

BIOTERRORISM

BY

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**POTENTIAL THREAT RELATED
TO
SHIPPING IN THE MALACCA STRAIT**

HISTORICAL PERSPECTIVES

- NATURAL DISASTERS
- PREMEDIATED USE OF DISEASE
- BIOTERRORISM
 - In the US
 - In Japan

NATURAL DISASTERS

- BLACK DEATH-----1348
- SMALLPOX-----1517
- CHOLERA-----1816
- MEASELS-----1875
- FLU PANDEMIC-----1918
- IRISH POTATO FAMINE-----1840
- FOOT AND MOUTH DISEASE-----1902
- INDIAN RICE CROP-----1943

PRMEDIATED USE OF DISEASE

- TARTARS IN THE CRUSADES----- 1120 BC
- JEFFREY AMHERST----- 1763 AD
- WORLD WAR I-----1916 AD
- KOREAN WAR-----1950 AD
- AFGANISTAN-----1975 AD

EXAMPLES OF BIOTERRORISM IN THE US

- 1984 IN OREGON
- RELIGIOUS CULT INFECTED FOOD ITEMS
IN A SALAD BAR
- *Salmonella Typhimaruim*
- 751 PEOPLE MADE ILL

EXAMPLES OF BIOTERRORISM IN JAPAN

- 1950'S
- SARIN IN SUBWAY
- PREVIOUSLY HAD TRIED TO DISPERSE ANTHRAX AND BOTULINUM TOXIN IN TOKYO

POTENTIAL SOURCES OF BIOTERRORISM AGENT

- AL-QUIDA
 - Evidence found that they are trying to develop biological and chemical agents
- RUSSIAN SCIENTIST
- IRAQ
- IRAN, NORTH KOREA, SYRIA BELIEVED TO BE DEVELOPING CAPABILITIES

RATIO OF COST TO EFFECT A ONE SQUARE KILOMETER AREA

- BIOLOGICAL-----1
- CHEMICAL----- 600
- NUCLEAR WEAPONS-----800
- CONVENTIONAL WARFARE----- 2000

POTENTIAL DISEASES

ANTHARX

- NOT A CONTAGIOUS DISEASE
- INCUBATION PERIOD 5 DAYS
- CAN BE SPREAD BY INHALATION
- THERE IS AN ANTITOXIN

POTENTIAL DISEASES

PLAGUE

- HIGHLY CONTAGIOUS
- INCUBATION PERIOD 2-4 DAYS
- CAN BE SPREAD BY INHALATION
- ANTIBIOTICS EFFECTIVE IF GIVEN IN 24HRS

POTENTIAL DISEASES

CHOLERA

- HIGHLY CONTAGIOUS
- INCUBATION PERIOD 1-5 DAYS
- CONTAMINATION THROUGH THE MOUTH
- ANTIBIOTICS EFFECTIVE IF GIVEN EARLY

POTENTIAL DISEASES

FOOD BORNE DISEASES

- CAUSES 5,000 DEATHS PER YEAR
- CAUSES 325,000 HOSPITALIZATIONS PER YEAR
- CAUSES 76,000,000 ILLNESSES PER YEAR
- INCUBATION PERIOD VARIES FROM HRS TO DAYS
- MANY DIFFERENT ORGANISMS CAUSE IT
 - Salmonella
 - Shigella
 - Vibrio
 - Campyloacter

POTENTIAL DISEASES

BOTULISM

- MOST TOXIC SUBSTANCE KNOWN
- SYMPTOMS APPEAR IN 6-36 HRS
- 1/100 OF AN ASPRIN TABLET COULD KILL 50,000 PEOPLE
- STABLE IN UNCOOKED FOOD

AMOUNT NEEDED

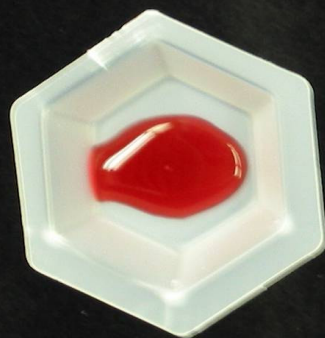
POTENTIAL HUMAN AGENTS

- ANTHRAX-----10,000
- PLAGUE-----3,000
- CHOLERA-----100
- EBOLA-----A FEW
- FOOD BORNE DISEASES-----VARIES
- BOTULINUM TOXIN-----< 11 μ g

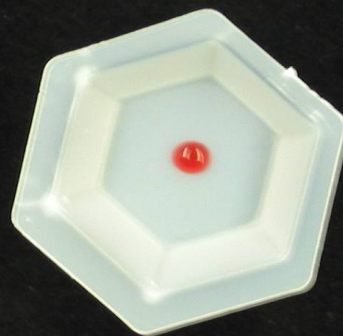
BIOTERRORISM ABOARD SHIPS OR IN PORTS

- AMOUNT REQUIRED IS MINUTE
 - 1 ml of cholera cells could infect 10,000,000 people
 - 1 gram botulinum toxin could kill 8,000,000 people
- COULD BE AN INFECTED INDIVIDUAL
 - No visible signs of disease

AMOUNT NEEDED

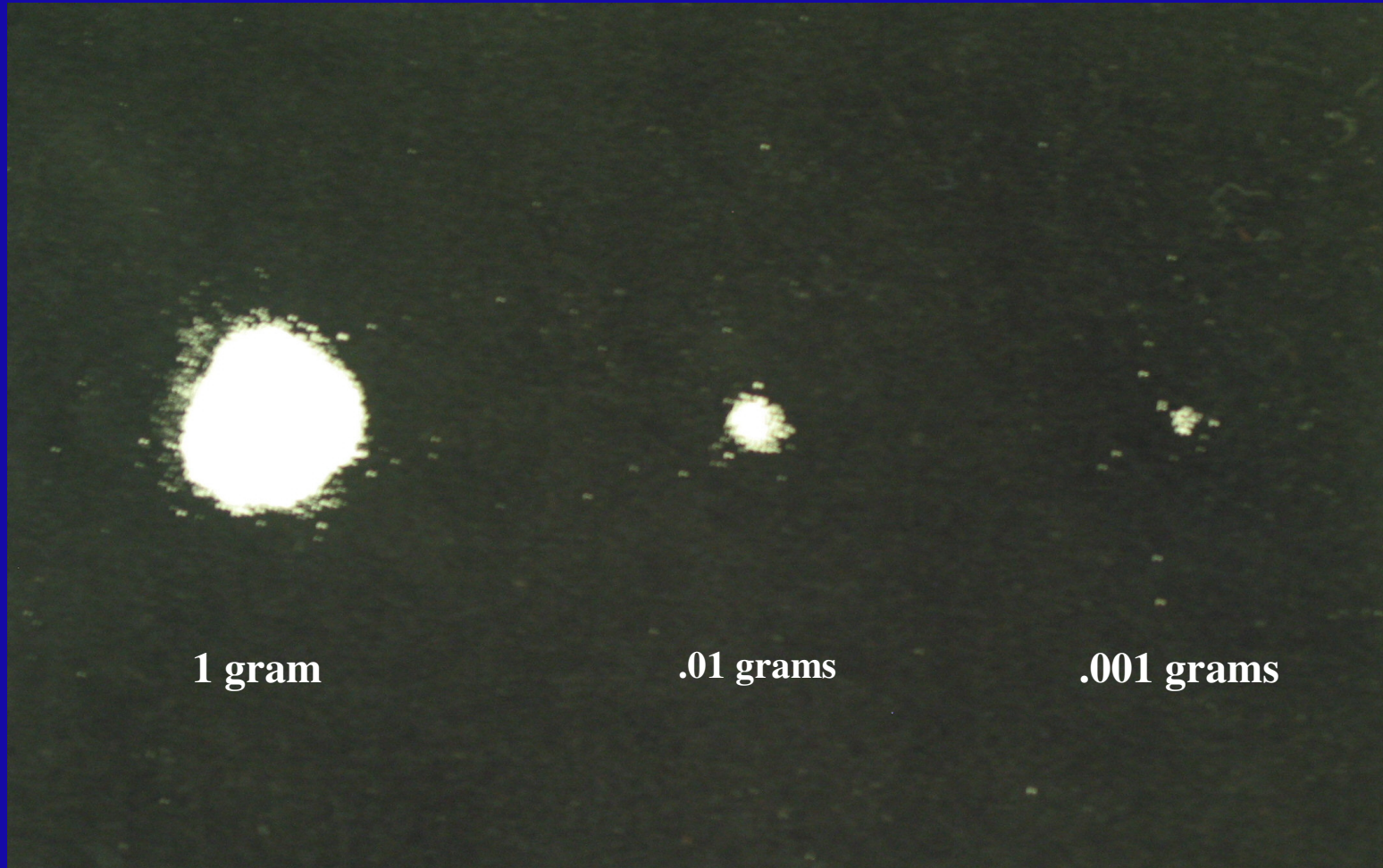


1 ml



.05 ml

AMOUNT NEEDED



1 gram

.01 grams

.001 grams

MITIGATION OF EFFECTS OF BIOTERRORISM COMMUNICATION

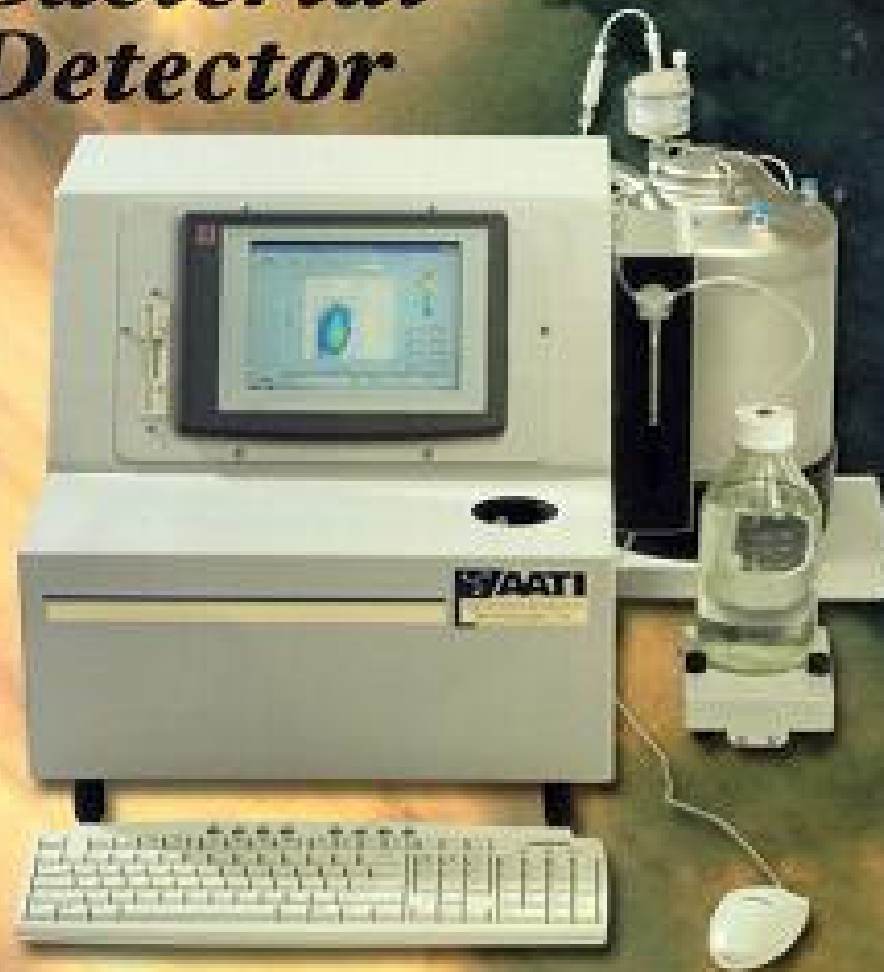
- BETWEEN PORTS AND SHIPS
- WITH TRAINED MEDICAL
PERSONNEL

MITIGATION OF EFFECTS OF BIOTERRORISM AVAILABILITY

- RAPID TEST TO IDENTIFY DISEASE
- TREATMENTS-ANTIBIOTICS AND ANTITOXINS
 - Some can be prevented within 24 hrs.
 - CDC can ship antitoxin anywhere (botulinum within 24hrs)

RBD2100

***Rapid
Bacterial
Detector***



MITIGATION OF EFFECTS OF BIOTERRORISM REPLACING CREW

- **SAFETY OF NEW CREW**

MITIGATION OF EFFECTS OF BIOTERRORISM DECONTAMINATION

- SOME ON SHIPS
- SOME FOR DELIVERY TO SHIPS AND PORTS

AP Photo/Gino Domenico



at West Coast, November 9, 1997. Emergency

OUTLOOK FOR THE FUTURE

- **C**OMMUNICATION (Rapid)
- **A**VAILABILITY (Identifying techniques and treatments)
- **R**EPLACEMENT (Crews)
- **D**ECONTAMINATION (Ships)