



Cooking up trouble

AS a religious terrorist group, al-Qaeda does not fit the assumption made by Brian Jenkins in 1975 that "terrorists want a lot of people watching and a lot of people listening, and not a lot of people dead". This statement fits better with secular terrorist groups; with religious terrorist groups like al-Qaeda, their "divine duty" results in the disappearance of moral restraints that would justify "a lot of people dead" in their terrorist attacks, such as the 9/11 ones. If CW are part of the weapons of mass destruction (WMD) concept because they can cause a large number of casualties, then they could be very good tools for religious terrorists to achieve their goals.

Is al-Qaeda interested in CW?

There are three phases in the statements of al-Qaeda members related to CBRN weapons. In the first phase, al-Qaeda tended to justify the acquisition and possession of CW from the point of view of deterrence. This phase goes as far back as 1998 when Osama bin Laden stated: "Acquiring weapons for the defence of Muslims is a religious duty. If I have indeed acquired these weapons [chemical and nuclear 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."

This and similar statements were made by bin Laden in different interviews after the US attack on the al-Shifa Pharmaceutical Industries factory in Khartoum on 20 August 1998. This attack was part of Operation Infinite Reach in retaliation for the bombings of the US embassies in Kenya and Tanzania on 7 August 1998, for which the bin Laden terrorist network was blamed by US officials. The al-Shifa target was justified in the finding of O-ethyl methylphosphonothionate (EMPTA), a precursor of VX, in soil samples outside the factory, and in the financial contributions of bin Laden to the production of CW.

Soon after 9/11 and the mailings of envelopes with anthrax spores in the United States, bin Laden was interviewed, and when asked about reports claiming that he was trying to acquire chemical and nuclear weapons, he answered: "I heard the speech of American President Bush yesterday [7 October 2001]. He was scaring the European countries that Osama wanted

to attack with weapons of mass destruction. I wish to declare that if America used chemical or nuclear weapons against us, then we may retort with chemical and nuclear weapons. We have the weapons as deterrent."

A few weeks later, Abu Hafs "The Mauritanian" (al-Qaeda's religious leader) replied similarly when asked about the veracity of bin Laden's previous statements: "If such a weapon [chemical, biological, or nuclear] is at al-Qaeda's disposal, then it is a deterrent weapon, and not for initiating an action. Let the Americans fear the worst possible scenario when they use any unconventional weapons. We are lying in wait for them, Allah willing."

The second phase of statements of al-Qaeda members relating to CBRN began soon after the overthrow of the Taliban regime in Afghanistan. Al-Qaeda's reasoning was that the Coalition forces had used conventional weapons (eg missiles) that had caused a large number of casualties and destruction, and for this reason these weapons could be considered WMD. This interpretation justified the use of CBRN weapons as retaliation for similar attacks. The most well-known statement in this second phase was made by Suleiman Abu

Major René Pita (PhD) and Major Juan Domingo of the Spanish NBC Defence School assess the chemical threat from jihadists

Gheith, al-Qaeda's spokesman, who wrote in the third part of his article "In the Shadow of the Lances" published on al-Qaeda's website (www.alneda.com) in 2002: "We have not reached parity with them. We have the right to kill four million Americans – two million of them children – and to exile twice as many and wound and cripple hundreds of thousands. Furthermore, it is our right to fight them with chemical and biological weapons, so as to afflict them with the fatal maladies that we afflicted the Muslims because of the [Americans'] chemical and biological weapons."

The third phase started in May 2003 when Shaykh Naser bin Hamad al-Fahd, a Saudi cleric who supports the global jihad movement, issued a fatwa justifying and authorising the use of CBRN weapons. Al-Fahd used arguments based on reciprocity, stating that the United States had used weapons that caused a large number of casualties and mass destruction. But what was new in this fatwa was that al-Fahd's arguments are based also on Islamic texts that prove it is allowed to use CBRN weapons if those engaged in jihad decide there is benefit in using them. This is the case of al-Qaeda's influential strategist Mustafa Setmarian Nasir, better known as Abu Musab al-Suri, who posted a letter on the Internet in December 2004 that stated: "Although I emphasise my non-participation and lack of prior knowledge of the honorable September 11 attacks, if I had been consulted about this operation, I would have advised them to select aircraft on international flights and to have put weapons of mass destruction aboard them. Attacking America with weapons of mass destruction was – and still is – a difficult and complicated matter, but it is still a possibility in the end, if Allah permits us. More importantly, it is becoming a necessity."

al-Qaeda's CW Programmes

The first information on al-Qaeda's CW programmes came from Jamal Ahmed al-Fadl (an al-Qaeda member who defected and became a US government informer in 1996), who claimed that in the early 1990s he and other al-Qaeda members discussed the start of a manufacturing programme of CW with a Sudanese army officer. In fact, the al-Shifa facility would have been part of this programme.

Since October 2001, reporters and military forces in Afghanistan have found written and electronic documents with rudimentary procedures for the production of CW. These procedures are similar, and in some cases word-for-word translations, from the ones included in the so-called "cookbooks" that are popular in "amateur terrorist" circles and among white supremacist terrorist groups in the United States. Actually, two well-known "cookbooks" were found in Afghanistan. An example of the relation between jihadi publications and "cookbooks" can be found in a 2003 Central Intelligence Agency (CIA) unclassified publication. The CIA report contains part of a document found in the summer of 2002 in Afghanistan with a diagram of the Levinstein method for making sulphur mustard. This diagram appears to be copied from a popular "cookbook," Assorted Nasties.

The CW-related material found in Afghanistan came mostly from the Abu Khabab camp located in the Darunta training camp complex, which specialised in chemical training. This camp was named after the man who ran it, the Egyptian Midhat Mursi, commonly known as Abu Khabab – who was first thought to have been killed in a US air strike on the Pakistani-Afghan border in January 2006, but seems to be still alive. Abu Khabab allegedly recorded the famous videotape aired in August 2002 by Cable News Network (CNN) that showed how a dog was exposed to a toxic substance in the Darunta complex. The fact that live training with animals was being conducted in the Darunta complex was already known before the start of military operations in Afghanistan. Ahmed Ressam, an Algerian arrested by US authorities for carrying explosives that he intended to use in a bombing against the Los Angeles International Airport (LAX), explained in court in July 2001 that he had been trained in the Darunta training camp complex in 1998 on how to prepare hydrogen cyanide by mixing a cyanide salt and sulphuric acid. He was told to release it near the air intake vents of buildings, and he even participated in live training exercises using dogs. More recently, a book by Omar Nasiri, the pseudonym of an alleged al-Qaeda member who worked as an informer for France's DGSE and the United Kingdom's MI5

and MI6, also revealed his participation in live experiments with animals exposed to cyanogen agents while training in Khaldan.

One of the most relevant discoveries in Afghanistan was made by Wall Street Journal reporter Alan Cullison, who obtained two computers from a looter who allegedly stole them from al-Qaeda's central office in Kabul on 12 November 2001. The looter told Cullison he had found the computers in the office of al-Qaeda's military commander Muhammad Atef (Abu Haf), a strong supporter of al-Qaeda's acquisition of CBRN weapons, who was killed in a US air strike that same month. The computer files included information of al-Qaeda's effort to start a CW and biological weapons programme code-named "al-Zabadi" ("Yogurt") in May 1999 with an initial budget of only \$2,000-\$4,000. Based on Cullison's analysis of the computer files, Ayman al-Zawahiri and Abu Haf (assisted by Abu Khabab) started the programme after studying different books and articles from biomedical journals. In a computer message dated 23 May 1999, al-Zawahiri mentioned discussing "very useful ideas" with Abu Khabab that included a "home-brew[ed] nerve gas made from insecticides and a chemical additive that would help speed up penetration into the skin." Although the name of the "nerve gas" was not mentioned, organophosphate pesticides have a mechanism of action similar to nerve agents but are much less toxic to humans. The option of using an insecticide instead of producing a nerve chemical warfare agent would reflect the difficulties of producing this type of agent. Even Aum Shinrikyo – which had excellent financial resources and personnel with the required expertise and had carried out their attacks before the entry into force of the Chemical Weapons Convention (CWC) – had some difficulties in synthesising sarin and could have received support from Russian sources, although its large-scale sarin production facility was never fully operational.

An additional problem for terrorists is the need to have a reliable delivery system. Effective dissemination or dispersion may be even more difficult than obtaining the agent, especially if the objective is to cause a large number of casualties. Aum Shinrikyo nerve

Cooking up trouble

agent attacks in Japan showed that effective dispersion of the agent is not an easy task. The "art" of chemical warfare includes the research and development of special munitions that, among other things, do not inactivate the agent by the thermal effect of the explosion. Aerosolisation dispersal systems are another option. Luckily, another gap in the information in the al-Qaeda-related publications and "cookbooks" is the often-inaccurate information on delivery systems. Omar Nasiri's book describes how, after several failed attempts to use mustard gas mortars in the Khaldan training camp, the camp members celebrated the appearance of a "thick cloud of smoke." This, however, does not mean that they had achieved their objective.

No public report of sophisticated CW means or production facilities found in Afghanistan has yet been made. Only a centrifuge and an oven found by British forces near Kandahar have been presented by the US Department of Defense as the equipment al-Qaeda intended to use to make CW and biological weapons. Based on intelligence assembled from collected documents, detainee interviews and reconnaissance of al-Qaeda facilities during Operation Enduring Freedom, the Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction (the WMD Commission) concluded in its unclassified report (dated 31 March 2005) that al-Qaeda did not have a large-scale CW capability. Still, past and current CW programmes are said to be not fully understood, especially because of difficulties in penetrating the terrorist network and, therefore, in collecting human intelligence (Humint).

After the disappearance of the Afghan training camps, Internet and jihadi websites have acquired more relevance. Al-Suri's book, *The Global Islamic Resistance Call*, posted on the Internet in 2005, suggests an asymmetric approach that includes the use of CBRN weapons, as well as a decentralised and diffused global jihad - labelled "al-Qaeda 2.0" by Peter Bergen in 2002 - in which autonomous cells play an important role. Autonomous cells should be self-sufficient, including having training



The Sudan is a hotbed of both fundamentalists and links to Al Qaeda and Bin Laden
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capabilities. For these reasons, jihadi websites are important tools providing autonomous cells with training manuals as well as lessons learned from attacks by other cells. For example, the latest (fourth) edition of the Jihad Encyclopaedia was discovered on the Internet in October 2004. The Encyclopaedia, as well as other electronic documents, includes information and procedures about CW identical to the ones found in Afghanistan - ie similar to the information included in "cookbooks." Some of these websites offer scanned copies of these "cookbooks" and even home-made videos.

al-Qaeda plots with CW

A detailed study of incidents with CW linked to al-Qaeda shows that hydrogen cyanide, ricin and toxic industrial chemicals (TICs) have been the chemical agents of choice for jihadi terrorists.

Procedures for obtaining hydrogen cyanide and ricin are common in jihadi publications. In fact, the procedures for obtaining ricin from castor plant seeds included in these publications are copies

from the ones included in the "cookbooks" but are not capable of achieving a good product for causing a large number of casualties by any exposure route, mainly because of the low content of toxin of the final extracts. Ricin was reported to have been detected in January 2003 in an apartment in north London, where North African al-Qaeda sympathisers were living. This finding turned out to be a false positive, as a laboratory analysis of the samples did not identify ricin, although castor plant seeds and a written ricin extraction procedure (as well as other recipes) were found. Only one of the arrested men, Kamel Bourgass, was convicted on 8 April 2005 of conspiring to commit a public nuisance by the use of poisons and/or explosives. At an earlier trial in 2004, he had been convicted of murdering a police officer during his capture in a flat in Manchester on 14 January 2003.

Hydrogen cyanide is easy to obtain by mixing the right salt and an acid, but transporting and mixing the reagents without being discovered constitutes one of the biggest hurdles for terrorists who

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decide to use it. Improvised chemical devices (ICD) that try to solve this problem have already been developed, information of which is available on the Internet. This is the case of the "al-Mubtakkar", with which al-Qaeda cell based in Saudi Arabia planned an attack on the New York City subway. Surprisingly, when al-Qaeda's leader in Saudi Arabia, Shaykh Yousef al-Ayiri, told al-Zawahiri about the plot in January 2003, al-Zawahiri decided to cancel the operation. Two hydrogen cyanide ICD were also described in a training manual found in October 2003 after a raid in the southern Philippines on the home of Taufiq Rifqi, a senior Jemaah Islamiyah (JI) leader.

Nerve agents also seem to be of interest to al-Qaeda, especially because of their toxicological and physico-chemical properties which make them ideal for tactical use in terrorist attacks. However, the synthesis process requires some level of expertise and is far more complex than the recipes featured in "cookbooks" and al-Qaeda-related manuals.

Since late 2006-early 2007, suicide terrorists in Iraq have started detonating vehicle-borne improvised explosive devices (VBIED) carrying chlorine cylinders. This new tactic shows that the use of TICs is an option that may yield better results than following the crude and rudimentary procedures of al-Qaeda-related publications for the production of "classical" chemical warfare agents. The chlorine attacks in Iraq, however, are still rudimentary in their means of delivery; for example, in the attack on 28 January 2007 in Ramadi, 16 people were killed not because of chlorine exposure, but due to the mechanical and thermal effects of the explosion.

Conclusions

The lack of adequate procedures and programmes for the production of CW may explain why, until now, al-Qaeda has not been capable of achieving an effective chemical attack. But it is clear that jihadi terrorists are both interested in CW and actively trying to obtain them. For this reason, it should not be dismissed out of hand that at some stage they could have access to chemical warfare agents and effective delivery systems. According to

al-Suri's book, his proposed decentralised global jihad system should include "Strategic Operations Brigades" with "very high-level financial capabilities to acquire an operational knowledge and potential to use WMD." Perhaps the inclusion of this special group for CBRN operations arose after al-Suri realised the difficulties faced by a small autonomous cell that depended on its own capabilities to become a multidisciplinary team with the expertise required to obtain and disperse CW in an effective manner.

Acquiring CW from black-market smugglers or sponsoring states is an option that may help al-Qaeda achieve its goal. In a letter dated 5 June 2002, bin Laden wrote to Mullah Muhammad Omar (the Taliban leader of Afghanistan): "It is a fact that the [former Soviet Union's] Islamic Republics region is rich with significant scientific experiences in conventional and non-conventional military industries, which have a great role in the future jihad against the enemies of Islam."

In a 2006 audio message distributed through jihadi websites, Abu Hamza al-Muhajir, al-Qaeda's new "amir" in Iraq, called for people with expertise in chemistry, among others, to help with the development of non-conventional weapons to be used in Iraq. As a result an online journal, Al-Mujahid al-Tiqani (The Technical Mujahid), appeared in December 2006, dealing with technological issues that can be useful for the jihad.

Another concern is that al-Qaeda will increasingly try to acquire chemical substances that are not strictly classified as "classical" chemical warfare agents, but which could be equally effective. An attack against a chemical plant or transport vehicle may also result in the release of TICs, with potentially catastrophic consequences similar to the release of methyl isocyanate in Bhopal (India) in 1984. Actually, in 1997 or 1998 Abu Hamza al-Masri had said: "You cannot do it by chemical weapons, you have to do it by mice poison." The reasoning of Brynjar Lia of the Norwegian Defence Research Establishment is that if al-Qaeda used airplanes like missiles, they could use TICs like CW. These attacks could have important effects not only because of the

toxicological effects of the chemicals used, but also because of the psychological effects of a chemical attack. Indeed, one of the objectives of using CW or biological weapons in a military scenario is not only to cause physical casualties, but also to demoralise troops. Similarly, in a terrorist attack on civilians, one of the primary goals is to create a general sense of panic and fear, resulting in psychological trauma and disruption of economic and social activities. For these reasons, CW can also be regarded as weapons of mass disruption.

A 2006 report of the Council on Global Terrorism states: "Governments cannot protect everything, all at once, all of the time". Try to achieve this would mean use of resources that would finally lead al-Qaeda to achieve one of its goals, as mentioned in a bin Laden message from October 2004: "Even more serious for America is the fact that the Jihad fighters have recently forced Bush to resort to an emergency budget in order to continue the fighting in Afghanistan and in Iraq, which proves the success of the plan of bleeding [America] to the point of bankruptcy, Allah willing". While security measures of critical facilities are essential, the problem is defining "critical" and "non-critical" facilities. For example, the 2007 chlorine attacks in Iraq raised concerns that similar attacks with chlorine could take place outside of Iraq. Organisations in the United States asked for drinking- and waste-water treatments other than chlorine, and in the United Kingdom security services started monitoring the movement of industrial chlorine. The questions are: what chemicals will be next and what new measures should be taken?

New intelligence models are also required to minimise vulnerabilities against the jihadi terrorism threat. The source Humint and incorrect analyses that lead to bad intelligence products are some of the deficiencies observed. Finally, governments must develop the capabilities to detect and minimise both physical consequences and psychological impact in case a chemical attack occurs. We should not forget the statement made by the IRA in 1984: "We only have to be lucky once. You have to be lucky all the time."