Defence Against Terrorism Review
Vol. 2, No. 1, Spring 2009, pp. 1-13

ISSN: 1307-9190

Hostis Humani Generis: The Threat of WMD Terrorism and How NATO is Facing the Ultimate Threat

Guy B. ROBERTS
Deputy Assistant Secretary General for Weapons of Mass Destruction Policy, NATO

Abstract: *Terrorism as we have seen in the past can arise from almost any situation and in various forms. The 9/11 terrorist attacks in New York and Washington ushered in a new era of potential catastrophic terrorist acts. The first part of this paper considers the important and dangerous challenges NATO faces from the threats of Biological, Chemical, and Nuclear agents/materials by using past examples to illustrate the threat. The second, and central, part of this paper then highlights the complex nature of NATO's work in trying to create a 'holistic' deterrence posture. It focuses on NATO's work in accordance with the Comprehensive Political Guidance (CPG), which was endorsed by nations, after the 2006 Riga summit. The CPG reinforced the belief that the threat emanating from WMD terrorism remains one of NATO's primary challenges for the next 10-15 years and stresses the importance of creating and maintaining International Partnerships to combat the spread and use of WMD material. Finally, the paper considers NATO's remaining challenges and makes some suggestions towards maintaining our ability to combat WMD terrorism.*

Keywords: *NATO, WMD terrorism, Biological, Chemical, Nuclear, Deterrence, Partnerships, Co-operation, CBRN, Defence*

Introduction

On September 12th 2001 many commentators and analysts argued that the terrorist attacks in New York City and Washington D.C. have made our worst fears a reality. Yet regardless of the terrifying events of that day we have fortunately not seen our worst fears become reality. Local, national and international terrorism have caused thousands of casualties each year and indeed the events on September 11th 2001 have made us aware that terrorist groups and individuals with similar ambitions are willing and capable of killing and injuring thousands of innocent civilians.

The attacks on 9/11, regardless of their enormous impact, were conventional in nature. A similar attack with Weapons of Mass Destruction (WMD), defined as a chemical, biological, radiological or nuclear (CBRN) device would have had much more of a devastating effect than the attacks of 9/11. So far we have been fortunate that a full blown WMD terrorist attack has not occurred and that attempts have been largely unsuccessful. This however should not imply that we are immune to such attacks in the future. Looking at the past, together with the severe implications of using CBRN materials and coupled with the motivations of certain terrorist groups such as Al-Qaeda (AQ). We must acknowledge the fact that WMD terrorism is a real and even likely possibility.

Nevertheless, sceptics point to the fact that terrorists need to overcome numerous hurdles to perpetuate an act of WMD terrorism. They argue that the technical difficulties and the moral boundaries of such an attack are too high and that the motivation of terrorists groups to acquire WMD is too low for such an event to occur. Yet in looking at specific cases it becomes vividly clear that such assessments are overly optimistic, worse still, such assumptions could lull civil society into a false sense of security and result in a failure to adequately invest the necessary time and effort to prepare for the eventuality of a WMD attack.[1]

NATO has over time adapted itself to the evolving international security environment and has had to ask very stern questions in order to be able to prepare for the worst. How vulnerable are we to a CBRN attack by terrorists and how are we able to respond? Hopefully, the following section can present some of the dangers and vulnerabilities we have encountered and the following section can look into NATO's responses. It now becomes useful for the purpose of this article to delve into the recent past and note the WMD threats, so as to correlate NATO's work with the existent threats.

WMD-Terrorism Threat Assessments

The Biological Threat - 'The Poor Man's Atomic Bomb'

A recent Interpol report states: "Current analysis indicates that the potential for terrorist use of biological represents a real threat. The timing of events is difficult, if not impossible, to predict, and the threat is summarized by the statement: not if, but when."[2] Experts see the increased proliferation of dual-use civilian biotechnology, as well as scientific know-how to recreate biological lethal pathogens and toxins as an increasingly worrisome source of bio terrorism. The biotechnology industry continues to expand throughout the world, new pathogens and pathogen making technologies are rapidly spreading, increasing the risk that terrorists will acquire these deadly tools.

There have been several cases in the past, in which Al-Qaeda or affiliates of the organization have tried to acquire the means for a biological attack. Al-Qaeda's leader in Iraq, Abu Hamza al

---

1 See Osman Aytaç and Mustafa Kibaroğlu (eds.), *Defense Against Weapons of Mass Destruction Terrorism*, IOS Press, Amsterdam, 2009.

2 Interpol Bio-Terrorism Incident Pre-Planning & Response Guide 206, p. 7.

Muhajir, stated in an audio statement in September 2006 that: "The field of jihad can satisfy your scientific ambitions, and the large American bases [in Iraq] are good places to test your unconventional weapons, whether biological or dirty".[3] This statement provides an insight into the WMD aspirations of these terrorist groups. Al Qaeda has also hired knowledgeable scientists in order to try to acquire/ assemble crude biological weapons for their purposes, demonstrating the practical desires of the group. According to the Report of the Commission on the Prevention of WMD Proliferation and Terrorism, Al-Qaeda had launched, parallel with the planning for the September 11th terrorist attacks, a concerted effort to develop an anthrax weapon that could inflict further mass casualties in a separate event. To succeed in this endeavor Al-Qaeda hired a Pakistani veterinarian named Rauf Ahmad to set up a bio-weapons laboratory in Afghanistan. After differences with Ahmad concerning his pay, Al-Qaeda turned to another man to continue their work Malaysian terrorist Yazid Sufaat. Mr. Sufaat who had studied biology at California State University fled back to his home country after the U.S. invasion of Afghanistan, where he was later arrested.

In the mid-1990s, the Japanese doomsday cult Aum Shinrikyo (AS) had plans for terrorist attacks in their home country using biological weapons, namely botulinum toxin and anthrax. Reports indicate that AS has, at least a dozen times, attempted bio attacks. The first notable incident occurred in June 1993 when they released a cloud of botulinum toxin in the vicinity of government buildings and the imperial palace. Two years later, they tried again in a subway station, this time instead opting for a suitcase loaded with aerosol emitters. The first attempt failed due to the low quality of the toxin, but disaster was averted in the second attempt as an AS member chose not to load the aerosol emitters. AS then used anthrax in attacks on Tokyo. On one occasion they simply released anthrax spores from a mid-rise office building in downtown Tokyo and let the wind disperse the pathogen. Once again luck played a big part in preventing human deaths, but animals were affected. It was later found that the toxins used were designed for vaccine purposes and where not potent enough for weaponization. However, it goes without saying that if AS had succeeded in acquiring a virulent strain and delivered it effectively, the casualties could have been in the thousands.

Finally, also considering the anthrax letter attacks in the United States that occurred shortly after the 9/11 atrocities. An American bio-defence scientist named Bruce E. Ivins, working at the U.S. Army's bio-defence research laboratory at Fort Detrick, allegedly sent out several letters containing 1-2 grams of dried anthrax to three major television broadcast networks in New York and Florida. Letters were also sent to the offices of Senators, Tom Daschle and Patrick Leahy in Washington D.C. By November 2001, 22 people in New York, New Jersey, Connecticut, Florida and the District of Columbia had been infected with anthrax, half of them through the skin (causing cutaneous anthrax) and the other half through the lungs (causing inhalational anthrax). Five of the victims who had contracted inhalational anthrax later died.

Even more significant, The Commission on the Prevention of WMD Proliferation and Terrorism estimated the total economic impact of the anthrax letter attacks was more than 6 billion US dollars. These attacks also led to the tragic death of 5 of the 22 people infected. Despite the

---

[3] The Middle East Media Research Institute. www.memri.org/bin/articles. (no. 1309)

small quantity of dried spores used in the 2001 letter attacks – a total of about 15 grams- the ripple effects of the attacks extended far beyond those sickened or killed. The attack caused massive panic, shut down the U.S. government mailing system, lead to an overrun of hospitals and had a significant impact on the financial markets.

According to the U.S. commission report the threat coming from biological material is greater than that of a nuclear attack. This is due to the belief that the acquisition of deadly pathogens and the weaponization and dissemination in aerosol form entail fewer technical hurdles than the theft/production of weapons-grade uranium or plutonium and the implications attached to building an Improvised Nuclear Device (IND).[4] The cases above have hopefully displayed the elements of fortune which have played a part in keeping the casualty levels down. One thing is for certain, fortune will eventually run out consequently NATO needs to be prepared for every eventuality.

The Chemical Threat

Looking at precedent, we quickly find references to past attacks that point in the direction of chemical weapons. Iraqi insurgents have on several occasions used chlorine canisters in vehicle-borne improvised explosive devices (VBIED) killing dozens and injuring an unverifiable number of others. On the 20th of February 2007 U.S. troops discovered a VBIED-making workshop near Fallujah that contained 55-gallon chorine cylinders as well as a number of partially completed car bombs. Three years earlier U.S. troops uncovered a terrorist chemical weapons factory in the region of Fallujah. The rudimentary laboratory contained guidebooks on how to assemble crude chemical weapons as well as the precursors for the blood agent hydrogen cyanide, including potassium cyanide and hydrochloric acid.

Additionally there have been reports of various chemical terrorist plots in Jordan in 2004. According to Jane's Intelligence Digest one terrorist plot came perilously close to reality; however, the suspected terrorists were arrested and accused of plotting a massive chemical attack in the capital Amman. It was claimed that the terror-cell planned to attack a compound of government buildings using a truck bomb to disable the compound's defences, which would have been followed by a detonation of explosive devices combined with a cocktail of chemicals such as acetones, nitric acid and sulphuric acid.[5]

So far, the most devastating terrorist attack using chemical means occurred in 1995, when the already mentioned apocalyptic Japanese cult Aum Shinrikyo released self-manufactured Sarin gas at five points on the Tokyo subway, killing in total 12 people and injuring more than 5,500. Even though the cult had competent chemists, AS still did not achieve mass casualties. AS, however, did succeed in creating a great deal of panic, disruption and suffering.

The Nuclear Threat

Let us start with the good news first. Contrary to the biological or the chemical threat, there are no cases that could be defined as "nuclear terrorism". Up to this day there have been no reports that

---

4 See Bob Graham, "The Report of the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism," *World at Risk*, p. 11.

5 See "Briefings: Risks of Chemical Terrorism," *Jane's Intelligence Digest*, September 10, 2004.

indicate that terrorist groups or other individuals have been successful in assembling a fully operational nuclear weapon or even an improvised nuclear device (IND).

Graham Allison, the director of Harvard's Belfer Center for Science and International Affairs and the co-author of the 2008 WMD commission report, argued in 2004: "In my own considered judgement, on the current path, a nuclear terrorist attack… in the decade ahead is more likely than not."[6] Now this might sound for many as fear-mongering, yet Allison makes a valid point. Looking at the current *availability and security of fissile materials* in certain states, the *desire and motivation of certain terrorist groups* such as Al Qaeda to acquire nuclear weapons or INDs and the *capability* of such groups to assemble such weapons, it becomes shockingly clear that we are faced with a real and growing threat. The following three areas of concern give adherence to Allison's statement.

The Availability of Fissile Materials:

Most of the global fissile material stock, which is needed for the manufacturing of nuclear weapons (Uranium-235 and Plutonium-239), is adequately and sufficiently protected. A large amount, however, predominately in Russia, is stored under highly questionable security conditions. The black market of fissile material is monitored by the IAEA Illicit Trafficking Database, which records illicit trafficking cases of radioactive and nuclear materials since the beginning of the 1990s. From the over 100 recorded cases the most prominent case has been the arrest of a man in St. Petersburg who was aiming to sell 2, 9 kg of highly enriched uranium. This case was recently overcome by reports of the arrests of the individuals in the Ukraine, who were trying to sell close to 4 kg of Plutonium-239.[7] Even though these quantities are still insufficient for a crude nuclear device they could be used in a radiation dispersal device, these examples underline the fact that there is a demand for fissile material by both rogue states and terrorists.

The Desire and Motivation of Terrorists

On an AQ associated website Osama Bin Laden's spokesman Abu Gheith asserted that AQ had "the right to kill 4 million Americans – 2 million of them children - and to exile twice as many and wound and cripple hundreds of thousands".[8] Also, on more than one occasion, Osama Bin Laden has openly declared that acquiring nuclear weapons 'in the defence of Muslims' is a religious duty. When asked by a journalist working for TIME magazine in 1999 if he was trying to acquire chemical or nuclear weapons Bin Laden replied: "Acquiring weapons for the defence of Muslims is a religious duty. If I have indeed acquired these weapons, then I thank God for enabling me to do so. And if I seek to acquire these weapons, I am carrying out a duty. It would be a sin for Muslims not to try to possess the weapons that would prevent the infidels from inflicting harm on Muslims."[9] Yet the motivation of AQ to acquire such weapons is not to be underestimated as and

---

6 Graham Allison, *Nuclear Terrorism. The Ultimate Preventable Catastrophe*, Times Books, New York, 2004, p. 15.

7 New York Times, Europe, www.nytimes.com/2009/04/15/world/europe/15ukraine.htm

8 Allison 2004, p. 12.

9 See "Conversation with Terror," *Time Magazine,* January 11, 1999.

reduced to mere motivation and talk. The best documented attempt of AQ to acquire the necessary material for the construction of an IND was in 1993, when operatives of the organization reportedly tried to purchase uranium in Sudan worth 1.5 million American dollars. This effort failed since the materials were fortunately bogus. It nonetheless demonstrated that Al Qaeda does have a strong motivation and the financial means to acquire materials for the construction of an IND.

The Capability of Terrorist Groups to Assemble INDs:

Assuming that AQ or any other terrorists organization could acquire a sufficient amount of weapons grade fissile material (about 25 kg of U-235 or 8 Kg of Pu-239) for the construction of a first generation nuclear weapon, hence an IND, the question remains if the terrorists would then be capable of assembling such a device? Even though there are differences of opinion concerning this question, there is a wide consensus among numerous U.S. weapons designers that certain terrorist groups could build a crude nuclear weapon with a so-called 'gun-type' design, given adequate supply of fissile material.[10] Furthermore, the U.S. National Research Council warns in its report, that "crude HEU weapons could be fabricated without state assistance."[11]

Concerning the threat of nuclear terrorism we may conclude the following. Even though, we have not yet witnessed nuclear terrorism we need to both urgently prepare for such an eventuality and do everything we can to prevent this from occurring. Terrorists have to overcome many difficult and complicated nuclear hurdles however, nuclear terrorism, the worst form of WMD terrorism, cannot be ruled out in the future. All three WMD scenarios have highlighted two sobering facts: First we have been extremely fortunate in those few cases where society has been attacked with a WMD. Second, with the exception of the Anthrax attacks in 2001 the disruptions have been relatively minor. Given the determination of those who seek such weapons and the growing availability of CBRN materials our luck will eventually run out.

NATO's Fight Against WMD-Terrorism.

As previously discussed, one of the greatest modern challenges that NATO faces comes from the threat of (WMD) falling into the hands of those who would indiscriminately use them against a civilian population. The vulnerability of critical sites and national infrastructures are the subject of rigorous assessment, but vulnerability also includes public perceptions. Similarly, the response to a CBRN attack will largely be shaped by the quality of the public response. This means that WMD terrorism cannot be treated as a purely national security, 'top-down' issue. NATO has been looking at these broad aspects in the context of a more complex and problematic international security environment.

One of our new aims recognizes that we can only tackle the threat posed by terrorists armed with CBRN through cooperation with inter-governmental organizations and other partners.

---

[10] See Carson Mark *et al*. "Can Terrorists Build Nuclear Weapons?" in Paul Leventhal and Yonah Alexander (eds.), *Preventing Nuclear Terrorism*, Nuclear Control Institute, Lexington 1987, p. 55.

[11] *Making the Nation Safer. The Role of Science and Technology in Countering Terrorism*, U.S. National Research Council, Washington D.C. 2002, p. 45.

NATO's approach is based upon prevention of CBRN proliferation, deterrence of an attack (should prevention fail) and assisting members to recover and respond (should deterrence fail). The role currently being undertaken is not an easy one; NATO member countries and allies remain subject to a wide variety of military and non-military risks that are both multi-directional and difficult to predict.

After briefly discussing empirical and theoretical evidence in regards to potential WMD terrorism it is now relevant to discuss NATO's efforts in combating the threats of WMD. As mentioned above it is not difficult to imagine how terrorists might eagerly use a weapon that could inflict thousands of civilian casualties or even how a terrorist cell may fund the acquisition of a WMD. These are but a few of the tasks that NATO faces on a daily basis while maintaining a conduct which is in accordance with international law and UN principles. NATO and its Allies take this threat very seriously, not only from the ones arising from fully assembled WMD weapons but also from the illicit transfer of components, technologies, industrial equipment, and dual use items including chemical, biological or radiological material. Proof we can note from the of committees that undertake work in this area: The Joint Committee on Proliferation is a senior advisory body providing coordinated reports to the North Atlantic Council on political- military and defense aspects of the proliferation of WMD. It brings together members of the Senior Political-Military Group on Proliferation (SGP) and the Senior Defense Group on Proliferation (DGP) in joint session to coordinate the political and defense dimensions of NATO's response to the WMD threat. The SGP considers a range of factors in the political, security and economic fields that may cause or influence proliferation and considers political and economic means to prevent of respond to proliferation. DGP is the senior advisory body to the North Atlantic Council (NAC) on proliferation of WMD and their associated delivery systems. It brings together experts and officials with responsibilities in this field under the joint North American and European chairmanship. The DGP considers the military capabilities needed to discourage WMD proliferation, to deter threats and the use of such weapons and makes recommendations for further enhancing our capabilities to respond to WMD threats.

After the Washington Summit in April 1999, it was believed that the threat of WMDs was extremely serious not only from sovereign states such as North Korea and Iran but also from non-state actors, such as terrorist groups. This strong belief lead to the launch of NATO's WMD centre in 2000, which deals with the threats arising from the potential use of Chemical, Biological, Radiological and Nuclear assets. The Centre includes a number of personnel from the International Secretariat as well as National Experts. The Centre's primary role is to improve coordination of WMD-related activities, as well as to strengthen consultations on non-proliferation, arms control, and disarmament issues. The other role the centre provides is three-fold, to improve intelligence and information sharing on proliferation issues, to assist allies in enhancing the military capabilities to work in a WMD environment and third to discuss and bring the Alliance's support to non- proliferation efforts in the world.

A CBRN event would have serious consequences on the people and infrastructure involved in the attack. The recent swine flu epidemic showed us that how great an effort in international co-ordination would be needed in the event of a CBRN attack. After deterrence, NATO has been working rigorously on solidifying its ability to respond to any attack. Demonstrated by the yearly event organized by the WMD Centre, with the aim of educating and exhibiting to NATO's Allies

and Partners about the capabilities of NATO in the event of CBRN attacks/plans, most recently it was held in Jambes, Belgium, with 98 participants from 35 countries. The Centre also supports defense efforts to improve the preparedness of the Alliance to respond to the risks of WMD and their means of delivery.

Further enhancement of collaboration was achieved after the 2002 Prague Summit when NATO adopted a Military Concept for Defence against Terrorism, reinforcing cooperation with partner countries by agreeing on a partnership Action Plan against Terrorism. The military concept for Defence against Terrorism underlines the alliance's readiness to help deter, defend, disrupt and protect against Allied populations, territory, infrastructure and forces by acting against terrorist and those who harbour them; to provide assistance to national authorities in dealing with the consequences of terrorist attacks; to support operations by the European Union or other international organisations or coalitions involving Allies; and to deploy forces as and where required to carry out such missions. Regarding NATO-EU relations, undoubtedly, there is still a degree of duplication between activities carried out by each organization. But there are also examples of cooperation, for example, on bio-detection and the disposal of improved explosive devices (IEDs). Unfortunately, as there is not a proper institutional relationship between NATO and the EU, the extent of effective cooperation is limited.

Another example of teamwork in this area is evident through The Euro-Atlantic Disaster Response Coordination Centre (EADRCC), a '24/7' focal point for coordinating disaster relief efforts among NATO member and partner countries. In order to ensure close cooperation with the United Nations Office for the Coordination of Humanitarian Affairs (UN-OCHA), a permanent UN liaison officer is based in the EADRCC. During an actual disaster, the EADRCC can temporarily be augmented with additional personnel from EAPC delegations to NATO, or NATO's international civilian and military staffs. In addition, the EADRCC maintains a list of designated national experts that can be called upon to provide the Centre with particular advice in different areas in the event of a major disaster.[12]The Centre has guided consequence management efforts in more than twenty-five emergencies, including fighting floods and forest fires and dealing with the aftermath of earthquakes. Operations have included support to the US in response to Hurricane Katrina and - following a request from the Government of Pakistan - assistance to Pakistan in coping with the aftermath of the October 2005 earthquake. Since September 2001, the EADRCC has also been tasked with dealing with the consequences of terrorist attacks.

At the same summit NATO governments endorsed the implementation of five nuclear, biological and chemical (NBC) defence initiatives designed to improve the Alliance's defence capabilities against WMD. The biggest challenge and something the WMD centre has been working strongly for is the need to intensify cooperation with other international organisations that can to contribute to efforts in improving the defence against terrorism. In this area NATO and the EU have exchanged information on civil emergency planning and in other related fields. NATO is also contributing actively to the work of the UN counter terrorism Committee. The proliferation of nuclear, biological and chemical (NBC) weapons and their means of delivery remains a matter of serious concern for the WMD centre. We recognise that proliferation can occur despite efforts to

---

[12] See the official NATO website http://www.nato.int/issues/eadrcc/index.html

prevent it and can pose a direct threat to our Allies. Our support for the non-proliferation of weapons of mass destruction has been at the heart of our work towards combating any future type of WMD attack by a terrorist group.

After the Prague summit in 2002, NATO launched three broad initiatives in an effort to modernize, and to ensure that the Alliance is able to effectively meet the new challenges of the 21st Century. The first was aimed at addressing the increasing threat of missile proliferation and the threat on Alliance territory. The second initiative is in the area of defense against CBRN weapons. Within this field states also agreed on implementing immediately five initiatives that can be categorized in the area of response in countering the threat of WMD attacks. One was to constitute an event response force to counter different types of threats.

The second was to set up deployable laboratories to assess what type of agents one could be dealing with and the third was to look at the creation of a medical surveillance system. The final two initiatives in this response category was to create a stockpile of pharmaceutical and other medical counter-measures to reacts to any attack and finally to improve training within this area as a whole. These were but a few of the demonstrations exhibited at the Jambes event, as mentioned above. The Prague summit also called for an implementation of the civil emergency plan of action for the threat of WMD terrorism.

In regards to terrorism arising from WMD, NATO's primary instrument is for the support and enforcement of the Non- Proliferation Treaty. We want and need it to be universal. It makes the job much more hazardous if there are states who would want to create WMDs or material to pursue this goal. Unfortunately there is a growing risk; we live in a world with many dual- use technologies. Dual- use technologies that can be used for appropriate purposes that can also be misused. The medical industry for example can draw on direct benefit from biological research.

Not only are the use of WMD by terrorists a threat to life and property but they also have the threat of mass disruption. This is something the WMD centre at NATO is trying to combat. Improving coordination with civil groups and disseminating information could be used in the event of a radiological blast for example. In the same vein we have been working closely with organisations such as Interpol and the World Health Organisation (WHO), at a minimum, to prevent any duplication in our work. NATO has to be able to work alongside numerous other specialist non-military agencies, such as the International Atomic Energy Agency (IAEA) and World Health Organization (WHO).

As well as this we are also trying to deepen our relations and co-operation with partner group countries. Including Russia, Ukraine and the Mediterranean dialogue countries. We only have to look at Pakistan and the growing influence of the Taliban within the Northern region to see the possibility of Pakistan's nuclear arsenal going missing. It only takes one to disappear for there to be the potential of catastrophic human casualties. On top of the NATO-Russia Council, the NATO- Ukraine Commission and the Mediterranean Dialogue NATO also consults with countries in the broader Middle East which take part in the Istanbul Cooperation Initiative.

Together with the theoretical and political tools of cooperation which are needed to prevent, deter and respond. NATO has also looked at the practical elements by creating the Multinational Chemical, Biological, Radiological and Nuclear (CBRN) Defense Battalion on 1 December 2003 designed to provide capabilities specifically for defense against CBRN threats as well as timely

assessments and advice to commanders and forces in the field. The Comprehensive Political Guidance (CPG) which was endorsed at the Riga summit in 2006 also provides an analysis of the future security environment and a fundamental vision for NATO's ongoing transformation. It highlights the danger of the proliferation of Weapons of Mass Destruction and their means of delivery. The CPG also reiterates the importance of civilian actors in achieving NATO's goals. Although, even to this day we still encounter some suspicion from civilian organizations and humanitarian actors towards cooperating with a military alliance. The WMD centre can hopefully continue being a hub for the continued improvement in the area of co-operation. The multinational Chemical, Biological, Radiological Nuclear Defense Battalion was declared fully operational at the Istanbul summit in June 2004. Since then it has been replaced by the Combined Joined CBRN Defense task force. The Combined Joint CBRN defense Task Force is designed to respond to and manage the consequences of the release of any CBRN agent. Under normal circumstances it will operate within NATO Response Force, which is a joint, multinational force of up to 25,000 troops designed to respond to emerging crises across the full spectrum of Alliance missions.

Another area in which NATO has been working is the Joint Centre of Excellence on CBRN Defense based in Vyskov, the Czech Republic activated in July 2007. The Centre is there to offer recognized expertise and experience to the benefit of the Alliance, especially in support of the transformation process. The purpose of this Centre of Excellence is to provide education, training and exercises, assisting concept, doctrine, procedures and standards development in the CBRN area. On top of this NATO is actively cooperating with partners to improve in this area. NATO has been working at improving sea based defense in regards to the trafficking of WMD. After the attacks of Sept 11 2001, NATO initiated a maritime counter-terrorism operation- Operation Active Endeavour (OAE) aimed at deterring terrorists' threats in the eastern Mediterranean. To enhance and expand MIO expertise, in 2004 NATO established a Maritime Interdiction Operational Training Centre in Crete, Greece. This promotes the exchange of best practices, development of doctrine, and provision of training in the planning and conduct of MIOs among the Allies and with NATO's partners. Partner countries have also endorsed the effectiveness of Operation Active Endeavour, NATO's maritime counter-terrorism operation in the Mediterranean, which continues to make an important contribution to the fight against terrorism.

Many of NATO's science programmes focus on the civilian side of nuclear, chemical and biological technology. Scientists from NATO and Partner countries are developing areas of research that impact on these areas. These include the decommissioning and disposal of WMD, and components of WMD, the safe handling of materials, techniques for arms control implementation, and the detection of CBRN agents.

NATO also facilitates workshops and seminars on proliferation issues involving non- member countries. The largest event, which was organized by the WMD centre under the directions of the SGP took place in Vilnius, Lithuania, in April 2007, attracted more than 120 senior officials representing 43 countries from five countries from five continents, as well as a number of international organizations and academic institutions/ it covered all types of WMD threats as well as political and diplomatic responses to them.

NATO's Remaining Challenges

As the threat of a WMD terrorist attack on Alliance territory is real, complex and multifaceted so are the challenges that remain in this regard. The Alliance might face numerous challenges in the continuous fight to prevent a WMD attack by terrorists. In that regards three elements will be crucial.

NATO Must Maintain a Credible Deterrent!

It is often argued that deterrence, in particular nuclear deterrence, has no value when it comes to the threat of terrorists using WMDs. Hence the popular argument goes that terrorists have no territory to defend or loose, no population to protect or even their own life or freedom to preserve. Terrorists, in particular suicide bombers, supposedly act highly irrational and emotional and can therefore be not deterred by nuclear weapons and the prospects of "Mutual Assured Destruction". This however is not completely true. These arguments overlook fundamental qualities of a holistic and credible nuclear deterrent.

First of all, a credible nuclear deterrent is needed to effectively deter potential nuclear state sponsors to help, give or sell a fully operational nuclear weapon or even fissile material for the manufacture of an IND to motivated terrorists. Through nuclear forensics it is possible today to identify the origins of fissile materials, which then would directly lead to the state sponsors of the "stateless" perpetrators. In such a case and after a successfully committed WMD-terrorist attack, the Alliance could then consequently respond with its full range of military force, including and up to its nuclear capabilities. Thanks to the Alliance credible nuclear deterrent potential state sponsors are aware that even indirect acts of aggression against NATO make possible gains incalculable and unacceptable. The consequences for the state sponsor would be devastating and final, governments of such states are fully aware of that.

Secondly, terrorists can be deterred by the holistic deterrent approach of NATO, as the Alliance does not solely rely on its nuclear forces to deter, but also upholds deterrence through a mix of nuclear and conventional forces as well large capabilities to respond to a committed WMD-terrorist attack, through the creation i.e. of NATO's CBRN Defense Battalion. The latter is especially important in this regard. As mentioned earlier, even though a WMD attack by terrorists is possible, terrorists face numerous and difficult obstacles in their quest to WMD-terrorism. They need reliable contacts, knowledgeable and dedicated scientists and engineers, proper and affluent financing and a covert area of operation where they can prepare for such an attack. A WMD terrorist attack will cost time and money, while at the same time not necessarily guaranteeing success and glory. A successful response force, such as the CBRN Defense Battalion, can even minimize the effects of such an attack making such an attack less severe. Terrorists might then still rather prefer conventional methods, as they are cheap, quick and effective, than to "waste time" on costly and highly complicated endeavors where success is not guaranteed and its outcome can be minimized by NATO's response. In this regard, defense is the best offense and functions well in the complex and appropriate mix of NATO's deterrent.

Adopting a "Network of Networks" Approach.

As mentioned earlier the threat of WMD-terrorism is severe and complex, NATO cannot fulfill all the tasks by itself. The Alliance must continuously uphold and strengthen the partnership with other international organizations, state partners, non-governmental organizations and academics to be fully aware and capable to face this grave threat. Cooperation between NATO and the European Union, the United Nations, World Health Organization, Interpol, the IAEA and many others need strengthened and extended. NATO's Comprehensive Approach outlines this and was endorsed by nations, after the 2006 Riga summit. We can only effectively face this multifaceted threat by a multifaceted response. We need to include experts from all different sorts of fields and backgrounds. The response must have qualities from military, political, and scientific areas of expertise and we can only sufficiently combine these, if we expand our approach of "networks of networks". This will be a crucial area of expenditure and expansion in the coming years.

The Fight Against WMD-Terrorism Needs Full International Commitment!

As also outlined at the beginning of this article, the threat of a WMD-terrorist attack is real and challenging. In some aspects we have already witnessed the first forerunners of WMD terrorism, such as e.g. the U.S. Anthrax letters of 2001. That we have not yet witnessed a nuclear holocaust or a biological attack resulting in a global pandemic should not lead us to the conclusion that we are safe and sound and immune against all future threats of this kind. We have to stay alert and committed to the cause of preventing future WMD attacks by individuals and terrorist groups. Therefore, we need the full commitment of the international community to uphold and even further financial and human capital commitments. Promises and response paper tigers will not get the job done. We at NATO have numerous programs, initiatives, responsive units and the political structures to deter as well as respond well to the threat, but these numerous initiatives need the political support of the home governments and populations of the member states. The population of our member and partner states should be made aware, without causing unnecessary panic and hysteria, of the common threat we face and why we need full international and financial commitment to the cause. WMD-terrorism does not have to be inevitable, even though experts claim it is not a question of if, but when. In this regard the capability to effectively respond to a CBRN attack will lessen the probability of such an attack occurring. Only the international community—recognizing that no one nation can stop this scourge alone—working together effectively and efficiently building a network of networks to create a web of denial has the best chance of preventing and deterring a terrorist WMD attack. This will require the full support and strong political will to address this unparalleled threat. Sheer words and promises are not and never have been enough to stop *Hostis Humanis Generis.*

BIBLIOGRAPHY

Allison, Graham *Nuclear Terrorism. The Ultimate Preventable Catastrophe*, Times Books, New York, 2004.

Aytaç, Osman and Mustafa Kibaroğlu (eds.), *Defense Against Weapons of Mass Destruction Terrorism*, IOS Press, Amsterdam, 2009.

Graham, Bob and Jim Talent, *World at Risk: The Report of the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism,* Random House, New York, 2008.

Mark, Carson *et al.* "Can Terrorists Build Nuclear Weapons?" in Paul Leventhal and Yonah Alexander (eds.), *Preventing Nuclear Terrorism*, Nuclear Control Institute, Lexington 1987.

U.S. National Research Council, *Making the Nation Safer: The Role of Science and Technology in Countering Terrorism*, Washington D.C. 2002.