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**DEPARTMENT OF THE ARMY**  
**UNITED STATES ARMY INTELLIGENCE AND SECURITY COMMAND**  
**FREEDOM OF INFORMATION/PRIVACY OFFICE**  
**FORT GEORGE G. MEADE, MARYLAND 20755-5995**

REPLY TO  
ATTENTION OF:

Freedom of Information/  
Privacy Office

Mr. John Greenwald, Jr.

OCT 05 2009

Dear Mr. Greenwald:

References:

a. Your electronic Freedom of Information Act (FOIA) request of June 10, 2009, to the Department of the Army, Freedom of Information Privacy Act (DA, FOIA/PA) Division requesting the document entitled *Why Must We Know the Chemical Weapons of the Enemy*. The DA, FOIA/PA Division on June 17, 2009, forwarded your request to the Defense Technical Information Center (DTIC). The DTIC on July 13, 2009, forwarded your request along with the Army-originated document you requested. This correspondence was received in this office on July 20, 2009.

b. Our letter of July 22, 2009, informing you we were coordinating the record with another element of our command and that we were unable to comply with the statutory 20-day time limit in processing your request.

Coordination has been completed and the record is partially releasable to you.

Since the release of some of the information deleted from the record would result in an unwarranted invasion of the privacy rights of the individuals concerned, this information is exempt from the public disclosure provisions of the FOIA per Title 5 U.S. Code 552 (b)(6).

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Sincerely,



Susan J. Butterfield  
Director

Freedom of Information/Privacy Office  
Investigative Records Repository

Enclosure

**Why Must We Know the Chemical Weapons of the Enemy**

**ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER ...**

**APR 1986**

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①  
NOT EDITED

**AD-B105 838**

FSTC-HT-0794-85

DATE: April 1986

ENGLISH TITLE: Why Must We Know the Chemical Weapons of the Enemy

TRANSLATION OF: Serzhant, No. 3, 1985, pp. 16-18.

UDC:

NOT EDITED

CIRC REFERENCE NO. (if applicable):

LANGUAGE: Bulgaria

COUNTRY: Bulgaria

AUTHOR (AFFILIATION): (b) (6)

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WHY MUST WE KNOW THE CHEMICAL WEAPONS OF THE ENEMY

(b) (6)

Serzhant, No. 3, 1985, pp. 16-18.

What are the chemical weapons of the enemy?

→ The chemical weapons of <sup>Bulgaria's</sup> ~~our~~ probable enemy include toxic agents and means of their combat use. <sup>These</sup> They are used to injure enemy personnel, to reduce his combat effectiveness and to make difficult the use of fighting equipment, terrain and various material resources.

Classification of combat toxic agents according to NATO<sup>1</sup>.

The foundation of the chemical weapons are combat toxic agents. <sup>These</sup> They are divided into four groups by their purpose: lethal; temporary incapacitation of personnel (psychochemical); irritant (poison); training. Some specialists put herbicides in a special group. They were used in large quantities by the American Army during the Vietnam war. ↙

They are divided by their stability on the terrain into stable and unstable.

<sup>1</sup>Journal Zarubezhnoe voennoe obozrenie, No. 10/1982.

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Toxic agents with lethal effect.

The foundation of the chemical weapons arsenal of the USA is lethal military toxic agents. They include sarin, mustard gas, VX gas and the newest agent XR. They are working actively for the use of soman. Phosgene and cyanogen chloride, in the opinion of American specialists, are not promising, but they can find military application, since they are produced in large quantities.

Sarin, soman and VX gases are organophosphorus toxic agents with neuroparalytic action. They are colorless, odorless liquids which differ substantially from each other in volatility, persistence and toxicity. Regardless of that, they have a common mechanism of lethality. They inhibit the activity of the enzyme cholinesterase, as a consequence of which the activity of the central nervous system is disrupted. Symptoms of injury are myosis, excitability, muscular convulsions, difficulty in breathing, paralysis and stopping of the heart. Poisoning can be caused by inhalation of the vapors or aerosols of the toxic agent, by penetration (resorption) through the skin of the vapor or drops, through the eyes or by entry into the gastrointestinal tract. When drops of soman or VX gas strike the skin they are rapidly absorbed and rapidly spread through the blood and body as they damage the central nervous system.

Sarin acts mainly through the respiratory organs and eyes. It is an unstable toxic agent, it evaporates quickly and is easily hydrolyzed to a nontoxic product. It can be used both on the attack and in defense, because its lethal effect appears quite rapidly in the first one or two minutes. At low concentration and a small physical charge, if personnel do not use means of protection when inhaling air, they are contaminated with the toxic agent vapors, and 50% of them are out of action after a minute if timely medical aid is not given them.

Soman occupies an intermediate position between sarin and VX gas in many properties. It is slightly soluble, more persistent than sarin and is three times more toxic than it, but it lags behind VX in these characteristics.

VX gas is a persistent toxic agent which evaporates and decomposes slowly. In vapor form and in the aerosol state, VX is 10 times more toxic than sarin and, through the skin in the form of drops, it is 100 times more toxic than it. Ameri-

can specialists intend to use VX to strike personnel who are not under cover, as well as to impede the use of the terrain, weapons and equipment by the enemy. It can persist up to 10 days in summer.

Neuroparalytic toxic agents are detected with an automatic gas alarm and combat equipment for chemical reconnaissance (VPKhR), by means of an indicator tube with a red ring and dot.

Protection from these toxic agents is accomplished with the aid of individual means of protection, the gas mask and means of protection of the skin, as well as with collective means of protection, shelters and combat equipment fitted with filtering ventilation devices.

First aid for contamination with organophosphorus toxic agents is given as soon as possible by putting on the gas mask, injecting the antidote, treating contaminated sections of the skin immediately with the small container of the individual antigas kit (IPP), and the eyes with a 2% solution of baking soda or with pure water. Soman contamination is more difficult to treat.

Decontamination of equipment contaminated with these toxic agents is accomplished by means of a decontaminating solution based on calcium hypochloride.

Soman and VX gas are persistent in water, and they contaminate a reservoir for a long time.

XR (XR), botulinus toxin, is a toxic agent of protein origin. It inflicts damage through the respiratory passages, gastrointestinal tract, mucous membranes and open wounds on the skin. The symptoms are weakness, dryness of the mouth, vomiting, disturbances of vision and speech and cessation of breathing. The incubation period is from 2 to 10 hours, but up to a few minutes upon getting into the blood. Treatment can last up to several months.

Mustard gas is a persistent toxic agent which blisters the skin. It has a wide range of injury. In the liquid drop and vapor states and in the form of a mist, it damages the skin and eyes. Local injury of individual organs is accompanied by general poisoning of the body. It has a latent period of action and

the ability to accumulate in the body. It is inferior to VX in persistence but, in connection with the fact that it is convenient to produce industrially and for prolonged storage, it is found in the American chemical arsenal.

Protection from mustard gas is accomplished by means of individual and collective means of protection.

First aid is given as contaminated sections of the skin are decontaminated by means of the large container from the individual antichemical kit, and the eyes are rinsed with a 2% solution of soda or with pure water and the gas mask is put on. Decontamination of equipment and structures is carried out in the same way as in contamination with neuroparalytic toxic agents.

#### Psychochemical Toxic Agents

Psychochemical toxic agents have a specific action on the central nervous system. A representative of this group is BZ (BZ). It causes sluggishness, severe headache, sleepiness, visual disturbances and it produces mental disorder. Other symptoms can be observed, such as palpitations, dizziness and an increase of temperature of the human body. The specific toxic properties of psychochemical toxic agents are the reason why American specialists use it mainly to cause confusion among personnel and to deprive them of the capability of acting rationally at decisive moments.

Personnel contaminated with a psychochemical toxic agent of the BZ type have to wash contaminated sections of the body with soap and water, and they are isolated and if necessary sent to specialized treatment institutions.

#### Irritant Toxic Agents

Irritant or, as they also are called in the west, police toxic agents in small concentrations severely irritate the eyes and respiratory passages, and some of them have a blistering action on the skin. Toxic agents of this group include adamsite, chloracetophenone and CS. Of these toxic agents, CS is of the greatest interest. It was used in the war with Vietnam. It is characteristic of it that, in high concentrations, it causes nausea and vomiting. Its effect on the eyes and

respiratory passages lasts for 10-15 min after removal of the contamination from the contaminated section. It is a persistent toxic agent, and it can stay on the ground up to 15-25 days.

Protection is carried out with individual means of protection, and CX is removed from the human body and the surfaces of equipment with a large amount of water.

#### Means for Use of Toxic Agents

Military toxic agents are used by means of aircraft, artillery, rockets, chemical mines, spraying devices, chemical grenades and cartridges.

In the USA and NATO, they have chemical ammunition for artillery, mortars and rocket launchers. They are filled with toxic agents of the VX, sarin, mustard gas and CS types. The M-91 115 mm 45 rocket launching system is of particular interest. It has a range of up to 11 km and covers an area of up to 40 hectares with one volley.

The chemical warheads (KhBCh) of the rockets are bomb clusters filled with special bombs containing sarin or VX gas. For the present in the USA, chemical warheads for the Honest John free flight rocket and the Sergeant and Lance guided rockets have been developed. In the opinion of American specialists, the use of toxic agents with rockets provides for surprise assaults on large area targets at comparatively great depth.

The basic means of chemical attacks by aircraft are chemical aircraft bombs, bomb clusters and spraying devices (IAP). The chemical bomb clusters and bombs are filled with sarin, BZ and CS and, by means of spraying devices, toxic agents of the VX type are used to contaminate personnel and contaminate military equipment and terrain.

There are two types of chemical land mines in the armament of the American Army: M-23 filled with VX; M-1 filled with mustard gas. Chemical land mines are used in the armies of the United States to restrict use by the enemy of important sections of the terrain, for laying passages in minefields and to attack personnel.

negotiating them. They can be laid separately or in combination with antitank or anti-personnel mines.

Toxic agent aerosol generators are intended to attack personnel over large areas, and they are used from aircraft, helicopters, motor vehicles, etc.

Chemical ammunition in the American Army is colored gray. Lethal chemical munitions are marked with green rings: one green ring designates chemical munitions filled with choking chemical agents; two rings designate blistering toxic agents; three rings designate neuroparalytic toxic agents. Munitions filled with psychochemical toxic agents are marked with two red rings and, with irritant toxic agents, with one red ring.

#### Binary Chemical Munitions

In distinction from conventional chemical munitions, binary munitions are not filled with one toxic agent, but with two nontoxic or slightly toxic substances, which are mixed in the body of the munition during its flight to the target, as a result of which a highly toxic agent is produced. The advantage of these munitions is primarily their easier and safe storage.

Binary sarin and binary VX gas have been developed in the USA. They are working actively on the development of other toxic agents. Tank and cluster bomb type binary bombs are being received in the armament of the American Army. Tank binary aircraft bombs contain two components, one of which can be in the liquid state and the other in the solid state. The interior of a bomb filled with the liquid component is simultaneously the chemical reaction chamber, into which one component is driven in a specific way by means of a pyrotechnic charge. Besides, there are devices in the bomb for mixing the initial products, as a result of which the reaction occurs quickly and effectively.

The design of binary cluster bombs is more complicated. One component is in the bodies which fill the bomb cluster, and the other is in the open space between them. The bodies in the bomb cluster are half filled and have a valve through which the other component can be driven in.

The design of the binary artillery projectiles is similar.

It becomes clear from what has been presented that there are toxic agents with varied toxic action in the armament of the armies of our probable enemy, which are continually being improved. We must become familiar with the military properties of the toxic agents which are in the armament of our enemies and know to perfection how to protect against them.

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