English seminar called:

Weapons Of Mass Destruction

Presented by: Ammar Al-Ashker

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Supervised by: Ms.Wafaa sbeha

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i. Problem:

Weapons of mass destruction are threating the existence of mankind.

ii. Introduction:

Many people hear about weapons of mass destruction, but how much do they really know about it?

- Weapons of mass destruction are extremely powerful weapons, some of them can't be contained in one area.

Why you don't find it in every country?

- These weapons are advanced technologized weapons systems, created by professionals in many specializations, and request high economic abilities, that's why not every country is capable of developing them.

What are the types of these weapons?

- Weapons of mass destruction have many kinds, and each kind of them is distinguished by its way of development, usage and it's destructive power.

iii. Section 1:

1. What are weapons of mass destruction?

(ABC Warfare) it's the 20th sanctuary war, it means the war of (Atomic, Biological and Chemical weapons), which are weapons of mass destruction.

The specter of weapons of mass destruction (WMD) has existed for centuries. For example, biological vectors used to spread out diseases among enemies long time ago, and the more recent example, the usage of massive chemical weapon attacks in World War I, and then World War II witnessed the entry of atomic weapons and their destructive effects, and started a subsequent arms race among nations to obtain such incredible power.

These days Russia and the USA have a huge amounts of these weapons that is capable of destroying everything on Earth, and terrorists all over the world trying hard to develop it, but the United Nations are doing all they can to stand in their way and protect the society.

2. Why are they dangerous?

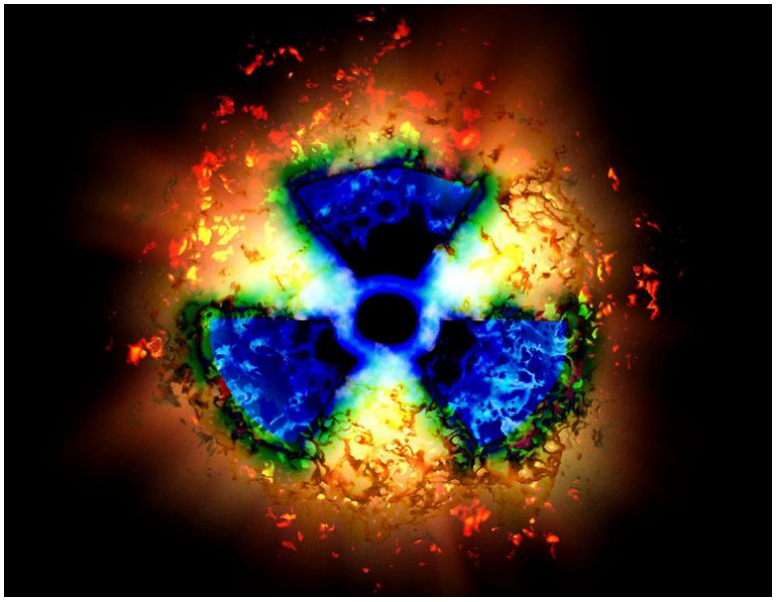
These weapons are extremely dangerous because there devastating way of killing, some of them are made to destroy buildings and some made to destroy city's, some of them capable of destroying countries, and they usually have a delayed effects on the environment.

3. What are the types of these weapons?

Weapons of mass destruction is a spectator called about a lot of weapons that are completely different from each other by the way of killing, splitting, the effecting area and effects that's left on the environment. And every weapon has its own level of forbiddance.

Now we'll be taking on some of the most popular mass destruction weapons .

A. Atomic weapons:



symbol 1: nuclear

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Atomic weapons have two different kinds (nuclear and radiological weapons), the main Idea of atomic weapons is to make some elements disperse burning radiances that are fatal or harmful to humans.

❖ Nuclear:

Figure 1: nuclear explosion

It's the most powerful kind of weapons, its way of killing is destroying an area and clear everything on it, and make radiation that burns everything close.

Soon after nuclear division was discovered by German physicist (Otto Hahn) in 1938, it was realized that the energy from fission could be used to produce a nuclear explosion. The fear that Germany and Japan might succeed in developing nuclear weapons stimulated the Americans to make a massive effort, known as the Manhattan Project, to develop them first. It led to the first nuclear explosion a test carried out in the New Mexico desert in 1945.

There are many types of nuclear bombs and they differ from each other by their way of ----, exploding and the area of effect.

- Pure fission weapons:

Example: Little Boy and Fat Man.

- Fusion-boosted fission weapons:

  Example: Project Hardtrack.

- Thermonuclear weapons: (the hydrogen bomb)

  This kind of nuclear weapons is the most powerful until now, it works by transforming the hydrogen into one of its radioactive isotopes, which releases a huge amounts of energy.

  Example: TSAR Bomba.

Nuclear explosions leave a lot of bad effects on the environment, short effects like the destruction on the area of the bomb drop, and long effects like the radioactive materials that come out form the fallout, and they burn every creature that come close.

Figure 2: the differ beteen nuclear bombs expolosion sizes.

❖ Radiological:

Radiological weapons are new aspects of WMD, is usually conceived as the use of a radiological device or an attack on a nuclear facility such as a nuclear power plant. The aim is to release radioactive contamination into the atmosphere. Radioactivity is the release of energy in the form of radiation, as some naturally occurring elements attempt to change their fundamental atomic structure. Isotopes are forms of these particular elements that have distinct nuclear properties. When an isotope is unstable, it emits radiation and is called a radioisotope. Radiation from radioisotopes can damage human cells and cause problematic health issues.

One of the more well-known dissemination descriptions is a radiological dispersal device (RDD). Means to spread radiation throughout a designated area. The "dirty bomb," is an example

of using conventional explosives to disperse radioactive material.

Other forms of RDD could distribute radioactive material in the atmosphere or in confined areas. An aircraft might be used to disperse powdered or aerosolized forms of radioactive material. A passive method of radiological attack could be the use of a radiation-emitting device (RED). In this example, a RED could be positioned to expose a population to intense radiation for a short period of time, or expose a selected population to low radiation over an extended period.

- ✓ The dirty bomb:

  The dirty bomb is an example of radiological attacks, this bomb doesn't activate an nuclear detonation, but it sprites out a radiological element that cause radiation.

  This bomb leaves the elements radiating randomly in the attacked area which is dangerous or fatal to any one that approaches it, and the cleaning will take so long to clear the area from radiations.

B. biological weapons:

Biological weapons are found as infectious agents (replicative) such as bacteria, viruses and fungi, or toxins (not-replicative), that are poisons produced from replicating agents or plants which are pathogenetic to human bodies. Biological weapons kill by spreading a disease that is normally fatal or harmful by tricking the body's cells into producing a toxin that overwhelms body defenses. The most serious threat is posed by some of mankind's most ancient diseases, which include anthrax, plague and botulinum.

Unlike chemical weapons, biological weapons have a delayed effect, normally taking several days or weeks of incubation before victims realize they are in danger. The first symptoms of many of the biologicals are like stomachaches and tiredness followed by a cough and many other issues.

Biological weapons doesn't leave the same effects on the environment like radiological weapons, because most of the infectious bacteria and viruses can live only in narrow temperature ranges, so the only way that they can survive and stay dangerous is to spread out in humans, animals or insects which may be harder to clear them.

C. Chemical weapons.

Chemical weapons are defined as compounds, which, through their chemical properties, produce lethal or harmful effects. They are classified by their effects: nerve (Tabun, Sarin, Soman, VX), blood (hydrogen cyanide, cyanogen chloride, arsine), choking (chlorine, phosgene) or blister (mustards, Lewisite). These weapons kill by destruction or disruption. The infamous gases of World War I choking gases essentially burn away parts of the respiratory system. More modern nerve gases disrupt the chemical processes through which one nerve cell communicates with another. When a nerve agent is introduced into a system, Death occurs when the heart and lungs stop receiving instructions to beat and breathe. Chemical agents are generally liquid when containerized but are disseminated as an aerosol or gas. To be effective, chemical agents must be dispersed in sufficient quantity to cause serious damage. Chemical agents are heavily effected by weather conditions (temperature, wind speed and direction and humidity), which make it

difficult to achieve sufficient concentrations to be effective in an open-air environment.

Unlike biological and radiological weapons, chemical agents are fast acting. Protection from these agents requires full respiratory and skin protection.

iv. Section 2: historical events about weapons of mass destruction.

1. The two Atomic bombs on Japan.

Nuclear weapons have been used only twice in anger:

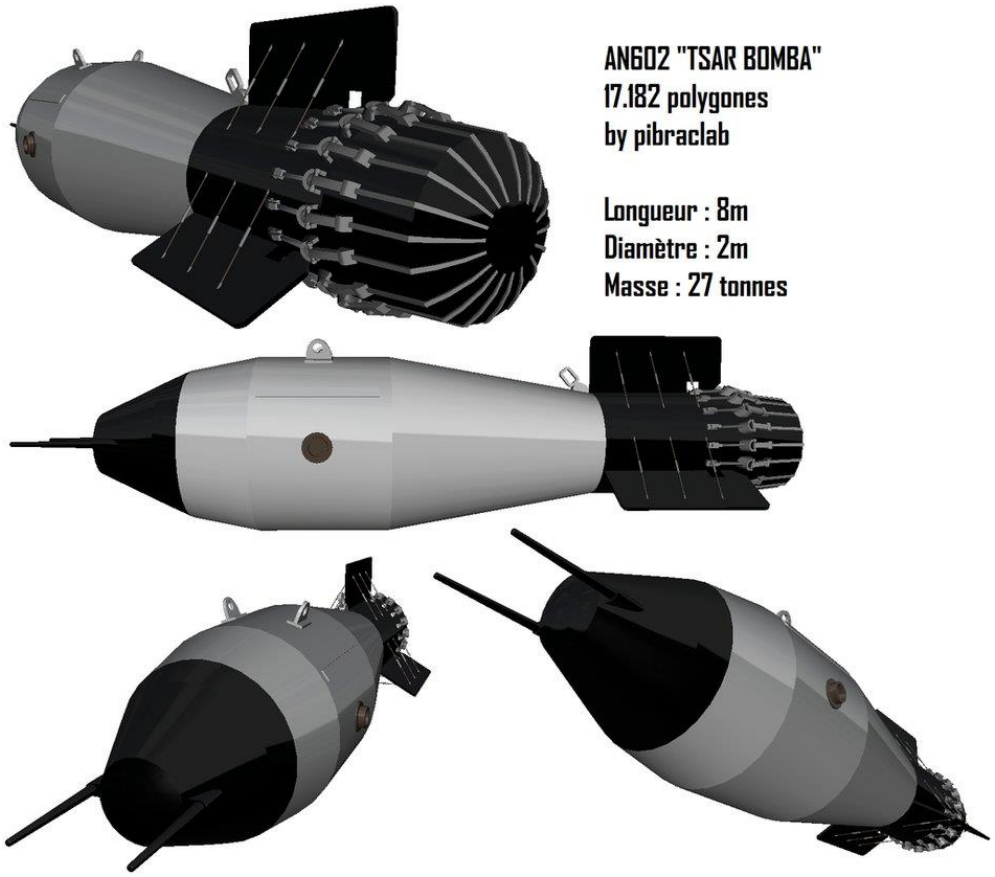
Little boy bomb: Hiroshima was destroyed by a nuclear bomb called (little boy) on August 6, 1945 with a yield of 15 KT.

Fat man bomb: Nagasaki was destroyed three days later by a nuclear bomb called (fat man) with a yield of 20 KT.

Together the two explosions killed a total of about 250,000 people, and left radiation for a long period.

Until now we see genetic problems in Japan, some people are born retarded, because their parents were exposed to radiation long time ago, and you can find some areas there that are not available for human use until now.

2. TSAR Bomb: the biggest nuclear bomb ever activated.



30 / 10 / 1961 the Soviet (TU95 bomber) Flies over the island (Novaya Samba), located in the arctic sea, reaching the high of 35 thousand feet, the pilot drops the TSAR bomb, the most powerful nuclear bomb ever, and the world witnessed the biggest explosion on Earth since the existence of mankind, It was visible form 600 miles away.

Although the huge high that it was dropped from, it was attached to a small parachute to give the pilot time to escape the area, even though, the pilot were nearly killed by the radiation, but he was well protected.

This bomb has an enormous effect on area around it, at the begging it was made to be a 100 megaton nuclear bomb, but the detonation was only 50 megatons.

Effects:

- Total destruction – 15 miles radius.
- 3rd degree burns – 64 miles radius.

It was and still the biggest nuclear detonation ever happened.

Video: 02 TSAR BOMBA explosion I

v. Conclusion:

As we have seen in the research, the usage of weapons of mass destruction, must be stopped, and be considered forbidden on every one , because of their effects on humans and the environment.

And their development must be restricted on risky areas, to prevent horrible accidents cause a lot of deaths.

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