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Homeland Security & Cybersecurity


Weapons of Mass Destruction

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Lesson 10
WMD

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Weapons of Mass Destruction

“Any weapon that is designed or intended to cause the death or serious bodily injury through the release, dissemination, or impact of toxic or poisonous chemicals, or their precursors; any weapon involving a biological agent, toxin, or vector; or any weapon that is designed to release radiation or radioactivity at a level dangerous to human life.”

Title 18 Section 2332a
United States Code



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- This definition recognizes chemical, biological, radiological, and nuclear agents, or “CBRN”, as general classes of WMD.
- Under this same law **it is illegal to employ WMD against US citizens, anywhere in the world.**

Chemical
Biological
Radiological
Nuclear

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- **Chemical agents** are generally classified by their effects.
- Nerve agents, such as Sarin, attack the body’s nervous system.
- Blood agents block oxygen transfer to the blood.
- Blister agents cause blisters, and choking agents attack the respiratory system.



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- Under Title 18 Section 229f United States Code, it is illegal to develop, produce, acquire, or transfer chemical weapons.
- However, experts recognize that a wide range of industrial chemicals and common household products may be also be employed as chemical weapons, **making this class of WMD readily accessible to those who mean to do harm.**



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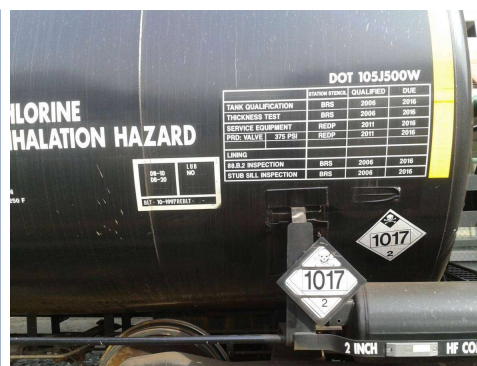
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- In 2005 the National Planning Scenarios were released detailing probable catastrophic scenarios and their consequences.
 - Of the 15 listed scenarios, four were related to chemical attacks.
 - Two pertained to the release of chemical agents.
 - The other two involved the release of toxic industrial chemicals.
- **According to the 2005 Planning Scenarios, the deliberate destruction of a chlorine tanker could result in 17,500 casualties.**



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- Biological agents include pathogens, toxins, and bio-regulators.
- Pathogens are micro-organisms, cellular or viral.
- Toxins are biologically produced poisons.
- Bioregulators are chemicals that facilitate metabolic processes.



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Under Title 18 Section 178 United States Code, it is illegal to develop, produce, stockpile, transfer, acquire, retain, or possess a biological agent or delivery system for use as a weapon.



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- It is estimated that a carefully executed anthrax attack could kill as many as **13,000 people**.
- Alternatively, the deliberate introduction of foot and mouth disease could crash livestock herds.



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- Radiological devices, as defined under Title 18 Section 2332a, include “any weapon that is designed or intended to release radiation or radioactivity at a level dangerous to human life”.
- Such a device is called a **Radiological Dispersal Device, “RDD”, or more colloquially a “Dirty Bomb”**.



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- Section 2332h United States Code makes it illegal to produce, construct, acquire, transfer, receive, possess, import, export, or threaten to use an RDD.
- An RDD is not considered particularly destructive, but it is considered highly disruptive.**



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- The 2005 National Planning Scenarios contain only one RDD scenario.
- According to this scenario, an RDD released in a major urban area could contaminate up to 36 city blocks.**
- Essentially, the area would have to be evacuated until such time as it could be decontaminated.
- Decontamination could take years and cost billions of dollars.



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- Unfortunately, radiological sources, like their chemical counterparts, are readily available through common sources.
- Radiological agents are used in many medical applications and may be found in most large hospitals.
- Likewise, Americium is a radiological agent commonly found in smoke detectors.
- Fortunately, most of these agents are kept in such small quantities or have such short half-lives that they are impractical to make into weapons.



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- Nuclear devices are also comprised of radiological materials, either Plutonium or Highly Enriched Uranium, but they are **designed to create a large explosion by inducing an instantaneous and uncontrolled fission reaction.**
- Under Title 18 Section 2332a it is illegal for agents not authorized by the Federal government to produce, acquire, or possess a nuclear device.



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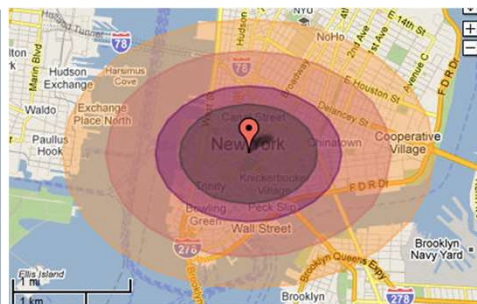
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- The 2005 National Planning Scenarios consider the detonation of an Improvised Nuclear Device in a major urban area.
- The estimated 10-kiloton blast would incinerate most everything within a half mile of detonation.
- Blast damage would gradually taper out to for miles from the epicenter.



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- Electromagnetic pulse would render surviving electronics inoperative within three miles of the detonation.
- Anybody within 12 miles of the blast could be exposed to excessive radiation, and winds could carry radioactive fallout as far as 150 miles.



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- While the 2005 National Planning Scenarios do not provide an estimate of casualties, **a similar device dropped on Hiroshima killed more than 100,000 people.**
- Of course, recovery would take decades and cost hundreds of billions of dollars.



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- It should be noted that the employment of WMD within the United States by non-state actors, while certainly catastrophic, **would not threaten the survival of the nation.**
- Indeed, following the 1995 Tokyo subway attacks, the Japanese government did not fall, widespread disorder did not ensue, nor did society collapse.
- There is no reason to assume that the outcome would be any different in the United States.



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However, because of the extreme consequences that could result from a successful CBRN attack, even the remotest likelihood of one cannot be dismissed as insignificant.



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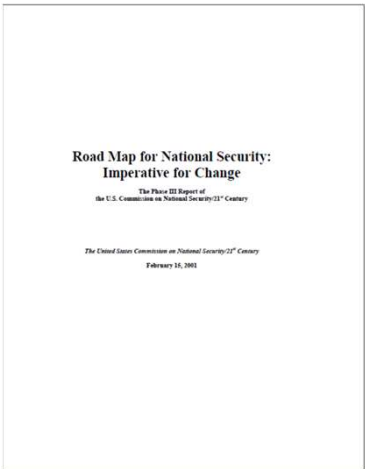


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- Ominously, the third report of the Hart-Rudman Commission in February 2001 predicted “A direct attack against American citizens on American Soil is likely over the next quarter century.”
- **While an attack occurred as predicted, it happened as nobody could have predicted.**



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Conclusion

Questions?



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