[SE1-GB-1] Nuclear and Missile Commerce: The Cases of Iran, Myanmar, North Korea, and Syria

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Full Summary

Examining an issue fresh from the headlines following the May 2011 interception by the United States Navy of a North Korean ship suspected of transporting missile technology to Myanmar, the panel took an in-depth look at trafficking and commerce in nuclear and ballistic missile technologies by and among North Korea, Iran, Syria, and Myanmar. Leonard Spector, head of the Washington, D.C. office of the James Martin Center for Nonproliferation Studies, chaired the panel. Joshua Pollack of Science Applications International Corporation (SAIC) and Dr. Jeffrey Lewis of the James Martin Center for Nonproliferation Studies served as discussants.

Spector delivered an overview of collaboration to date among these states in nuclear and ballistic missile technologies as well as strategies to mitigate such exchanges. Pollack provided a detailed look at North Korea's missile supply relationship with Iran and Syria, and implications for policy moving forward. Lewis discussed the tough case of Myanmar, where speculation on the country's nuclear and ballistic missile aspirations stemming from concerns over diplomatic and military ties to North Korea and murky details concerning its acquisition of dual use components and technology have led to increased scrutiny and debate among the wider nuclear policy community.

Spector opened the discussion. He argued that each of these countries (as well as Pakistan in a historical context) are special cases because they operate outside the bounds of the Nuclear Non-Proliferation Treaty (NPT), in violation of the NPT, or act in ways that are inconsistent with the NPT. In addition, he argued, each country has relied on outside assistance to advance their programs and each has a history of mutual collaboration with the other states. The ongoing challenge, he said, is for the international community to manage the flow of nuclear and missile technology, and in a sense, "hold the line" using a toolbox of diplomatic, economic, and military means.

Spector outlined several patterns of proliferation utilized by the case countries to advance

their programs and provided examples as they relate to each country. Patterns ranged from a country or actor transferring completed items to a second country, as was the case with the Pakistani manufacture and transfer by the Khan network of completed P2 gas centrifuges to Iran, to the possibility of a country providing services directly to another country or partner. Other patterns included the transfer of designs or component parts to a second country which then manufactures the items on their own, and the illicit acquisition of items by one country to be transferred to another. Spector cited numerous examples of North Korean transfers of missile components and technology to Syria, Iran, and Myanmar, and pointed to North Korea's illicit procurement of reactor components, designs, and know-how and subsequent support for the construction of the Al Kibar reactor in Syria. He also highlighted the possibility of true collaboration in the manufacture and testing of an item, and cited the simultaneous development and testing of the nearly identical Shahab 3 and Nodong missiles by Iran and North Korea as an example.

Spector then discussed a number of means by which individual states and the international community can deter or control the export or transfer of nuclear and ballistic missile technologies. These ranged from the application of UN, multilateral, or unilateral sanctions to direct military action. In particular, Spector noted the potential utility of having a patron-state apply diplomatic or economic pressures on a country in order to curtail illicit exports. Fostering such a relationship between China and North Korea could be useful, though Spector noted there is little evidence of this strategy's success to the extent that China may be doing this already. Spector also pointed to the unilateral or multilateral strategy of constraining shipping by denying a country's access to airspace, ports, and financial institutions. This strategy was taken on by the Bush administration through the development of programs such as the Proliferation Security Initiative (PSI), and it has been further reinforced by the Obama administration. Finally, short of full-scale military action, Spector noted the possibility of cyber attacks and targeted assassinations as a means to slow down a country's progress on nuclear or missile programs. Intelligence is critical in all of these cases.

All of these strategies, Spector argued, have had some success. Sanctions have limited access to key materials and other dual-use components such as vacuum pumps. Initiatives such as PSI and UN Security Council Resolutions (UNSCRs) 1540, 1718, and 1874 have clearly limited North Korean transfers and progress on the Iranian uranium enrichment program. However, Spector warned that these successes have been limited and they risk being overshadowed by the fact that current export control regimes, sanctions, and initiatives have not kept pace with the adaptability and tactics of the traffickers. He concluded by predicting that while more sustainable results would come from promoting universal compliance with export control regimes, further progress on the prevention of illicit shipping and the improvement of the implementation of sanctions resolutions such as UNSCR 1540 could be

expected in the near term.

Next, Joshua Pollack presented research he conducted on North Korea's missile supply relationship with Iran and Syria. He argued that North Korea is the single most important supplier of ballistic missile technology in the world today, however one that has adapted and declined over time. While North Korea supplied at least seven states throughout the 1980s and 1990s, global attempts to curtail nuclear and missile proliferation force it to develop more exclusive and collaborative ties.

Pollack described the North Korean missile trade as a funnel both in terms of how it acquires missile technology and components from a wide range of sources and then packages these technologies for a small group of customers, and in the declining number of exports, transfers, and joint development projects over time. Pollack explained that North Korea is not self-sufficient, and relied heavily on foreign sources of missile technology, tools, parts, and materials in its development of a missile program. Evidence from seizures of North Korean cargo indicates that sources ranged widely, including the Soviet Union/Russia, China, Japan, and Egypt.

In terms of missile exports, technology transfers, and joint development, Pollack noted while North Korea was very active in the export of whole missiles prior to 1994, this practice declined substantially over time in spite of the perception that North Korea continues to ship complete missiles to parties worldwide. Throughout the 1990s, missile deliveries gave way to technology transfers and services. Again, Pollack noted this is evidenced by data on seized shipments, which suggest that from 1994 to 2000, North Korea shipped far fewer complete missiles and far more shipments of manufacturing equipment and parts—most of which were seized between 1999 and 2000. Pollack argued that this indicates North Korea was increasingly open to technology transfers and that its customers were increasingly intent on developing and sustaining their own missile programs. As customers became more self-sufficient, North Korea's customer base nearly collapsed with North Korean shipments almost exclusively moving to conventional arms. However, Iran and Syria (and recent developments point to Myanmar) still receive North Korean assistance on ballistic missile production, though the relationship is much more collaborative. Pollack pointed to evidence that North Korea employs various techniques in collaborating with others on missile development, including the exchange of scientists and technicians, data, and through reciprocal participation in testing and evaluation. This, he said, has led to increasingly sophisticated ballistic missile arsenals exhibiting increasingly common designs.

Pollack then examined how these developments in the North Korean missile trade and export strategy came about. He pointed to four major policy efforts undertaken to prevent missile

proliferation, including export control diplomacy, sanctions and interdiction, pressure on buyers, and the development of ballistic missile defense capabilities. Pollack argued that pursuing export control diplomacy has been partially effective. In particular, the Missile Technology Control Regime (MTCR) helped to prevent the spread of sophisticated Russian and Chinese ballistic missiles, forcing countries like North Korea, Iran, and Syria to rely on acquisition of old technology and increasing the difficulty of acquisition. However, Pollack noted that there are some short comings. Other initiatives including a series of negotiations between North Korea and Israel were largely inconclusive, and North Korea and other proliferators still have access to a myriad of duel use technologies from China and Japan.

Regarding international initiatives to implement sanctions and interdict missile shipments, Pollack argued that there has been little success. PSI, he argued, has had no observable influence on missile proliferation. Interdictions that have taken place under PSI, UNSCR 1718, and UNSCR 1874 have resulted primarily in the seizure of conventional weapons and some dual-use components. Pollack argued this is due to two factors. First, the market for North Korean missile trade seems to have largely concluded in the decade prior to the establishment of PSI and other initiatives. As such, North Korea's customer base has decreased significantly. Second, Pollack argues that North Korea has adapted to the threat of interdiction at sea. The UN Panel of Experts on UNSCR 1874 concluded that air transit is increasingly important to North Korean illicit trade.

Pollack argued that applying international pressure on the buyers has been partly effective in reducing demand for ballistic missile technologies and components. Egypt, Pakistan, Libya, the United Arab Emirates, and Yemen all appear to have discontinued their ties to North Korea for the acquisition of missile technology. In the case of Yemen, Pollack argued, the Spanish Navy seized a shipment of North Korean Scud missiles bound for Yemen in late 2002, upon which the United States heavily and openly pressured Yemen to cease trade with North Korea. All other countries are strong military partners of the United States and are recipients of advanced U.S. weapons and technology, creating an incentive for them to discontinue dealing with North Korea. However, Pollack argues that these pressures have had little or no effect on Iran or Syria. Neither are strong military partners of the United States or the West, and international political dynamics have made the application of sanctions and the interdiction of weapons shipments more difficult.

Finally, Pollack contended that the development of ballistic missile defense systems have actually been counterproductive in reducing demand for ballistic missiles and missile technology. Pollack argued that the intent of a ballistic missile defense system is in part to increase the cost of an adversary possessing a ballistic missile capability, therefore reducing demand. However, according the 2010 U.S. *Ballistic Missile Defense Review Report*, Iran,

Syria, and North Korea are all described as amassing large ballistic missile arsenals with the increasingly sophisticated capacity to overcome defenses via missile defense countermeasures and other tactics such as a salvo launch. Pollack argued that the expansion of ballistic missile defense systems has stimulated these developments.

In conclusion, Pollack argued that what we have seen as a result of measures intended to counter ballistic missile proliferation is the considerable diminishment of the missile problem, but a hardening or toughening of the problem that remains. He argued that in order to make these policies more effective with wider participation, a number of things must take place. First, he noted that the limited participation of the Chinese has weakened existing policies and initiatives, citing poor Chinese enforcement of export controls on dual-use technologies, and few controls over transit of North Korean shipments through Chinese seaports and airspace. Secondly, Pollack cited the continuing risk of technology transfers from more advanced countries, which could have implications for the proliferation of missile defense countermeasures. At least three of the international community's undertakings, Pollack concluded, could prove more productive with increased participation from China.

Finally, Jeffrey Lewis focused on the case of Myanmar, which is suspected of developing a clandestine nuclear weapons program. Lewis suggested it is important to focus on Myanmar in addition to other cases for several reasons. First, he said, Myanmar is simply interesting because we don't know what its true aspirations are, and because it is an unusual case. Second, Myanmar offers observers a means to study how patterns of nuclear commerce and patterns of proliferation have changed over the last few decades.

Lewis argued that the international community traditionally focused on disrupting the proliferation of a plutonium weapon. Development of a plutonium bomb requires a large and visible reactor, a large and visible reprocessing facility, and several other components that are easy to identify because they constitute large industrial undertakings. This is the type of program that North Korea developed, and the type of program it attempt to assist Syria in developing. Historically, the international community was always successful in identifying when a country is developing this type of program, and as such it became complacent in its ability to detect proliferation for a number of years.

In the 1970s, Lewis argued this began to change with the rise of the gas centrifuge and the uranium enrichment process. A key component leading to this development was the ability to produce high precision machining tools cheaply and in large quantities that could be used to produce components of a nuclear program. More importantly, a proliferation network could deal almost exclusively with dual-use suppliers. In spite of the initial reluctance of the United States and other nations to accept this development, this led to a fundamental change that was

exploited by the A.Q. Khan network. Technology was widely available, difficult to control, and had many uses. Moreover, a gas centrifuge facility does not have many of the tell-tale signs that identify it as part of a larger uranium enrichment program as did a plutonium program. Nuclear programs became easier to hide.

Coming to Myanmar, Lewis argued, there are very few known facts, and an abundance of circumstantial evidence. First, it is known that Myanmar openly sought a nuclear research reactor from the Russian Federation, which they claimed was to create medical isotopes. The project did not advance primarily due to cost. The second known fact, Lewis argued, is that Myanmar began to send a large number of students to Russia to study in highly technical fields traditionally out of place in the Myanmar economy, including plutonium production and reprocessing. Finally, close links to North Korea, including the possibility of missile proliferation, highlight further concerns. Lewis pointed to a trip report from a 2008 Myanmah military delegation to North Korea, in which the delegation visited a North Korean Nodong missile production factory. Photographs from the trip report include meetings with Jon Byon-ho, a North Korean official highly involved in North Korean missile proliferation to Syria and Iran, and a former contact of A.Q. Khan. Additionally, Myanmar has also openly admitted to mining uranium. Lewis cited five uranium deposits in the country, but noted that it is unclear as to whether mining operations have been successful. In spite of this potentially disturbing evidence, Lewis stressed that the details are unclear.

Two facilities in particular stand out. Two appear to be machine shops built by Myanmar and outfitted with German and Swiss equipment. Lewis noted that usually largely construction projects like this receive some sort of domestic public attention in Myanmar, but these did not. After outfitting the site, Germany in particular was very skeptical, noting a significant military presence in the area. In addition, several photos leaked out from inside the facility through a dissident group. One photo in particular depicted several pieces of highly technical equipment, one of which is used in the uranium enrichment process. Moreover, pictures of senior military leaders at a large ore processing facility, Lewis noted, have led to a much more vigorous debate regarding whether the facilities are related to an enrichment program. Lewis suggested the possibility that the sites are related to the extraction of rare earth metals, and noted that there may be some credible evidence for this argument. However, he also pointed to the fact that the cover for India's nuclear plant is also a rare earth metals plant.

So, Lewis asked, what should be done or can be done to resolve the situation? Without firm evidence pointing clearly to a nuclear weapons program, the situation is very complicated from a policy perspective. First, he argued that Myanmar must take steps toward greater transparency on the issue. That a senior official recently told Senator John McCain that Myanmar was disbanding any pursuit of a nuclear program because the endeavor was too

costly is a positive development, but not good enough. Lewis argued that the only real way to resolve the issue is for Myanmar to sign their Additional Protocol and allow the international community some kind of access to the facilities in question. ASEAN involvement, he argued, would be a positive step.

Finally, Lewis asked how Myanmar fits into the world of proliferation networks, particularly in light of their relationship to North Korea. First, following Leonard Spector's prior analysis, he suggested that Myanmar may be a customer like Syria. Lewis also pointed to the possible role of Myanmar as a transshipment point for North Korea as a plausible scenario. There are some examples of this, including the recent seizure of a shipment of magnetometers to Myanmar by a Hong Kong company. Magnetometers can be used for missile production or to enrich uranium. However, Lewis noted that it was also plausible that the company simply did not know that Myanmar had such sanctions placed upon it.

The session closed a question and answer period with the audience.