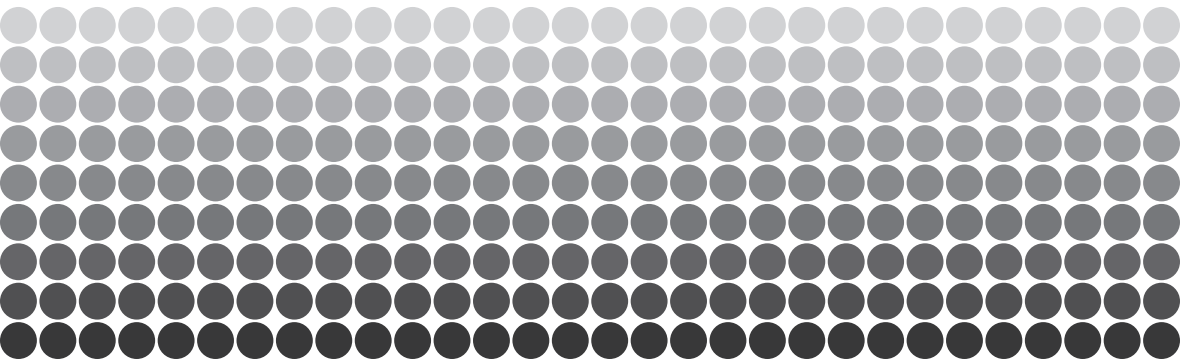


# **SIPRI YEARBOOK 2013**

Armaments, Disarmament and International Security

Chemical and biological weapon programmes

JOHN HART



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### III. Chemical and biological weapon programmes

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Allegations of chemical and biological weapon programmes and use continued in 2012 with little official or otherwise authoritative reporting to clarify them. Many of these allegations concerned suspected Syrian chemical weapon stockpiles and fears that such stocks would be used in that country's civil war. In addition, new information emerged on the methods used by the Japanese cult Aum Shinrikyo in its 1995 sarin attack on the Tokyo underground, and a definitive account of the Soviet biological weapon programme was published.

#### Syria<sup>1</sup>

On 23 July 2012 the Syrian Ministry of Foreign Affairs (MFA) stated that Syria possesses chemical weapons and that 'All of these types of weapons are in storage and under security and the direct supervision of the Syrian armed forces and will never be used unless Syria is exposed to external aggression'.<sup>2</sup> On 24 July Syria sought to clarify the press briefing. The spokesman who gave the briefing, Dr Jihad Makdissi, reportedly issued a tweet the following day stating: 'the Foreign Ministry's statement was only "a response to false allegations on [weapons of mass destruction] & explanation of guidelines of defensive policy"'.<sup>3</sup> On 24 July Syrian state media was quoted as stating that

The Ministry said that 'the goal of the statement and the press conference wasn't to declare but rather to respond to a methodical media campaign targeting Syria to prepare world public opinion for the possibility of military intervention under the false premise of weapons of mass destruction (similar to what happened with Iraq) or the possibility of using such weapons against terrorist groups or civilians'.<sup>4</sup>

Ahmet Üzümcü, the Director-General of the Organisation for the Prohibition of Chemical Weapons (OPCW), reacted to the 23 July statement the

<sup>1</sup> On other developments in the conflict in Syria see chapter 1, section I, in this volume.

<sup>2</sup> Associated Press, 'Syrian regime makes chemical warfare threat', *The Guardian*, 23 July 2012; and 'Syria: could use chemical arms against "external aggression"', Reuters, <<http://www.reuters.com/video/2012/07/23/syria-could-use-chemical-arms-against-ex?videoId=236629771>>. For Syrian state television's July broadcast see Makdissi, J. [Foreign and Expatriates Ministry spokesman], 'Terrorists of Arab nationalities killed in Syria', Syria News, 23 July 2012, <<http://www.youtube.com/watch?v=8WYwYnAlzu4>>. For the full MFA statement and questions and answers see Makdissi, J., 'Chemical weapon[s] won't be used unless in case of external aggression', Press conference, 23 July 2012, <<http://www.youtube.com/watch?v=fqjWzGfOLIE>>.

<sup>3</sup> CNN, 'Syria tries to clarify comments about WMD possession', Phantis, 24 July 2012, <<http://www.phantis.com/news/syria-tries-clarify-comments-about-wmd-possession>>.

<sup>4</sup> 'Official: reinforcements head to Syria's largest city', CNN, 24 July 2012, <<http://www.cnn.com/2012/07/24/world/meast/syria-unrest/>>.

following day, stating that chemical weapon use is prohibited under international law and that the reported presence of chemical weapon stockpiles and their possible deployment are a matter of ‘grave concern’ to the international community.<sup>5</sup> The United Nations Secretary-General, Ban Ki-moon, stated the same day that ‘It would be reprehensible if anybody in Syria is contemplating use of such weapons of mass destruction, like chemical weapons’.<sup>6</sup> The Russian MFA reacted by stating that Russia wished to underline that Syria had joined the 1925 Geneva Protocol in 1968 and that Russia ‘is confident that the Syrian authorities will henceforth keep to its international commitments’.<sup>7</sup>

That same week the Russian Deputy Foreign Minister, Gennady M. Gatilov, was asked to comment on the Syrian statement on the possibility of the use of chemical weapons in case of external aggression. He responded:

We certainly consider the use of chemical weapon inadmissible. Syria acceded to the Geneva Protocol of 1925 which prohibits the use in war of asphyxiating, poisonous or other gases, and thus, as we consider, it assumed certain obligations to reject such methods of warfare. We consider that Syria has to fulfil its obligations both under the Geneva Protocol of 1925 and the [1993 Chemical Weapons Convention]. On our part, we carried out the respective insistent work with the leaders of Syria to make them ensure reliable protection of the chemical weapon storage sites, and Damascus firmly assured us of absolute safety of these arsenals.<sup>8</sup>

Earlier in 2012, the United States Department of State reportedly sent *démarches* to Iraq, Jordan, Lebanon and Saudi Arabia in order to express concern about the possibility that weapons could be transported across their respective borders from Syria should President Bashar al-Assad fall from power.<sup>9</sup> Military exercises, code named ‘Eager Lion’, were purportedly conducted in the Jordanian desert and mountains, including simulation exercises for seizing weapon caches—among them chemical weapons—in at least three Syrian governorates. The spring exercises

<sup>5</sup> OPCW, ‘OPCW statement on alleged chemical weapons in Syria’, 24 July 2012, <<http://www.opcw.org/news/article/opcw-statement-on-alleged-chemical-weapons-in-syria/>>.

<sup>6</sup> United Nations News Centre, ‘Use of chemical weapons in Syria would be “reprehensible”—UN chief’, 23 July 2012, <<http://www.un.org/apps/news/story.asp?NewsID=42538&Cr=syria&Cr1=>>>.

<sup>7</sup> Russian Ministry of Foreign Affairs, [Russian Ministry of Foreign Affairs Department of Information and Press Commentary in connection with a statement by the representative of the Ministry of International Affairs of Syria], 24 July 2012, <[http://www.mid.ru/bdomp/brp\\_4.nsf/0/9a789cac921b5a9944257a480045059c](http://www.mid.ru/bdomp/brp_4.nsf/0/9a789cac921b5a9944257a480045059c)>. For a summary and other details of the 1925 Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare (1925 Geneva Protocol) see annex A in this volume.

<sup>8</sup> Russian Ministry of Foreign Affairs, [Interview of Deputy Minister of Foreign Affairs G. M. Gatilov to the ITAR-TASS information agency, Moscow, 25 July 2012], 25 July 2012, <[http://www.mid.ru/bdomp/brp\\_4.nsf/0/80f8e1e5e5695fad44257a480028b673/](http://www.mid.ru/bdomp/brp_4.nsf/0/80f8e1e5e5695fad44257a480028b673/)>. For a summary and other details of the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction see annex A in this volume.

<sup>9</sup> Rogin, J., ‘Exclusive: State Department quietly warning region on Syrian WMDs’, 24 Feb. 2012, Foreign Policy, <[http://thecable.foreignpolicy.com/posts/2012/02/24/exclusive\\_state\\_department\\_quietly\\_warning\\_region\\_on\\_syrian\\_wmds](http://thecable.foreignpolicy.com/posts/2012/02/24/exclusive_state_department_quietly_warning_region_on_syrian_wmds)>.

attempted to simulate countering al-Qaeda's seizure of chemical weapon caches and other high-end or otherwise strategically significant weapons.<sup>10</sup>

The USA also reportedly told Israel that 'the material' was dispersed among 'many sites' and that it was thus 'doubtful that all these [sites] could be located'.<sup>11</sup> Turkey and the USA consulted each other on Turkish plans to secure sites based on information that Turkey had received from Syrian military officers.

Syria's opposition was decentralized and commanded by a separate committee for each of the country's 14 governorates.<sup>12</sup> An anonymous senior Syrian opposition army defector spoke to the Israeli newspaper *Haaretz* on the opposition forces' plans to take control and stabilize the country as the Assad regime falls. In particular, he stated 'We have divided the aftermath into four periods with different priorities for each day. The first period is the first day, the first hours after Assad's control breaks down, and one of the priorities during those hours is taking control of the chemical weapons so they won't fall in the hands of terrorists'. The defector noted that the chemical weapon stockpiles were controlled by the Air Force Intelligence Directorate and under the overall command of Abdel-Fatah Qudsiyeh (formerly the commander of Air Force Intelligence and head of Syria's secret police since 2009).<sup>13</sup>

General Adnan Silou, a defector from the Syrian Government side, reportedly stated that the rebel forces were forming a special unit to secure chemical weapon sites. Silou oversaw the 2008 creation of emergency plans to help ensure that dangerous weapons remain under government control. He supervised the training of thousands of military personnel in the Damascus and Latakia areas to 'secure what analysts believe are the largest chemical weapons stores in the world, consisting principally of sarin, mustard gas and cyanide'. He stated that there are two principal chemical weapon stockpiles: warehouse 417 in eastern Damascus and warehouse 419 in the Homs area. Traditionally, Syria maintained approximately 1500 soldiers commanded by two or three generals at each site. Silou had met with Assad and other senior leaders numerous times and believed Assad capable of ordering the use of chemical weapons. Silou also stated that he believed government forces had sprayed pesticides over rebel-friendly areas in

<sup>10</sup> 'Sources: Eager Lion exercises simulated attempts to seize Syrian arsenals', Al-Quds al-Arabi Online, 30 May 2012, Translation from Arabic, Open Source Center, 30 Apr. 2012.

<sup>11</sup> 'US reportedly tells Israel: unsure all Syrian WMD can be located', *Yedi'ot Aharonot* (Tel Aviv), 12 June 2012, Translation from Hebrew and Abkhazian, Open Source Center, p. 10.

<sup>12</sup> Pfeffer, A., 'Syrian rebel leader to *Haaretz*: Assad's opposition will secure chemical weapons', *Haaretz*, 28 May 2012.

<sup>13</sup> Pfeffer (note 12).

Rastan near Homs.<sup>14</sup> In addition, Syria reportedly has aerial chemical bombs under the control of an air force unit called Unit 450.<sup>15</sup>

On 20 August 2012 US President Barack Obama stated that the issue of Syria's chemical weapons 'doesn't just concern Syria; it concerns our close allies in the region, including Israel', and 'We cannot have a situation where chemical or biological weapons are falling into the hands of the wrong people.'<sup>16</sup> In December 2012 the Secretary General of the North Atlantic Treaty Organization (NATO), Anders Fogh Rasmussen, noted 'The Syrian stockpiles of chemical weapons are a matter of great concern. . . . the possible use of chemical weapons would be completely unacceptable for the whole international community and if anybody resorts to these terrible weapons I would expect an immediate reaction from the international community'.<sup>17</sup> One estimate suggested that 75 000 troops would be required to secure Syrian chemical weapon sites, and the US Secretary of Defense, Leon E. Panetta, stated that Syria's chemical weapon status is '100 times worse' than that of Libya.<sup>18</sup>

Israel has stated that 'Syria still maintains a considerable operational arsenal of chemical weapons and has recently admitted their possession in an official statement'.<sup>19</sup> Iranian and Syrian media made counter-allegations of chemical weapon use by Syrian rebels.<sup>20</sup> Iran stated that Israel possesses a 'clandestine programme to develop chemical weapons' and that the international community should pressure it to join the 1993 Chemical Weapons Convention immediately and without precondition.<sup>21</sup>

Also relevant are the details released by the Panel of Experts on the Democratic People's Republic of Korea (DPRK, North Korea) established by UN Security Council Resolution 1874 concerning two 2009 shipments of

<sup>14</sup> Sherlock, R., 'Rebels forming unit to secure chemical weapons sites', *Daily Telegraph*, 20 July 2012.

<sup>15</sup> Schmitt, E. and Sanger, D. E., 'Hints of Syrian chemical push set off global effort to stop it', *New York Times*, 7 Jan. 2013.

<sup>16</sup> White House, 'Remarks by the President to the White House Press Corps', Press Briefing transcript, 20 Aug. 2012, <<http://www.whitehouse.gov/the-press-office/2012/08/20/remarks-president-white-house-press-corps>>.

<sup>17</sup> North Atlantic Treaty Organization, 'Doorstep statement by the NATO Secretary General at the start of the Foreign Affairs Ministers meeting', 4 Dec. 2012, <[http://www.nato.int/cps/en/natolive/opinions\\_92785.htm](http://www.nato.int/cps/en/natolive/opinions_92785.htm)>.

<sup>18</sup> Starr, B., 'Military: thousands of troops needed to secure Syrian chemical sites', CNN, 22 Feb. 2012, <<http://security.blogs.cnn.com/2012/02/22/military-thousands-of-troops-needed-to-secure-syrian-chemical-sites/>>. Panetta is cited in Nikitin, M. B., Feickert, A. and Kerr, P. K., *Syria's Chemical Weapons: Issues for Congress*, Congressional Research Service (CRS) Report for Congress R42848 (CRS: Washington, DC, 5 Dec. 2012), p. 1.

<sup>19</sup> OPCW, Conference of the States Parties, 17th Session, 'Israel: statement by Mr Eyal Propper, Director arms control policy department, Ministry of Foreign Affairs', C-17/NAT.15, 27 Nov. 2012, p. 2.

<sup>20</sup> 'Report: terrorist groups in Syria armed with chemical weapons', Fars News Agency, 9 June 2012, Open Source Center, document no. IAP20120609950087.

<sup>21</sup> OPCW, Conference of the States Parties, 17th Session, 'Islamic Republic of Iran: Statement by H. E. Kazem Gharib Abadi, Ambassador and Permanent Representative of the Islamic Republic of Iran', C-17/NAT.24, 26 Nov. 2012, p. 3.

chemical protection gear sent by ship from North Korea to Syria.<sup>22</sup> In January 2012 panel members examined the cargo of the November 2009 shipment and confirmed that 13 000 protective coats and 23 600 gas indicator ampoules ‘bore clear traces of manufacture in’ North Korea and that the coats were identical to those acquired in October 2009 from the MSC *Rachele* (the two shipments with coats were taken in October and November 2009). In March 2012 Syria indicated that the 2009 shipment of protective gear and ampoules was for ‘agricultural and laboratory use’. According to shipping documents, the intended recipient was the Environmental Study Centre, which the committee concluded ‘appears to be linked with the Higher Institute of Applied Sciences and Technology . . . which provides training to Scientific Studies and Research Centre engineers’. The USA has designated the latter two bodies as suspected of involvement in ‘Syrian weapon of mass destruction programmes’, while Japan has labelled them ‘entities of proliferation concern’.<sup>23</sup>

### Aum Shinrikyo

The Japan-based religious cult Aum Shinrikyo is best known for attacking the Tokyo underground with sarin in March 1995. In late 2011 it appeared that all criminal proceedings against members of Aum Shinrikyo were concluded. As of November 2011, 12 of the 13 members prosecuted had been sentenced to death. However, on 31 December 2011 a 14th member of the cult, Makoto Hirata, turned himself over to police. Apparently, he did so in order to delay the executions because all co-defendants to a crime must be tried and sentenced before sentences are carried out. In 2011 Professor Anthony T. Tu, a noted chemist who advised the Tokyo police on technical aspects of their investigation of the 1994 Matsumoto and 1995 Tokyo underground nerve agent attacks, interviewed one of the condemned members, Dr Tomomasa Nakagawa.<sup>24</sup>

According to Nakagawa, two other cult members, Hideo Murai and Masami Tsuchiya, got the idea of using sarin after reading a Japanese translation (by another group member) of *The Story of Poisons*, by D. Vachivarov and G. Nedelchef. Nakagawa said that the idea of using VX came from an article published by Tu in *Chemistry Today*. The specific point of interest was that one of the intermediates the cult was using for the production of sarin to obtain phosphorus trichloride (PCl<sub>3</sub>) was a potential VX precursor

<sup>22</sup> UN Security Council Resolution 1874, 12 June 2009.

<sup>23</sup> United Nations, Security Council, Letter dated 11 June 2012 from the Coordinator of the Panel of Experts established pursuant to Resolution 1874 (2009) addressed to the President of the Security Council, S/2012/422, 14 June 2012, pp. 27–28.

<sup>24</sup> For Tu’s account of his work with the Japanese authorities see Tu, A. T., *Chemical Terrorism: Horrors in Tokyo Subway and Matsumoto City* (Alaken: Fort Collins, CO, 2002). Tu is Professor Emeritus in the Department of Biochemistry and Molecular Biology at Colorado State University.

mentioned in Tu's article. Nakagawa also stated that assistance from Russian actors was confined to supplying pyridostigmine bromide (a pre-treatment prophylactic to protect against nerve agent exposure), respirators, protective gear, a chemical agent monitor, AK-47 blueprints and a helicopter.<sup>25</sup>

Nakagawa indicated that media statements that the Japanese police had found methylphosphonic acid in soil samples taken at the cult's Satyan 7 complex in Kamikuishiki, where the cult engaged in the manufacture of sarin, triggered an effort to destroy all stocks of the precursors (mainly methylphosphonyldifluoride, DF). According to Nakagawa, the news reports caused consternation among religious cult members. He also stated that this reaction 'accelerated the collapse' of the cult and that, without it, 'there would have been more killing by the sect of innocent people'.<sup>26</sup>

### **The Soviet biological weapon programme**

In 2012 Milton Leitenberg and Raymond Zilinskas published what is generally regarded as a definitive study of the Soviet biological weapon programme.<sup>27</sup> Russia dismissed unspecified media reports concerning the fate of the Soviet biological weapon programme (including possible biological weapon stocks) by stating that 'such fabrications do not correspond to reality' and that Russia is fully compliant with the 1972 Biological and Toxin Weapons Convention (BTWC).<sup>28</sup>

<sup>25</sup> Tu, A. T., 'Final death sentences for Aum Shinrikyo's chemical terrorists', *ASA Newsletter*, no. 144 (31 Mar. 2012), p. 10.

<sup>26</sup> Tu (note 25), p. 11.

<sup>27</sup> Leitenberg, M. and Zilinskas, R. A., *The Soviet Biological Weapons Program: A History* (Harvard University Press: Cambridge, MA, 2012). A British participant in the highly secret trilateral British–Soviet (then Russian)–US process to clarify the status of the Soviet violation of the BTWC described the study (in a review that contributes to the literature in its own right) as 'magisterial'. Walker, J. R., 'The Leitenberg–Zilinskas history of the Soviet biological weapons programme', Harvard-Sussex Occasional Paper no. 2, Dec. 2012, <<http://www.sussex.ac.uk/Units/spru/hsp/Occ-papers.html>>. For extensive interviews of participants in Soviet biological weapon activities in Kazakhstan and related information see Ben Ouagrham-Gormley, S. et al., 'The anthrax diaries: an anthropology of biological warfare', Cornell University, [n.d.], <<http://russian.cornell.edu/bio/cfm/home.cfm>>.

<sup>28</sup> Russian Ministry for Foreign Affairs, [Department of Information and Publications of the Russian MFA commentary on the matter of the period of operation of 'The Nunn-Lugar Programme'], Press Release 1921–10–10–2012, <[http://www.mid.ru/brp\\_4.nsf/newline/3B025187C9313ECE44257A9300604256](http://www.mid.ru/brp_4.nsf/newline/3B025187C9313ECE44257A9300604256)> (in Russian).