

**Weapons of Mass Destruction (WMD) Class Outline
for the Special Operations Combating Terrorism (SOCbT) Course
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The Special Operations Combating Terrorism (SOCbT) Course will be taught at the Joint Special Operations University (JSOU), Hurlburt Field, Florida, 29 January 2007 through 9 February 2007, to a class of primarily foreign counterterrorism operators and officials. The SOCbT Course is part of the United States Department of Defense (DoD) Defense Regional Counterterrorism Fellowship Program.

The Weapons of Mass Destruction (WMD) class will be taught by Robert Spulak on 8 February 2007. It will be entirely unclassified using only open source materials.

Students will read beforehand about the spectrum of weapons of mass destruction (WMD), consequences for terrorist use of WMD, indications and warnings, and possible countermeasures. The instructor will provide a brief recap of the readings followed by an interactive seminar to discuss the political considerations and implications of WMD, deterrence, and the role individual countries play in the international community in dealing with the counterproliferation of WMD.

Following is the outline to be used in teaching the class:

I. What are Weapons of Mass Destruction?

- A. Nuclear explosives (weapons)
- B. Biological pathogens (diseases)
- C. Chemicals
- D. Radiological (dirty bombs)
- E. "Enhanced" high explosives??X
- F. Mass effects (airliners into buildings)?X

II. Why do we collect these weapons into a single category (WMD)?

- A. Different from historical terrorist weapons
 - 1. Hostage-taking
 - 2. Airplane hijacking
 - 3. Killing of innocents by
 - a. Gunfire (Athens airport)
 - b. Suicide bombs
 - c. Other bombing
- B. Terrorists have generally not used these weapons, so they represent an escalation. Although there have been four (4) known cases:

1984: Oregon: a religious cult contaminated restaurant salad with salmonella, sickening at least 751 people.

1990: The Liberation Tigers of Tamil Edam (LTTE) attacked a Sri Lankan Armed Forces base with chlorine gas from a nearby paper mill.

1995: Aum Shinrikyu attacked the Tokyo subway with Sarin (liquid) causing 12 deaths. They failed in 10 attempts to use biological agents (anthrax).

2001: Anthrax attacks in the United States killed several people.

C. *Potential* for greater consequences, large number of casualties, since military applications of these technologies are horrific.

D. Greater psychological effect if these weapons are used.

E. Fear of the unknown?

III. In reality, nuclear, chemical, biological, and radiological weapons are all very different in the capability needed to use them and the effects of an attack.

We should discuss them separately.

A. Boaz Ganor categorized Chemical and Radiological weapons as “limited” in time and location and Biological and Nuclear weapons as potentially unlimited.

B. It is generally agreed that the greatest potential consequences are from (in order):

1. Nuclear
2. Biological
3. Chemical
4. Radiological

C. Of particular importance here, a WMD threat almost always would justify the use of the military.

1. WMD would exceed the capability of law enforcement to deal with the threat
2. Unlike other terrorist attacks, WMD could represent a threat to the sovereignty of the State
3. Large numbers of casualties could be interpreted as war on civilians

C. In general, the more dangerous the weapon, the more difficult it is for terrorist groups to obtain the capability.

IV. Capability and Characteristics of WMD

A. How could terrorists get WMD?

1. Make it.
2. Steal it (US anthrax attacks appeared to be from US military research).
3. Buy it.
4. Receive it from a state sponsor.

B. WMD have historically taken the resources of a state to make into a reliable weapon. But terrorists may not need reliability or other military characteristics.

C. All WMDs require some kind of special materials; so in general:

1. We can try to prevent terrorists from being able to acquire these materials.
2. It takes a more bureaucratic terrorist organization to make their own. This would probably result in more of a “signature” that could be identified through intelligence.
3. It would require specialized military capabilities to handle dangerous materials in an intervention against the terrorists.
4. It would require specialized capabilities to manage the consequences of a WMD terrorist attack. These (3. and 4.) may be beyond the capabilities of many governments.

D. Nuclear Explosives

1. A nuclear attack would be catastrophic. Nuclear weapons are in a class by themselves.
2. The key to nuclear weapons is *fissile* material, either highly enriched uranium (HEU: U235) or Plutonium (Pu249).
3. The International Atomic Energy Agency (IAEA) reports that there have been 18 cases of seizures of stolen HEU or Pu.
4. There are 130 civilian research reactors in 40 countries that use HEU, including Ukraine and Ghana. Program underway to secure this HEU back to Russia.
5. So there is the potential for terrorists to steal fissile materials.
6. Terrorists could also steal a nuclear warhead. After the fall of the Soviet Union, there was a lot of concern about the security of FSU nuclear weapons. Nunn-Lugar (US) funded security upgrades, former Soviet States Ukraine, Belarus, etc., gave up warheads on their territories, CTR program.
7. Security of weapons in some other nuclear states (e.g., Pakistan) is unknown.
8. Graham Allison's (one of the readings) prescription to prevent nuclear terrorism: 3 *No's*
 - a. *No Loose nukes*: improve security for nuclear weapons in states that have them.

- b. *No nascent nukes*: Prohibit the production of fissile materials (HEU and Pu). Allison wants enforcement from sanctions and the use of military force if necessary. Iran is the test case.
- c. *No new nuclear states*: Eight current nuclear powers, US, Russia, China, France, UK, India, Pakistan, and Israel. North Korea is the test case.

9. Ukraine, Belarus, Kazakhstan, South Africa were all nuclear states that gave up their weapons. Libya, Brazil, and Argentina are among the countries that had NW programs and gave them up.

E. Biological Weapons

1. Especially a problem because there is a lack of geographical boundaries to their effects; it would be difficult to identify the perpetrators or whether an attack had actually occurred.
2. A biological attack might be mistaken for a natural outbreak of disease. The correct diagnosis might not be made for some time, especially if health workers were not familiar with the disease. The pattern of the outbreak would probably be recognized as deliberate, eventually.
3. A biological weapon would be totally out of control. There would be a large potential to affect the terrorists' constituent population.
4. Twenty to forty million people died in the great influenza epidemic of 1918-1919, including my grandfather.
5. Research for defense against biological weapons, to develop vaccines, etc., creates the capability for biological weapons themselves.
6. The Biological Weapons Convention tries to establish security for existing pathogens such as smallpox.
7. However, biotechnology is a new and important industry that can lead to the creation and genetic modification of biological weapons.
8. Finally, unlike other WMD attacks, health workers would be the first responders instead of the military or law enforcement.

F. Chemical Weapons

1. Most chemicals are dual-use. An agricultural chemical capability has the potential to create many of the chemicals of concern, some chemicals may be relatively easy to obtain. However, chemical attacks would be limited in scope.
2. Most chemicals have effects of limited duration; they are affected by weather conditions and terrain.
3. Even battlefield chemical weapons are not all that effective, even in the First World War, where they were extensively used.
4. CIA claims that several groups associated with al-Qaeda have attempted to carry out attacks in Europe and easily produced chemicals and toxins.
5. Potential for attacks on chemical plants: Bhopal

G. Radiological Weapons

1. Radiological Dispersal Device (RDD) uses conventional explosives to spread an amount of a highly radioactive substance. The most dangerous substances are Cesium-137, Strontium-90, Cobalt-60, Phosphorus-32, Americium-241 and Radium-226. None of these materials exist in nature; they are all artificially produced in reactors.
2. Radiological materials have many medical and industrial uses and can be found in hospitals, universities, factories and construction and mining companies. These materials are dangerous to handle and are usually under some kind of government control.
3. An RDD would have relatively small health effects from the radioactive materials themselves; there is probably more potential for casualties from the explosives themselves.
4. However, there might be a large impact from the cost of clean-up and decontamination of the affected area. There might also be a large psychological effect—people have become very afraid of radiation.
5. Another way to spread radioactive materials with potentially much greater consequences would be an attack on a nuclear power plant or other nuclear facility with large amounts of radioactive material.

V. Motivation

- A. There is a great debate about whether terrorists would actually use WMD. Of course there are already examples of limited use or attempts to use chemicals and some biological weapons.
- B. On the one hand, terrorists have specific political goals that they claim are in service to a constituency. Terrorists may use violence to coerce governments to meet their political goals and also for their own organizational needs. Terrorist organizations may have to perform violent acts to provide meaning and motivation for their members and to demonstrate their usefulness to the constituency. This may lead them to escalate the level of violence until they exceed the level of tolerance of either their constituency, who will then abandon their support for the terrorists, or they may exceed the level of tolerance of their target who may be motivated to take effective action against them.
 1. This may actually have been the case with al-Qaeda, who escalated their attacks from the African embassy bombings, to the USS Cole, to the Pentagon and the World Trade Center. It wasn't until September 11 that al-Qaeda exceeded the level of tolerance of the US who then overthrew the Taliban in Afghanistan and decimated al-Qaeda.
 2. September 11 was seen by many jihadists as a mistake until the US invaded Iraq.

3. So from a strategic point of view, terrorist use of WMD may be seen by the terrorists themselves as counterproductive to their political goals. Even al-Qaeda has political goals, including the withdrawal of US support for Israel, removal of US forces and influence from Arab lands, and remaking the political landscape of the Middle East. Osama bin Laden offered a truce to the US if his political demands were met.

C. On the other hand, Osama bin Laden has described the conflict as a clash of civilizations, the Jews and Crusades against Islam.

1. The scope of US aggression has been so great in this view that the use of all means to inflict the greatest possible damage is justified. A fatwa has been issued justifying the use of WMD.
2. Osama bin Laden has stated that the goal is to destroy the government of the United States by causing the greatest possible economic damage. Al-Qaeda believes that they caused the collapse of the Soviet Union by defeating them in Afghanistan and draining them economically.

VI. Policy

- A. In addition to a concerted effort to prevent terrorists from acquiring the capability to use WMD through security for needed materials and intelligence and action against terrorists who develop organizations to acquire WMD, one means to limit the possibility of terrorist WMD is to limit the freedom of action of terrorists in general.
- B. That is, we can try to limit the scope and scale of terrorist organizations by limiting the physical sanctuary they may have in failed or weak states.

VII. Other Discussion