

LESSON PLAN

PART I
COVER SHEET

LESSON TITLE: Natural Disaster Threats

TRAINING METHOD: Briefing

REFERENCES: AFI 32-4001 Disaster Preparedness Planning and Operations (6 May 94)
FEMA Handbook HS-2, Emergency Management U.S.A.(May 1986)

AIDS AND HANDOUTS: Base Populace Training (604076)

LESSON OBJECTIVE: Given a briefing on local natural disaster threats, the student should gain a basic knowledge of the natural disaster threats and individual protective actions associated with the area the student is at.

SAMPLES OF BEHAVIOR: This subject material is not testable.

ORGANIZATIONAL PATTERN: Topical

SUGGESTED COURSE(S) OF INSTRUCTION: Base Populace

STRATEGY: This briefing is for use in the Installation Disaster Preparedness Information Program, initial and recurring training. In overseas areas, modify this briefing to meet host nation agreements. You should have on hand copies of the "Emergency Preparedness Checklist". This checklist, distributed by FEMA and the American Red Cross covers all natural disasters and hazardous materials.

LESSON OUTLINE:

MAIN POINT 1 PHASES OF RESPONSE

- A. Notification
- B. Initial Emergency
- C. Sustained
- D. Recovery

MAIN POINT 2. TORNADOES

- A. Description
- B. Tornado Watch
- C. Tornado Warning
- D. Protective Actions

- MAIN POINT 3. FLOODS
 - A. Description
 - B. Protective Actions

- MAIN POINT 4. HURRICANES
 - A. Description
 - B. Hurricane Watch
 - C. Hurricane Warning
 - D. Protective Actions

- MAIN POINT 5. EARTHQUAKES
 - A. Description
 - B. Protective Actions

- MAIN POINT 6. TSUNAMIS
 - A. Description
 - B. Protective Actions

- MAIN POINT 7. WINTER STORMS
 - A. Description
 - B. Protective Actions

- MAIN POINT 8. VOLCANOES
 - A. Description
 - B. Protective Actions

- MAIN POINT 9. FIRES
 - A. Types
 - B. Protective Actions

- MAIN POINT 10. AFTER THE DISASTER
 - A. Long Term hazards
 - B. Post Disaster Actions

PART II
TEACHING PLAN
INTRODUCTION

ATTENTION:

Every year some type of natural disaster strikes with terrific vengeance: Hurricanes like Andrew and Opal, tornadoes and flooding in the midwest, as well as, winter snow and ice storms on the east coast, and more. Internationally, the worlds has seen tremendous disasters such as the earthquake in Kobe, Japan and the floods of Bangledesh.

MOTIVATION:

A natural disaster can strike with little or no warning. They can leave death and destruction in their wake. Knowing protective measures can help save lives and minimize the destruction of property.

OVERVIEW:

This lesson covers several types of natural disasters and the protective measures to take if they occur.

TRANSITION:

Let's begin with types of disasters.

BODY

MAIN POINT 1. PHASES OF RESPONSE

Natural disasters can create emergency conditions that vary widely in scope, urgency, and degree of damage and destruction. Plan response and recovery on worst case scenarios for the natural disasters that are mostly likely to occur in your area.

Since the types of disaster and protective actions differ we will cover different types of disasters, descriptions and actions but first we'll cover the general phases of response that apply to this installation regarding any natural disaster.

A. NOTIFICATION

A. First is the notification phase. This consists of actions taken in anticipation of a natural disaster if time exists. Some of these actions include:

(1) ESTABLISH COMMAND AND CONTROL

(1) Establishing command and control. This could be as simple as putting people on alert at the command post or as intensive as activating all control centers on base and the rest of the disaster response force (DRF).

(2) BASE AGENCIES AND BASE POPULACE

(2) Notifying base agencies, and base populace. The initial situation report should be followed up on a regular basis to keep base personnel informed.

(3) FACILITIES

(3) Protecting facilities and materials. For example in a hurricane threat area, if time permits, this may include boarding up buildings.

(4) SHELTER AND
EVACUATION

(4) During the notification stage consider shelter or evacuation measures.

(5) MUTUAL
ASSISTANCE AND
DATA GATHERING

(5) Finally, begin coordination with civil authorities for mutual assistance. Start data gathering. Data gathering begins with the initial entry in the situation log and continues until the final lessons learned report is filed.

B. INITIAL
EMERGENCY

B. The next phase of response is the initial emergency phase. This phase includes actions taken during or immediately after a natural disaster. Actions include:

(1) MAINTAIN
CONTROL

(1) Maintaining command and control. This is a very critical step in any recovery operation.

(2) ASSESSMENT

(2) Assessing casualties, damage to facilities, utilities, material, and mission impact. The critical facilities and communications need to be restored as soon as possible.

(3) LIFESAVING
OPERATIONS

(3) Clearing routes to aid firefighting and search and rescue. Then conducting lifesaving operations.

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|----------------------------------|--|
| (4) REGISTER | (4) Establishing a facility to register and care for displaced persons, serve as an inquiry point, and reunite separated family members. |
| (5) DISASTER CORDON | (5) Establishing necessary disaster cordons and provide security to these areas. |
| (6) DATA | (6) Data gathering would continue. |
| C. SUSTAINED | C. The third phase is the sustained emergency phase which continues operations from the initial emergency phase. Actions continue for lifesaving and reestablishing primary mission capability. Other actions include: |
| (1) CONTINGENCY RESPONSE PLAN | (1) Implementing the base civil engineer Contingency Response Plan and restore communication-computer systems. |
| (2) INFORM BASE POPULACE | (2) Keeping the base populace informed and control rumors. |
| (3) SALVAGE FOOD/WATER | (3) Salvaging, protecting, and distributing food and water stocks. |
| (4) SANITATION | (4) Implementing sanitation procedures. |
| (5) DEFINITIVE MEDICAL TREATMENT | (5) Establishing more definitive medical treatment and detailed damage assessment. |

(6) FINANCES

(6) Initiating financial services.

(7) DATA

(7) Continue data gathering.

D. RECOVERY

D. The final phase, or recovery phase, focuses on short and long term steps to return to normal operations. The priority is to reestablish mission capability. Data collection efforts should continue for a final lessons learned report.

TRANSITION

Throughout every phase of operation you may play a significant part. You should know both your personal responsibilities to prepare for a natural disaster as well as your unit's responsibilities. Now let's talk about some specific types of natural disasters.

<p>INSTRUCTOR'S NOTE: You may want to mention briefly the various types of natural disasters but concentrate specifics for the local threat at your installation.</p>
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MAIN POINT 2.
TORNADOES

Tornadoes

A. DESCRIPTION

A. A tornado is a violent storm with whirling winds of up to 300 miles per hour and is usually associated with hurricanes or thunderstorms.

It appears as a rotating, funnel-shaped cloud, from gray to black in color, extending towards the ground from the base of a thundercloud.

The tornado may sound like a roaring locomotive or airplane. These storms, usually short-lived, are the most violent of all weather related phenomena and over a small area, the most destructive.

B. TORNADO WATCH

B. A tornado watch means that weather conditions are favorable for a tornado to occur in or near your area. Listen to local radio or television for information or advice.

C. TORNADO WARNING

C. A tornado warning means that a tornado has actually been sighted, or has been indicated by radar and may strike in your vicinity. Take action to protect yourself.

D. PROTECTIVE ACTIONS

D. Some protective measures to take for a tornado are:

(1) TAKE COVER - AT HOME

(1) If you are at home, go to a corner of your basement and take cover under a sturdy workbench or table. If your home has no basement, take cover in the center of the house, on the lowest floor, in a small room such as a closet or bathroom, or under sturdy furniture.

Stay away from windows to avoid flying debris. Don't remain in a trailer or a mobile home if a tornado is approaching; take cover in a nearby shelter or lie flat in the nearest depression or ditch.

(2) TAKE COVER - AT
WORK

(2) If you're at work in a building, go to an interior hallway on the lowest floor, or to the designated shelter.

(3) TAKE COVER -
OUTSIDE

(3) If you're outside in open country, take cover and lie flat in the nearest depression, such as a ditch, culvert, excavation, or ravine. Cover your head with your arms.

MAIN POINT 3.
FLOODS

Floods

A. DESCRIPTION

A. Floods normally occur when rainfall is enough to cause rivers to overflow their banks or when melting snow combines with rainfall to produce similar effects.

In many areas, heavy rains may cause quick or "flash" floods. Small creeks, gullies, dry streambeds, ravines, culverts, or even low-lying ground can flood quickly and endanger people, sometimes before any warning can be given.

B. PROTECTIVE
ACTIONS

B. Some protective actions to take for a flood are:

(1) EVACUATION

(1) Monitor weather reports and follow the instructions of the local authorities. If you are advised to evacuate, do so promptly. If you are instructed to move to a certain location, go there; don't go anywhere else.

(2) SECURE YOUR HOME

(2) If time permits, secure your home before leaving. Bring outside possessions such as lawn furniture in the house. Shut off your water, gas, or electrical service and disconnect any electrical appliances or equipment that can't be moved. Move what items you can to the highest point possible in your home (upstairs or on shelves and counters). Lock doors and windows.

(3) TRAVEL WITH CARE

(3) Travel with care. If certain routes are specified or recommended, use those routes rather than trying to find your own. Know where the high ground is and how to get there. Leave early enough to avoid being marooned by flooded roads.

(4) WATCH FOR WASHED OUT ROADS, POWER LINES, ETC.

(4) Watch out for washed-out roadways, earth slides, broken sewer or water mains, loose or downed power lines, and fallen objects.

(5) DRIVING MAY BE
HAZARDOUS

(5) Don't try to cross a stream or a pool of water unless you are certain the water won't be over your knees, or above the middle of your car's wheels, all the way across. Abandon stalled vehicles in flooded areas if you can do so safely.

MAIN POINT 4. HURRICANES

Hurricanes

A. DESCRIPTION

A. Hurricanes are tropical storms with winds above 74 miles per hour. These storms are usually accompanied by heavy amounts of rainfall and often spawn tornadoes. The most dangerous part of a hurricane is the storm surge.

B. HURRICANE WATCH

B. A hurricane watch means a hurricane may threaten coastal and inland areas, and that hurricane conditions are a real possibility. It does **not** mean they are imminent. Listen to the local radio or television station for information and advice.

C. HURRICANE WARNING

C. A hurricane warning is issued when a hurricane is expected to strike within 24 hours.

D. PROTECTIVE ACTIONS

D. When an area receives a hurricane warning:

(1) LISTEN TO RADIO/
TV

(1) Keep your radio or television on. Listen for the latest weather service advisories as well as special instructions from local authorities.

(2) PREPLAN

(2) Plan your time before the storm arrives and avoid last-minute hurry which might leave you marooned or unprepared.

(3) LOW LYING
AREAS

(3) Leave low-lying areas that might be swept by high tides or storm waves.

(4) OUTDOOR
OBJECTS

(4) Secure outdoor objects that might be blown away.

(5) REMAIN INDOORS

(5) Remain indoors during the hurricane. Travel is extremely dangerous when winds and tides are whipping through your area.

(6) EVACUATION

(6) If evacuation is advised, you should:

(a) Follow the instructions and advice of the local authorities. If you are advised to evacuate, do so promptly. Know the evacuation routes ahead of time.

(b) If time permits, secure your home before leaving. Bring outside possessions inside; shut off water, gas or electric service; disconnect any electrical appliances or equipment that can't be moved; lock doors and windows.

(c) Travel with care. Leave early enough so you aren't marooned by flooded roads, fallen trees, and wires.

(d) As you travel, keep listening to the radio for additional information and instructions from your local emergency managers.

(e) If you go to a shelter, stay there until informed by local authorities that it is safe to leave.

<p>INSTRUCTOR'S NOTE: If your base implements hurricane conditions (Hurcons) cover them at this point.</p>

MAIN POINT 5. EARTHQUAKES

Earthquakes

A. DESCRIPTION

A. Earthquakes strike without warning. It is a shaking or trembling of the earth, caused by underground volcanic forces or by breaking or shifting of rock beneath the surface. The earth movement can cause buildings and other structures to shake or collapse. Most casualties result from falling objects and debris, splintering glass, and fires.

B. PROTECTIVE ACTIONS

B. Protective measures to take in the event of an earthquake are:

(1) KEEP CALM

(1) Keep calm. Don't run or panic.

(2) STAY PUT

(2) Stay where you are. If outdoors, stay outdoors. Most injuries occur as people are entering or leaving buildings.

(3) TAKE COVER -
INDOORS

(3) If the earthquake strikes when you are indoors take cover under a desk, table bench, or against inside walls or doorways. Stay away from glass, windows, and outside doors.

(4) OUTDOORS -
MOVE AWAY FROM
BUILDINGS AND
UTILITY WIRES

(4) If outside during an earthquake, move away from buildings and utility wires. Once in the open, stay there until the shaking stops

(5) WATCH FOR
HAZARDS IF IN A CAR

(5) If you are in a car, stop and stay in the vehicle. Avoid stopping on bridges, near or under buildings, overpasses, and utility wires. When you drive on, watch for hazards created by the earthquake.

MAIN POINT 6. TSUNAMIS

Tsunamis

A. DESCRIPTION

A. A tsunami is a series of waves caused by an underwater disturbance. Most tsunamis are associated with large earthquakes whose centers underlie or border the ocean floor. However, their cause is not positively known.

In this century, more than 200 tsunamis have been recorded in the Pacific. Some of these resulted in coastal waves more than 100 feet high that smashed into land with tremendous destructive power.

**B. PROTECTIVE
ACTIONS**

B. Some protective actions to take if a tsunami occurs are:

**(1) LOW LYING
AREAS**

(1) Stay out of low-lying coastal areas after a local earthquake. Stay out of these areas until an "all clear" is issued by competent authority.

**(2) DON'T BE AN
OBSERVER**

(2) Never go down to the beach to watch for a tsunami. When you can see the wave, you are too close to escape it.

**(3) LISTEN TO LOCAL
INSTRUCTIONS**

(3) Follow all instructions of the local authorities.

**MAIN POINT 7.
WINTER STORMS**

Winter Storms

A. DESCRIPTION

A. A blizzard is the most dangerous of all winter storms. It combines cold air, heavy snow, and strong winds. The blowing snow reduces visibility to only a few yards.

**B. PROTECTIVE
ACTIONS**

B. Some protective measures to take for a blizzard are:

(1) RADIO AND TV

(1) Keep posted on weather conditions. Use your radio and television to keep informed of current weather conditions in your area.

(2) ISOLATION

(2) Be prepared for isolation at home. If you live in a rural area, make sure you can survive at home for a week or two if a storm isolates you.

(3) DRESS FOR THE SEASON

(3) Dress for the season. If you spend much time outdoors, wear several layers of loose fitting lightweight, warm clothing rather than a single layer of thick clothing.

(4) TRAVEL ONLY IF NECESSARY

(4) Travel only if necessary. If you must travel, use public transportation if possible. If you use your car for a trip of any distance, use the following precautions:

⇒ Ensure your car is in good condition, equipped with chains or snow tires, and filled with gas. Don't be a "peephole" driver. Clear your windshields completely before driving.

⇒ If possible, take another person with you and/or ensure someone knows your schedule.

- ⇒ Have emergency winter storm supplies in the car, such as sand, shovel, windshield scraper, tow chains or rope, flares, and a flashlight with extra batteries.
- ⇒ Drive with all possible caution. Don't try to save time by traveling faster than road and weather conditions permit.
- ⇒ Keep calm if you get in trouble. If you are on a well-traveled road, indicate you are in trouble by flashing your hazard lights or hang a cloth from the radio aerial or car window. Stay in your car and wait for help to arrive. If you run the engine to keep warm, remember to open a window wide enough to provide ventilation and protect you from carbon monoxide poisoning. Keep the exhaust free from snow.

MAIN POINT 8.
VOLCANOES

Volcanoes are rare but a very potential menace. Mount St. Helens in 1980 and Mount Pinatubo in June 1991 proved a potential source of danger. The Pinatubo explosion caused over \$300 million in base damage at Clark AB and contributed to its closure and that of nearby Subic Naval Base.

A. DESCRIPTION

A. Volcanoes are mountains that have a vent to a reservoir of molten rock or magma deep below the surface. Volcanoes form where weak spots in the earth's crust allow the magma to push toward the surface.

B. PROTECTIVE ACTIONS

B. Your primary protective actions for a volcanic eruption include evacuation and avoiding valleys in the vicinity.

RELATED EMERGENCIES

Volcanic eruptions can generate mild to moderate earthquakes, mudflows, flash floods, and huge ash clouds.

TRANSITION

Let's discuss fires and some protective actions to be taken.

MAIN POINT 9.
FOREST FIRES
CAN OCCUR ANY
TIME OF THE
YEAR

Forest fires destroy property and valuable natural resources and threaten lives. They become especially dangerous when coupled with other disasters.

A. FOUR TYPES OF FIRES

A. There are four types of fires:

(1) surface -most common and burns along the floor of the forest, moving slowly.

(2) ground -started by lightning, burn on or below the forest floor. Thses are had to detect and even harder to extinguish.

(3) crown - spread rapidly by the wind, move the fastest of all types of fires by jumping along tops of trees.

(4) chapparral - occur where a chaparral forest cover grows in canyons or on hillsides. Since they can endure extended rainless seasons become extremely flammable, thus creating dangerous fire conditions.

B. PROTECTIVE ACTIONS

B. Some protective measures to take for a fire are:

- ⇒ Learn how to recognize dangerous fire conditions if you live in a heavily wooded area.
- ⇒ Clear an open space around your house to serve as a fire break.
- ⇒ Plan several evacuation routes and don't hesitate to leave. Fires can spread rapidly and unpredictably.
- ⇒ Oxygen may be of short supply, so remain calm, stay close to the ground, and breathe through a wet handkerchief or wet piece of clothing, if possible, to avoid scorching our lungs or inhaling smoke.
- ⇒ Don't try to outrun a forest fire, travel at right angles to the patch of fire instead.

MAIN POINT 10. AFTER THE DISASTER

It's human nature to want to get to your home as soon as possible after a natural disaster has struck. You may want to check on family or secure your belongings. However, you may not be able to return immediately. In any case, proceed after a natural disaster with extreme caution. Here are some guidelines:

A. LONG TERM HAZARDS

A. Numerous hazards exist after the disaster. Typical hazards include:

- ⇒ Fires
- ⇒ Road Closures
- ⇒ Unsafe structures
- ⇒ Downed power lines
- ⇒ Contaminated water supplies
- ⇒ Outbreak of disease
- ⇒ Exposure to the weather

B. POST DISASTER ACTIONS

B. Post disaster actions include:

(1) CONTINUE
LISTENING TO RADIO/
TV

(1) Keep listening to your radio for advice and information on evacuation routes, shelter locations, emergency contact numbers, etc.

(2) CAUTION AROUND
DAMAGED BUILDINGS

(2) Use extreme caution if entering or working in damaged buildings.

(3) FLAMMABLE
HAZARDS

(3) Don't take lanterns, torches, or lighted cigarettes into damaged buildings. Leaking gas lines or flammable material are possible.

(4) ELECTRICAL
HAZARDS

(4) Stay away from fallen or damaged electrical wires which may still be dangerous.

(5) ELECTRICAL
APPLIANCES

(5) If your electrical appliances are wet or in standing water, turn off the main power switch to your house. Then unplug the wet appliance. Dry it out before you reconnect it and then turn the power back on.

(6) SPOILED FOOD

(6) Check your food and water supplies before using them. Refrigerated foods may be spoiled if electric power has been off. Also, don't eat food that has come in contact with flood waters. Follow local instructions before using the water supply.

(7) DON'T INTERFERE
WITH RESCUE WORK

(7) Stay away from disaster areas. Sightseeing could interfere with first aid or rescue work and may be dangerous as well.

(8) DRIVING
HAZARDS

(8) Don't drive unless necessary. Report any hazards you see to the local authorities.

(9) NOTIFY
RELATIVES

(9) Notify your relatives after the emergency is over so they will know you and your family are safe. However, don't tie up telephone lines if they are still needed for official or emergency calls.

(10) HAVE A
PREDETERMINED
MEETING PLACE FOR
THE FAMILY

(10) Finally, during evacuation if you become separated from your family because of duty requirements, try to have a predetermined location to meet your family.

CONCLUSION

SUMMARY:

In summary, we talked about the phases of response to a natural disaster. These four phases of response: Notification, Initial and Sustained Emergency, and Recovery can effect you personally at home or on the job. Then we discussed the types of natural disasters and the threats to this area. Finally we mentioned post disaster hazards and actions.

REMOTIVATION:

By preplanning for emergencies, following these protective actions and using a little common sense, you may be able to save your life when a natural disaster strikes.

CLOSURE:

This concludes this briefing on local disaster threats.

TRANSITION:

(Develop locally to transition to the next topic.)

**PART III
EVALUATION
STUDENT PERFORMANCE STANDARDS**

This section is not used.

**PART IV
RELATED MATERIALS**

Use Emergency Preparedness Checklist as a handout. This checklist is available from your local Red Cross or FEMA office and covers general information for all natural disasters and HAZMAT incidents.

Additional Reading: FEMA Handbook HS-2, Emergency Management U.S.A. (May 1986)

TRAINING PACKAGE COMMENT REPORT

RTP #	RTP DATE
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To get an *immediate response* to your questions concerning subject matter in this Readiness Training Package (RTP), call the author (listed on the front cover) or the Contingency Training Section at DSN 523-6160 between 0700-1600 (CT), Monday through Friday. Otherwise, write, fax, or E-mail the author to make comments, suggestions, or point out technical errors in the area of: references, body information, performance standards, test questions, and attachments.

NOTE: Do not use the Suggestion Program to submit corrections for printing or typographical errors.

Comments: _____

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