



# Disarmament and International Security Committee

*Topic 1: Measures to prevent the use of nuclear and bacteriological weapons.*

*Research Report by Francesca Santucci*

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## 1. Definition of key terms

**Weapon of mass destruction:** The concept of weapons of mass destruction (WMD) indicates any armaments capable of killing indiscriminately a great amount of living and human beings.

**Nuclear weapon:** The term “nuclear weapon” indicates all the arms that exploit the reactions of nuclear fission and/or nuclear fusion; in the vast majority, such weapons are bombs and explosive heads for missiles. They are classifiable as weapons of mass destruction.

**Bacteriological weapon:** The term “bacteriological weapon” is used to identify those arms that comprise a microbiological harmful agent, or a toxin produced by it. They can be used as an instrument of offense in order to spread the contamination or infection in enemy territories and, therefore, can be classified as a weapon of mass destruction.

**Project Manhattan:** It was a secret military project, created by the United States in 1942 with the aim of fabricating the first nuclear weapons. It was started mainly for the fear that Nazi Germany would be able to use nuclear weapons during the Second World War. The directors of the project were the scientist Robert Oppenheimer and General Leslie Groves, both Americans, but during the realization it was attended by numerous European Physical, including Albert Einstein, Enrico Fermi, and Leo Szilard.



**Trinity Test:** It was the first test for nuclear weapon, conducted by the United States on 16 July 1945 as part of the Manhattan project.

**Anthrax:** It is an infection caused by a bacterium (*Bacillus anthracis*)

## 2. Introduction

The denomination "weapon of mass destruction" is normally used in order to describe all those weapons capable of killing a large amount of living beings. According to this, it is usual to identify four different types of weapons of mass destruction (WMD): chemical weapons, radiological weapons, nuclear weapons and bacteriological weapons. The danger of these kinds of armaments, caused by the indiscriminate destruction provoked by their use, is so significant that the issue represents today an open debate in the political and international military sphere. Although the diffusion of these represent a real mutual danger, the development and the control of these weapons changes from nation to nation and the international level on I.

Both nuclear and biochemical weapons represent a not ignorable threat for international security, although they are substantially different from each other. In fact, on the one hand biochemical weapons are alarming because of their relatively simple production and low cost. Moreover, the symptoms accused by any population bombed by bacteriological agents are insidious and difficult to recognize, and can be confused with those of a normal epidemic.

On the other hand, nuclear weapons are more effective than the most destructive bomb among the not nuclear ones. In addition to the initial blast, these kinds of arms release radiation in large quantities, thus prolonging inevitably their effect on living beings, causing terrible illnesses.

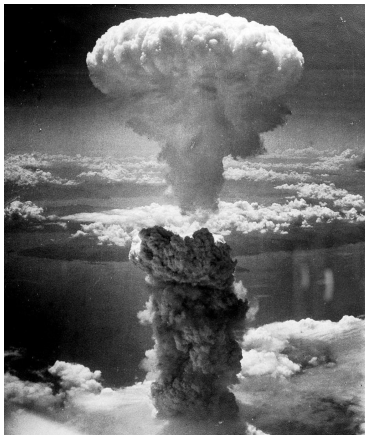
## 3. Background Information

Nuclear weapons, such as nuclear bombs, were created to cause substantial damage through an explosion capable of releasing an enormous quantity of energy in a short period of time. In conventional nuclear bombs, the explosion is caused by a chemical reaction which provokes the creation of new molecules from the rearrangement of atoms. This means that, through a chemical process, the atoms themselves are changed, in order to create new atoms, by splitting or fusing the original ones.

In 1945, Usa had the first nuclear device detonated during the Trinity Test, within project Manhattan. This project was a program for research and development in the military sphere and led to the realization of the first atomic bombs during the Second World War. The research, carried out by the United States, was supported by Canada and Great Britain. The Trinity Test's result is known as "The Gadget", which was a prototype that would serve to test the different technologies that would subsequently be employed for the realization of the first nuclear weapons during World War II. scientist Robert Oppenheimer led the team of researchers, while General Leslie Groves guided the US army.

The Manhattan Project was considered essential to win the war against Nazi Germany, which was erroneously supposed to be running a military project similar to the US one.

During the Second World War, two types of atomic bombs were developed: one implosion bomb and one gun-type fission weapon. These first weapons, known as Little Boy (the bomb gun type) and Fat Man (the implosion bomb) were respectively used to bombard the Japanese cities of Hiroshima and Nagasaki.



*In the photograph, the mushroom cloud caused by the explosion of "Fat Man" in Nagasaki, which reached eighteen kilometers in height.*

*After the Second World War, atomic weapons were acquired from all the major world powers: the USSR obtained them in 1949, the United Kingdom in 1952, France in 1960 and China in 1964.*

As a result of this situation, the climate of the so-called "Cold War" was born. The term "Cold War" indicates that period after 1945, during which climate tension and constant rivalry emerged between the Soviet Union and the USA. This situation led to the formation of two spheres of influence, two symmetrical blocks which divided the world into two halves. The two blocks West and East, in contrast from every point of view (military, ideological, economical and political) created opposing military alliances (respectively the North Atlantic Treaty Organization (NATO), and the Warsaw Treaty Organization (WTO)), well aware of being able to destroy each other with only the use of their atomic arsenal.

Furthermore, nuclear weapons became increasingly complex and their numbers increased considerably.



In 1957, the International Atomic Energy Agency was created to control the development of atomic arsenals. It is an autonomous agency with the aim of promoting a peaceful use of atomic energy and preventing its employment in military issues. Due to its commitment, the agency received the Nobel Prize for Peace in 2005.

Regarding bacteriological weapons, they can be even more lethal than chemical weapons even in smaller amounts. Often just a few milligrams are enough to cause devastating effects on the body. An aqueous solution or an extremely thin powder containing the virus, the bacterium or the toxin are necessary in order to spread the biological agent; however, the particles must be very small, in order to harm human beings. In fact, in such a way they can penetrate the human lungs in depth and start the infection. The action of a biological weapon can take place in three different modes.

- aerial diffusion with consequent inhalation;
- contamination of food or water;
- contamination of the splinters due to the explosion of bombs and projectiles.

Their first use can be dated to the years of the Middle Ages, when the soldiers used to leave dead bodies in fresh water adjacent to an enemy city to poison it. An example of mass contagion in the past could be when in 1347 in Crimea, the bodies of some Tatar warriors, dead of plague, were thrust into the Genoese colony of Caffa (today Feodosia, Ukraine) after a siege which had lasted for several months. In fact, this episode may have been responsible for the advent of the Black Death in Europe through Genoese maritime traffic.

In modern history, many are aware of the fact that the Spanish “Conquistadores” by bringing European diseases to America, were facilitated in the conquest and exploitation of the local populations, which were literally exterminated.

However, it is in the twentieth century that bacteriological weapons were most successful. Between the end of the nineteenth century and the beginning of the twentieth century industrialization also affected the military apparatus. The development of increasingly effective and destructive weapons also involved biology.

In 1854, during the Siege of Sevastopol, the British chemist Lyon Playfair proposed to the English government to modify the artillery shells by inserting a cyanide compound inside the charge. Not many years later, during the American Civil War, a similar project, based on the use of liquid chlorine, was proposed to the Union Army. Both the cases were based on the use of poisons, which are not really “biological” but rather “chemical”. However, the



development of weapons capable of carrying poisonous agents was the fundamental premise for the same weapons to be used for a bacteriological war.

World war I was the ideal breeding ground where microbiology, which in those years was making huge steps forward, could make itself available to military commands. Germany was trying in every possible way to weaken its enemies, among the unconventional weapons used by the Kaiser there was Anthrax. The German emperor had the cattle destined for Russia or the allies at the battlefield poisoned by the parasite. In this way, food production could have suffered a drastic decline. However, the operation did not have the desired effects.

With the end of the First World War, the powers agreed to ban the use of biological weapons in the Geneva Convention in 1925. Nevertheless, it was not considered useful or necessary to prohibit its research, manufacture and storage. Thus many countries continued to develop biological weapons and store them in their warehouses.

At the beginning of the Second World War, research on bacteriological weapons was still at an immature stage, but the state of war and the consequent allocation of enormous resources in military research, soon led the US and the UK to promote biological weapons programs. So, the first tests began, and with them their tragic effects. A group of British scientists who wanted to study the effects of anthrax, contaminated with it a small island in Scotland, Gurnard Island, which remained inaccessible for the following 48 years.

Inter same years, Japan made direct experiment of the use of bacteriological weapons on humans: the infamous "Unit /31" conducted large-scale infections in Manchuria and China, infecting civilians and militaries with typhus and plague. The state also planned operations of infection of civil population on American soil. The Japanese experiments led to the death of thousands of people, perhaps more than 100.000.

During the "Cold War", the arms race of the main powers also involved bacteriological research. For every bacterium or virus that was "produced", the countries invested enormous capital in the search for its antidote. This "bacterium race" went throughout the 1960s, until it became clear that further weapon improvement could have been potentially catastrophic due to the high risk of accidents and the danger of the tests. For this reason, the two blocks found a common ground that led to a sort of distension and avoided the risk of an uncontrollable escalation.

Due to scientific discoveries in microbiology between the late 1970s and 1980s, the "bacterium race" became an even more dangerous "race to the virus". DNA research, then opened up another field of research, with the first studies on the genetic modification of plants and animals.



#### 4. Major countries involved

Nowadays, the main countries that have declared to possess atomic weapons, being part of the so-called “atomic club”, are: United States, Russia, China, France, United Kingdom, Pakistan, India and North Korea. Israel has never officially confirmed or denied having nuclear weapons. Five states follow NATO’s “nuclear sharing” program, hosting US nuclear weapons in their territories in order to receive training for their use in case of conflict. These countries are Belgium, Italy, Germany, the Netherlands and Turkey. North Korea has had an officially declared nuclear program and, in 2006, made its first underground explosion test.

Other nations, first of all, Iran, are strongly suspected of pursuing a nuclear armament program.

Nowadays, bacteriological weapons are considered terrorist weapons and their proliferation is prohibited by international laws and conventions. Nevertheless, some states, including Russia and the United States, are suspected of keeping large quantities of biological agents, which could be used to trigger bacteriological attacks.

Moreover, the supposed presence in the arsenals of Iraq was one of the declared causes of the Iraq War (Second Gulf War). Even North Korea could potentially resort to the use of bacteriological weapons, having them available in its arsenals.

#### 5. UN involvement

The United Nations has always been an active participant in solving the issues of arms worldwide as it has established the United Nations Office of Disarmament Affairs (UNODA) to help tackle such problems of biological and nuclear weapons too.

In addition, on January 1953 the United Nations Disarmament Commission (UNDC) was launched and in the 1980s the United Nations Institute for Disarmament Research (UNIDIR) was developed to look further into questions of disarmament, especially concerning mass destruction weapons worldwide.

On 28 April 2004, UN Security Council resolution n. 1540 recognized the threat to international peace and security from nuclear, chemical and biological weapons, along with the instruments employed to use them; it also called for greater efforts by nations in order to limit their proliferation. These weapons, especially nuclear ones, were used only during the Second World War, because their employment is essentially an invitation to a



counterattack through the use of the same type of weapons, generating an escalation that could easily destroy a large part of the world population.

The UN recognizes nuclear weapons as among the most catastrophic in the world. Since its settlement, the UN has always tried to tackle the issue: the first commission established to tackle the problems caused by new discoveries in the nuclear energy area was founded in 1946, following the adoption by the General Assembly of a resolution on the topic in the same year.

Since that time, several international treaties have been established:

- Treaty of Non-Proliferation of Nuclear Weapons: it was adopted by the General Assembly on the 5th of March 1970, and illustrates the rules for nuclear weapons around the world. 190 countries signed the treaty, including the five recognized nuclear states (which are the five permanent countries in the Security Council at ONU). Only India, Pakistan and Israel never signed the treaty, whereas North Korea abandoned in 2003, before first testing nuclear weapons in 2006.
- The Partial/Comprehensive Test Ban Treaty, (PTBT) and (CTBT), on the tests of nuclear weapons in water and air;
- Treaty on the Prohibition of Nuclear Weapons (TPNW), which was opened for signatures in 2017.

Concerning bacteriological weapons, the Convention on the prohibition of the development, production and storage of biological weapons and toxic weapons and their destruction (BWC, from Biological Weapons Convention) was the first multilateral treaty on disarmament to prohibit the production of a whole category of weapons. It was the result of prolonged efforts by the international community to create a new instrument that could complete the Geneva protocol of 1925. The BWC was opened for signatures on the 10th April 1972 and entered in action on the 26th March 1975, when 22 governments ratified it.

## 6. Useful links

<https://www.nytimes.com/topic/subject/nuclear-weapons>

<https://www.google.it/amp/s/www.nytimes.com/2019/02/01/opinion/inf-nuclear-weapons.amp.html>

<https://www.un.org/disarmament/wmd/nuclear/>

<https://www.iapss.org/2018/05/27/analysing-proliferation-of-weapons-of-mass-destruction-in-contemporary-times/>