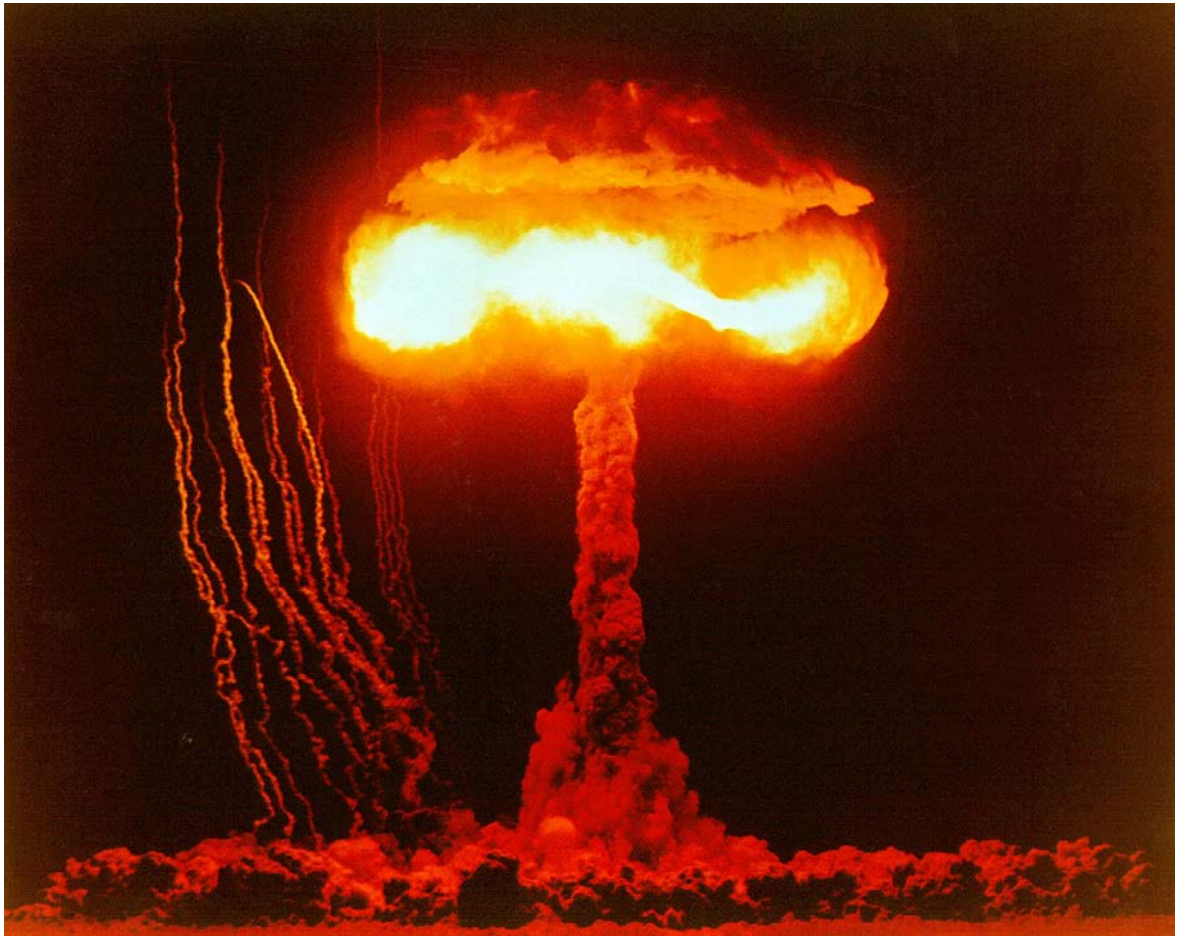
WMD



The First Use of the Term WM

- **The first use of the term “Weapons of Mass Destruction" on record is from *The Times* (London) in 1937 in reference to the aerial bombardment of Guernica, Spain with this new incenderary bomb.**

WMD Th

CBRNE

- Chemical agents
- Biological agents
- Radiological materials
- Nuclear

Chemical Agents

Newport Chemical Depot
Newport, Indiana

- Categories
  - Blister agents
  - Choking agents
  - Blood agents
  - Nerve agents
  - Toxic Industrial Chemicals
- Characteristics
  - Incapacitating versus lethal agents
  - Persistent versus non-persistent

Blist

- Recognition
  - Symptoms for some are not right away. Red Skin.
  - Common names – Sulfur Mustard, Lewisite, HD.
  - Vesicants mix with our DNA and cause cellular change.
  - They are liquid, so you can disperse them several ways.

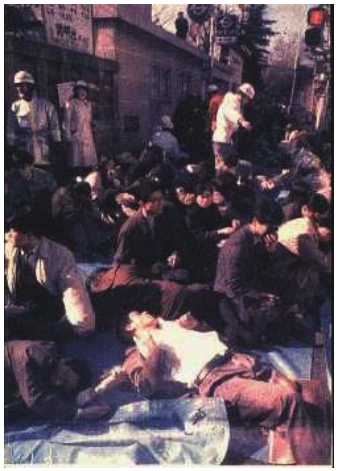
Choking Age

- Recognition
  - They are Dispersed by air.
  - Common names
    - Chlorine
    - Phosgene
    - Tear gas

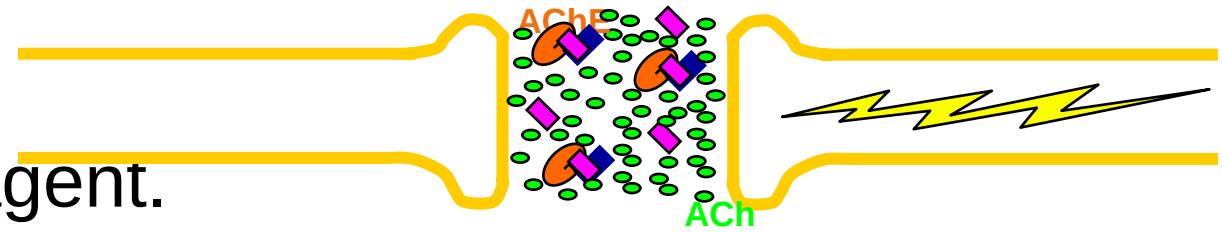
Blood A

- Recognition
  - Characteristics – Smells like burnt almonds. Red, Blue skin from low O2. Rapid breathing.
  - Common names - Hydrogen Cyanide and Carbon Monoxide, CK (for cyanogen chloride).
  - Dispersal – The most

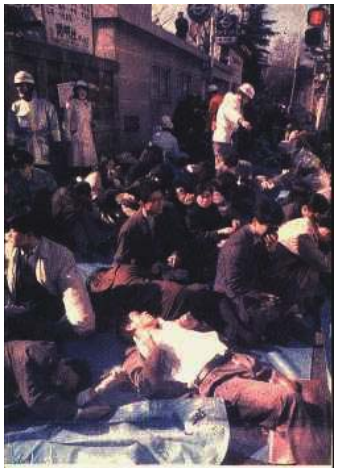
Nerve Agents



- Recognition
  - SLUDGEM
  - Common names
- Sarin, Soman, Tabun, VX
- Dispersal is done in liquid form,
- like with blister agent.



Nerve Agents



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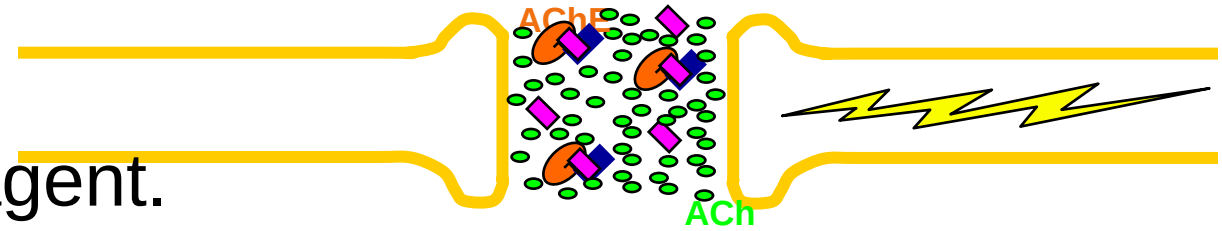
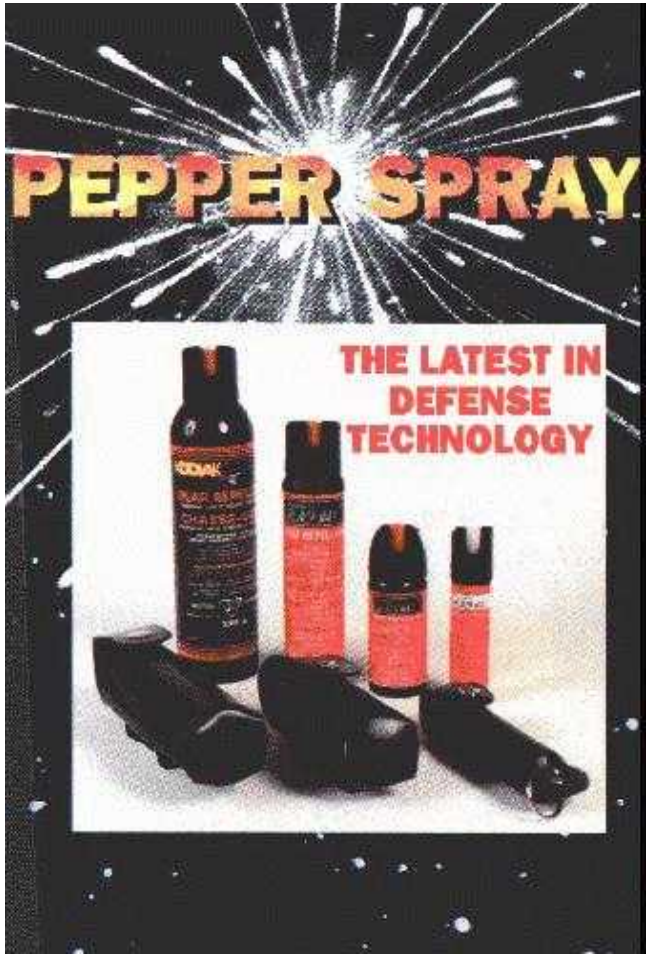


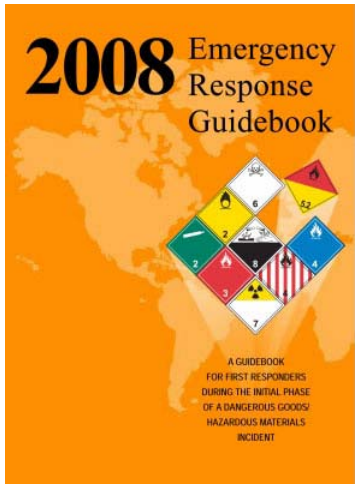
Incapacitating Versus Lethal Agents

- Recognition
  - Less than lethal – police use of force.
  - Common names – Mace

    pepper spray, OC



Toxic Industrial Chemicals (TIC)



- Recognition
  - Many kinds
  - Easy to obtain. What is in your jurisdiction?
- ERG – Protection, Decontamination
  First aid

Chemical Agents

- Advantages
  - Uniqueness
  - Hard to detect
  - Response cost and technical difficulty
  - Psychological aspects
  - Casualties
- Disadvantages
  - Swift and forceful retaliation
  - Damage to the terrorists' public image

Persistent Versus Non-persistent

- Recognition
  - Oil vs. Gasoline
  - VX vs. Sarin
  - Lewisite vs. Mustard
  - Pepper vs. tear gas

Deacon: Chemical specific (soap & water).

Biological Agents

- Recognition
  - Categories
    - Bacteria
    - Rickettsia
    - Viruses
    - Toxins
  - Routes of entry
    - Enter body through respiration, ingestion, dermal penetration, absorption (rare)

Biological Agents

- Detection
  - Incubation period **Note the blood auger**
  - On-site detection currently not reliable
    - Victims likely asymptomatic initially
    - First real indicators come later, which may include 9-11 calls and the influx of patients with similar symptoms into medical care facilities

Biological Agents

- Additional characteristics
  - Deadly
  - Obtained from nature
  - Relatively easy to produce
  - Invisible to the senses
  - Delayed effects

Biological Agents

Georgi Markov

- Anthrax
- Plague
- Smallpox
- Venezuelan Equine Encephalomyelitis (VEE)

BACTERIA:ANTHRAX

Among the most likely Bio Warfare agents

- Cheap and Easy
- Aerosolized
- Odorless, colorless, tasteless
- Inhalational anthrax is highly lethal
- Delayed onset

Normal Brain

Brain of a person who died from inhalational anthrax

Smallpox

- Synchronous Pustules all over body
- Develop on hands and feet
- Highly contagious
    - Quarantine for 17 days
    - Infectious before skin lesions appear & until scabs heal
    - Scab material remains infectious

Biological Agents

- Advantages
  - Far-reaching effects
  - Difficult to detect
  - Long incubation
  - Naturally-occurring
  - Easily transported
  - Diverse delivery means

- Disadvantages
  - Temperature
  - Precipitation
  - Wind speed
  - Urban areas and

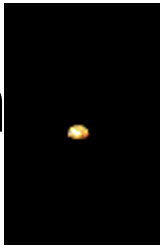
- Larry Wayne Harris

Yersinia Pestis

Deacon: Bleach & Water – up to 30 min kill time.

Radiological Materials

- Radiological exposure symptoms an medical aspe



- Nuclear weapons

Alpha Beta Gamma Neutron

le

t–

Radioactive Dispersal Device (RDD)

Radiological Materials

- Advantages
  - Easily weaponized
  - Deprives others of using property
  - Safely handled
  - Significant impact
- Disadvantages
  - Potency
  - More explosive charges
  - Inadvertent contamination

Dirty Bomb

Nuclear W

- Expensive & Difficult to M
- Components Are Difficult
- Many Key Components Ar
- Programs Not Easily Hidden
- Low Yield Can Be Achieved With a "Portable" Nuclear Device (40-120 lbs)
- Larger Yield Requires Large (I.e. heavy) Bomb
- Can Achieve Large Area Coverage
- High Casualties
- Triggers an Immediate Response

Suitcase Nuke

Radiation can be used as a poison.

Polonium 210
Alexander Litvinenko

RDD's can spread radioactive dust, causing a inhalation hazard.

Acute Radiation Syndrome (ARS)

- Must Have:
- High Dose
- Penetrating
- Entire Body
- Short Time

From exposure not necessarily inhalation or injection
Duration – Wash it off!

With all WMD's HARM is the same

- **TRACEM**
  - Thermal
  - Radiation
  - Asphyxiation
  - Chemical
  - Etiological
  - Mechanical

Reducing Harm

- **R A I N**
  - Recognize
  - Avoid
  - Isolate
  - Notify

CBRNE

- **We Have Covered**
- 1. The basic categories of WMD’s
- 2. Signs and Symptoms
- 3. Dispersal
- 4. Deacon for WMD’s

Swinging Meters