

‘Nerve Agents’: Potent Chemical Weapon for War, Terrorism and Assassinations!

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Summary

In 2017, there have been two unrelated events where nerve agent have been used. This calls for close examination as the nerve agents are banned but can still be easily manufactured and are potent.

Since the beginning of this year, we have witnessed two distinct chemical weapon events involving the use of the lethal nerve agents. In February, a North Korean national, Kim Jong Nam, was killed when nerve agent VX was smeared on his face at Kuala Lumpur airport terminal, Malaysia. Just a few months after this, in early April, nerve agent was used in Khan Sheikhoun town in the northwestern Idlib governorate in Syria killing and maiming over a hundred people, including children. The Khan Sheikhoun incident reminded us of the August 2013 chemical weapon attack in Ghouta that killed over a hundred people near Damascus, Syria's capital. These two incidents, though unrelated, necessitates close examination as the potent nerve agent, a banned but easily manufactured chemical weapon, was used in both the cases despite international proscription. Although it is common knowledge now that toxic chemical agents like chlorine, mustard or nerve agents are extremely potent, invisible and indiscriminate use against population targets and successfully used in the past to accomplish specific military goals, its atrocious use for terrorism and assassination purposes warrants action against the perpetrators.

Agents of Fear and Death:

Nerve agents are highly potent, colourless, odourless, tasteless chemicals which belong to organophosphorous insecticides category. Categorised as G series: Tabun (GA), Sarin (GB), Soman (GD); and V series (VX, VXII), these agents are known for their persistence and toxicity that make them suitable for weaponisation. The G series were discovered by the Germans as insecticides but sooner it was recognised as potential chemical warfare agents. Documented history of nerve agents

informs that the first nerve agent ever synthesised was Tabun in 1936, followed by Sarin in 1939 and Soman in 1944. The lesser known Cyclosarin (GF) was discovered in 1949. However, unlike G series of nerve agents, the lethal discovery of VX took place in the United Kingdom during the course of civil pesticide research before it went to the military laboratory for war related synthesis and development in both UK and US by November 1955.¹ Infamous for its high toxicity, the VX, for example, is about 2000 times as toxic as mustard gas by skin absorption and about 300 times as toxic through the lungs.² Studies anticipated that 5 milligram of VX, if used properly, can kill approximately 6 soldiers.³ If exposed to higher dosages, the symptoms will progress more rapidly through difficulty in breathing, nausea, vomiting, involuntary defecation and urination, convulsions and finally death.⁴ The V-agents, more toxic than the G-agents, act rapidly if inhaled and act much faster through the skin. The V-agents can be dispersed in aerosols as direct contact is hazardous, especially on exposed skin or as a persistent indirect hazard contaminating the soil vegetation and equipment. This is why VX, the most volatile Nerve agent, is stockpiled in the secret military arsenals for its military effectiveness. The liquid properties of most of these nerve agents make them suitable for weaponisation and can be delivered using mortar shells, missile warheads, landmines, grenades, etc., through both aerial or ground dispersal vehicles.

Throughout last century, development of nerve agents in secret arsenals by both States and non-State Actors and its lethal application in war and in peacetime, dominated non-proliferation discourse. The UK's Porton Down, USA's Edgewood and Rocky Mountain Arsenals, Iraq's Samarra chemical complex, among others, have carried out in-depth studies, development and weaponisation of nerve agents. The

Persian Gulf War in the 1980s, however, showed definite evidence of the use of nerve agents and other chemical weapons (e.g. mustard agents). The most notable was March 1988 Halbaja incident when the then Iraqi regime targeted this Kurdish town with mustard gas and a host of other nerve agents (cocktail of Tabun, Sarin and possibly VX) killing over 5000 people. As per one estimate, of those who were killed 75% were women and children. Those who survived this chemical weapon mayhem subsequently developed critical respiratory, visual and psychological problems for life.⁵

Unlike Halbaja incident, which was condemned as crime against humanity perpetrated by a State actor, Tokyo subway nerve gas incident in 1995 orchestrated by a Non State religious cult to spread death and fear can be categorised as an act of terrorism against civilians. However, before this actual event in Japan, couple of times in the past, nerve gas scare was spread by criminal minded individuals like Muharem Kurbegovic (better known as the Alphabet Bomber or Isaiak Rasim who headed a group called 'Aliens of America'), who attempted to spread panic and terror in the US in June and August 1974 threatening to use nerve agents.⁶ However, the hollow threats and scaremongering using nerve agents turned out to be a reality when members of Aum Shinrikyo, a Japanese millennial movement led by its blind but charismatic cult leader Shoko Asahara, spent millions on weapons of mass production plant for nerve agent Sarin and other weapons to spread terror in Japan and beyond. The Tokyo incident in which the deadly nerve agent Sarin was released in the Tokyo subway system killed 12 people and injured scores of commuters.⁷

North Korean Connection

After two decades of the 1995 Tokyo subway nerve gas incident, the horror associated with

the nerve agents returned once again in February 2017 with the death of Kim Jong Nam, the 45-year-old estranged half-brother of the North Korean Supreme leader and Chairman of the Workers' Party of Korea. Investigations into Kim Jong Nam's assassination have revealed few details so far, including that his death was due to exposure to the VX nerve agent and two women (one Vietnamese and an Indonesian) who smeared his face with the liquid have been charged with the murder. Samples taken from the skin and eyes were identified as VX (ethylS-2-Diisopropylaminoethyl methyl phosphonothiolate) in a preliminary analysis by the Centre for Chemical Weapons Analysis of the Chemistry Department of Malaysia.⁸

Although the North Korean regime has vehemently denied any involvement in the assassination, the needle of suspicion is still on North Korea. At present, Malaysian authorities are investigating the case, zeroing on few North Korean nationals who are believed to be hiding in North Korea's embassy in Malaysia or who could have fled to Pyongyang.⁹ Apparently, Malaysian police is also investigating to fathom how this banned substance VX was brought into the country and where it originated from.

The Democratic People's Republic of Korea is known to have launched an acquisition and domestic production program of chemical agents, including mustard and other nerve agents, in the late 1970s. Reports emanating from neighboring South Korea have estimated that North Korea's stockpile of chemical weapons agents ranged between 2,500 and 5,000 tons.¹⁰ Worryingly, North Korea is not a member of the Chemical Weapon Convention (CWC) -- it has neither signed nor acceded to it.

The country has already received warning letters from the United Nations and the

OPCW for this assassination allegation using banned chemical weapon. These international bodies have also urged this reclusive Nation to join the CWC at the earliest and declare or renounce its clandestine weapons programs.

Syria again!

The August 2013 Ghouta chemical weapon incident and few subsequent small scale chemical weapon events during Syrian civil War are still fresh in the minds of this generation, while another equally devastating chemical weapon attack took place on April 4, 2017 at Khan Sheikhoun, a town in the northwestern Syrian Governorate of Idlib. The nerve agent used in the attack killed nearly 90 people, many of whom were children. The Khan Sheikhoun attack sparked international outrage as it proved the widespread use of Chemical weapons in the ongoing War. Unlike in earlier occasions where Chlorine gas and sulphur mustard were used, the latest strike was aimed at inflicting massive physical damage and moral trepidation within the civilian population. Hospitals treating the victims and subsequent laboratory analysis of samples by the French, British and Turkish governments have confirmed the use of Sarin nerve agent.¹¹

The OPCW has observed that there were at least 30 chemical weapon incidents reported in the second half of 2016, and 15 incidents in Syria since the beginning of 2017.¹² To note, Syria, which joined the CWC in 2013, is believed to have chemical warfare program and stockpiles of nerve agent Sarin for offensive purpose. The country also reportedly destroyed 67,098 metric tons of chemical agents since it joined the CWC. However, it is likely that the Basar al Assad regime might be withholding some chemical agents in the guise of agricultural or industrial research, jeopardising complete destruction

efforts by OPCW. While the allegations and ground evidences from Khan Sheikhoun are going against the Syrian government forces, there are few allegations against the warring rebel groups active in Syria as well. The Syrian government has denied its involvement in the toxic attack and in turn blamed rebel groups for the Khan Sheikhoun incident. This controversy will continue over the actual user of the chemical weapon in Syrian war theatre for times to come.

Conclusion

International efforts to proscribe the use and development of chemical weapons reached a landmark in 2017 during the marking of the 20th anniversary of the Chemical Weapons Convention (CWC) and the founding of the OPCW, the organization that helps in implementation of global ban on CW, defining its use as a taboo under international law. Not long ago, in 2013, OPCW, the international anti-chemical weapon regime, received Noble Peace Price for its efforts to eliminate chemical weapons and in 2015 it commemorated the 100th anniversary of the first chemical agents use during the first World War in Ypres (Belgium) and in Bolimow (Poland). As per official assessment, approximately 95 per cent of declared chemical weapon stockpiles have been eliminated so far under the supervision of OPCW over the last two decades.

The confusion and blame game would persist as long as UN mandated chemical inspectors review and examine the biomedical samples from victims and environmental samples from the epicenters before a stipulated time. The deteriorating Syrian war situation makes things difficult to ascertain the real perpetrator of ongoing chemical anarchy. OPCW's request to send a technical mission to both Khan Shaykhun and Al-Shayrat airbase in Syria to establish the facts behind the latest Nerve agent attack is still pending.

In this situation, the upcoming Eighty-Fifth Session of the Executive Council at OPCW which will be held from in July 2017 would be vital especially with regard to the recent widespread chemical weapons use in Syrian civil war and elsewhere (e.g Kuala Lumpur). These incidents have virtually questioned the effectiveness of the international regimes and underscored the urgency for a robust collective effort to bring the possessors or users of this insidious weapon agent to justice and complete destruction of remaining stockpiles.

Endnotes:

- ¹ Eric A. Croddy (eds), "Chemical and Biological weapons" (Vol.1), in *Weapons of Mass Destruction: An Encyclopaedia of Worldwide Policy, Technology and History*, ABC-CLIO, California, 2005, pp. 313-314.
- ² Steven Rose, *CBW: Chemical and Biological Warfare*, George G.Harrap & Company Ltd., London, 1968, p. 24.
- ³ Jared Ledgard, *A Laboratory History of Chemical Warfare Agents* (Second Edition) 2006, p. 223.
- ⁴ World Health Organisation (WHO), *Health Aspects of Chemical and Biological Weapons*, WHO, Geneva, 1970, p. 30.
- ⁵ "On This Day-1988: Thousands die in Halabja gas attack", BBC Report, http://news.bbc.co.uk/onthisday/hi/dates/stories/march/16/newsid_4304000/4304853.stm
- ⁶ For detailed study on Alphabet Bomber, See, Jonathan B. Tucker (ed.), "Toxic Terror: Assessing Terrorist Use of Chemical and Biological Weapons", MIT Press, 2000, pp.71-94.
- ⁷ "Aum members sentenced to death for subway attack", Japan Times, July 18, 2000.
- ⁸ Kim Jong Nam probe: Chemical weapon VX nerve agent used, Malaysia police say", Channel News Asia, February 24, 2017, <http://www.channelnewsasia.com/news/asiapacific/kim-jong-nam-probe-chemical-weapon-vx-nerve-agent-used-malaysia—7603406>

- ⁹ “4 suspects in Kim Jong Nam’s murder ‘back in Pyongyang’, video surfaces online”, Asian Correspondent, February 20, 2017, <https://asiancorrespondent.com/2017/02/4-suspects-kim-jong-nams-murder-back-pyongyang-video-surfaces-online/#B0EebtVoxWk0Vjl8.99>
- ¹⁰ “North Korea: Chemical”, NTI, December 2015, <http://www.nti.org/learn/countries/north-korea/chemical/>
- ¹¹ Jean-Marc Ayrault, “Chemical Attack in Syria - National Evaluation,” Defense Council Meeting, April 26, 2017, <http://www.diplomatie.gouv.fr/en/country-files/syria/events/article/chemical-attack-in-syria-national-evaluation-presented-by-jean-marc-ayrault>
- ¹² “Chemical weapons used 45 times in Syria since mid-2016, says global watchdog”, AFP/Hindustan Times. April 28, 2017, <http://www.hindustantimes.com/world-news/chemical-weapons-used-45-times-in-syria-since-mid-2016-says-global-watchdog/story-V025DmySZ7XxeaagYPuJNN.html>