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WMD Proliferation Trends and Challenges

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The Challenge of WMD Proliferation

The spread of WMD poses one of the greatest threats to international peace and security. Over recent years, proliferation activities have become more sophisticated with greater efforts made to circumvent well-established non-proliferation norms. A number of states continue to develop WMD in defiance of international rules and norms. And there is an increasing risk that terrorists will acquire and use WMD.

The WMD threat is not a theoretical one – recent history has all too many examples of states and terrorist groups attempting to acquire WMD and related technologies.

Nuclear Proliferation Trends

While nuclear weapons have only been used twice at the conclusion of the Second World War, states of proliferation concern continue to acquire or attempt to acquire nuclear weapons.

The Nuclear Non-Proliferation Treaty, IAEA monitoring and the nuclear export control regimes have generally been quite effective barriers to nuclear proliferation. In the 1960s, it was widely feared that nuclear proliferation was inevitable and there could be as many as 25 nuclear-armed states by the 1990s. Instead, today there are fewer than ten states which possess or claim to possess nuclear weapons. Some particular success stories are as follows:

- In the 1990s, South Africa, Belarus, Ukraine and Kazakhstan all renounced nuclear weapons and joined the NPT as non-nuclear-weapon states. The nuclear arsenals involved were dismantled or, in the case of former Soviet states, transferred to Russia.
- Concerns about the direction of Argentinean and Brazilian nuclear programs were allayed when both countries joined the NPT and renounced nuclear weapons in the early 1990's.
- In December 2003, following secret negotiations with the United States and the United Kingdom, Libya renounced its clandestine nuclear weapon program and began to dismantle it under IAEA supervision. Libya also reaffirmed its commitment to the NPT which it ratified in 1975.

However, such successes notwithstanding, the NPT has come under serious challenge in recent years from clandestine nuclear programs.

North Korea's withdrawal from the NPT in 2003 and announcement that it possessed several nuclear devices highlighted the risk of latent proliferation. This is where states acquire sensitive nuclear technology for ostensibly peaceful use, and subsequently withdraw from the NPT to pursue nuclear weapons.

More recently, Iran's pursuit of uranium enrichment has also focused attention on the potential for countries of proliferation concern to misuse the NPT's provisions on access to peaceful nuclear energy in order to acquire the technical basis for developing nuclear weapons.

Chemical Weapon Proliferation Trends

Chemical weapons are easier to manufacture and have been more widely used.

Saddam Hussein ordered the use of chemical weapons against Iranian forces in 1983. Iran estimates that more than 60,000 soldiers were exposed to mustard gas and the nerve agents sarin and tabun. Iran is also believed to have retaliated with chemical weapons. And in August 1988, Saddam Hussein launched chemical attacks against defenseless civilian men, women and children in Kurdish villages in northern Iraq. No one knows how many Kurds died as a result of these attacks, but some estimates place the dead at 8,000 while others say up to 24,000.

Chemical weapons have also within the reach of non-state actors. In March 1995 the Aum Shinrikyo cult released the deadly nerve agent sarin into the Tokyo subway, killing 12 and injuring nearly 3,800. In 2004, the Jordanian Government foiled a plot by a terrorist cell linked to the Al Zarqawi network to launch an attack involving toxic chemicals and explosive devices in Amman. The discovery of a rudimentary chemical and biological manual in a Jemaah Islamiyah safe-house in the Philippines in 2003 showed that terrorists in this region share these ambitions.

Biological Weapons Proliferation Trends

Biological weapons have been used in war for thousands of years. Armies have poisoned the wells of their enemies with the rotting carcasses of dead animals, and plague-infected corpses were used to attack besieged cities during the Middle Ages.

Japan is the only state known to have employed biological weapons in the modern era, when Japanese forces used weaponised agents for anthrax, cholera, plague, typhoid and other diseases against Chinese civilians and Allied prisoners of war before and during the Second World War.

A number of countries have established biological weapons programs, in many cases in the form of "defensive" research. This research creates a "break-out capability", as well as increasing the risk of the technology being diverted to other states or to terrorists.

Such biological weapon agents have been accidentally released, with horrific consequences. In 1979, less than 1 gram of weaponised anthrax spores was accidentally released from a military microbiology facility in the city of Sverdlovsk (now called Ekaterinberg) in the Urals region of the Soviet Union. More than 67 people were killed in a zone spreading 4 km south of the facility, with livestock deaths extending out about 50 km.

Biological weapons are of great interest to terrorists. The US 9/11 Commission reported that Al Qaida had been pursuing an anthrax program in Afghanistan in 2001. The mailing of anthrax spores in letters in the United States in the immediate aftermath of September 11 also demonstrated that biological agents are within the reach of terrorists (although there is no evidence of a direct link between these attacks and Al Qaida).

Missile Proliferation Trends

Along with the proliferation of WMD, proliferation of the means to deliver WMD, particularly using ballistic missiles, continues to be a matter of great international concern.

Up to 1972, missile proliferation had been limited to cold war adversaries, with only the United States, the Soviet Union, France and China indigenously producing ballistic missiles, although the number of states possessing ballistic missiles extended further due to proliferation by the Soviet Union to its allies.

Today the number of with ballistic missiles has increased dramatically.

Recent Missile Proliferation

According to published sources, eleven states currently possess medium-range (1,000–3,000 km), intermediate-range (3,000–5,500 km) and/or intercontinental (over 5,500 km) ballistic missiles, and at least another nineteen states possess only short-range (less than 1,000 km) ballistic missiles.

Looking at this graphic, it is noteworthy that the places where proliferation of ballistic missiles has occurred mirrors areas of conflict – India-Pakistan, the Korean peninsula, and most notably the Middle East. Countries are thought presently to possess medium and long-range ballistic missile capability include North Korea, Iran, India, Pakistan and Syria. Since the late 1980s, several of these states have attained an indigenous production capability, although most need to import components or materials from other states.

The recent, albeit unsuccessful, test launch of an inter-continental ballistic missile by North Korea and the test launch of a medium-range missile by India demonstrate that efforts to acquire increasingly sophisticated delivery capabilities continue.

The only region where ballistic missiles have been used in conflicts since the Second World War is the Middle East, and those countries that have used them – Iraq and Iran - are the same countries that have been the subject of concern regarding the development of WMD programs.

This is a dramatic illustration of the importance of countering the further proliferation of missile technology.

The A Q Khan Network

Let's briefly look at a few recent cases of proliferation activities that illustrate some of the techniques employed by proliferators and the challenges Governments face stopping proliferation.

Several states which were once recipients of WMD-related technologies and materials are now themselves sources of these same technologies to other countries of proliferation concern.

The seizure in October 2003 of the German-owned cargo vessel *BBC China*, which was carrying container loads of Malaysian centrifuge parts (used to enrich uranium) bound for Libya's clandestine nuclear program, led to the exposure of the extensive nuclear black market network operated by Pakistani nuclear engineer Dr Abdul Qadeer Khan.

The Khan network exploited weak enforcement of export controls in several states and revealed the increasingly devious and sophisticated methods being used by proliferators.

Khan's network is believed to have sourced nuclear components from up to 30 companies in 12 countries, including in Europe and South-East Asia.

Libya renounced its WMD program shortly after the seizure of the *BBC China*. Libya's subsequent admissions concerning its procurement activities provided clear cut evidence against Khan and his network. Investigations into the extent of Khan's trade with North Korea, Iran and possible other recipients are continuing.

Secondary proliferation compounds the risks of terrorists acquiring WMD. While the Khan nuclear procurement network assisted state nuclear programs, it is not difficult to imagine a situation in which former WMD scientists might seek to profit from terrorist interest in acquiring WMD.

The *Be Gae Bong* Incident

Brokers or distributors, in the form of front companies and intermediaries, are sometimes used to hide the true final destination and end-use of exports destined for use in a WMD program and to avoid domestic controls intended to prevent such exports. Re-export of goods received in one country then exported to a third country is also a widely used diversionary tactic.

On 8 August 2003 the *Be Gae Bong*, a North Korean cargo ship, was intercepted by customs officials while transiting the Kaohsiung port in Taiwan. The ship was discovered to be carrying 158 drums of phosphorus pentasulfide — a dual-use chemical which can be used in the production of the deadly nerve agent VX.

The shipment originated in Italy where it had received an export licence for shipment to Bangkok. The importer in Bangkok then re-exported the goods to North Korea via Taiwan. Upon receipt of information on the shipment, Taiwanese customs officials were able to seize the cargo on the basis of Taiwan's export control laws applying to the transit of WMD-related materials.

The Aum Shinrikyo WMD Weapons Program

The March 1995 sarin attack on the Tokyo subway by Aum Shinrikyo led to the uncovering of an extensive chemical weapons program. The cult established a roughly US\$30 million program to produce multiple agents. While sarin was their primary agent, they also used VX, phosgene, and hydrogen cyanide gas.

Using a standard proliferator's tactic, they used front companies to acquire materials. It is reported that they purchased precursors from over 200 companies to amass stockpiles of over 60 tons of starting material. They also recruited scientists to the cult and sought assistance from former Soviet weapons scientists.

The development of an extensive CW program by a non-state actor and the subsequent high-profile attacks were a disturbing reminder of the destructiveness of chemical weapons in the hands of terrorists.

Smuggling Ballistic Missiles

Clandestine missile transfers, especially involving ballistic missiles, their components and relevant technologies, to countries of proliferation concern, are a major problem.

The extent of the problem can be seen in the frequency with which interdictions under the Proliferation Security Initiative (PSI) have involved missiles.

In a speech by US Secretary of State Condoleezza Rice on the second anniversary of the launch of the PSI in May 2005, she revealed that *"PSI cooperation stopped the transshipment of material and equipment bound for ballistic missile programs in countries of concern, including Iran. PSI partners, working at times with others, have prevented Iran from procuring goods to support its missile and WMD programs, including its nuclear program. And bilateral PSI cooperation prevented the ballistic missile program in another region from receiving equipment used to produce propellant."*

Last month at the PSI High Level Policy Meeting in Warsaw, US Under Secretary for Arms Control and International Security, Robert Joseph, referred to continuing attempts to transfer missile technology. *"Between April 2005 and April 2006 the United States worked successfully with multiple PSI partners ... on roughly two dozen separate occasions to prevent transfers of equipment to WMD and missile programs in countries of proliferation concern. For example, PSI cooperation has stopped the export to Iran's missile program of controlled equipment and dual use goods."*

Note that countries in the Middle East have been the main customers for missile proliferators, and the leading supplier has been North Korea.

North Korea's Trade in Ballistic Missiles

North Korea's ballistic missile program began in the early 1980s when it purchased Soviet-built missiles from Egypt. Since that time, North Korea has augmented the original performance specifications of these missiles and developed a significant domestic production capability.

North Korea has subsequently become a leading supplier of missile-related exports for countries seeking to acquire or develop ballistic missile capabilities, providing it with a major source of hard currency. It has actively marketed and supplied a wide range of goods and services, including complete missiles, components, technical support and production facilities, both overtly and covertly. Customers have included countries in unstable regions such as South Asia and the Middle East.

One example emerged in December 2002, when an illicit shipment of 15 Scud ballistic missiles, together with fuel and spares, was found aboard the North Korean freighter *So San*, bound for Yemen. The vessel attempted to conceal its identity and nationality, and the missiles were found hidden under a cargo of cement. In 1999, at the Indian port of Kandla, Indian customs agents boarded the North Korean freighter *Kuwolsan*. In crates marked "water refinement equipment" were found nose cones, machine tools, guidance systems, extensive engineering drawings labeled "Scud B" and "Scud C," and much more. Not everything necessary for a missile production plant was found, suggesting prior and/or future shipments. US and Indian intelligence agree that the missile cargo was intended for Libya. All countries, have a strong interest in preventing such proliferation from occurring.

The Challenge

So a key challenge for our counter-proliferation efforts is to establish a robust export control system that enables legitimate users to obtain and use items for their legitimate use while ensuring that these items do not fall into the hands of those who would use them to threaten the security of their neighbours or pass them on to terrorist groups.

A substantial international infrastructure has been established to prevent proliferation, including the major non-proliferation treaties, the export control regimes, various monitoring and verification mechanisms, and of course national counter-proliferation measures.

The export control lists developed by the Australia Group, Nuclear Suppliers Group, Wassenaar Arrangement and Missile Technology Control Regime provide benchmarks to which the national export control systems of all states should aspire. These lists include both items specifically manufactured for WMD production and "dual use" items which have legitimate commercial uses. Export licensing systems are needed that enable trade in dual use items to continue, but with checks and safeguards that ensure they are not diverted to use in WMD programs. If every country effectively enforced controls over these items, the proliferator's task would be difficult indeed.

But the international response to the proliferation threat needs to be dynamic. Proliferation continues, and an increasing concern is that the capability to effectively use weapons of mass destruction will fall into the hands of terrorists.

UN Security Council Resolution 1540

The UN has sought to help close the gaps in the international architecture to counter WMD proliferation with the unanimous adoption of UN Security Council Resolution 1540.

UNSCR 1540 reinforces the objectives of the core non-proliferation treaties by requiring states, among other things, to criminalise the proliferation of WMD, enact strict export controls and secure sensitive materials. Importantly, UNSCR 1540 applies to all UN member states thereby bringing into the non-proliferation regime states which have remained outside the WMD treaties and other instruments.

Broadly UNSCR 1540 requires:

- all states to refrain from providing any form of support to non-state actors that attempt to develop, acquire, manufacture, possess, transport, transfer or use nuclear, chemical or biological weapons and their delivery systems;
- all states to take and enforce effective measures to establish domestic controls to prevent the proliferation of nuclear, chemical or biological weapons and their means of delivery, including by establishing appropriate controls over related materials;
- all states to establish, develop, review and maintain appropriate effective national export and transshipment controls over WMD-related items; and
- establishment of a committee (the 1540 Committee) comprising all Security Council members, which would report on the implementation of the Resolution.

UNSCR 1540 obliged states — by October 2004 — to present a first report on steps they had taken or intended to take to implement UNSCR 1540. As at April 2006, 129 States members of the United Nations plus the European Union had submitted first national reports to the Committee and 79 States had provided additional information at the request of the Committee. Sixty-two States had not submitted their first report. Australia's and other UN members' reports on implementation of the Resolution are available online at the [1540 Committee website](#).

By its adoption of Resolution 1540 the Security Council has confirmed that the proliferation of WMD constitutes a threat to international peace and security, that it has a mandate to uphold compliance with the WMD treaties, and to take appropriate measures in cases of non-compliance. This was reaffirmed on 27 April 2006, when the mandate of the 1540 Committee was extended for a further two years.

Closing the Gaps: The Proliferation Security Initiative

The importance of tightening the proliferation noose in face of the terrorist challenge and evidence of the ability of determined proliferators to circumvent national and international controls demanded new strategies to counter the proliferation menace.

One such strategy is the Proliferation Security initiative, launched by US President George Bush in a speech in Krakow, Poland in May 2003.

The PSI is an innovative and practical measure for closing gaps in multilateral non-proliferation regimes. The initiative operates as an informal arrangement between countries sharing non-proliferation goals to cooperate with each other, as necessary, to disrupt WMD-related trade.

The PSI specifically responds to the urgent need to capture WMD-related transfers between states of proliferation concern, or to non-state actors, that breach international non-proliferation norms or are beyond the reach of the export control regimes.

The High Level Political Meeting held in Warsaw on 23 June reflected the resolve of the international community to cooperate to prevent proliferation. There are now more than 75 countries that have expressed their support for the PSI, coming from all regions of the world and particularly from those regions where concern about WMD-related trafficking is highest.

PSI-participating countries have already significantly strengthened their capacity to prevent proliferation through identifying and where necessary strengthening laws to enable interdiction; improving interdiction capabilities through multilateral training and exercises; enhancing national decision-making processes; and building relationships with key industries to facilitate their cooperation with PSI operations.

PSI-participating countries are actively engaged in outreach to explain the Initiative and secure even broader international participation, helping to close what UN Secretary-General Kofi Annan described as “a gap in our defences”.

Conclusion

The task of preventing the spread of weapons of mass destruction is complex and constantly evolving. As we put in place effective controls, proliferators will search out new avenues to exploit. But it is a fight we must continue to engage with all our efforts. The possible consequences of failure are too horrific to contemplate.