NEW PLAYERS ON THE SCENE
A.Q. Khan and the Nuclear Black Market

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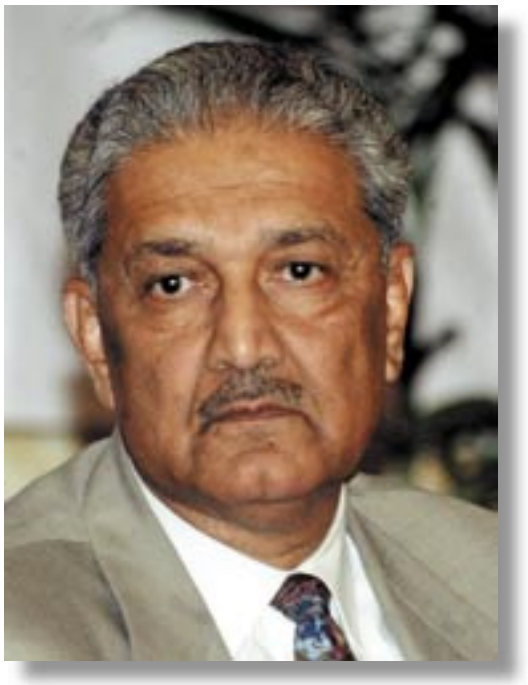

Current nonproliferation regimes "may be inadequate to deal with the emerging threat of non-state proliferation" that Pakistani nuclear scientist A.Q. Khan represents, according to U.S. Air Force Colonel Charles D. Lutes. He says that's because these regimes are based on international norms, which in turn are based on the assumption that only governments are able to develop nuclear weapons.

A Senior Military Fellow at the Institute for National Strategic Studies at the National Defense University, Washington, D.C., Lutes says the Bush administration, recognizing this flawed assumption, has begun employing a two-tracked approach, attacking both supply of and demand for nuclear materials.

Photo above: An undated photo from Islamabad, Pakistan, of Abdul Qadeer Khan, founder of Pakistan's nuclear program. (AP Wide World Photos)

In October 2003, Italian coast guard cutters pulled alongside a German-flagged cargo vessel bound for Libya called the *BBC China*. Upon inspection, authorities found precision machine tools, aluminum tubes, molecular pumps, and other components for building approximately 10,000 "P-2" gas centrifuges designed for enriching uranium to specifications required for a nuclear weapon.

These components were traced back to a publicly traded Malaysian engineering company called Scomi Precision Engineering. Scomi had manufactured the parts at the behest of a Sri Lankan, Buhary Sayed Abu Tahir. Via his front company in Dubai, SMB Computers, Tahir arranged to deliver the parts to Libya for its hidden nuclear weapons program.

The Italian authorities ensured that the cargo never arrived at its destination. The seizure of the *BBC China's* cargo was a key part in a chain of events that led Libyan President Muammar Qaddafi to "come out of the cold" and renounce his weapons of mass destruction (WMD) programs in December 2003.

Just as significantly, this interdiction operation was the strand that unraveled the shadowy proliferation network of Tahir's boss and mentor, Pakistani scientist Abdul Qadeer Khan. [Note: The details on the *BBC China* seizure and the Khan network were derived from published sources. Specifically, see Bill Powell and Tim McGirk, "The Man Who Sold the Bomb," *Time*, February 14, 2005, pp. 22-30. Also see Barton Gellman and Dafna Lizner, "Unprecedented Peril Forces Tough Calls: President Faces a Multi-Front Battle Against Threats Known, Unknown," *The Washington Post*, October 26, 2004, p. A1.]

A Nuclear Marketplace

The godfather of Pakistan's nuclear weapons program, A.Q. Khan is a legendary and celebrated figure in his country for his years of secretive work in developing the first "Islamic bomb" to counter the threat from long-time rival India.

As a scientist working for the Dutch Urenco firm in the 1970s, Khan had access to blueprints for uranium enrichment technology, which he stole and brought back to Pakistan when he returned home.

Khan was appointed by then-Pakistani Prime Minister Ali Bhutto to run Pakistan's nuclear-research program, with the goal of countering India's nuclear aspirations with a weapon of its own. Running counter to the non-proliferation norms of the international community, Khan was forced to pursue this goal with the utmost secrecy. However, Pakistan's indigenous scientific and engineering infrastructure was underdeveloped for the task. So Khan did what any good entrepreneur would do: he outsourced.

He cultivated a network of suppliers and manufacturers, many of whom did not realize the ultimate objective of the science project undertaken at the Khan Research Laboratories. By 1998, however, there was no doubt. To the surprise of the international community, Pakistan completed five underground nuclear tests and joined an elite club of nuclear weapon states.

For A.Q. Khan, the patriotic fervor surrounding this achievement was only the beginning. A shrewd businessman, he saw potential for financial gain between his network of suppliers and a burgeoning market for nuclear arms. North Korea, Iran, Iraq, Syria, and Libya were foremost on a list of those at least window-shopping for such capability.

An ongoing investigation reveals that the Khan network played a significant role, beginning in the early 1990s, in the development of Iranian and North Korean enrichment technology. In exchange, North Korea appears to have shared its ballistic missile technology with Pakistan.

The investigation of the Libyan program continues to reap an intelligence bonanza uncovering the extent of Khan's cooperation with rogue regimes worldwide. While there is considerable debate over the role of the Pakistani government with regard to Khan's activities, it is unlikely that officials in Islamabad had full knowledge of the scope and scale of the Khan network.

As it continues to be exposed, the web of alleged Khan sponsors and suppliers is breathtaking. Starting with the stolen centrifuge designs from the Netherlands, and augmented by weapons designs from China, the syndicate also included engineering assistance from Britain; vacuum pumps from Germany; specialized lathes from Spain; furnaces from Italy; centrifuge motors and frequency converters from Turkey; enrichment parts from South Africa and Switzerland; aluminum from Singapore; and centrifuge parts from Malaysia, all orchestrated from an administrative hub in Dubai.

Despite mounting evidence, however, it is unlikely that the full extent of the network that International Atomic Energy Agency (IAEA) Director General Mohamed El-Baradei dubbed "the nuclear Wal-Mart" will ever be fully known.

Supply Always Meets Demand

Now that A.Q. Khan is under house arrest in Pakistan, but unavailable to Western authorities for interrogation, vexing questions remain. It is clear that Khan met with, and possibly sold components to, officials in a number of nuclear-aspiring states. Ongoing investigation has linked Khan to nuclear programs in Iraq, Iran, North Korea, and Libya. Additionally, published reports have identified Khan meetings with potential customers in Egypt, Saudi Arabia, Sudan, Malaysia, Indonesia, Algeria, Kuwait, Myanmar, and Abu Dhabi. The wider the spread of this dangerous knowledge and expertise, the greater the opportunity exists for terrorists or criminals to become armed with a nuclear bomb.

Clearly, al-Qaida and its affiliates are in the market for nuclear weapons. On the one hand, Khan's far-flung conglomeration of shady manufacturers, unsavory middlemen, and illicit traffickers seems the ideal supplier to meet the terrorist demand for nuclear arms. Its loosely coupled network mirrors the cellular structure favored by al-Qaida-affiliated terrorists. This structure facilitates surreptitious and relatively untraceable transactions among those who wish to wreak catastrophic violence.

This building in Almaty, Kazakhstan, photographed on February 18, 2004, was reported to house an office of SMB Computers, a Dubai company linked to the global nuclear black market. In a February 11, 2004, speech, President George W. Bush said, "a man named B.S.A. Tahir ran SMB Computers…as a front for the proliferation activities of the A.Q. Khan network." (Serik Kovlanbayev, AP Wide World Photos)

On the other hand, in considering the terrorist link it is important to look at the wares that Khan and his cronies offered for sale. Primarily, Khan purveyed the necessary materiel for a state nuclear program: centrifuge components and designs, weapons blueprints, and technical expertise. There are no published reports of Khan dealing in nuclear fissile material itself, the final product of the enrichment process that fuels a nuclear weapon.

Presumably terrorists would prefer to purchase a finished weapon or, at a minimum, the fissile material, as they likely have little ability or patience to develop a program infrastructure. To a terrorist, then, dealing with Khan would be tantamount to asking for AK-47s and bullets, and instead receiving steel, metal casts and molds, and a fabrication instruction manual.

As much damage as the black market may have done in bringing North Korea and Iran closer to membership in the nuclear club, the present danger lies in how the supplier network adapts now that Khan is no longer at the helm.

Although President Bush has stated that Khan's network has been shut down, it remains possible that parts of it may have just burrowed more deeply underground. While it is unlikely that Khan Research Laboratories will engage in any further black market activity, it remains to be seen what will become of its associates.

Just as terrorist networks re-form and adapt, so too can the supplier network. The predominant commodity will be the knowledge base and expertise resident in the remaining supplier nodes. Cut off from Khan's access to the rogue state market, a new network of nuclear scientists and engineers may coalesce around the terrorist market.

To the extent that these profiteers may have any access to fissile material or even a finished weapon, the risk of proliferation to terrorists increases exponentially. Unfortunately in the case of terrorist actors, unlike state actors, possessing a nuclear weapon probably has only one purpose: for detonation into a visible mushroom cloud.

From Cooperative Agreements to Cooperative Action

Existing nonproliferation regimes may be inadequate to deal with the emerging threat of non-state proliferation as exemplified by the Khan nuclear smuggling network. International norms—the basis of these regimes—are predicated on an assumption that only states have the requisite resources to develop nuclear weapons.

The Khan experience, viewed through a new set of assumptions in a post-9/11 world, indicates that this basic premise is flawed. For this reason, the Bush administration has begun prodding the international community to move from a position of cooperative agreements to one of cooperative action.

Accordingly, the United States and its partners have developed a more proactive approach to attack both ends of the problem. To curb demand, the war on terrorism seeks to defeat terrorist groups in the short term, while undermining terrorist ideology and support over the long term. Against rogue states, international diplomatic pressure backed by threat of force is aimed at isolating outlaw regimes. The experience in Iraq shows the challenges of this policy when conducted with limited international consensus.

On the supply front, two approaches are currently in play. The first is to round up the relatively limited supply of fissile material. Threat reduction techniques applied to the former Soviet states have been extended on an international scale through the G-8 Global Threat Reduction Initiative. A recent agreement between the U.S. and Russia to enhance cooperation in the fight against nuclear terrorism is another example.

The second approach is embodied by the Proliferation Security Initiative (PSI), under which participating gov-

U.S. Navy photo

ernments collaborate to interdict shipments of components and material needed to construct weapons of mass destruction. The slogan that PSI is "an activity, not an organization" reflects the paradigm shift toward cooperative action. It was cooperation under the PSI principles that led to the interception of the *BBC China* and the unraveling of the Khan network.

However, the black-market activities of A.Q. Khan may only be the tip of the iceberg. As long as there is significant demand for nuclear capability, suppliers will try to find ways to meet it. The international community must be flexible in its approach in order to confront the ever-changing nature of the nuclear supplier network. The shift from cooperative agreements to cooperative action to curb both demand and supply is a necessary ingredient for success. ■

The views expressed in this article are those of the author and do not necessarily reflect those of the National Defense University, the U.S. Air Force, or the United States government.

U.S. Navy photo
Below: Katsumi Kasahara, AP Wide World Photos

Proliferation Security Initiative training. International forces practice interdiction techniques. Top, Special Operations Forces from Spain search a sailor after boarding the USNS Saturn during the 15-nation Sea Saber 2004 exercise, January 17, 2004. Middle, Inspectors from Japan's National Police Agency wear protective suits to analyze materials loaded in a container during an export control exercise in Tokyo, October 22, 2004. Bottom, Italian firefighters wearing protective suits against chemical, biological, and radiological contaminants set up warning signs around a container suspected of carrying weapons of mass destruction during the exercise Clever Sentinel 2004 on April 22, 2004, in Sicily.