

July 15, 2008

The Nuclear Threat: Terrorism, Proliferation and Instability in the International Community

In view of recent worldwide developments in the area of risk, this is an appropriate time to revisit the greatest risk of all: the nuclear threat — or as some counterterrorism experts appropriately designate, “The Sum of All Fears.” Unlike other weapons, nuclear arms originated on a precise date: July 16, 1945, when the first atomic bomb was detonated at a desert site in Alamogordo, New Mexico. This event was the culmination of three years of secret work conducted by 130,000 American-led scientists, along with a few other experts who escaped in various manners from war-torn Europe. The Manhattan Project, created by President Franklin D. Roosevelt in May 1942, arose from the fear that Nazi Germany would try to develop an atomic bomb. And these concerns were not unfounded; in 1938, scientists in Germany bombarded a uranium atom with neutrons that split its nucleus, releasing energy. This successful experiment revealed that the splitting of a significant number of nuclei of uranium atoms could release an immense amount of energy. The challenge was to harness that division, or fission, into a controlled blast. Germany, however, for a variety of reasons ranging from idealism and heroism to subterfuge, failed to develop a weapon.

While Germany had surrendered by the time the atom bomb was developed, Japan had not yet capitulated. Military planners estimated that invading Japan would cost thousands and thousands of American lives. The war, which started in 1939 in Europe, already had dragged on for over six years and there was a resulting clarion call to a quick and decisive cessation of warfare. The American President ordered the use of the two available atomic bombs, and during August, 1945, two Japanese cities — Hiroshima and Nagasaki — were bombed. Thousands were killed instantly and countless more succumbed later from the explosive fires and deadly radiation resulting from the blasts. The Japanese sued for peace and the war ended shortly thereafter.

Even before the atomic bombing of Japan, many of the scientists of the Manhattan project were arguing that the international control of atomic energy was essential. The explosive force of each bomb dropped on Japan was about 15 kilotons, or 15,000

tons of TNT; however, following World War II, far more powerful nuclear weapons were developed, including hydrogen bombs, whose force could exceed 1 million tons of TNT. These scientists understood that any modern, industrialized state could eventually build its own atomic bomb if it so chose. There was no “secret” scientific theory or principle concerning the building of the bomb; the recipe is fundamental to basic modern physics. Then, as now, the primary difficulties were engineering-related: separating uranium-235, producing plutonium and designing and building the actual weapon.

The second nation to test an atomic bomb was the United States’ Cold War rival, the Soviet Union. This development was not unexpected, but the timing was. The American intelligence community generally believed the Soviet Union would not have “the bomb” until 1952 or even later, certainly not as early as August 1949. Soviet wartime espionage sped its weapons development, probably only by a year or two because the bomb tested on August 29, 1949, closely resembled the implosion device developed at Los Alamos. In 1952, Britain became the next nation to join the “nuclear club.” France and China joined the nuclear club in the 1960s.

It is clear that the nuclear programs of the original five nuclear powers were driven by primarily Cold War concerns. These five initial nations were part of the Cold War scenario that played out until the fall of the Berlin Wall in 1989, and the collapse of the Soviet Union in 1991, as the conflict between communism and capitalism steadily dissipated. Some of us can still recall air raid drills and other exercises that were part of the Cold War legacy. Although the USSR was aggressively proselytizing the philosophy of communism and supporting communist movements around the world, this conflict remained for the most part a “Cold War.” The communist parties and their associates in the United States never launched a reign of terror activity supported by the USSR. However, in the 1970s, a largely unrelated arms race in South Asia produced two more members of the nuclear club: India and Pakistan.

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The fact that at predictable levels, nuclear energy transforms into heat, which can generate electricity, adds to the confusion as to who is developing weapons and what countries are developing nuclear generators for energy-producing reasons; dual-use technology refers to the possibility of military use of civilian power technology. The enriched uranium utilized in most nuclear reactors is not sufficiently concentrated to build a bomb — most nuclear reactors run on 4 percent enriched uranium. In contrast, the uranium content in the first atomic bomb, “Little Boy,” was 80 percent enriched uranium. It is also important to note that the same plants used to enrich uranium for power generation can be used to make the highly enriched uranium needed to build a bomb. In addition, plutonium produced in power reactors, if concentrated through reprocessing, can be used for a bomb.

From the birth of nuclear arms 60 years ago during the dark days of World War II, fear over who might acquire these apocalyptically destructive weapons has remained an abiding hallmark of this uneasy atomic era. The Cold War confrontation was a weighty one because of the potential involvement of nuclear weapons, but the combatants exercised restraint and allowed the weapons of logic — including the concept of mutually assured destruction — and diplomacy to determine the relationship. The Cold War ended symbolically with the fall of the Berlin Wall.

Nuclear Proliferation

To date, seven countries have openly conducted nuclear tests. They are: the United States in 1945, the Soviet Union in 1949, Great Britain in 1952, France in 1960, China in 1964, India in 1974, and Pakistan in 1998. Two additional countries believed to have nuclear weapons are Israel and North Korea, while others — notably Iran — are suspected of pursuing this goal.

By the mid-1960s, five declared nuclear powers, all — not so coincidentally — permanent members of the United Nations Security Council, had emerged. In 1968, the UN General Assembly approved the Nuclear Non-Proliferation Treaty (NPT), designed to keep the nuclear bomb club from growing; some

190 nations have since agreed to adhere. Although these devastating weapons have not spread as virulently as once feared, the treaty regime has hardly proven fail-safe. Israel, India and Pakistan all refused to sign the NPT, and each is known to possess usable nuclear weapons and regional delivery systems. Under the apartheid regime, South Africa developed atomic arms, but abandoned them after reverting to majority rule. North Korea withdrew from the NPT in January 2003, however, and is currently believed to have as many as eight nuclear warheads. Iran, too, is generally believed to sustain an active effort to build atomic capabilities while Iraq is thought to have had an aggressive program to acquire nuclear weapons. Were Iran to procure nuclear weapons, this would undoubtedly launch a chain of events leading to the proliferation of nuclear weapons in the Middle East and the Levantine in order to maintain a balance of power between the Shiite and Sunni-dominated countries. This would be a far more dangerous situation than ever encountered during the “Cold War,” as recent developments in that part of the world reflect.

The greatest risk from nuclear weapons proliferation comes from countries that have not joined the NPT and which have significant unsafeguarded and unregulated nuclear activities: India, Pakistan, North Korea and Israel. While safeguards apply to some of their activities, others remain dangerously beyond scrutiny. Some of the safeguards are:

1. Material Accountancy — the tracking of all inward and outward transfers and flow of materials in any nuclear facility. This includes sampling and analysis of nuclear material, on-site inspections and review and verification of operating records.
2. Physical Security — the restriction of access to nuclear materials at the site.
3. Containment and Surveillance — the use of seals, automatic cameras and other instruments to detect unreported movement or tampering with nuclear materials, as well as spot checks on site.

While in 1985, there were 65,000 active nuclear weapons in the world, in 2002 this number decreased to about 20,000. As of 2007, the total number was projected to decline by 30 to 50 percent

over the next decade. Russia and the United States have subjected their nuclear forces to independent verifications under various treaties. Thousands of Russian and United States nuclear warheads are in inactive stockpiles awaiting processing. The fissile material contained in the warheads can then be recycled for use in nuclear reactors. An estimate of the active warheads from the remaining nations known to have deployed nuclear weapons is as follows: United Kingdom 200, France 350, China 160, India 140, Pakistan 60, North Korea 8 and Israel 200.

The more serious issues come from the non-signatory states and the unsanctioned activity of other rogue operators. The unsanctioned nuclear activity of Iraq and its subsequent failure to comply with international protocols played a major role in precipitating a coalition invasion that has since gravitated into a sectarian conflict — a conflict that some would call a civil war with long-term hostilities. This conflagration moved the al Qaeda battlefield a thousand miles closer to Europe from al Qaeda's established protected enclave, the Afghanistan-Pakistan border.

Iraq's efforts to secure nuclear potential originated in the 1960s. In the late 1970s, a specialized plant, Osiraq, was constructed near Baghdad. The plant was attacked during the Iran-Iraq War and was destroyed by Israeli bombers in June 1981. This attack is reminiscent of the recent Israeli attack in 2007 on a facility in Syria; the site of the alleged reactor in al-Kibar, eastern Syria, was bombed by Israeli warplanes in September. The United States claims it had gathered intelligence suggesting the structure was a nearly completed plutonium-producing reactor, while Damascus claims the building was a non-nuclear military operation. Again, the mere suspicion of nuclear activity almost provoked another war in this volatile area.

Pakistan

The situation in Pakistan deserves special attention, particularly in light of recent developments. Pakistan's government was broken and civilian institutions markedly atrophied by eight years of military rule; the country's major political parties were left rudderless by the absence of leaders living in exile during this period. The assassination of

Benazir Bhutto in December left her party in deep disarray. Although the political parties and the military — including the intelligence services — all seek a breather from the suicide bombings and nascent insurgency that have roiled Pakistan in recent years, their inability to cooperate is leading to a very dangerous situation. It is becoming increasingly clear that al Qaeda has successfully relocated its base from Afghanistan to Pakistan's tribal areas, where it has rebuilt much of its ability to launch attacks and broadcast its message to militants across the world.

Pakistan was dedicated to producing a nuclear weapon because of India's successful development of nuclear arms. In the 1970s, Pakistan's first attempt focused on the plutonium route; however, United States intervention prevented the Pakistanis from receiving fissile material from a reprocessing facility supplied by France. Consequently, Pakistan redoubled its efforts to acquire uranium enrichment technology. The main efforts in this direction were spearheaded under Dr. Abdul Qadeer Khan, who during the 1970s managed to gain access to classified information from various sources on how to enrich ordinary uranium to weapons-grade concentrations. His efforts turned Dr. Khan into a national hero.

Sadly, however, the story does not end here — and its later chapters are dire in their ramifications. The International Atomic Energy Agency, IAEA — with the help of western intelligence agencies — unearthed a nuclear black market with close ties to Pakistan and Dr. Khan. Dr. Khan's illicit nuclear network was dismantled in early 2004, but recent evidence suggests that the network has since sold enrichment technology to Iran, North Korea and Libya. While Libya gave up its nuclear program and North Korea is involved in endless negotiations, Iran has not — despite international pressure, sanctions, and repeated offers of incentives to comply. Needless to say, a repeat scenario whereby an anonymous scientist with access to nuclear technology sells these dangerous assets to al Qaeda — allowing them to produce a “nuke in a box” — would be an ominous one indeed. Al Qaeda's methodology to date has been to escalate the violence, and a feasible plan to detonate a small

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nuclear device somewhere in Western Europe or the United States would almost certainly appeal to its members.

Iran

The ring led by Dr. Khan has been known to provide nuclear parts to Iran — a disturbing revelation in view of the fact that this ring also has blueprints to make a usable nuclear weapon, critical information many suspect was also passed to Iran. The nuclear weapon in question is a device that could be detonated under carefully controlled conditions, but is not a weapon that could be delivered on a missile. Recently, Iran announced that it was pressing on with uranium enrichment “non-stop,” despite the offer by world powers of economic incentives to coax Tehran into halting such activities. The Islamic Republic also appears to dismiss any suggestion of freezing nuclear work, claiming that their nuclear efforts are solely for the purpose of generating electricity — but which the West has good reason to suspect is for the making of bombs. This situation is dangerous, especially considering Iran’s current political direction and assistance to terrorist groups like Hezbollah and Hamas. Furthermore, a situation where a Shiite nation such as Iran develops nuclear weapon capacity would precipitate an arms race in the Middle East because Saudi Arabia, a Sunni nation, would have to catch up — much like the situation that evolved in South Asia when India developed nuclear weapons and its archenemy Pakistan was forced to follow. This scenario would represent a definite setback for non-proliferation.

In view of the aforementioned untoward events emanating from al Qaeda, Iran, Pakistan, North Korea and other rogue operators attempting to cause damage to the United States, firm conditions for control over fissile material must be established. Terrorist use of a nuclear or radiological device could gravely damage social cohesion and political stability, especially given the carnage a nuclear yield would inflict on an American city. This threat makes it absolutely vital that errant fissile material is kept out of the United States. It also requires that such material, especially plutonium, be made unusable for nuclear weapons purposes — particularly in Russia, which has large quantities of

plutonium and could be a prime source for weapons fuel.

A recent internal United States Air Force investigation revealed that the majority of air force bases in Europe that contain United States nuclear bombs do not meet United States Defense Department security requirements, as many are behind in repairs, have insufficient lighting or fencing and do not post security guards with adequate training and experience. A consistently noted theme throughout the investigation was that most sites require significant additional resources to meet Department of Defense security requirements. In order to strengthen security, it was recommended that the United States choose to consolidate its weapons at fewer bases to reduce vulnerabilities. Moreover, concluded the study, in view of the fact that security is less than adequate at American facilities in Europe — a nation with a great amount of expertise and resources — one should wonder as to the adequacy of controls in nations such as Russia, Pakistan, and India which do not have great reputations for efficiency and proper safeguards.

Vigorous efforts to secure nuclear weapons and materials as efficiently and effectively as possible must always remain at the center of any intelligent strategy for preventing nuclear terrorism. Control over fissile material is an urgent nonproliferation issue that demands adequate funding, active American diplomacy and cooperation with other countries. No defense can completely eliminate the potential for nuclear terrorism: as long as we continue to live with nuclear weapons and materials, eradicating nuclear terrorism will not be an option. But the right strategy can keep our gambling to a minimum, and tilt the odds in our favor. The time for urgency is now®.



The Lipman Report Editors