

MANAGING MATERIAL SUSPECTED OF CONTAINING BIOLOGICAL / CHEMICAL THREAT AGENTS

(Information for Operational Forces Personnel)

This notice has been prepared to assist operational commands when dealing with suspicious substances received in the mail. Simultaneously, the effect of any hoax in disrupting operations can be minimized by having adequate procedures in place, and exercising those procedures so damage control, medical, Master at Arms and administrative watchstanders can respond appropriately. While basic information is provided in this document, additional information is contained in references and appendices.

The following information has been based on the NSTM Chapter 470, *Shipboard BW/CW Defense and Countermeasures*, and Centers for Disease Control and Prevention guidelines.

Background:

- Anthrax-containing powders have been mailed from within the United States to several high-profile figures and commercial activities in the United States.
- To date, while there have been a number of samples evaluated aboard military properties, not a single one has been found which actually contained anthrax or any other biologic threat agent.
- There have been no instances to date in which anthrax was mailed to any operational command, but we realize that this could change at any time.
- Procedures for the handling of hazardous materials (HAZMAT) can be adapted to avoid contamination of personnel by a suspicious substance received in the mail.
- Chain of custody procedures established by Masters at Arms / law enforcement authorities, conducted in concert with HAZMAT handling personnel, increase the likelihood of successful prosecution of those who sent, or claimed to have sent, suspicious substances through the mail.

Recommended Procedures:

1. Recognizing and Handling of suspicious unopened containers or mail: What should make me suspect a piece of mail? (REF: OPNAV webpage:

[HTTP://164.224.120.32/N09B/WEBDOC01.NSF/ALL/21AE11F44875253385256ADA005DBC92](http://164.224.120.32/N09B/WEBDOC01.NSF/ALL/21AE11F44875253385256ADA005DBC92))

- Excessive postage
- Handwritten or poorly typed addresses
- Incorrect titles
- Title, but no name
- Misspellings of common words
- Oily stains, discolorations or odor
- No return address
- Excessive weight
- Lopsided or uneven envelope
- Protruding wires or aluminum foil
- Excessive security material such as masking tape, string, etc.
- Visual distractions
- Ticking sound
- Marked with restrictive endorsements, such as “? Personal”? or “?Confidential”
- Shows a city or state in the postmark that does not match the return address

What should I do with a suspicious piece of mail?

- Don't handle a letter or package you suspect is contaminated
- Don't shake it, bump it, sniff it, or open it.
- Put the mail piece in a [clear] plastic bag, then triple bag. (See Paragraph 6 below for directions)
- Wash your hands thoroughly with soap and water
- Notify the chain of command who should, in turn notify NIS, postal authorities, and other law enforcement authorities as directed

IF A SUSPICIOUS SUBSTANCE SPILLS OUT (Per REF: OPNAV website, [HTTP://164.224.120.32/N09B/WEBDOC01.NSF/ALL/21AE11F44875253385256ADA005DBC92](http://164.224.120.32/N09B/WEBDOC01.NSF/ALL/21AE11F44875253385256ADA005DBC92))

1. Do not try to clean up the powder. Cover the spill to minimize its spread.
2. Warn people in the vicinity, notify a local supervisor, and notify Damage Control (DC) Central and the MAA force.
3. Control access to the area until relieved by emergency personnel. Minimize exposure to personnel while also controlling the spread of contamination.
4. If possible, secure local ventilation (ie. Close blast gates immediately until ventilation is properly secured by engineering). (See Paragraph 2 below for directions.)
5. . If contaminated clothing is removed, do so carefully to avoid creating an airborne hazard. Place any removed clothing in a plastic bag. (See Paragraph 3 below for directions.)

2. Threat Agent Appearances and Initial Procedures if confronting material suspicious of being a potential threat agent:

Appearances: Threat agents in powder form may appear slightly gray, off white, or light beige. If the threat material is crystalline (like sugar, Epsom salt or table salt), it is unlikely that a biological threat exists – but the material may be a chemical threat (e.g., pepper spray). Plain letters without any powder or other materials rarely pose an immediate threat.

Secure the Area and Ventilation to a Space: Securing the area, in addition to securing ventilation to a space will minimize both the risk of spreading any suspect material and the chance of exposing more personnel. Ventilation to compartments where mail is routinely handled should be identified in advance so that ventilation can be rapidly secured if an agent or contamination is suspected.

Notification and Isolation: Immediately seal off the immediate area and notify the chain of command. Include notification of the Command Duty Officer, Damage Control and/or Chemical Officer, Master At Arms/Provost/ Security/Law Enforcement, and Medical departments. Shore establishments should notify the appropriate base commander. (Recommend ships conduct drills to increase knowledge and skills prior to an incident.)

3. Handling Exposed Clothing, Post-Exposure Handwashing and Showering:

- Any personnel who may have been exposed in a space to the suspicious substance through handling should promptly and thoroughly wash their hands and any exposed areas using soap and water.
- They should remove any clothing that may have come in contact with the suspicious substance and triple bag it (preferably using clear plastic bags) and then decontaminate the outside bag using a 9% calcium hypochlorite solution (if available). Per para. 470-7.2.3.1 of reference (a), calcium hypochlorite is the standard shipboard oxidizer for chemical decontamination. If 9% calcium hypochlorite solution is not available, a 5% sodium hypochlorite solution may be used. Household bleach is a 5% sodium hypochlorite solution. If calcium hypochlorite supplies are limited, a 5% calcium hypochlorite solution may be used. Five or 9% calcium or sodium hypochlorite solutions should not be used on human skin. The precautions regarding the use of calcium hypochlorite contained in paragraph NSTM 470-7.2.3.1 of reference (a) should be followed. Contaminated clothing should be disposed of as per NSTM 470.
- They should then thoroughly shower using soap and warm water to remove any remaining potential contaminant.

4. Personal protection for those who will handle suspected threat materials is MOPP 4, per NSTM 470.5.1 (Those who will gather samples for later analysis, those who will gather material to forward as evidence, and who will decontaminate a space in which suspicious material is found):

- Prior to entering a space containing suspected material in order to collect a sample or decontaminate the space, secure the ventilation to the space and secure access to the area immediately around the entrance to the space.
- If MOPP gear is not available, don Tyvek^R –type coveralls (disposable protective clothing with integral hood and booties). Rubber boots (firefighting boots, NBC overboots, etc.) must be worn even if integral booties are part of the coveralls
- Check the coveralls, hood, and booties for integrity, any cover any break in the integrity thoroughly with duct tape
- Wear rubber gloves. Place the sleeves of the coveralls over the gloves to prevent water from running into the gloves during decontamination after the operation.
- Use duct tape to thoroughly cover the joints between the coverall sleeves and rubber gloves, and between the coverall trouser legs and boots.
- Wear one of the following types of respiratory protection:
 - A positive pressure self contained breathing apparatus (SCBA)
 - A properly-fitted Powered Air Purifying respirator with High Efficiency Particulate Air (HEPA) filters
 - A properly-fitted full or half facepiece respirator with HEPA filters (N95, N100 or P100)
 - An M40 or MCU-2P Mask with filters will also protect against biologic threat agents. However, before either mask is used in the setting of a potential biohazard they should be fit tested

5. Obtaining a Sample of Suspicious Material for Analysis and Maintaining Chain of Custody:

ALL suspicious materials should be examined for the presence of chemical and biological warfare agents.

- Chemical warfare agents should be tested as per NSTM 470.
 - Samples of suspicious materials should be collected for criminal evidence, as per NCIS guidance.

- ALL environmental and clinical samples from patients (e.g. nasal swabs, skin swabs) that need to be obtained should be coordinated and forwarded to the nearest NEPMU for laboratory testing. All clinical specimens should be handled as regular medical specimens.

- Environmental sampling equipment should be available to assure ready access in case material suspicious of being a threat agent is received. The samples of suspected materials should be collected using culturette tubes as listed in the Materials List, Table 470-4-2 of the NSTM 470. The environmental samples should be collected and packaged as per NSTM 470-4.6.1 and forwarded to the nearest NEPMU, with the remaining suspicious material forwarded to NCIS.
 - Culturette tubes and clear plastic bags should be available near postal facility spaces to assure ready access in case material suspicious of being a threat agent is received.
 - An individual, designated the “dirty” person, fully outfitted in protective gear, following guidance of medical personnel, should obtain two culturettes of any suspicious material to facilitate identification
 - Each culturette tube or other specimen must be clearly marked, either on the container or on a piece of masking tape attached to the container, with the location where the specimen was taken, the date, the time, and at least the initials of the individual taking the specimen. Alternatively, each specimen should be assigned a unique identification number, and a log maintained of the above information.
 - Gently roll culturette sterile cotton swabs in the suspect material to avoid stirring up the material. It is important to gather as much material as possible on the swab to provide adequate specimens for analysis by any receiving reference laboratory.
 - Slowly insert the exposed culturette swab tip into the culturette sampling tube so the swab tip portion of the culturette is in the culture media.
 - Place the culturette tubes in a clear plastic bag after being used to obtain any specimens. This may be more readily accomplished with a second, assisting “Clean” individual, also in protective gear, holding open the plastic bag while the first “Dirty” individual (who obtained the culturette swab specimens) places the culturette tubes into the bag, and the “Clean” individual should then seal the bag.
 - The assisting second “Clean” individual should then place the first clear plastic bag into a second plastic bag, seal that outermost bag, and then decontaminate the outside of that bag using a 9% or 5% calcium or sodium hypochlorite solution. This will make is safer for laboratory personnel who will be dealing with the material later.

- While awaiting transport to a reference laboratory, refrigerate the culturettes. **DO NOT FREEZE.** Freezing will decrease the possibility for thorough analysis.
- It is important to assure maintenance of a chain of custody to facilitate any legal action that may be taken against the sender(s) of any threat agent(s). Therefore, conduct the process in concert with guidance by law enforcement personnel to maintain proper chain of custody. Aboard ship the Master At Arms should provide guidance and participate in the process, as well as assuring chain of custody forms are properly completed.
- ***Due to the significant risk of aerosolization***, and the severe consequences of inhalation anthrax, ***personnel should not*** attempt to plate culture dishes to obtain a culture and subsequent evaluation

for antibiotic sensitivity from environmental samples. This should be left to reference laboratory personnel.

- The material gathered for culturing should be forwarded to the reference laboratory for testing following the “Packaging and Transportation Protocol” and the illustration “Packing and Labeling of Infectious Substances” contained in the CDC Guidelines for State Health Departments Revised October 14, 2001. This is to assure that any specimen leakage is absorbed by packing material and cannot escape through three leak proof containers. The containers will meet state and federal regulations governing transport of hazardous material and “Biohazard” labeling requirements.
- Operational commands should obtain “Biohazard” labels, for cassettes of suspect material, the envelopes / packages in which the suspicious substance was sent, and the remaining suspicious material gathered and forward for laboratory and possible legal use.

6. Packaging of Letters or Packages that contained Suspicious Material and Maintaining Chain of Custody:

- The same “Dirty” individual, wearing protective gear, who obtained the cassette swab samples, should handle any such letter or package.
- Clear plastic bags of sufficient size to place packages or letters received in the mail should be kept available to postal facility spaces to assure ready access in case material suspicious of being a threat agent is received is found in the same packages.
- The “Dirty” individual who obtained the cassette swab samples should place the package or envelope into a clear plastic bag held open by the assisting “Clean” individual, with the “Clean” individual then sealing the plastic bag.
- The assisting second “Clean” individual should then place the first clear plastic bag into a second plastic bag, and then seal that bag.
- He / she should then place the second bag into a third plastic bag and seal that outermost bag.
- The assisting “Clean” individual should then decontaminate the outside of the outermost bag using a 9% or 5% calcium or sodium hypochlorite solution. This will make it safer for both laboratory and law enforcement personnel (e.g., NIS, FBI, etc.) who will handle the package or letter later.
- It is important to assure maintenance of a chain of custody to facilitate any legal action that may be taken against the sender(s) of any threat agent(s). Therefore, conduct the process in concert with guidance by law enforcement personnel / the Master At Arms to maintain proper chain of custody.
- The letter or package should be forwarded to the reference laboratory for testing and other purposes following the “Packaging and Transportation Protocol” and the illustration “Packing and Labeling of Infectious Substances” contained in the CDC Guidelines for State Health Departments Revised October 14, 2001. This is to assure that any specimen leakage is absorbed by packing material and cannot escape through three leak proof containers. The containers will meet state and federal regulations governing transport of hazardous material and “Biohazard” labeling requirements.

7. Environmental Decontamination:

After completing steps required in (5) and (6) above:

- Personnel fully outfitted in protective gear, following guidance of medical personnel, should collect any remaining suspicious material in a manner to minimize any airborne dispersal.
- Using a 9% or 5% calcium or sodium hypochlorite solution commercial bleach in a sprayer, gently wet down all surfaces around the suspected threat agent, ensuring a contact time of at least 5

minutes. Saturate the suspected threat agent, and use clean towels to wipe down surfaces, which may be contaminated. Gather the suspected threat material; any potential biologic threat agent. Repeat this process to remove any remaining material.

- The “Dirty” individual who obtained the culturette swab specimens and placed the containing letter or package into the plastic bag held by the assisting “Clean” individual (also in protective gear) should gather the suspicious material using gentle motions and place it into a clear plastic bag, and he/she should then seal the plastic bag.
- The clear plastic bag should then be placed by the same “Dirty” individual into a second plastic bag held by the assisting second “Clean” individual, and the assisting second “Clean” individual will then seal that bag.
- The assisting “Clean” individual will then place the two previously sealed bags into a third plastic bag, and seal that outermost bag.
- The assisting “Clean” individual should then decontaminate the outside of the outermost bag using a 9% or 5% calcium or sodium hypochlorite solution. This will make it safer for laboratory personnel and any law enforcement personnel who will be dealing with the material later.
- Chain of custody must be maintained for the suspect material gathered for environmental decontamination material as above in (5) and (6) in accord with the direction of law enforcement / Master At Arms personnel.
 - Any potentially contaminated surfaces in the space should be cleaned with a 9% or 5% calcium or sodium hypochlorite solution to remove or kill any anthrax spores, starting with the highest surfaces in a space, and working down to the floor.
 - Any instruments / tools used to collect the suspect material should be either triple bagged as the package / envelopes containing suspicious materials are, or left overnight in a 9% or 5% calcium or sodium hypochlorite solution and then autoclaved.
 - Non-autoclavable equipment should be cleaned with a decontamination solution.
 - The clean and dirty persons should then exit the room and remain within the exclusion area while at least one person, suited identically to the clean and dirty persons, should be in the exclusion area to decontaminate those personnel.
 - The decon persons should spray each person (still in protective gear) with a 0.5% calcium or sodium hypochlorite solution. Per Table 470-7-2 of reference (a), a 0.5% calcium hypochlorite solution may be prepared by adding a 6 ounce bottle of calcium hypochlorite to 8 gallons of water. If calcium hypochlorite is not available, 1 part household bleach added to 9 parts water will result in a 0.5% sodium hypochlorite solution. Decon personnel should use one of these solutions to gently scrub both individuals with a brush, starting at the head and working down to the feet, and then decontaminate the undersides of their boots.
 - The sampling team should then be cleaned with soap and water. The team should remove any boots, if they wore them.
 - The sampling personnel should then remove their coveralls, rolling the coveralls over themselves as they are removed. They should have their gloves removed and then, finally, the respirator should be removed.
 - Decontaminated boots may be retained for future use. Respirator cartridges (if removable) should be disposed of. Respirators may be retained for future use. Coveralls should be triple bagged and disposed of ashore.
 - Both the “Dirty” and the “Clean” individuals should follow the guidance listed above in (3) regarding washing and showering.
 - Commands may find it useful to procure small wading pools to have personnel stand in while being decontaminated to catch runoff water and bleach solution. Small, commercially available garden sprayers work well for spraying bleach solution.

8. Testing Potential Threat Agents and Prophylactic Treatment:

- The suspicious material should be forwarded, after proper notification, to a reference microbiology laboratory for evaluation as soon as possible.
- NEPMUs can facilitate appropriate testing of properly collected and bagged samples. A listing is provided below:

	PHONE	FAX	E-MAIL
NEPMU-7 Sigonella, IT	001-39-095-56-4101	001-39-095-56-4100	nepmu7@nepmu7.sicily.navy.mil
NEPMU-6 Pearl Harbor, HI	(808) 473-0555	(808) 473-2754	postoffice@nepmu6.med.navy.mil
NEPMU-5 San Diego, CA	(619) 556-7070	(619) 556-7071	nepmu5@nepmu5.med.navy.mil
NEPMU-2 Norfolk, VA	(757)-444-7671	(757) 444-1191	nepmu2@nepmu2.med.navy.mil

- Wherever the analysis is conducted, opening of the specimen bags must be conducted using a negative pressure laboratory hood to assure the safety of laboratory personnel. Auxiliary breathing apparatus should be worn while working with specimens, as there may be aerosol dispersal of suspicious powders, including when specimens are being worked with under a laboratory hood.
- Whenever medical and/or HAZMAT personnel deem it likely that personnel have, in fact, had actual contact with the suspicious material, it may be necessary to start exposed personnel on antibiotics until reference laboratory testing determines that there is no threat agent present in the suspicious material forwarded for testing. The aforementioned CDC Guidelines provide advice on administration of antibiotics, including dosages for pediatric and adult populations.

9. Follow up Care, Antibiotic Prophylaxis, and Risk Evaluation:

- Because of the consequences of untreated anthrax infections, and the benefits of early treatment of anthrax with antibiotics, it is important to monitor any individuals who may have been exposed to a suspicious material.
- In the instance where a suspicious letter or package has been opened: Prophylactically treat anyone who was in the space where the suspicious letter / package was, anytime after it was opened, and prior to the space being decontaminated.
- In the instance where a suspicious substance was found in a space and the time when personnel may have first been exposed to it is unclear:
A rapid investigation should be conducted to determine when personnel could first have been exposed to any potential threat agent. As the incubation period for the development of anthrax typically ranges from one to seven days it may be necessary to start anyone who has been in the space anytime during the prior seven days, and discontinue antibiotics only after laboratory analysis has found the suspicious material to be negative for the presence of any threat agent.
- Personnel who may have been exposed should be evaluated in accordance with the CDC State Guidelines, including using a rayon swab (dipped in saline) to obtain a gram stain and culturing of the patient's nostrils.
- Personnel who were not likely to have been exposed do not need to be placed on antibiotics, but should be placed in a monitoring program for two full weeks and directed to report immediately to

their medical provider if they develop any fever, and / or flu-like symptoms, including muscle aches, malaise, fatigue, cough, and mild chest discomfort any time in the week following any potential exposure. They should be started immediately on antibiotics if they develop such signs / symptoms.

- Any medical provider evaluating such a patient during their monitoring period should contact the individual's command to advise them of any emergent symptoms, which could indicate anthrax disease, along with the local NEPMU.
- Medical personnel should maintain close communication with their cognizant NEPMU during and after any confirmed bioterrorist / criminal (or chem./rad) incident.

10. Antibiotic Regimens for Adults:

- Adults should start on *either* Doxycycline 100 mg po BID, or Ciprofloxacin 500 mg po BID. Both are effective, and FDA approved, for the treatment of anthrax.
- Continue antibiotics for a *full* 60 days, even if the patient does not display symptoms. Those who have completed the anthrax vaccination series of six doses, and whose vaccine status is current (i.e. they have received any appropriate annual boosters) need to complete only a *full* 30 days regimen of antibiotics. . Both groups should then be monitored by medical for late development of any clinical signs and symptoms for 30 days after completing their course of antibiotics. Restart the individual on antibiotics if signs/symptoms redevelop
- The above antibiotic regimens are approved for adults, including those who are pregnant and/or immunocompromised
- Antibiotics should be continued until PCR analysis and/or routine culture plating determines that suspicious substance submitted to the reference laboratory does not actually contain anthrax.

11. Notification:

Any command finding a suspicious material should notify, in addition to those who have been previously listed:

- Their Immediate Superior In Charge
- Their Type Commander and CINC
- The nearest NEPMU
- The Navy Environmental Health Center
- BUMED Codes 02 and 024.

12. Additional consultation can be obtained from:

	PHONE	FAX	E-MAIL
NEPMU-6 Pearl Harbor, HI	(808) 473-0555	(808) 473-2754	postoffice@nepmu6.med.navy.mil
NEPMU-5 San Diego, CA	(619) 556-7070	(619) 556-7071	nepmu5@nepmu5.med.navy.mil
NEPMU-7 Sigonella, IT	001-39-095-56-4101	001-39-095-56-4100	nepmu7@nepmu7.sicily.navy.mil
NEPMU-2 Norfolk, VA	(757) 444-7671	(757) 444-1191	nepmu2@nepmu2.med.navy.mil

Reference: Erik A. Henchal, COL, MSC, Chief, Diagnostic Systems Division, Research Coordinator for the DTO Common Diagnostic Systems, NCMR-UID, USAMRIID.

Reference: CDC Protecting Investigators from Exposure to Bacillus anthracis Using Personnel Protective Equipment.

Ref: (a) NSTM Chapter 470, Shipboard BW/CW Defense and Countermeasures. Note: This reference includes Stock Numbers (NSNs) for outfitting individuals for chemical decontamination and for biological sampling kits.