

# TYPHOON



## TIPS:

**Before, During & After**

# TYPHOON TIPS

**BEFORE, DURING &  
AFTER**

## A Special Project

By

**Guam Cooperative  
Extension**

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## Introduction

The Guam Cooperative Extension's Typhoon Tips is a valuable tool for you during the typhoon season as an aid in preparedness activities. The brochure is divided into twelve sections to provide the information you need in an easy-to-use format. Each section provides a series of preparedness measures and post typhoon response that should be taken in the event of a typhoon.

This brochure is not intended to cover every situation and early post-typhoon response. Because every community is different, special consideration for the local area should be taken into account along with the information provided in the brochure.

Pages and sections of the brochure may be removed and photocopied. Information is structured in a manner conducive to public use. Government and private agencies are encouraged to provide copies of the material to the public, both as "preventive education" and for response needs.

This brochure was developed as a joint effort of Extension Service - U.S. Department of Agriculture and the Guam Cooperative Extension. The information given herein is for educational purpose only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Guam Cooperative Extension is implied.

## Acknowledgement

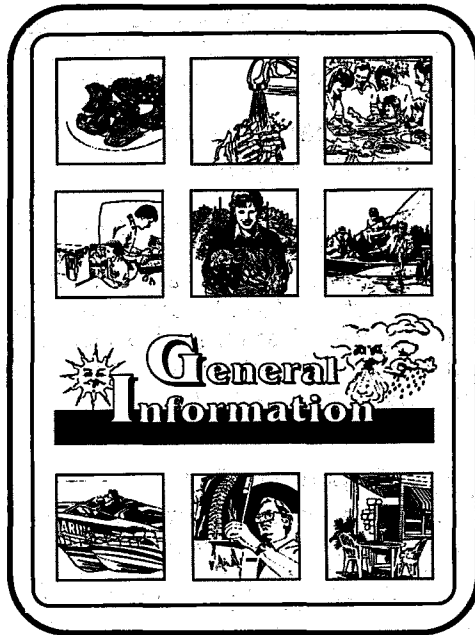
A large number of people were needed to conduct this study and bring it to successful completion. Most important was the excellent cooperation of agency staff, extension agents, and volunteers who provided most of the information in this brochure. The project was assisted by the following faculty, support staff & research assistants: Lawrence Kasperbauer, Elaine Cepeda, Frank Tyquiengco, Jennifer Matter and Gene Ransom.

Educational programs conducted by the Guam Cooperative Extension serve citizens of all ages regardless of socio-economic level, race, color, sex, religion, disability or national origin. Issued in furtherance of Cooperative Extension Work in Agriculture and Home Economics Acts of Congress of May 8, and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Dr. Jeff D.T. Barcinas, Dean / Director, College of Agriculture and Life Sciences, University of Guam.

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### How different is a Hurricane from a Typhoon?

Hurricane comes from the Spanish word 'huracan', meaning wind. Typhoon originates from the word 'tai fung' which literally means great wind. Both of these storms are the same phenomenon. The only difference is that hurricanes occur north of the equator, while typhoons occur south of the equator.

Hurricanes occur north of the equator over the Atlantic and Pacific oceans. Hurricanes are formed in the North Atlantic, Caribbean Sea, Gulf of Mexico and the Pacific Coast of Mexico. The greatest likelihood of hurricane striking land is along the Gulf Coast and the southern seaboard. Hurricanes also have hit central Pennsylvania and the coast of New Jersey, New York and New England. The Atlantic hurricane season lasts from June through November. August and November are peak months.

Typhoons occur in the South Pacific. Typhoons can hit Guam anytime, but are more likely during the rainy season, from May to November, with the highest frequency of occurrence during July through September. Typhoons bring high winds, heavy rains, flooding, and high seas.

### Why Typhoons Are a Risk To People

*Typhoons pose three major threats:*

**1. Wind:** Typhoon winds exceed 74 mph. The winds of Typhoon Omar were measured more than 120 mph. Typhoon winds

cause buildings to rip apart, uproot unstable structures or objects, damage utility lines and threaten lives. Wind damage can occur inland. Heavy rains in hilly areas can cause flash flooding where there is little warning of this major threat to life and property.

**2. Heavy Rain:** There are "dry" and "wet" typhoons. A "dry" typhoon moves quickly over land and may drop a total of 5 inches of rain or less. These typhoons usually do not pose much of a risk from flooding but usually can cause great wind damage. "Wet" typhoons can drop more than 9 inches of rain per square mile and are slow moving. They can stall, dropping 18 inches or more of rain in some areas.

**3. Storm Surge:** A Storm Surge is a large dome of water pushed up in advance of a typhoon making landfall. This dome of water can exceed 20 feet, depending on the strength of the typhoon. It's important to differentiate storm surge from a tsunami (incorrectly referred to as a "tidal wave"). A storm surge is a large amount of water, on top of which there is heavy wave action. A storm surge can last for several hours.

The advancing storm surge combines with the normal tide to create the typhoon storm tide. In addition, wind waves 5 to 10 feet high are superimposed on the storm tide. This build-up of water level can cause severe flooding and destruction in coastal areas, particularly when the storm surge coincides with normal high tides.

### How to Prepare for a Typhoon

**1. Know the risk of the area.** If you live in Hawaii, Guam, American Samoa or Palau, you are subject to devastating effects from typhoons.

**2. Know what a typhoon "watch" & "warning" means.**

- A Typhoon Watch means a Typhoon may hit your area.
- A Typhoon Warning means a Typhoon is headed toward your area. You may be told to move to a shelter or evacuate the area. Do so immediately.

**3. Review your family disaster plan.** Check straps and anchors for manufactured homes, sheds and out-buildings.

- Install typhoon shutters or pre-cut 3/4 inch marine plywood for each window of your home. Install anchors for the plywood and

predrill holes in it so that you can put up the plywood quickly when a WATCH is issued.

- Make trees more wind resistant by strategically removing branches so that wind can blow through them. Remove diseased or damaged limbs.

### Actions During a Typhoon Situation

1. During a watch (24 to 36 hours before landfall):

- Cover all windows of your home. If shutters are not installed, use pre-cut plywood. If you do not have plywood, do what you can to protect windows from breaking. Tape does not work. Remove tree limbs, branches, shrubbery and other objects that can break windows.
- Recheck manufactured home tie-downs.
- Take in lawn furniture, outdoor decorations or ornaments, trash cans, hanging plants and anything else that can be picked up by the wind and become a missile of destruction.

2. During a warning (24 hours before landfall):

- Evacuate if you are advised to do so.
- If you are not advised to evacuate, stay indoors and away from windows.
- Be aware of the calm "eye;" the storm will happen when the eye passes over and the wind comes from the opposite direction. Trees, shrubs, buildings and other objects damaged by the first winds can be broken or destroyed by the second winds, whose force is opposite the direction of the first winds.

### Basic Response After a Typhoon

1. Wait until an area is declared safe before entering.

- Roads may be closed because they have been damaged or are covered by water. Barricades have been placed for your protection. If you come upon a barricade or a flooded road, go another way.
- Keep listening to the radio for news about what to do, where to go or places to avoid.

2. If you must walk or drive in areas that have been affected by the Typhoon, stay on firm ground. Moving water only 6 inches deep can sweep you off your feet. Standing water may be electrically charged from underground or downed power lines.

3. Check gas, water and electrical lines and appliances for damage.

- Use a flashlight to inspect for damage.

- If necessary, turn off main gas valves and electrical switches or fuses. Have these services restored by a professional.

4. Use the telephone to report life-threatening emergencies only.

5. If you need assistance, visit your local Red Cross service center or chapter facility. Territorial and federal agencies often provide assistance to individuals, families and businesses after larger storms. Listen to the radio for information on how to obtain governmental assistance.

### Typhoon Characteristics

A typhoon is a tropical storm system having sustained winds of at least 75 miles (121 km) per hour. The best way to cope with a typhoon is to BE PREPARED. Typhoons can occur any time of the year. The main season is June through November. July, August and September have the highest frequency of typhoons, but typhoons are still unpredictable. So be prepared – it's better to be safe than sorry.

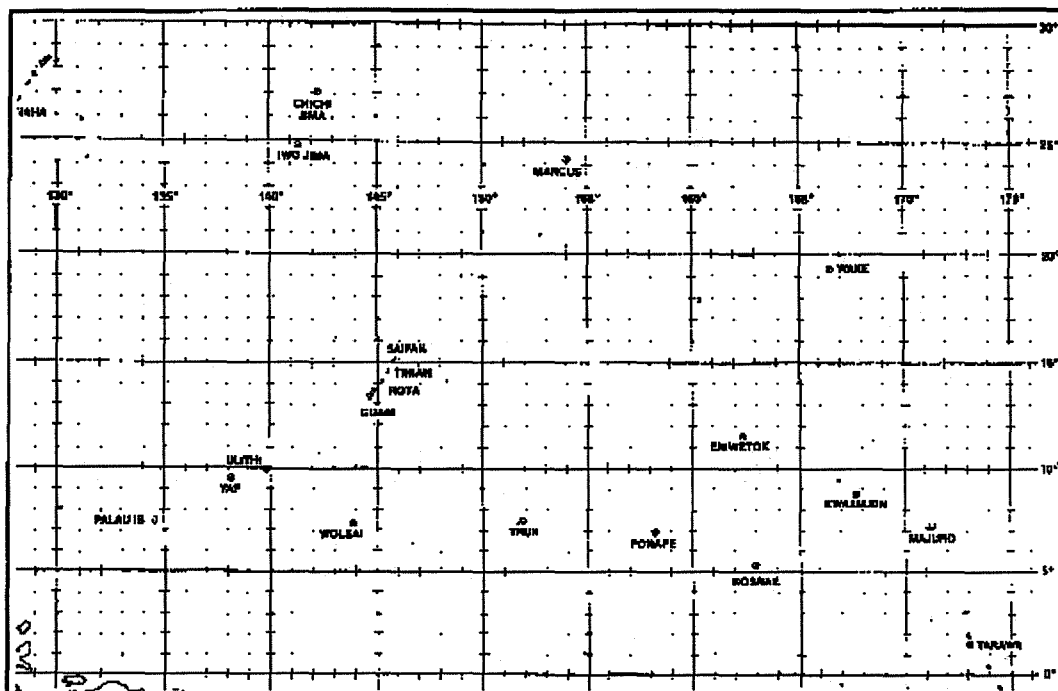
Typhoons can leave a path of destruction hundreds of miles wide and thousands of miles long. Typhoon winds blow around a center of low pressure, called the "eye." The strongest winds are directly around the eye, which varies from three to six miles in diameter. If an eye passes directly over Guam, residents will experience the strongest winds, followed by a sudden cessation of wind and rain (when the eye is directly over Guam) only to be hit again a short time later by strong winds from the opposite direction.

Storms are generally grouped as:

- **Tropical Depression:** *Maximum sustained winds of less than 40 miles (64 km) per hour.*
- **Tropical Storm:** *Maximum sustained winds greater than 40 and less than 75 miles (64 and 121 km) per hour.*
- **Typhoon:** *Maximum sustained winds greater than 75 and less than 150 miles (121 and 214 km) per hour.*
- **Super Typhoon:** *Maximum sustained winds greater than 150 miles (214 km) per hour.*

When a storm system approaches Guam, the wind conditions are defined in one of four categories:

- **Condition Four:** *Guam is always in Condition Four, which means a typhoon can strike within 72 hours.*



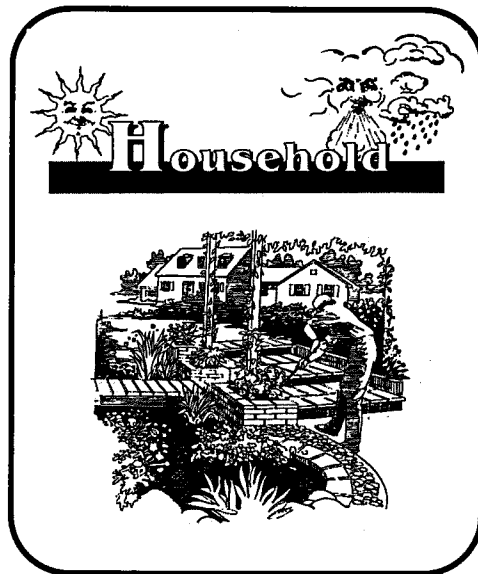
- **Condition Three:** A typhoon can strike within 48 hours. General preparations should be started.
- **Condition Two:** A typhoon can strike within 24 hours. All non-essential government agencies, including schools and the military, close. Residents are advised to go home and prepare for the storm. All women who are 36 or more weeks pregnant should go to the hospital because the atmospheric depression caused by a typhoon can cause pre-mature labor. For more information, call Guam Memorial Hospital Authority at 646-2000, exts. 104 or 105.
- **Condition One:** A typhoon is imminent & may strike within 12 hours. Only emergency traffic is allowed on roadways.

## Typhoon Tracker

You can use a typhoon tracker to follow the course of the typhoon. Knowing the direction the typhoon takes will allow you to estimate when the storm will arrive, and gives you lead time to prepare. Remember, preparation is essential.

*Use the tracker as follows:*

- Listen to the radio/TV for typhoon reports and write down when the typhoon position was determined, and the typhoon's coordinates (the latitude and longitude). Latitude is usually given first, and indicates the distance north or south from the equator. Longitude indicates the distance east or west. Use the section provided at the bottom of the tracker to keep a log of this information.
- Refer to the typhoon tracker above. The grids contain dots. Each dot indicates one unit of measurement (degrees).
- Follow the latitude along the right vertical border of the map. They range from 0 to 30°. Use a pencil to mark the spot.
- Follow the longitude along the horizontal axis (in this map, the longitudes are located in the second row of grids). Longitudes on this map range from 128° to 189°. Using a ruler to be exact, locate where the two points intersect. This is the general location of the typhoon. Use a number at each point to aid in tracking the typhoon's progress.
- Erase the pencil mark on the latitude scale, so you don't confuse it with the next reading.
- As an example, 8.5 north and 167.5 east would indicate a spot on or near Kwajalein.



### When a Typhoon Strikes

Hopefully you will never have to experience a typhoon. When it does happen, however, try to remain calm and patient and put your family preparedness plan into action. You should follow the following steps:

- Retrieve your typhoon emergency kit (See Appendix).
- Wear protective clothing and sturdy shoes.
- Confine or secure pets to protect them.
- Go to the safe place in your home you have identified and stay there until well after the disaster is over.
- Listen to your battery-powered radio for news and instructions.
- Evacuate, if advised to do so.

### Why Prepare?

Typhoons can affect Guam during the raining season, swiftly and without warning. Most people don't make preparations until it is too late; then, they suddenly realize how unprepared they are for the massive changes it makes in their lives. Local officials can be overwhelmed and emergency response personnel may not be able to reach everyone who needs help right away.

The occurrence of a typhoon requires preparation, clean-up and recovery. Families who are prepared ahead of time can reduce the fear, confusion and loss that comes with typhoons. They can be secured in their homes, ready to evacuate their homes, and know what to expect in public shelters.

### Indoor Preparations

Imagine wind and rain entering through a door or window. This will help you determine what needs to be done to prepare your home's interior.

Cover all beds and other items you don't want to get wet with plastic covers, sheets of plastic or large trash bags. Move beds away from windows. Because water can seep in around windows, take down curtains and draperies. To prevent mildew, pack clothing, especially socks, underwear and towels, into zip-lock bags, even if the clothing is in a drawer or bureau. Consider packing matches, toilet paper and other things you must keep dry in zip-lock bags.

Imagine a window giving way to strong wind and rain. Then look around each room and stow any item(s) that may be blown down, damaged or destroyed by rain water. Closets are good places for stowing items. Put important papers and documents into overhead cabinets. To prevent damage and mildew, move wicker and cloth-covered furniture into a central hallway. Roll carpets up away from doors.

As you wait for the approaching storm, imagine yourself in sudden darkness. Then arrange your flashlights, lanterns, candles and matches in places where they can be easily found and activated. If you use candles, place them on non-flammable surfaces, such as plates, to prevent accidental fires.

### Public Shelters

If you have a thatch or tin house and feel uncomfortable about the structure's sturdiness, you may not want to stay there for the storm's duration. Call your mayor's office to see which public buildings will be designated as shelters. Secure your house and belongings, then pack the necessary items you will need for an overnight stay at the local shelter. Stay there until you are informed by those in charge that it is safe to return home.

In the event that you have to go to a shelter, make sure you have at least one complete change of clothing and footwear per person.

*Items to include are:*

- Hat & gloves • Sunglasses • Rain gear
- Sturdy shoes or work shoes
- Blankets or sleeping bags

One of the first steps toward preparedness is to stock items needed in the event of a typhoon. This will help you get through the first few days after a typhoon. Public shelters may not offer some of the basic necessities. Having handy items will make a stay in a public shelter more comfortable, should it be necessary. Stock items in a convenient place known to all family members. Store these in airtight bags or containers. Replenish your stock at the start of the rainy season.

## Evacuation Procedures

Evacuations during a typhoon may be necessary. Evacuation procedures vary by location. Contact your local civil defense office for specific evacuation plans. The amount of time you have depends on the intensity of the typhoon. This means that preparation is essential since there may not be time to collect the basic necessities.

Evacuations can last for several days. During this time you may be responsible for part or all of your own food, clothing and other supplies.

Advance planning will make evacuation procedures easier. First, you should have your family emergency supply and plan ready. Additional steps that can aid preparedness include:

1. Reviewing possible evacuation procedures with your family.
  - Ask a friend or relative outside your area to be the check-in contact so that everyone in the family can call that person to say they are safe.
  - Find out where children will be sent if they are in school when an evacuation is announced.
2. Planning where you would go if you have to evacuate.
  - Consider the homes of relatives or friends who live nearby, but outside the area of potential danger.
  - Contact the local civil defense office for community evacuation plans. Review public information to identify reception areas and shelter areas.
3. Keeping fuel in your car's gas tank at all times. During emergencies, filling stations may be closed. Never store extra fuel in the garage.
  - In flooded areas, store propane tanks or secure them safely to the structure.
  - Turn off the main water valve.
  - Take any action needed to prevent damage to water pipes.

- Securely close and lock all doors, windows & garage.

4. Making transportation arrangements with friends, neighbors or your local civil defense office, if you do not have a car or other vehicle.

5. Knowing where and how to shut off electricity and water at main switches and valves. Make sure you have the tools you need to do this (usually pipe and crescent or adjustable wrenches). Check with your local utilities for instructions.

## Evacuating

When you are told to evacuate there are four steps you need to take:

1. If there is time, secure your house.
  - Unplug appliances.
2. Follow recommended evacuation routes. Do not take shortcuts; they may be blocked.
3. Listen to the radio for emergency shelter information.
4. Carry your family emergency supply kit.

## Preparation of Property

The best way to avoid costly typhoon damage is to keep your property free of loose debris, and to keep your structures in good condition. If you have typhoon shutters, make sure they are in working order. Keep your roof in good condition - no leaks! Keep an updated list of your furniture and personal belongings for future claim purposes.

### Here are some guidelines:

- Secure anything that might blow against your car or structure, or your neighbor's. Park your car on high ground, preferably next to a concrete wall on the leeward side of a building. Be wary of brick walls because these are not as stable in high winds as concrete walls.
- Secure all loose items such as loose garbage cans, lids, empty drums, gardening tools, toys, lawn furniture, potted plants, coconuts, metal sheets or canvas awnings. Take down any aerials, lawn umbrellas and temporary pala-palas.
- Windows are vulnerable to flying debris and wind pressure. Secure typhoon shutters on windows and have an extra shutter on hand. If you don't have shutters, apply masking tape across the glass surface. This will not prevent a window from breaking but it will prevent broken glass from flying. To equalize pressure and help prevent windows from breaking, open a window on the leeward side of the structure. Stay away from windows during a typhoon to avoid injury from flying debris. The safest place is in a windowless inner room or hallway.



## Items Needed in the Event of a Typhoon

### Supplies

- Camp Stove
- Drinking water
- Styrofoam® ice chest
- Wind-up clock
- Masking tape
- Toilet paper
- Auto and generator supplies
- Baby food or formula and diapers
- Fire extinguisher, small canister, ABC type
- Battery back-up and surge devices
- Large garbage cans and plastic garbage bags
- First Aid Kit: Band-Aid®, bandages, aspirin & medicines
- Flashlights, lanterns and/or matches & candles
- Liquid chlorine bleach & dish-washing detergent
- Non-perishable foods & snacks, powdered milk & cereal
- Cans of Sterno
- Gasoline & cooking fuel
- Ice
- Battery-operated radio
- Rope and flares
- Books and games
- Mattress covers

- Clothing and bedding
- Special Items

### Utensils

- Paper plates & cups
- Plastic cutlery
- Non-electric bottle & can openers
- Easy-to-clean pots and pans

### House Repair List

- Heavy plastic sheeting
- Hammer and nails
- Plywood & lumber
- Rubber gloves

**Food:** When you buy food, assume you must prepare and eat the items without water and power. Look for products that your family likes and:

- have a long shelf life;
- require no refrigeration;
- require no preparation or cooking;
- require no water or milk;
- can be eaten cold.

- Remove or waterproof window air conditioners because of strong winds.
- When, or if, the power goes out, unplug all appliances. This will prevent damage from a power surge when power is restored. Be sure your range controls are in the "off" position. Fires can start when power is restored to stoves with activated controls. When the power goes off, make sure the main breakers at the service box are off to prevent damage to appliances when power is restored. Power lines ripped loose by the storm can cause electrical shock or fire. Don't touch loose power lines; report these to the Guam Power Authority (GPA).
- If you have a gas stove, make sure the main gas valve is shut off.
- Stay indoors until Condition Four is declared. If the eye passes over the island, do not go outdoors unless emergency repairs are absolutely necessary. The lull is temporary. If you must venture outdoors, secure any debris that may cause damage when the winds resume.

### Returning Home After the Typhoon

1. Do not return until the local authorities say it is safe.
2. Continue listening to the radio for information and instructions.
3. Use extreme caution when entering or working in buildings - structures may have been damaged or weakened. Watch for poisonous snakes in flooded structures and debris.
4. Do not take lanterns, torches or any kind of flame into a damaged building. There may be leaking gas or other flammable materials present. Use battery-operated flashlights for light. If you suspect a gas leak, do not use any kind of light. The light itself could cause an explosion.

5. If you smell leaking gas, turn off the main gas valve. If you can open windows safely, do so.

- do not turn on lights - they can produce sparks that may ignite the gas.
- leave the house immediately and notify the fire department.
- do not re-enter the house until an authorized person tells you it is safe to do so.

6. Notify the power company or fire department if you see fallen or damaged electrical wires.

7. If any of your appliances are wet, turn off the main electrical power switch in your home before you unplug them. Dry out appliances, wall switches and sockets before you plug them in again.

8. Check food & water supplies for contamination and spoilage before using them.

9. Wear sturdy shoes when walking through broken glass or debris, and use heavy gloves when removing debris.

10. After the emergency is over, telephone your family and friends to tell them you are safe.

### Initial Inspection and Clean Up

Threats of serious injury abound in the aftermath of a typhoon. The following precautionary measures are suggested when conducting initial inspection and cleanup.

**General Safety:** Do not allow children to play around damaged structures and debris cluttered areas. Also, keep away from any and all downed power lines and report them to GPA.

**Driving:** When driving from a shelter to your home or to your place of employment for inspection, take extra precaution and watch out for washed out roads, bridges and fallen objects that may be on, or protruding into, the road.

**Proper Clothing:** Suggested clothing for cleaning debris and damaged structures include thick-soled shoes, gloves, long pants and long-sleeve shirts. A hard hat is an added protective measure, especially when working with damaged structures.

**Before Entering a Damaged Structure:** Shorted electrical wires create some of most dangerous situations in typhoon-damaged homes and structures. Never cross damp floors inside the building to shut off power at the breaker box. Wet surroundings can turn a building into a giant live wire. Just touching parts of the building could cause electrocution. Be sure that power service is out or disconnected. If in doubt, contact GPA or a certified electrician for assistance. Once the subject of power is resolved, make sure that the damaged structure does not pose any danger of collapsing. If such a danger exists, obtain appropriate assistance for either the repair or dismantling of the structure.

**Cleaning Damaged Structures that are Safe to Enter:** If the building is equipped with a gas cooking system, shut off the valve completely and allow the building to air for several minutes. If you must enter in darkness, carry a battery-operated flashlight. Do not use a mantle-style lantern or open flame as a light source, and do not smoke. When entering, watch out for slippery floors and stairs.

You will most likely find a shortage of materials, so temporary repairs may require some creativity. First, clean and remove all broken glasses. Next, repair all broken windows, doors, and roofs with suitable materials like heavy plastic, canvas, plexiglass and lumber. Covering a damaged roof is very important when you wish to avoid further water damage to furnishings and personal items, as well as to the interior structure of the house.

If your house is equipped with roof gutters and/or downspouts, take time to inspect and clean them if clogged. You can collect rain water from your gutters/downspouts for use in cleaning activities.

Once sufficient structural repairs are made, clean and dry all furniture and other water-soaked personal items. Most home furnishing can be cleaned by wiping them down with a mild soap solution and clean water. Refer to the sections on Care For Electronics, and Furniture Restoration, for more information.

In case of severe flooding, sweep out all the water. Shovel out any mud that may have entered the building while it is still moist, to give floors and walls a chance to dry. Brush off any loose dirt on smooth walls and ceilings with a mild soap solution and wipe with a damp cloth. Walls and ceilings with special surface materials may require a separate cleaning method, or major resurfacing work.

Inspect your plumbing system, especially floors drains, and remove any material causing clogs.

The heavy salt content of typhoon rain has a corroding effect on concrete, causing chipping, fragmentation or flaking. If a sufficient source of fresh water is available, rinsing the concrete surfaces will give them a longer life. Never use contaminated water for this purpose. Clean all metal structures and surfaces immediately, then wipe with a cloth soaked in kerosene. A final coating of oil should help prevent rust.

### **Clothing & Household Textile Products Storage before the Typhoon**

The way in which clothing and household bed and bath linens are stored before the typhoon may help to minimize damage and to prolong the life of textile products. Textile wares will last longer if given a chance to "rest" between uses. Rotating items in use will provide this rest period. Storage practices for household flat textiles and clothing should encourage this rotation. For example, clothes, towels or bed linens that have been laundered may be placed at the bottom of the stack of items. The next item to be used should be taken from the top of the stack. When textile products are rotated, they should be checked for signs of insect infestation or mildew.

Clothes hung in closets may be protected from dust and air-borne dirt by covering them with thin plastic dry cleaning bags. When garments are stored in plastic bags for long periods of time, they are susceptible to degradation from gases emitted by polyvinyl chloride (PVC), especially if the bags are also exposed to the deteriorating effects of sunlight, heat and moisture. The older plastic bags should be discarded on a regular basis; the clothes should be aired out and rotated; and, new plastic bags should be placed over the clothes for pro-

tection from dust and dirt. During the typhoon, these plastic bags can protect clothing from water damage if excessive moisture gets into the closet.

In Guam's humid climate, as a general practice, clothing should be hung on plastic or plastic-coated hangers to avoid rust and water stains. Rust stains from metal hangers are difficult, but not impossible, to remove. Lemon juice or laundry aids, such as bleaches, can be used to pretreat the stain before laundering. During a typhoon cloth hangers may get wet and water stains from dyes could discolor clothing. Clothing should never be stored on wooden hangers or wooden shelves for long periods of time because direct contact with the acids in wood will discolor fabrics.

### **Cleaning before the Typhoon**

Using the correct procedures for cleaning clothing and household textile products will extend the useful life of these items. After the typhoon, the accumulation of soil on fabrics is one of the factors that causes them to deteriorate. "Ground-in dirt" can increase the abrasion of yarns as gritty soils rub against fibers, causing them to break.

Insects, such as cockroaches, crickets, and the larvae of clothes moths and house moths, will feed on clean clothing. However, they show a decided preference for spots on clothing soiled by spilled food-stuff, perspiration, or urine. Regular soil removal is the most important aspect of caring for clothing. Every week, soiled clothing and household textiles should be hand washed, machine washed, or dry cleaned. As soon as Typhoon Condition II is declared, begin doing the weekly family laundry. Remember that, once the winds start to blow, power may go off.

### **During Typhoon Condition III - Prevention Practices**

It is wise to have several large sheets of plastic readily available to protect furniture and carpets in the event of water seepage, especially under and around doors. Plastic trash bags in a variety of sizes can be used to cover many different household items that could be damaged by water. It's a good idea to take down curtains and draperies because water often seeps in around windows. When the typhoon is over, the curtains and draperies can be hung back up.

## **Care of Soiled Clothing / Textiles after the Typhoon**

Soil deposited on clothing and household textiles is made up of different materials. Some types of soil are soluble, while other types are insoluble. Soluble dirt can consist of organic acids, mineral acids, alkaline substances, blood, starches and sugars. All these substances dissolve in cool or warm water. Unfortunately, when dried, they require special stain-removal techniques and extra time to remove the dried soils. Soiling should be treated immediately after the typhoon. If clothing and household textiles have become badly soiled, they should be rinsed or soaked in water as soon as possible. When power is restored, these items can be machine washed using heavy-duty laundry detergent and warm water.

Insoluble soils may be held onto the fabric by soils, greases or oils by physical attraction. Such insoluble soils require pretreatment using either a laundry cleaning aid or a dry cleaning solvent.

### **Cleaning of Soiled Pillows**

1. For feather pillows, if ticking is in good condition and does not contain red or yellow stains, wash feather and ticking together.

- Brush off surface dirt.
- Wash in machine or by hand in warm (not hot) suds for 15 to 20 minutes. Use a disinfectant, following product directions for use. If using an automatic washer, wash no more than two pillows at one time.
- Spin off water or squeeze out as much water as possible. Do not put pillows through a wringer.
- Dry in an automatic dryer at moderate heat setting. Put several bath towels in the dryer with the pillow to speed up drying. Allow about 2 hours. Or, dry pillows in a warm room on a sweater drying rack with a fan on them. Shake and turn pillows occasionally to fluff feathers and hasten drying. Or, hang pillows on a clothesline by two corners. Change position end to end and shake occasionally to fluff feathers and speed drying.

2. If ticking is not in good condition or is stained with red or yellow mud, wash feathers and ticking separately.

- Find or make a bag of light weight, firmly woven fabric such as muslin. The bag should be two to three times larger than the ticking.
- Open one edge of the ticking.
- Pin the open edges of the ticking and the bag together. Shake feathers from ticking into bag.

- Sew seam in bag to close it.
- Wash and dry the bag of feathers, following directions for washing feathers and ticking together.
- Wash the ticking, using a disinfectant in the first wash. Follow product directions for use. Repeat washing until stains have been removed. Difficult red and yellow stains may need to be bleached or treated with rust remover.
- Avoid drying the ticking with heat until all stains have been removed.
- Transfer clean feathers to clean ticking, using the same method as for emptying the ticking. Sew seam in ticking to close it.
- Feathers will slide into the ticking more easily if ticking has been starched and ironed.

3. If pillows have been badly soaked with flood water, it may not be possible to remove all objectionable odors.

- If washing by hand, rinse at least three times in clear warm water.

### **Cleaning Polyester Fiberfill Pillows**

1. Brush off surface dirt.

2. Wash in machine on gentle cycle or by hand in warm (not hot) suds, using a disinfectant. Follow product directions for use. If washing by hand, flush water through the pillow by compressing it. Do not wring or twist. Repeat if all stains are not removed.

3. If washing by hand, rinse three times in clear, warm water.

4. Spin off water or press out as much water as possible by hand.

5. Follow directions for drying given for feather pillows.

### **Cleaning Foam Rubber or Urethane Pillows**

1. Brush off surface dirt.

2. Follow manufacturer's directions, if available. Otherwise, wash in machine on gentle cycle or by hand in warm (not hot) suds, using a disinfectant. Follow product directions for use. If washing by hand, use a bathtub or large sink. Wash by pushing down on the pillow, releasing and pushing down again. Rinse the same way. Do not wring or twist.

3. Rinse well with lukewarm water.

4. Gently squeeze or spin out excess water. Blot with towels.

5. Dry away from heat or sunlight. Pillows may be tumbled in an automatic dryer on "air only" setting. Do not use heat. Or, air dry on a flat surface, turning regularly. Pillows may dry very slowly in the air.

### **Cleaning Soiled Blankets, Quilts, Comforters and Linens**

Wash only one blanket, quilt or comforter at a time. Shake and brush to remove surface dirt. Follow manufacturer's laundering directions, if available. Otherwise, follow the directions below.

#### **Wool Blankets, Quilts and Comforters**

1. Soak for 15 to 20 minutes in lukewarm water. Use a bathtub or large sink. Turn two or three times during soaking period. Drain off water. Several soaking periods may be needed if the blanket is very soiled.

2. Wash in lukewarm water with mild detergent and disinfectant appropriate for fiber content. Follow product directions for use. Immerse blanket and work suds through gently, using as little agitation as possible. If necessary, repeat washing procedure.

3. Rinse in clear water three or four times.

4. Gently squeeze out water. Hang blanket over two or more clotheslines. Let blanket droop between lines to distribute weight evenly. Or, use automatic dryer set on low heat or air only. Remove blanket from dryer while it is still damp and hang over clotheslines to finish drying. Gently stretch blanket into shape as it dries.

5. Brush blanket on both sides to raise nap. Steam press binding, using a synthetic setting. Quilts and comforters do not need brushing or pressing.

#### **Cotton and Synthetic Blankets**

1. Machine wash on gentle cycle in warm (not hot) water with detergent and disinfectant. Follow product directions for use. Repeat if necessary. Use bleach or rust remover to remove red or yellow stains. Test before use because some bleaches and rust removers may remove or change the colors.

2. Dry in automatic dryer on moderate heat. Add several towels to speed drying. Or, air dry on a clothesline.

3. Press binding if needed.

### **Sheets, Towels and Linens**

1. Brush and shake off as much loose dirt as possible.
2. Soak or rinse mud-stained fabric in cool water in washing machine to remove some of the soil.
3. Wash in warm suds and disinfectant several times if necessary. Follow product label directions for use. Do not use hot water or dry with heat until all stains have been removed.
4. If stains remain after several washings, bleach with sodium perborate or chlorine bleach. Rust remover may remove red or yellow stains. Test bleaches and rust removers before use because they may remove or change the colors.

### **Care of Wet Clothing/Textiles after the Typhoon**

Wet clothing and household textiles tend to promote mildew and attract insects. Immediately after the typhoon, all wet textiles should be hung to dry in a ventilated area. Remember that clean clothing will not mildew as readily as soiled clothing. Bath towels and kitchen dish cloths should be hung up and allowed to dry between uses.

Since most textiles deteriorate when exposed to direct sunlight, protect wet clothing or rugs from light damage by hanging in a covered and ventilated area, such as an outdoor kitchen or carport. The ultraviolet rays of the sun are very destructive to both natural and synthetic fibers. Dyes often fade from exposure to the sun. If the label reads "Olefin" or "100% polyester," the textile product should not be hung in direct sunlight. Olefin rugs and carpets are degraded by the sun's rays unless ultraviolet stabilizers have been added in the manufacturing process. Clothing that is 100% polyester is especially subject to damage from sunlight because the synthetic fibers contain delustrants.

Wall-to-wall tufted carpeting made of nylon with jute backing soaks up water during Guam's typhoons. In a short time the jute backing begins to discolor and decompose. Once rotting starts, it is best to dispose of the damaged part of the carpeting. A heavy-duty shears can be used to cut large carpets into smaller ones. When purchasing a new floor covering, select only

rugs and carpets that:

- can be rolled up, covered with durable plastic, and stored before the typhoon, or,
- are made of tufted nylon with olefin backing because nylon dries quickly and olefin is a synthetic fiber that does not rot when wet.

### **Prevention and Treatment of Mildew**

When power has been off for several days or weeks, mildew can appear on clothing and household fabrics. Mildew is a fungus that appears on organic matter, especially when exposed to damp and heat. It can permanently damage and stain most textiles, especially cellulose, such as cotton, ramie, linen and rayon. Mildew will also damage leather and paper items. Protein fibers, such as silk and wool, are less likely to be attacked. Synthetic fibers, such as polyester and nylon, are usually not attacked. To prevent mildew, it is important to keep clothing and furnishings dry.

Spraying damp nylon carpeting with a household disinfectant, such as Lysol Spray™, will help prevent mildew from getting established. At least one laundry process can be used to guard against the formation of mildew. After clothing has been washed and rinsed, rinse one last time with a small amount of boric acid in the water.

When mildew does occur, the spots should be treated as soon as possible. Any surface growth can be vacuumed or brushed off outdoors to avoid scattering mildew spores in the house. Untreated mildew can weaken fabrics.

Mildew-stained articles should be washed with heavy-duty laundry detergent and warm water. The spots can be pretreated with lemon juice or bleach. Articles that are not machine washable may be taken to the dry cleaner with the stained area marked and labeled as "mildew."

### **Prevention & Treatment of Insect Infestation**

Although insect damage can occur at any time, it is often more of a problem after a typhoon. To prevent insect infestation, carpets and rugs should be cleaned regularly with a vacuum cleaner. Moving heavy furniture and vacuuming underneath will prevent damage by moth grubs. If the furniture cannot be moved, a residual moth-proof-type spray can be applied every six months. It is best to spray the underside and edges of wall-to-wall carpeting before installation. If the carpeting was pulled up



before or during the typhoon, spray the underside and edges before reinstalling it. If furniture was moved, spray the carpet before putting items back in place. Since upholstered furniture is particularly susceptible to insect damage, the upholstery and underside of the chair or sofa should also be sprayed with a residual type insecticide.

Stored clothing and household textiles should be aired regularly and checked for signs of insect infestation. Before returning items to storage areas, shake, brush, or vacuum to remove insect eggs and other particles. The sudden alteration of temperature kills all stages of clothes moths and house moths. If insect infestation is discovered, the textile can be placed in a freezer for several days. Immediately after removal, the article should be brushed or vacuumed. If textiles are machine washable, they may be seeped in hot or boiling water to kill the insects. Unfortunately, once the clothing or household textile product is returned to ordinary room temperature, it is liable to become reinfested if a moth alights on it and lays some eggs. The best prevention is good continuous care and storage rotation.

### Wood Furniture

Furniture with a natural finish needs only a thorough cleaning to be restored. For a smooth finish, use a furniture cleanser-conditioner.

To make a home-made furniture cleanser-conditioner, fill a glass container one-fourth full of gum turpentine (not steam distilled) and three-fourths full of commercially prepared boiled laundry bleach. Apply the liquid to a dark spot and let it stand for 15 minutes. Rinse off and repeat, if necessary. White toothpaste can be used on dark spots if the stain is only a few days old.

Water-soaked furniture is likely to warp. Badly warped veneered/pressboard furniture is difficult to restore.

### Books and Walls

Books, papers and documents should be slowly and carefully dried. Books should be placed upright to dry. Keep pages apart. After exposing each page to the air for a while, place a paper towel between pages and stack books to prevent warping and crumbling. Later, stand the books upright and separate the pages for more drying.

This process will prevent mildew.

Water-damaged walls need special care. Plastered walls and wallpaper require different treatments than painted or concrete block walls.

To clean and dry an insulated wall, remove the baseboards and some of the siding to fully ventilate wall cavities. In certain cases, insulation may also need to be removed, dried or replaced. Wait at least two months before applying paint because paint will blister and peel if applied to a wet wall.

Plastered walls and wallpaper can be cleaned without replacing the paper by rinsing with clean water. If the wall paper peels from the wall, let it dry completely before applying glue.

For concrete walls, brush loose dirt off dry walls. Wash with mild soap and clean water. Start at the bottom and work up. The heavy saltwater content of typhoon rain has a corroding effect on concrete which causes chipping, fragmentation or flaking. If enough clean water is available, rinse the concrete surfaces to give them a longer life. Never use contaminated water for this purpose.

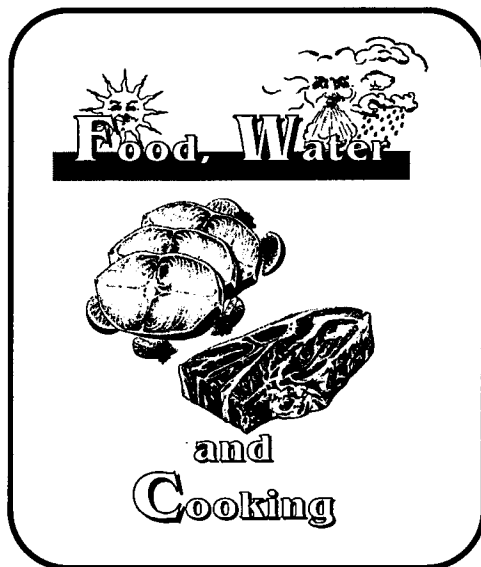
### Old Newspapers and their Usefulness

If a dry and fire-proof storage space is available in your home, it may be wise to save your daily newspapers. Newspapers, by the nature of their texture, have excellent liquid-absorbing qualities. To assist you in water/liquid clean-up activities, open up several sheets of newspaper and place them:

- under doorways and windows where water is apt to enter,
- on room floors where pets are kept, and
- underneath stored water containers.

Clean-up can be a lot quicker with the use of newspapers. As the sheets on the floors get soaked, simply roll them up and dispose of them. Continue to replace them with fresh, dry sheets as needed. The use of newspapers can greatly minimize mopping activities.

Newspapers make excellent glass/window cleaners. They may also be used to help start outdoor cooking fires.



### General Food Handling Practices

Buy food that does not require refrigeration, such as canned and dried meats, fruits, vegetables, powdered milk and cereals.

Anticipate a power outage by cooking and eating the most perishable foods first, such as meat, ice cream, fresh fruits and vegetables. Save liquids from canned vegetables to substitute for water in cooked dishes. Juices from canned fruits can be used as a salad dressing or as a beverage.

If you have time, clean the refrigerator the day before the typhoon hits to minimize odor in case the power goes off for a long time. Eat or discard perishable foods that spoil rapidly. At least 12 hours before the typhoon, turn your refrigerator's freezer to the coldest setting and try not to open the door. This will help the food stay frozen.

### Food Safety

Food safety precautions can make an important difference after a typhoon. Food can become contaminated as a result of fire, flood and wind related exposure. Also, it may spoil or become unsafe after a power outage.

Discard the following items if they came in contact with contaminated water:

- Meat, poultry, fish and eggs;
- Wooden & plastic utensils, baby nipples, pacifiers & other porous non-food items used with food;
- Fresh fruits and vegetables;
- Foods in cardboard or paper cartons, foil, cellophane or cloth;
- Foods in bags, such as rice, sugar or flour;
- Anything in crown-capped bottles, pull-top

cans, cork or screw caps, including all glass jars, even those you sealed yourself;

- Flour, grain, sugar, coffee & other staples in canisters;
- Dented, leaking, bulging or rusted cans;
- Home canned foods;
- Preserves sealed with paraffins;
- Unopen jars with waxed cardboard seals, such as mayonnaise and salad dressing;
- Seasonings and extracts;
- Opened containers and packages.

If you have any doubt about the safety of any food item, throw it away. Destroy all foods, including sealed unopened cans, that have been covered by water suspected of containing sewage waste.

Foods in sealed cans not fouled by sewage contaminated water are safe to eat if the cans are free from rust, have no bulges or leaks, and have been disinfected prior to opening. Commercial glass jars of food are safe if the containers have been sanitized.

To sanitize contaminated cans and glass jars, remove the labels and mark the contents on the can or jar lid with indelible ink. Wash with soapy water, immerse in a chlorine bleach solution (10 drops of bleach to one gallon of water) and air dry before using. Cans, empty glass jars, metal pans and utensils may also be sanitized by boiling for at least 10 minutes.

Generally, food in a refrigerator will be safe if the power has not been out longer than a few hours and the temperature has been at 40 degrees F or below. Food in a full, free-standing freezer should be safe for about 2 days if the temperature was at 0 degrees F or below. Food in a half-full freezer should be safe for about 1 day if the temperature was at 0 degrees F or below.

To prolong the life of your food; the following measures should be taken:

- Group meat and poultry to one side or on a tray, so their juices won't contaminate other foods if they begin to thaw.
- Be wary of using meat, poultry and foods containing milk, cream, sour cream or soft cheese.

### Do not refreeze thawed items

Discard any bread, fruit, vegetables and meat that has a questionable odor. Any meat, fish, cooked food or opened canned food that has been kept at 40° F or higher for two hours or more should be discarded. Partially thawed frozen vegetables with ice crystals may be safely refrozen.

Dry ice can keep foods frozen if placed over the food on boards or heavy paper. Allot 2 1/2 or 3 pounds of dry ice per cubic foot of space. More dry ice will be needed in upright freezers because the dry ice must cover every shelf. This will keep food for 2 days. Fill partially filled freezers with crumpled newspaper to reduce air currents which will dissipate dry ice. (**WARNING: Dry ice can burn bare skin**).

Foods in a freezer without any power may stay frozen from one to three days, depending on the following conditions:

- The door must remain closed;
- The freezer must be almost full;
- The temperature outside must be moderate; and,
- The freezer must be large and well-insulated.

### How Long Food Will Stay Frozen Also Depends Upon:

- The types of food in the freezer. Meat and other dense foods will not warm as fast as less dense food.
- A well-insulated freezer with good gaskets.
- The size of the freezer; the larger the freezer, the longer food will stay frozen.

### After a Power Outage

In emergency conditions, the following foods should keep at room temperature (above 40 F) for a few days. Discard anything that turns moldy or has an unusual odor or look, such as:

- Butter or margarine
- Fresh fruits and vegetables
- Dried fruits and coconut
- Opened jars of salad dressing, peanut butter, jelly, relish, taco sauce, barbecue sauce, mustard, catsup, olives
- Hard and processed cheeses
- Fruit juices
- Fresh herbs and spices
- Flour and nuts
- Fruit pies
- Bread, rolls, cakes and muffins

Discard the following food if kept for more than 2 hours above 40 F:

- Raw or cooked meat, poultry and seafood
- Milk, cream, yogurt, soft cheese
- Cooked pasta, pasta salads
- Custard, chiffon or cheese pies
- Fresh eggs and egg substitutes
- Meat topped pizzas and luncheon meats
- Casseroles, stews or soups
- Mayonnaise and tartar sauce
- Refrigerator and cookie doughs
- Cream filled pastries

### TO PREVENT DISEASE:

- Wash all fresh food with safe drinking water before eating it.
- Cook food properly and thoroughly.
- Do not eat land crabs or shellfish from the shoreline around bays or along rivers.
- Wash dishes and tableware with hot soapy water, rinse well, and sanitize by soaking the dishes for at least one minute in a solution of two tablespoons liquid chlorine bleach for every gallon of water.

### Cooking Tips

If a typhoon has knocked out your power or gas line, cooking meals can be troublesome and hazardous. Charcoal or gas grills are obvious alternatives. To avoid the danger of fire and poisonous gases, **NEVER USE THEM INDOORS**. Camp stoves that use kerosene or solid (Sterno\*) fuels should always be used outdoors for the same reasons.

Wood can also be used for cooking. Always build the fire outside, away from any buildings, making sure that it is well contained. A metal drum or stones can be used to contain the fire. A charcoal grill is a good place to build a wood fire. Never use gasoline to start a fire and be sure to put out your fire after cooking.

### Food Safety After a Fire

Food that has been exposed to fire can be affected by three factors:

- the heat of the fire;
- smoke fumes;
- the chemicals used to fight the fire.

Food in cans or jars that have been close to the heat of the fire may appear to be unharmed, but the heat from the fire can activate food spoilage bacteria, leaving them inedible.

Burning materials may release toxic fumes that contaminate food. Discard any type of food stored in permeable packaging such as cardboard or plastic wrap. Discard raw food outside the refrigerator. Food in refrigerators and freezers also may be contaminated. The seal on these appliances is not completely airtight. Discard any food with an off-flavor or smell.

The chemicals used to fight fires contain toxic material that can contaminate food and cookware. Throw away foods exposed

to the chemicals. Chemicals cannot be washed off the food. This includes food stored at room temperature, as well as foods stored in permeable containers such as cardboard and screw-topped jars and bottles.

Sanitize canned goods and cookware in the same manner as recommended for flood-damaged foods.

### **Water Storage for Drinking & Cooking**

Water for drinking and cooking, referred to as potable water, is the most essential item to have on hand during and after a typhoon. Water outages during and after a storm is not unusual. Therefore, preparations for potable water storage and handling should begin 48 hours before the onset of the anticipated typhoon.

Potable water should be stored in clean containers. Also, store enough water based on your estimated family needs for at least a 3 to 4 day period.

Smaller quantities of drinking water can be stored in plastic containers and then frozen. Should electricity go out, the frozen containers can keep both your refrigerator or freezer cold and provide cold drinking water as the ice melts.

Larger quantities of potable water can be conveniently stored in plastic garbage cans with wheels and snap-on lids. These are easier to move around than other large containers, and they can be covered for safe water handling. Lining garbage cans with plastic liners, such as clean plastic trash bags, helps prevent leaks. When garbage cans with wheels are not available, other suitable large containers can be used to store water. Be sure to keep stored potable water near or in the kitchen area but away from doors and passageways.

Water stored in closed containers may develop an odd taste but is still safe to drink. You can improve the flat taste of stored water by pouring it from one clean container to another several times to aerate it.

In the event that no water outage is experienced during and after a typhoon, try and utilize all stored water as a conservation measure.

When a water outage is experienced and water is later restored, consider all water coming out of your pipe as contaminated water until the Public Utility Agency of Guam (PUAG) announces it is safe to consume. In the meantime, following these few simple procedures may allow you to safely use the water for drinking and cooking.

#### **You can sanitize water by:**

- Boiling it for 20 minutes before using; or,
- Treating it with liquid chlorine bleach by using the following guidelines:

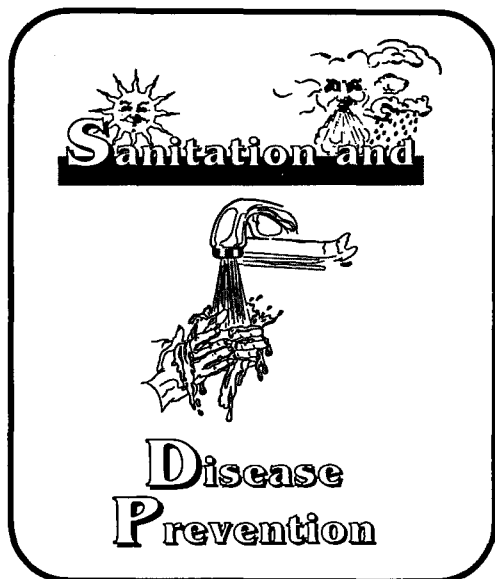
*\*One drop of bleach for a glass of water; or,*

*\*Ten drops of bleach for one gallon of water.*

Be sure to allow all chlorine treated water to stand 20 minutes before using.

If the water is cloudy or brownish with floating materials, boiling is the most preferred treatment method. The chlorine bleach treatment can be used, but the above mentioned chlorine dosage must be doubled and the water must stand at least one (1) hour before using.

Store all sanitized water in clean covered containers.



### Water for Sanitation/Restroom Cleanliness

Water for toilet and other hygienic uses is also an essential item to have on hand during and after a typhoon. Since water outages during and after a storm are not unusual, water storage for sanitation purposes should begin at least 24 hours before the onset of the anticipated typhoon.

During a water outage, the use of only one bathroom will simplify sanitation and cleaning. Preferably, select a bathroom with a bathtub. Next, remove all rugs in the bathroom. Plug the drain of the bathtub and fill with water. If possible, store a few large containers, such as plastic garbage cans, in the bathroom and fill with water. Keep a two gallon bucket handy in the bathroom. The water in the bathtub and containers can be used to flush toilets and for showers. Store several roles of toilet paper individually in plastic or zip-lock bags to minimize moisture and accidental contact with water.

### Toilets

**Flushing toilets:** Toilets can be flushed in two different ways during a water outage. One method involves manually pouring two to three gallons of water into the TANK for regular flushing. Another method involves pouring at least two gallons of water, in a quick manner, into the BOWL. This method requires the use of a wide mouth container, such as a bucket, and the total amount of water in the bucket must be poured into the bowl almost all at once.

**Frequency of Toilet Flushing:** It may

be necessary to conserve water for some time, so flushing after every use may not extend your water supply. There is a saying that goes: "When it's yellow, let it mellow. When it's brown, flush it down." In other words, when the toilet is used for urine only, you may wish to flush it only after several uses. On the other hand, flush after each bowel movement.

**Note:** If water is no longer available for flushing toilets, you can reduce strong odors by pouring a layer, at least one-half inch, of kerosene on top of the toilet bowl water. Because kerosene is lighter than water, it will float on top of the used toilet water and hold down odors. Keep a fire extinguisher on hand at all times. **WARNING: BEWARE OF CONSTANT FIRE DANGER ANYTIME YOU USE PETROLEUM FUEL PRODUCTS.**

**Used Toilet Paper:** Used toilet paper requires more water and may cause blockage due to insufficient water pressure from flushing. It is advisable to place used toilet paper in a plastic or zip-lock bag for disposal in the trash rather than flushing.

### Bathing

Most bathrooms these days are installed with drain outlets on the floor. If your bathroom is equipped with such a drain, showers can be improvised. For a warm shower, place one to two quarts of boiling water into a half-filled bucket of water. You may add more water to fill the bucket. With a plastic cup, use the warm water to first wet your hair and body before shampooing and/or soaping, and finally for rinsing off. You can also bathe in just two gallons of water by filling a basin with water, then soaping and rinsing as you wash down your body. Refreshing mini-showers can be taken with a bar of soap during rain showers (or in rain run-off), so keep a swimsuit handy.

### Good Health Practices

To maintain your personal hygiene:

- Wash your hands with soap and water:
  - \*After you've touched any unclean water or debris;
  - \*Before you eat anything;
  - \*After using the toilet or out house.
- Use garbage cans to contain garbage and food scraps. Always keep the garbage cans covered.
- Use a clean toilet or outhouse.



- Keep a container of chlorinated water in the bathroom for washing hands. Change this water daily.
- When drinking, always use a clean drinking glass and be sure the water is from a safe source.
- Install screens and windows to prevent flies from entering your home.
- Stay clean by bathing.

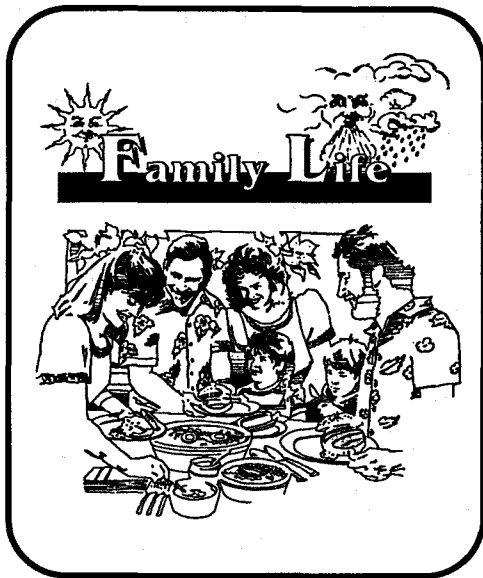
### **Prevention of Dengue Fever and Mosquito-borne Diseases**

In the aftermath of a typhoon, there is a higher rate of vector borne diseases. Dengue Fever, also known as Breakbone Fever, is caused by a virus that is transmitted by mosquitos.

As a precaution, stop mosquitos from breeding by taking the following steps:

- Empty, cover, discard or turn upside down containers that hold water, such as bottles, jars, buckets or barrels. Discard old tires at a proper dump site or store them in a shed or garage.
- Repair leaky pipes or outdoor faucets to prevent water from gathering into small pools or puddles.

- If you raise plants in water, change the water every 3 to 4 days. It takes a mosquito about one week to develop from a hatched egg to an adult.
- Change daily the water dishes of pets, poultry and livestock.
- Cover rain barrels and other water catchments with fine mesh screening (a minimum of 18 mesh per square inch).
- Fill any hole in trees with sand or mortar, or drain and spray them with insecticide.
- Cover and drain barbecue pits.
- Remove abandoned vehicles and broken equipment, such as old washing machines, toilets or roofing tin.
- Fill in puddles or ditches that collect stagnant water.
- Containers used to collect condensation from air conditioners should be emptied at least twice a week and washed to remove mosquito eggs and larvae.
- Once a week, burn all coconut shells and any open coconuts, or turn the shells upside down.
- Clear leaves and other rubbish from roof gutters.



## 4-Step Family Preparedness Plan

It is important to develop a family preparedness plan. This plan needs to be known to all family members. A basic preparedness plan has four steps:

- do your homework;
- create a family typhoon plan;
- make a checklist and periodically update it;
- practice and maintain your plan.

### 1. Do your homework

Find out what a typhoon could do to your area. Contact your Civil Defense/Guam Emergency Services Office and American Red Cross Chapter to:

- Learn about the possible destructive effect of typhoon where you live and how this might affect your family.
- Request for information on how to prepare and respond to typhoons.
- Learn about your community's warning signals, what they sound like, what they mean and what actions you should take when they are activated.
- Learn about local, state or federal assistance plans.
- Find out about the emergency response plan for your workplace, your children's school or day-care center, as well as other places where your family spends time.
- Ask about animal care: pets may not be allowed inside shelters because of health regulations.

### 2. Create a family typhoon plan

Discuss with your family the need to prepare for typhoon. Explain the danger of severe weather and floods to children. Develop a plan to share responsibilities and how to work together as a team.

- Discuss the types of typhoons that are most likely to occur and how to respond.
- Establish meeting places inside and outside your home. Make sure everyone knows when and how to contact each other if separated.
- Decide on the best escape routes from your home. Identify two ways out of each room.
- Plan how to take care of your pets.
- Establish a family friend or relative contact out of home. Call this person after the typhoon to let him know where you are and if you are safe. Make sure everyone knows the contact's phone number.
- Develop a list of important telephone numbers (doctor, work, school, relatives, fire, police, ambulance, etc.) and keep it in a prominent place in your home.
- Learn what to do if you are advised to evacuate.

### 3. Make a checklist & periodically update it

- Teach your children how and when to call 911 for help.
- Show each family member how to turn off the water and electricity at the main valves or switches.
- Teach each family member how to use a fire extinguisher (ABC type) and have a central place to keep it; check this each year.
- Install smoke detectors on each level of your home, especially near bedrooms.
- Conduct a home hazard hunt.
- Stock emergency supplies and assemble a typhoon supply kit.
- Learn basic first aid. At the very least, each family member should know CPR, how to help someone who is choking and first aid for severe bleeding and shock. The Red Cross offers basic training of this nature.
- Identify safe places in your home to go during a typhoon.
- Check to be sure you have adequate insurance coverage.

### 4. Practice and maintain your plan

- Test children's knowledge of the plan every 6 months so they remember what to do.
- Conduct fire and emergency evacuation drills.
- Replace stored water and food every 6 months.
- Test your smoke detectors monthly and change the batteries once a year.

### Preparing Children for Disaster

As you develop your preparedness plan, include children in the planning process. Teach your children how to recognize danger signals. Make sure they know what smoke detectors and other alarms sound like. Make sure they know how and when

to call for help. If you live in a 9-1-1 service area, tell your child to call 9-1-1. Keep all emergency numbers posted by the phone.

Help your children to memorize important family information. They should memorize their family name, phone number and address. Also, they should know where to meet in case of an emergency. If children are not old enough to memorize the information, they should carry a small index card to give to an adult or baby-sitter that lists the emergency information.

AND... In conjunction with the preparedness plan, working with neighbors can save lives and property. Meet with neighbors to plan how the neighborhood could work together after a typhoon. Members of a neighborhood organization, such as a home association or crime watch group, can introduce typhoon preparedness as a new activity.

Know your neighbors' special skills (medical, technical) and consider how to help neighbors who have special needs, such as disabled and elderly persons. Make plans for child care in case parents can't get home.

### Dealing with Stress after a Typhoon

A natural disaster, such as a typhoon, leaves more than a trail of property destruction. It often leaves thousands of victims with a destroyed sense of balance. In addition to restoring buildings and replacing material possessions, victims may need to restore their own emotional equilibrium. This can be especially important for children who do not have years of life experience to guide them. Here are some tips for dealing with stress:

- Be extra patient.
- Determine what's really important. Keep in mind that what your mate considers a top priority may be different from your priorities.
- Don't expect things to instantly restore themselves. Restoration, both physical and emotional, takes time.
- Realize that typhoon victims have suffered losses and that it is natural for them to express disbelief, anger, sadness, anxiety and depression.
- Realize that the emotions and moods of victims will change unexpectedly.
- Don't overlook children's feelings. They need to feel that they can count on you for extra attention, love and support. Reassure them. Make sure they understand that they are not responsible for the problems you face.

- Try to keep your family's diet nourishing.
- Refocus on the big picture instead of little details to get a sense of competency.
- Talk with friends, family and your parish priest or minister. In a crisis situation, a support network is essential.
- Be aware of the tendency to resort to bad habits when you are under stress.

### Helping your Children Cope with Disaster

It is normal for children to be afraid. Their fear may last for an extended period of time and is best handled by kindness and understanding. Encourage children to talk about their feelings and express their fears through play, drawing, painting and/or clay.

Children's fears vary according to age, maturity and previous experiences. Four common fears are death, darkness, animals and abandonment.

Children's fears may be intensified when adults back away from discussing certain topics with them. To help children cope with fears, it's important for adults to allot time to talk with children. Following a typhoon, some children may:

- be upset at the loss of a favorite toy, blanket, teddy bear, etc.
- be angry. They may hit, throw or kick things to show their anger.
- become more active and restless.
- be afraid of a recurrence of the typhoon. They may ask questions such as, "Will it come again?"
- be afraid to be left alone or sleep alone. They may have nightmares.
- behave as they did when younger. They may start sucking their thumb, wetting the bed, asking for a bottle or wanting to be held.
- show symptoms of illness such as nausea, vomiting, headaches, fever, or loss of appetite.
- be quiet and withdrawn, not wanting to talk about the experience.
- become easily upset, crying and whining frequently.
- feel guilty that they may have caused the disaster because of some previous behavior.
- feel neglected by parents who are busy cleaning and rebuilding their lives or homes.
- refuse to go to school or to child-care arrangements. The child may not want to be out of the parent's sight.
- become afraid of loud noises, rain or storms.
- not show any outward sign of being upset. Some children may never show distress because they do not feel upset. Other children may not give evidence of being upset until several weeks or months later.

## What Parents and Other Adults Can Do:

- Let children know you love them and that they can count on you. Reassure them and that they are not responsible for the typhoon.
- Talk with your child and provide simple and accurate information to questions.
- Talk with your child about your own feelings.
- Listen to what your child says and how your child says it. Is there fear, anxiety or insecurity? Repeating the child's words such as "You are afraid that...", or "You wonder if the storm will come again tonight," helps both you and the child clarify feelings.
- Reassure your child by saying, "We are together. We care about you. We will take care of you."
- You may need to repeat information and reassurances several times. Do not stop responding just because you spoke to the child once or even 10 times.
- Hold your child. Touching is important. Close contact helps assure children that you are there for them and will not abandon them.
- Spend extra time putting your child to bed. Talk and offer assurances. Leave a night light on if that makes the child feel more secure.
- Observe your child at play. Listen to what is said and how the child plays. Frequently, children express feelings of fear or anger while playing.
- Provide some play experiences to relieve tension. Work with clay, paint, play in water, etc. If children show a need to hit or kick, give them something safe like a pillow, ball or balloon. Allow a safe and open space for them to play, if possible.
- If your child lost a meaningful toy or blanket, allow the child to mourn and grieve. It is all part of helping the child cope with feelings about the disaster. In time, it may be helpful to replace the lost object.
- If you need help for your child, contact a community resource such as your Guam Cooperative Extension, mental health agency or a ministry.

## Special Preparations for People with Disabilities

People with disabilities may need to take additional steps to prepare for typhoon. If you are disabled or know someone who is, the following precautions should be taken:

- Ask about special assistance that may be available to you in an emergency. Many communities ask people with disabilities to register, usually with the fire department or emergency services office, so needed help can be provided quickly in an emergency.
- If you currently use a personal care attendant obtained from an agency, check to see if

the agency has special provisions for emergencies, such as providing services at another location should an evacuation be ordered.

- Determine what you will need to do in the advent of a typhoon.
- Determine in advance what your alternative shelter will be and how you will get there.
- Learn what to do in case of power outages and personal injuries. Know how to connect or start a back-up power supply for essential medical equipment.
- If you or someone in your household uses a wheelchair, make sure more than one exit from your home is wheelchair accessible in case the primary exit is blocked.
- Consider getting a medical alert system that will allow you to call for help if you are immobilized in an emergency.
- Store back-up equipment, such as a manual wheelchair, at a neighbor's home, school or your workplace.
- Avoid possible hazards by fastening shelves to the wall and placing large, heavy objects on the lower shelves or near the wall. Also hang pictures or mirrors away from beds. Bolt large pictures or mirrors to the wall. Secure water heaters by strapping them to a nearby wall.

## Pets

Do not leave pets tied up during a storm. Place them in a secured shelter. If you do not have one, keep them in the house, preferably in the bathroom or laundry room. Line the floor with paper to make cleaning easier. Provide them with enough water and food to last through the typhoon.

Unlike pets, allow chickens to run loose. They can take care of themselves in a typhoon. Surprisingly enough, chickens tend to sustain little or no harm during a typhoon.

## Livestock

Large animals, such as cattle and horses, are capable of caring for themselves. But, because of their size, they should be placed in a sturdy shelter.

Many of the injuries they suffer during a typhoon are due to flying objects.

Just as it is dangerous for humans to drink contaminated water, it is also dangerous for animals. Take the necessary precaution to sanitize water, such as boiling or using a chlorine bleach solution.



### Electronic Items

You'll need to protect your equipment from three dangers: wind, water and salt. Salt accelerates corrosion. Since typhoons pick up salt water from the sea, the rain associated with them has a high salt content.

Preparation for the protection of sensitive computers and similar equipment should begin before the approach of a typhoon.

Rooftop antennas should be dismantled and stowed. If you need to use your antennas during the storm, secure the bases with extra heavy piping. Double or triple wire supports, taking extra effort to secure them to solid anchors, not to trees.

Inside the building, disconnect all equipment from power sources and cover all components with waterproof covers or plastic garbage bags. Move all sensitive equipment away from windows and outside walls. If you must use your equipment during the storm, be sure they are connected with surge protectors and line conditioners while using island power. These two devices provide added protection for your equipment during power fluctuations. The use of a battery pack (back-up battery power) can help you save your work in the event of a power outage. If possible, operate from an interior location not along an outside wall or near a window. Most inexpensive power outlet-type surge protectors are not sufficient for full protection. Check with a technician on the right kind of protection equipment.

Never allow sensitive equipment to remain in contact with water. If your equip-

ment comes in contact with water, and it has not been disconnected, disconnect it immediately and do not turn it on or operate it. Allow your equipment to air dry. Call your service agent or deliver your equipment to a qualified service technician as quickly as possible.

### Damaged Appliances

All damaged appliances should be thoroughly checked out by a trained technician.

Do not plug any appliance into power outlets of a damaged structure until the building's wiring has been inspected. Appliances with working parts saturated with water should be professionally serviced. Running wet equipment, before it is properly cleaned and serviced, could permanently damage it.

To clean the hard surface of appliances, wipe with a mild soap solution. Follow with a wipe-down solution of two tablespoons liquid chlorine bleach in a quart of water. Avoid scratching enamel or metal surfaces by frequently rinsing your wash cloth in clean fresh water.

To remove odors from freezers and refrigerators, wipe the inside with a heavy duty cleaner and water. Don't overlook the plastic gasket that seals the door. Wipe with warm water and dry. If odors remain, wipe-down with a baking soda solution, rinse and dry.

Leave the doors of washers and dryers open until everything inside is dry.

### Portable Generators

Typhoons can terminate the island's power service for an extended period of time. The use of a portable generator can provide substitute power to a home. However, the generator must be of the right capacity to start and run desired appliances.

Generators come in various levels of power generation capacity. Most portable generators are designed to simultaneously run one or two home appliances and a few lights with the use of an appropriate extension cord. However, some of the larger, more sophisticated units can actually provide enough electricity to run all of an average home's appliances. These units can actually be hooked, with appropriate wiring and switching, into the house for more convenient operation. However, a



qualified, licensed electrician must be consulted for this type of electrical work. Unqualified, unlicensed individuals should not attempt to hook-up electrical service into a house. Serious damage to the wiring system of a house, including total destruction of a generator, as well as electrocution, can occur due to improper electrical hook-up.

The discussion that follows applies only to direct appliance to generator hook-ups.

To select the generator you want to use, first determine how many lights and appliances you want to operate simultaneously under portable power. Next, identify the total wattage required to start-up and run all the desired lights and appliances. It is important to note that it takes anywhere from two (2) to three (3) times more energy (wattage) to turn on an appliance than the energy (wattage) to keep it running once turned on. For example, if the running wattage of a motor is 400, then the wattage required to start the motor is 1,200. The generator you use must be large enough that it will start and run the necessary appliances. Generators too small for the job may be able to start appliances, but the voltage will drop and the motors of the appliances will overheat and burn out, not to mention possible damage to the generator.

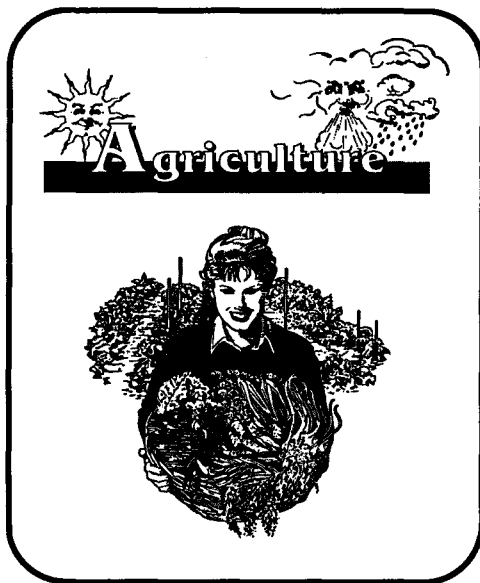
Note that appliances can be operated on a rotating basis. For example, some lights and a refrigerator can be operated for a period of time, and then the refrigerator

can be turned off and the washing machine can be operated in its place. Developing a good rotation schedule can help you decide on the more ideal and affordable generator unit.

To assist you in finding out the wattage requirement of an appliance, refer to the appliance owner's manual, or, if not available, check the manufacturer's name-plate on the appliance. If the wattage requirement is not found on the name-plate, locate the horsepower level. The horsepower level of a motor is generally expressed in abbreviated form as HP. If the power requirement of an appliance is expressed in horsepower (HP), refer to the horsepower to wattage conversion table on page 36.

### **Weatherheads**

During a typhoon, it is not uncommon for weatherheads to be damaged. Weatherheads are the fist-shaped metal coverings that protect the connection between your home's power lines and Guam Power Authority (GPA) wires. You must have a weatherhead for power to be restored to your home. If your weatherhead is damaged during a typhoon, notify your insurance company. They may cover the cost, or part of the cost, to repair the weatherhead, and recommend or send a certified electrician to repair it. Once it is repaired, the electrician will give you a building permit that must be taken to the Department of Public Works (DPW). DPW will notify GPA and approve a re-connection of power to your home.



### **Typhoon Preparedness on Hog Farms**

The first thing to consider is the strength of the roof against the strongest wind. If the roof blows away, hogs will be exposed to rain, wind, chill and cold. This may lead to health problems such as respiratory ailments, reproductive infections and diarrhea. Mature hogs may withstand cold, but over-exposure can lower their resistance to infections.

If severe structural damage has occurred - such as a blown-away roof or walls that expose hogs to the cold, rain or hot sun - immediate repairs should be undertaken, or temporary shelter should be provided. Securing hogs in a warm and dry shelter will reduce health problems.

If roofs and walls are intact, minimize the amount of rain entering the shelter, especially where piglets and weaners are kept. Heavy-duty curtains or plywood boards can be installed on the sides of the shelter. Be sure that the shelter can be opened during a hot day.

Have an adequate supply of feed on hand before a typhoon and keep it dry and safe from pests. Molds and fungi easily grow on wet feed and can render them useless.

Power outages can cause low water pressure or lack of water for several days or weeks. If running water is available, and if the farm is equipped with a watering system, consider applying soluble antibiotics for at least 3-5 days after the typhoon. Anticipate power outages by preparing dry jute sacks, old clothes or shredded paper to be used for bedding piglets and any ex-

pected farrowing. Livestock losses should be documented and reported to the Department of Agriculture or any disaster relief agency for possible aid.

Avoid handling and moving animals before a storm. Postpone weaning piglets. Delay castrations, ear notching or similar types of animal handling. The cold and the noise brought about by the typhoon can lower animals' resistance to disease. Secure any loose materials to prevent banging noise, which may further irritate the animals.

### **Disposal of Animal Carcasses**

Because the soil is relatively shallow on Guam, it is not recommended to bury dead animals. Instead, place the carcass in a plastic bag and take it to the Ordot Landfill where an area has been set aside for the disposal of carcasses. If you are not able to go to the landfill, or it is closed, follow this procedure: *leave the carcass in the sealed plastic bag and go to the landfill when you can.*

The Animal Control & Quarantine Unit of the Environmental Health Division, Dept. of Public Health & Social Service, can also help in the disposal of dead animals.

In the event that an animal is injured, follow first-aid procedures for preventing shock. Call your veterinarian or the territorial veterinarian of the Dept. of Agriculture at 637-3942 or 734-3942/3.

### **Insect Pests, Rodents, and Snakes**

After a storm, insect pests, rodents & snakes - like other residents - may be left homeless. It is not uncommon to find these pests & animals seeking shelter & food in areas where people reside. Damaged structures, with their many accessible entrances, have a higher probability of attracting rodents & snakes. Animals may also be found under debris scattered by the typhoon or in debris piles created during the cleanup effort. Rodents are a potential health hazard.

### **To discourage infestation outdoors:**

- Remove debris from around the farm as soon as possible. Debris attracts rodents that snakes feed on. It also provides shelter for snakes.
- Remove potential food sources such as household trash and wasted grain.
- Watch where you place your hands & feet when removing or cleaning debris. Wear

gloves & don't place your fingers under debris you intend to move. Wear boots at least 10 inches high and/or leggings in areas of heavy debris, where rodents & snakes are likely to be found.

- Never step over logs or other obstacles unless you can see the other side.
- Watch for snakes resting on fallen trees, branches and other debris.
- If you encounter a snake, step back & allow the animal to proceed on its way. You can easily retreat from the snake's path.

### Indoors:

- If you find a snake on your farm and you are unable to kill it, isolate the snake within a small area.
- A nonpoisonous snake can be captured by pinning it down with a long stick or pole, preferably forked at one end. Remove it by scooping it up with a flat-blade shovel.
- If you are uncomfortable about removing the snake yourself, seek out someone who has experience, such as someone from the Division of Aquatic & Wildlife Resources, Dept. of Agriculture. As a last resort, you may have to kill the snake. Club it with a long stick, rod or similar tool. Remember to stay out of the snake's striking range, estimated at one-half the snake's total length.
- If you are bitten by a snake, don't try to treat the bite yourself. Go immediately to the nearest hospital or clinic. Make a mental note of the snake's appearance for identification and treatment purposes.

### Vegetable and Fruit Crops

Heavy rains and typhoon winds usually destroy most cash crops. Commercial operators are best advised to re-plant rather than try to salvage severely damaged plants. However, typhoon damages vary. The following are some preventative measures that can be taken in case of small typhoons:

- Harvest all mature vegetables & fruits and those that can be used in their green or unripe stage.
- Eggplants and peppers can be pruned to 2-4 branches and to about 1-1.5 feet in height.
- If practical, lay trellised crops on the ground.
- If flooding is a concern, provide an avenue for water to drain out of the field. Avoid diverting water into the neighbor's yard or other property of significant use.
- Prune banana & papaya plants by cutting all but the three youngest, healthy leaves; cut these three leaves in half lengthwise & leave the smaller top leaves and growing tip uncut.
- If substantial storm damage is anticipated, you can begin new plantings before the storm hits. If a safe area is available, seeds may be germinated in seedling trays.

### Flooded Gardens

1. If flood waters have covered a garden, some produce will be unsafe to eat. The safety of unharvested fruits & vegetables will depend on:

- Kind of produce;
- Maturity of produce at the time of flooding;
- Time of year flooding occurred;
- Severity of flooding (depth of water and silt)
- Duration of flooding;
- Bacterial content of floodwater;
- Likelihood of contamination from sewage or other bacterial contaminants.
- If machinery was flooded, thoroughly clean & service engines before starting. Take diesel engines to your dealer for inspection of fuel injection systems.

### In addition:

- Drain crankcase oil and remove oil pan. Clean the inside of the engine with flushing oil or kerosene and change the filter.
- Remove cylinder head from engine if typhoon water was near the level of the combustion chamber. Clean thoroughly, dry and replace. Lubricate rings by putting oil on the cylinder walls.
- Remove the carburetor and intake and exhaust manifolds; dry and service all distributors, generators and starters that have been under flood water.
- Remove the fuel tank & flush clean if it has been flooded.
- If the engine heats up after starting, stop and recheck your work.

2. In general, immature fruits & vegetables at the time of flooding should be safe to eat by the time they are ready to harvest. For additional safety, disinfect produce & cook it before eating.

3. Unless flooding was light & there is no danger of bacterial contamination from floodwater, do not use fruits & vegetables that were ready for harvest at the time of flooding unless they are disinfected, peeled & thoroughly cooked. Some fruits & vegetables are more susceptible than others to bacterial contamination.

- Leafy vegetables such as petsai, lettuce, cabbage, mustard, kale, spinach, celery & fleshy vegetables & berry fruits such as tomatoes, summer squash & peppers are highly susceptible to bacterial contamination.
- Silt and other contaminants may be imbedded in the leaves, petioles, stems or other natural openings of fleshy structures and can be difficult to remove.
- Root, bulb and tuber crops such as carrots, radishes and onions are less susceptible to bacterial contamination. Disinfect these vegetables, peel and cook them thoroughly before eating.

- Produce with a protected fruit or impervious outer skin such as cucumbers, peas, melons, eggplant or sweet corn should be washed and disinfected before the outer shell skin or husk is removed. Then shell, peel or husk the produce and cook, if possible.
4. Thoroughly wash and disinfect any produce before eating.
- Wash in a strong detergent solution with a scrub brush. Remove all silt.
  - Immerse produce for 15 to 20 minutes in a chlorine solution. Household bleaches contain from 2 to 6 percent chlorine. The amount of bleach to add to one quart of water depends on the percentage chlorine it contains:
    - 2% - 3/4 *tablespoon*
    - 4% - 2 *teaspoon*
    - 6%- 1/2 *teaspoon*
  - Rinse thoroughly with safe drinking water.
  - Peel, if possible, and cook thoroughly before eating.
  - Refer any specific questions to health authorities or to the Guam Cooperative Extension.

### Trees and Plants

Damage to trees and to property caused by fallen trees can be reduced by taking the following precautions for:

**Fruit Bearing Trees:** Harvest all mature fruits. Give special attention to coconut trees. Remove old and yellowing palm fronds.

**Trees With Branches:** Branches of fruit and ornamental trees may be pruned to maintain an open canopy, thereby reducing wind resistance. Prune younger and smaller branches found between older and more mature branches.

Young and succulent growing branches are more susceptible to wind burn and breakage; so, remove these branches.

Remove branches that cross over each other, especially those with areas of worn bark.

**Cutting Down Trees:** The cutting down of a tree should always be viewed as a last resort. The most important factor to consider is the potential hazard the tree poses to life & property. Older & taller trees, especially those in shallow soils, can be uprooted by strong winds. Trees in shallow soils tend to show roots above the soil surface. As a rule, older trees, especially those showing surface roots & that are planted close to a house or other valuable

property, should either be cut down or extensively pruned.

**Potted Plants:** Outdoor potted plants, both free-standing & hanging, are best protected by being kept in-doors. If this is not practical, lay them on their side on the ground, preferably in a leeward area. If possible, anchor potted plants with heavy net, such as fishing net.

**Established Small Plants:** Small, short & bush type ornamental plants can suffer wind burn & broken branches. Trim off lanky branches.

If plants are very bushy, remove a few branches to increase air movement through the canopy and to prevent the plants from being toppled or uprooted. When removing branches, be sure cuts are clean to minimize plant damage.

### Small Fruit Trees

Storm damage to small fruit trees can occur in different ways, depending on the growth habit and the typhoon's proximity. Wind can be the most destructive element for most fruit trees and vine crops. Too much water and salt water can also affect crops. The following are some suggestions to lessen damage:

- Where wind damage is significant, pruning should be as light as possible. If large areas of bark are striped, the plant probably will not survive without proper attention. Make clean cuts to minimize bark stripped areas. Several growing seasons may be needed for the plant to regain its former size.
- Many leaning or uprooted plants can be reset if the root ball is intact. Once reset, they should be secured with stakes.
- Damaged terraces or raised planting beds need to be reshaped to protect the area.
- Cover exposed roots or provide a medium for new root growth. Use the smallest equipment possible to minimize soil compaction & to reduce further root damage.
- Defoliation caused by strong winds will weaken fruit trees. When coupled with root damage, defoliation will cause additional stress since the root system serves as a storage reservoir for plant food manufactured by the leaves.
- Soil in low-lying areas flooded by ocean water will make fruit growing difficult. Irrigate frequently to help reduce salt buildup. Rainwater, while complicating other cleanup activities, aids in flushing the soil.

### Typhoon Damaged Farm Implements

- Farm machinery damaged in a typhoon should be promptly reconditioned.
- Before putting the machine in service, thor-

oroughly clean its exterior. Mud and silt can be removed by hosing with pressurized water. Brush with fuel oil or kerosene to lift silt deposits.

- For machinery that was exposed to saltwater, over-lubricate with fresh lubricant to flush out dirt and water. Remove, clean, lubricate and replace all wheel bearings. Consider that sealed bearings might be damaged.
- Move the machine parts by hand to make sure all moving parts are free before applying power. Be sure they are completely dry before painting.
- Thoroughly clean and dry all belts before replacing.
- Prevent rust on polished working parts by cleaning and applying a rust preventive coating.
- If a tractor has not been submerged deeper than the platform and has no water in the engine, only the wheel bearings & other submerged parts need to be serviced.

### **Safety Rules for Farm Clean-up**

1. Delay permanent repairs until buildings are thoroughly dry.
2. Spread wet feeds to dry. Avoid feeding wet feeds to livestock unless absolutely necessary.
3. To avoid a fire hazard, move wet hay outside and spread it out to dry.
4. Move livestock to unflooded pastures to prevent disease.
5. Get rid of pests such as rodents, snakes & insects.
6. Promptly dispose of animal carcasses.
7. Disassemble, clean, dry and lubricate farm machinery. Do not start motors or engines until they are cleaned and reconditioned.
8. Clear and open drains, ditches, channels, small streams and tile-drain outlets. Drain floodwater, if possible, from fields.
9. Clear debris, especially barbed wire and other materials which could be dangerous to livestock, from lots and fields.
10. Avoid overexertion and strain in lifting and moving heavy objects or loads.
11. When using kerosene, keep away from heat, sparks and open flame.

### **Special Considerations for Gardeners & Farmers**

In addition to the precautions and responses covered in the previous pages, gardeners and farmers may want to consider the following measures: *Turf Grass Recovery After a Typhoon*

The surge of salt water brought inland by a typhoon can damage turf grasses on

lawns, golf courses, parks, playgrounds, sports fields and leisure-recreation sites.

1. Irrigation with clean, sodium-free, fresh water is probably the most important practice to follow when rinsing accumulated salts from turf leaf surfaces and leaching salts from root zones of soils.

- Test all irrigation water sources for salinity.
- You also can irrigate from a well or river if not contaminated with salt.

2. Bermuda, zoysia, creeping bent and St. Augustine turf grasses have good relative tolerance to salinity.

- Tall fescue and perennial ryegrass have medium salinity tolerance.
- Red fescue, Kentucky bluegrass, and centipede grass have poor relative salinity tolerance.

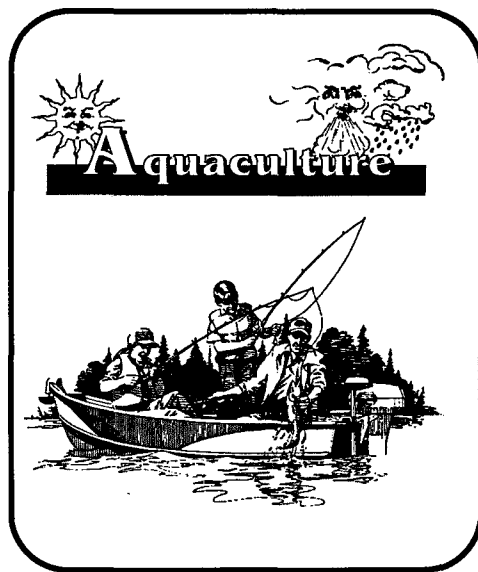
3. Repeated irrigation with water containing 1200 parts per million (ppm) total soluble salts will be harmful to the turf unless followed by sufficient rainfall or fresh irrigation water. Even irrigation water containing 500 to 600 ppm total soluble salts, when used repeatedly without being flushed with fresh water from rainfall or irrigation, can create a problem by allowing salts to accumulate in the root zone of the soil.

4. If it is overseeding time, remember that turf-type perennial rye-grasses have only medium tolerance to salinity. Test the soils for salinity before overseeding to avoid a loss in stand of cover.

5. Use gypsum (calcium sulfate, 18 percent sulfur, 20 percent calcium) to help leach salt from the soil. Gypsum works best when incorporated into the soil but it can be broadcast on the turf. Gypsum is not very soluble in water but it is more soluble than limestone.

- Irrigate after gypsum application to move it into the soil surface and root zone of the turf. Allow a period of time for the chemical reaction, then continue irrigation to leach the salts into soil below the root zone.
- Poorly drained soils will be difficult to leach. Water logging the soil for extended periods of time can be as harmful to the turf as excess soluble salts.
- Core aeration or deep tine aeration, preferably with coring tines, can greatly assist with improving infiltration and percolation of water and salts through the soil and below the root zone.





Preparing your farm for a typhoon actually begins with its design and construction and continues with regular maintenance. Ponds should be built well above historically high flood levels. High wave surge can flood ponds and break berms. Excessive rain can cause erosion and can dilute pond water, reducing salinity levels. So be sure to maintain concrete containments and keep the outside walls of ponds properly back-filled.

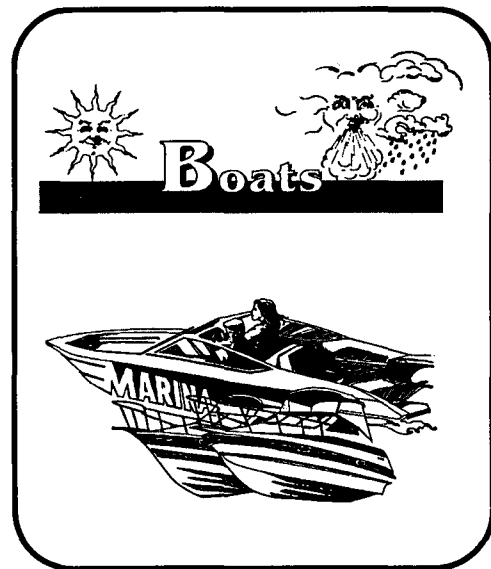
Prepare for each approaching storm as though it were a super-typhoon. A tidy farm is always easier to prepare and secure than a disorganized one. The greatest danger is from flying debris caused by high waves, excessive rain and winds. Residential structures and feed storage buildings are particularly vulnerable. Sheets of tin roofing are especially dangerous. Thoroughly inspect your farm and facilities before a storm to remove and secure loose equipment and debris.

Build wooden buildings according to Federal Emergency Management Agency standards. Regular maintenance will help you save preparation time. This includes clearing overgrowth and debris from your water source, clearing drains and pipes and replacing termite-ridden structures. Buy, install and regularly maintain an independent gas or diesel powered generator with sufficient capacity to operate water pumps and aeration equipment at alternating times. Maintain these facilities as needed.

Once debris and equipment are secured, shore up the structures. Tin roofing can be secured by stringing cable over it and cinching it down. Secure doors and windows

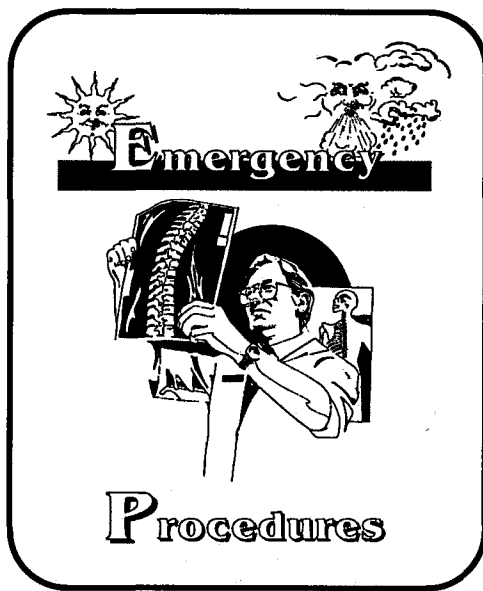
with lumber. Clear all drain pipes and drain areas to allow the escape of excessive water. Lower pond water levels by 1.5 feet to compensate for the expected heavy rains. Aeration units are usually secured in ponds, but shore them up against possible wave action.

When winds reach gusts of 50 miles per hour, connect equipment to a reliable independent power source. If an independent power source is not available, turn off all equipment and machinery and disconnect from the island's power to avoid equipment damage. Since power spikes can jump circuit breakers and cause damage, surge protectors and circuit breakers are not sufficient protection.



There are many different methods for securing your boat in the event of a typhoon. Small boats, which are defined as all boats that are trailerable, should be taken out of the water and strapped to a secured trailer. Larger boats, up to 55 feet in length, can be harbored at the Harbor of Refuge in Apra Harbor, which has the capacity to hold 50 boats. All boats, 55 feet and larger, are ordered to go to sea as soon as Typhoon Condition Two is announced.

Boats that are on blocks should be secured tightly. Loose items should be stowed away and secured. For sailboats, the sails should be taken off. All boats that are harbored at a marina should be tightly anchored and secured.



## First Aid

Because people are more prone to accidents during a typhoon, it is a good idea to know CPR and First-Aid. The following guidelines will help refresh your memory or, if you have never taken a First-Aid class, this will guide you to care for the victim until an ambulance or a certified First-Aid member arrives.

In all situations take care of the victim before calling 911. Then:

- Watch for changes in the victim's breathing and consciousness.
- Help the victim rest comfortably.
- Keep the victim from getting chilled or overheated.
- Reassure the victim.

## Bleeding

To stop bleeding, apply pressure directly over the wound with a clean cloth. If possible and practical, elevate the injured part. This will slow down the flow of blood to the wound. Then, apply a bandage snugly over the dressing.

## Burns

*To care for a burn:*

- 1) stop the burning by putting out flames or removing the source;
- 2) cool the burn with large amounts of cool water; and,
- 3) cover the burn with a dry & clean dressing.

If the burn is caused by electricity, make sure the power is off. Then, check breathing and pulse if the victim is unconscious.

A critical burn needs immediate attention. Call for an ambulance if a burn:

- Involves breathing difficulty.
- Covers more than one body part.
- Involves the head, neck, hands, feet or genitals.
- Is to a child or elderly person (other than a very minor burn).
- Is caused by chemicals, explosions, or electricity.

## Choking

If the victim is unable to speak, cough, or breathe, s/he is most likely choking. To remove the object, give abdominal thrusts by placing your fist just above the navel and giving a quick, upward thrust. Repeat until the object is removed.

## CPR

Administer CPR if the victim does not have a pulse and is not breathing. First, place the palm of your hand on the center of the breastbone and compress the chest 15 times. Give two slow breaths. Repeat sets of compressions and breaths until the ambulance arrives.

## Mouth-to-Mouth Resuscitation

Tilt the head back to open the airway. For an adult, pinch nostrils, and give 4 quick breaths, then 1 breath every 5 seconds.

For an infant, cover the mouth and nose & give 4 quick breaths then 1 puff every 3 seconds.

If the air won't go in, give up to five abdominal thrusts. Look for and clear any object from the mouth. Tilt the head back and reattempt breaths. Repeat steps until the breaths go in.

## Immobilization

If the victim is unable to move or use a body part:

1. keep the injured part from moving;
2. apply ice to the injured area; and,
3. get medical care.

Splint the injured part only if the victim must be moved. Do this without causing more pain. You can splint the injured part in the position that you found it in.

To splint an injury, support the area above and below the site of the injury. Then secure with soft materials, such as folded blankets, towels, pillows or or bandages.

## Fire Safety and Prevention

1. Install smoke detectors in your house or apartment. Place detectors on every level of your house: *a) outside bedrooms; b) at the top of open stairways or the bottom of enclosed stairs; c) near (but not in) the kitchen.*

Clean smoke detectors regularly and replace batteries once a year.

2. Plan escape routes with your family. See the General Family Preparedness section of the Handbook.

3. Check out storage areas. Don't let trash accumulate.

4. Check electrical wiring. Inspect extension cords for frayed or exposed wires or loose plugs. Do not overload extension cords or outlets.

5. Never use gasoline, benzene, naphtha or similar liquids indoors. Never smoke near these flammable liquids. Safely discard all rags or materials soaked in flammable material after use.

6. Check heating sources. Make sure they are clean and in working order.

7. Alternative heating sources such as wood, coal or kerosene should be used carefully.

8. Make sure that home insulation is not in contact with electrical wiring.

9. Know where your gas container and central electrical panels are so you can shut them off in an emergency.

10. Ask your local fire department to inspect your house for fire safety and prevention.

11. If you live in a boonie area, your house could be a target for wildfire. Call local authorities and get information about wildfires in your area. Make your landscape fire safe by removing excess brush and under-growth, planting fire resistant plants, and pruning trees of low branches.

## What to Do in Case of a Fire

1. To put out a small fire, take away its air or fuel, or cool it with water or fire extinguishing chemicals.

2. Never use water on an electrical fire. Use only a fire extinguisher.

3. Oil and grease fires occur primarily in the kitchen. Smother the flames with baking soda or salt or put a lid over the flame if it is burning in a pan.

4. Small fires can be controlled with water or fire extinguishers; do not try to put out a fire which is getting out of control.

5. If your clothes catch on fire, drop and roll until the fire is extinguished. Running only makes the fire burn faster.

6. Sleep with your door closed. If you wake up to the sound of a smoke detector, feel the door before you open it.

- *If the door is cool, leave immediately. Be prepared to bend low or crawl. Smoke and heat rise, and the air is cooler near the floor.*
- *If the door is hot, escape through a window. If you cannot escape, hang a white or light-colored sheet outside the window to alert fire fighters of your presence.*

## What to Do After a Fire

1. Contact your insurance agent about estimates and loss coverage.

2. Do not enter a fire-damaged building unless authorities have given you permission.

3. When entering a building, be watchful for signs of heat or smoke because they may be signs of smoldering remains of fire.

4. Have an electrician check your household wiring before the current is turned back on. Do not attempt to reconnect any utilities yourself.

5. Beware of structural damage. Roofs and floors may be weakened and need repair.

6. Discard food, beverages and medicines that have been exposed to heat, smoke or soot.

7. If you have a safe or strong box, do not try to open it. A safe or fire proof box can hold intense heat for several hours. If the door is opened before the box is cooled, the entering air combined with the high internal temperature may cause the contents to burst into flames.

*Refer also to the General Family Preparedness section.*

## Checking Flood-Damaged Buildings

1. Use extreme caution when entering any damaged building.
2. Watch for loose plaster and ceilings that could fall.
3. Open as many doors and windows as possible to remove moisture, odors and flammable or toxic gases. If windows are stuck tight, take off window strips and remove entire sash. If doors are stuck, drive out door hinge pins with a screwdriver and hammer, and remove doors.
4. If you are not qualified to judge the stability of a foundation, hire a contractor to make this inspection.
5. Examine foundations and supports for undermining. If walls or foundations have settled or cracked, uncover footings and raise, reinforce or brace any settled sections. Be extremely careful when uncovering footings, because of the possibility of cavernous washouts.
6. If underlying materials has been washed away, fill spaces to within 12 inches of the footing with gravel or crushed rock. Fill the remaining space with concrete reinforced with steel rods.
7. Check piers for settling or shifting.
8. If the building has shifted or the floors have settled badly, it may be necessary to install temporary bracing until extensive work can be done.
9. Drain any crawl spaces which contain water.
10. Wash out mud, dirt and debris as soon as possible with a hose and mop, cloth or sponge. Clean walls and floors before silt or mud dries up.
11. Start cleaning from the top floor or upper limit of flooding and work downward toward the first floor or basement.
12. Brace walls where necessary.
13. To speed up drying of flooded studing and insulation, remove all siding strips or plaster from upper and lower parts of the walls. Do not repaint walls until they are completely dry. This may take several months. Flooded insulation may be ruined.
14. Remove loose plaster. After house is completely dry, repair damaged plaster on walls and ceilings. Badly damaged plaster walls can be resurfaced with gypsum board or plywood.
15. Flooded wooden floors will dry out slowly. Don't build fires to speed up their drying, as this could cause cracking or splitting from uneven drying.
16. To prevent further buckling and warping, drive nails where the floor tends to lift or bulge.
17. After floors are completely dry, level by planing or sanding.
18. If floors are too badly damaged to be refinished, lay a new floor over the old, or cover with carpet, vinyl or linoleum.
19. If a concrete floor is badly damaged, break it up and install a new floor. If damage is minor, patch with a rich mixture of concrete containing no coarse gravel aggregate.
20. Use knife consistency patching compounds to repair minor leaks.

## Controlling Rodents After Floods

1. Rats and other rodents often move into buildings to escape flood waters. Rats can carry disease and small vermin. They should be eliminated as soon as possible.
  2. Because of the danger of rat infestation, use caution when entering flooded buildings.
    - Carry a solid club and a flashlight.
    - Inspect likely hiding places for rats.
- Check closets, furniture, drawers, mattresses, stacks of clothes or paper, appliances, upholstered furniture, dark corners, attics and basements.
- Be extremely careful when approaching rats. A starving rat can be dangerous.
3. Eliminate rat populations by poisoning rats that can't be destroyed by clubbing or trapping. Use rat control measures as recommended by your Extension Agent. Be extremely careful when using rat poison or bait, especially if there are children in the house.
  4. After infestation has been controlled, clean up rat harboring places. (Rats may move into buildings when their hiding

places are removed.) Remove trash piles and piles of damaged furniture or equipment. Store materials on platforms or shelves 1 to 18 inches above the ground.

5. Remove food sources. Store food supplies in rat-proof bins or containers. Suspend garbage containers from trees or posts. Remove animal carcasses which may attract rats. Do not leave scraps of food around.

6. Maintain several permanent rat bait stations in strategic locations, even after rat infestation has been controlled. This should eliminate rats that can migrate from neighboring areas, and will help prevent another infestation. Inspect baits frequently and replace them with fresh material whenever necessary.

7. If you are bitten by a rat, take the rat to your local health authorities or a veterinarian. The animal should be checked for rabies.

## Controlling Insects After Floods

### 1. Eliminate breeding spots.

- Empty water from barrels, old tires, cans and other vessels. (This water may be polluted by floodwaters and may be a health hazard, in addition to being a breeding place for insects.) Also, check clogged gutters and flat roofs which have poor drainage. Make sure cisterns, cesspools, septic tanks, fire barrels and rain barrels are covered tightly.
- Whenever possible, drain ponds, pools or any standing water in which mosquitoes may breed.
- Dispose of refuse. Bury animal carcasses as soon as possible. Bury or burn garbage at least once every week. Be sure garbage cans have tightly fitting lids. When using manure and garbage as fertilizer, spread it thinly so it will dry quickly and not support fly development.
- Clean up debris. In some climates, scorpions may seek refuge in and around buildings during flood conditions. During the day they hide beneath loose stones, loose bark of fallen trees, boards, piles of lumber and within walls of buildings.

2. Patch screens and other places where mosquitoes may enter buildings. Paint screens with an insecticide solution recommended by your Extension Agent.

3. Use a household spray or an aerosol bomb to kill mosquitoes, flies or other insects that get into buildings. Do not apply oil-based sprays to flowers or ornamen-

tal plants. Spray shrubbery and shaded areas of buildings to kill adult insects. Contact your Extension Agent for specific recommendations.

4. If possible, keep small children indoors, especially in the evening. Persons who must go outside at dusk should use a repellent on exposed parts of the body and clothing.

## Preparing For Hazardous Material Accidents in the Home

Dry off containers that get wet. Move them off damp shelves until the shelf material has dried thoroughly.

Check labels on wet containers and reglue or tape them securely before they come off completely.

Be aware of how different chemicals may react during mixed spills. Some common chemicals and their dangers are:

### Kitchen

- cleansers (reactive)
- cooking oil (flammable)
- detergents (reactive)
- aerosols (explosive in fire)

### Bathroom

- aerosols (explosive in fire)
- alcohol (flammable)
- medicines (see label)
- nail polish remover (flammable)

### Bedrooms

- aerosols (explosive in fire)
- medicines (see label)
- gun ammunition (explosive in fire)

### Workshops

- paints (toxic)
- adhesives (toxic, flammable)
- paint thinner (toxic, flammable)

### Garage

- gasoline (toxic, flammable)
- oil (flammable)
- antifreeze (toxic, flammable)
- brake fluid (toxic, flammable)
- transmission fluid (toxic, flammable)

### Laundry Room

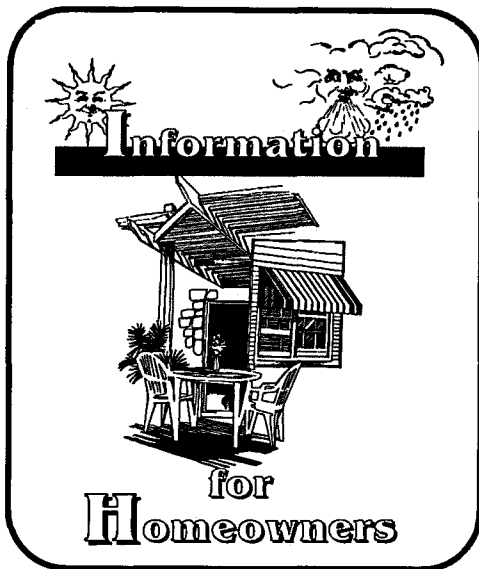
- detergents (reactive)
- cleansers (reactive)
- bleach (reactive)

### Gardening

- pesticides (toxic, reactive)
- fertilizers (toxic, reactive, most flammable or explosive when mixed with gasoline)

### General

- natural gas (flammable, explosive)
- sewer gases from broken sewer pipes (toxic, explosive)



### Insurance and Credit for Disaster Victims

Typhoon damage is sometimes covered under homeowner's insurance policies. But, it is a good idea to check with your Insurance agent before a typhoon to make sure.

In general most insurance policies cover:

- Your house, rental units that are part of the building and any attachments to the building, such as the garage.
- Structures on the grounds that are not attached to the house, such as a pool, gazebo, tool shed, etc. This also includes the lawn, trees and shrubs on the property.
- Vacant land you own or rent, with the exception of farmland.
- Cemetery plots or burial vaults you may own.
- Personal possessions, including those of members of your household and guests, and contents of the house. This does not include the possessions of tenants in your home.
- Any items that have been loaned to you, or given for safe keeping.
- Living expense if your home is unliveable due to damage.
- Rental payments, if you rent one part of your house but it is unliveable due to damage.
- Responsibility for unauthorized use of your credit cards, forged checks or counterfeit currency accepted in good faith.
- Settlement, medical expenses and court

costs brought against you for bodily injury of others or damage to the property of others.

Most homeowners' policies **DO NOT** cover loss due to flooding. You should check to see if your community participates in the National Flood Insurance Program. In addition to home insurance, there are loans and financial assistance programs available. Check with the Guam Cooperative Extension for information on such loans and assistance programs and how you can contact representatives of these programs.

Some helpful agencies' programs include:

- The American Red Cross, which grants assistance for immediate building repairs and living expenses for groceries, new clothes and medical needs when no other immediate assistance is available.
- Merchants and dealers, who sometimes extend credit for feed, equipment and rehabilitation of buildings and land.
- Farmers Home Administration (FHA), which offers agricultural loans only when credit is not available. Qualifying farmers in disaster areas can get short-, medium-, or long-term loans with moderate interest rates.
- Federal Crop Insurance Corporation (FCIC) where farmers can insure crops for 50, 65 or 75 percent of yield. Unavoidable losses due to any adverse weather conditions including typhoon winds are covered. Unavoidable losses due to insect infestations, plant diseases, floods, fires & earthquakes also are covered. You must have this insurance prior to the disaster.
- Small Business Administration (SBA), which offers medium and long-term loans, with moderate interest rates, for rehabilitation of non-farm homes and small businesses.
- Commercial and federal land banks, which offer loans with moderately low interest rates for home repairs, improvements, land equipment and livestock.
- Insurance companies, which offer long-term loans at relatively low interest rates for home repair, improvements, land equipment and livestock.
- The Federal Emergency Management Agency, a unit of the U.S Government, that responds to major disasters and emergencies by offering financial assistance in the form of grants and loans for families, busi-

nesses and farms. It offers public assistance to repair civic infrastructures such as roads, sewers, hospitals, etc. Also, the agency offers temporary housing assistance for up to 18 months and unemployment assistance for up to 26 weeks for anyone who is jobless as a result of layoffs caused by the typhoon.

Assistance also may be available through a variety of local agencies and volunteer groups. Listen to your battery operated radio after a disaster for information on disaster relief services and locations.

Non-financial resources also are available to many disaster victims. Technical assistance is available from:

The Agricultural Stabilization and Conservation Service (ASCS) for information on livestock and wildlife feeding, production and conservation practices.

The Animal and Plant Health Inspection Service (APHIS) which offers technical assistance on animal and plant pests and diseases.

Extension Service-USDA which offers information, educational material and advice on cleanup.

The Food Safety Inspection Service (FSIS) which can be reached for questions on the safe handling of meat and poultry.

### Filing Insurance Claims

The following steps should be taken to file an insurance claim for typhoon damage to your home:

1. Call the insurance adjuster immediately. Most insurance companies will not accept claims after 60 days unless there is an extenuating circumstance, such as a property owner being off island. It's important to follow up on your call with a letter detailing the problem. Keep a copy of the letter.
2. Begin cleanup and salvage work as soon as possible. Don't wait for an adjuster. Take photos **BEFORE** any cleanup for use as an inventory.
3. Make a list of damaged articles and their costs. Receipts for these damaged items will be very helpful and useful. Provide any other information the adjuster requests to process your claim. Prepare a copy of all information delivered to the insurance company.

4. Keep damaged materials for proof of loss.

5. Leave a phone number where you can be reached when the adjuster arrives. The Adjuster will assess damages to the house. The owner has to sign proof of loss statement. Additional damage can be included when found. Payment can't be made until the insurance company sends someone to evaluate the damage. However, given the number of claims being filed, the process could take weeks or months.

6. If looting should occur, report any theft to the police.

7. Protect your property from further damage by making temporary repairs. Save receipts for reimbursement. If your home is uninhabitable, save all receipts related to your temporary lodging and food.

8. Review the settlement steps outlined in your policy. If you're dissatisfied with the proposed settlement offer, explain your position. If there's a significant difference between what the insurance company offers and what you believe you're entitled to, you may submit the dispute to arbitration.

9. Some policies impose time limits such as three, six or nine months. Other policies pay the difference between normal living expenses and the cost of living elsewhere.

### Assessing Landscape Tree Loss

Along with assessing structural damage, property owners may need to calculate the loss of trees and other landscaping plants. The following factors help to determine the value of the damaged landscape:

- Decrease in the fair market value of the property which can be calculated in two ways: have appraisals done before and immediately after the typhoon, or deduct the costs associated with clean up, repair or replacement from the before-typhoon fair market value. Appraisals are the best proof of a decrease in fair market value. Appraisal fees are deductible under expenses incurred to determine tax liability, but are not calculated as part of the casualty loss.
- The adjusted basis of the property.
- The amount of insurance or other compensation received.



Cleanup, repair and replacement costs on damaged landscape may be used to measure the decrease in property value if the:

1. repairs are necessary to restore the property to its pre-typhoon condition.
2. amount spent on repairs is not excessive.
3. replacement or repairs do no more than take care of the damage sustained.
4. value of the property after the repairs does not, as a result of the repairs, exceed the value of the property before the typhoon.

Homeowners who sustain significant damage to landscape trees may wish to contact the IRS to determine what other methods are currently being used to evaluate tree value. If homeowners decide to pursue claims or deductions, they must prove that typhoon loss was sustained due to the typhoon and that the amounts claimed as a loss are deductible. Such record-keeping also is important in substantiating any claims for loss recovery. Specifically, homeowners must be prepared to show:

- The nature of the typhoon and when it occurred.
- That the loss was the direct result of the typhoon.
- That the claimant is the owner of the property.
- How much the property costs as proven by purchase contracts, deeds, etc.
- The value before and after the typhoon.
- The amount of insurance or other compensation received or recoverable.

Some tips that can be useful in assessing landscape tree loss:

- Photographs of the property before and after the damage to show the condition and value of the property prior to the typhoon.
- Local newspaper articles, complete with dates and the newspaper's name, can serve as evidence of the typhoon and its time and location.
- Appraisals for establishing values before & after the typhoon.
- Keeping receipts to support claims for repair & replacement.

## Contracts

If your property suffers substantial damage, you may need to hire someone to make

the necessary repairs. When doing this, hold on to your money until it has been completely earned by the person you have hired to do the job. Even under critical emergency conditions, complete, good quality repairs must be done or damage and deterioration will appear at a future date. Strengthen the patches and wait patiently until you can be sure of a good job. Then, start with a clear and complete contract.

Contracts are the best way to handle matters. A contract is a promise or set of promises for which the law gives a remedy in case of breach; or, the law, in some way, recognizes their performance as a duty.

## Three Elements of a Contract:

1. An agreement (or an offer and acceptance) to do specific things in a specific manner. State clearly, simply and completely all that is to be done. If a beginning and finishing date are involved, state them in the body of the contract. A good item to include in a contract for home rebuilding is that materials and procedures used will be those provided for in minimum standards of the current CABO (Council of American Building Officials) Code.
2. Parties involved in a contract must be at 18 years of age and mentally competent.
3. Something of value, usually money, exchanges hands. Signatures of parties making the agreement and the date are essential. If money or other considerations change hands before the entire contract is completed, signed receipts should also change hands.

## What to do when hiring a contractor:

- Plan your project carefully.
- Provide accurate plans or drawings to the contractors.
- Shop around before hiring a contractor and get at least three written bids for a project.
- Check out other construction projects the contractor has done.
- Ask your contractor to furnish a completion bond, which guarantees that the project will be paid for by the bond if the company fails to complete the project.
- Check with your lender for recommendations or inspections of your project.

- Request a copy of workers' compensation insurance coverage if the contractor has one or more employees on the project.
- Make sure everything you and your contractor have agreed on is in the contract.
- Make frequent inspections of the project for your files.
- Negotiate with the contractor if problems or disagreements occur. If negotiations fail, contact the licensing board at 646-7262 or 649-2211/9676.
- A description of the job, materials and equipment to be used and the cost of the project.
- Schedule of payments to be made.
- The fact that the contractor is responsible for obtaining lien releases from each subcontractor as each phase of the project is completed.
- A "Notice to the Owner" regarding Guam lien laws and the rights and responsibilities of the owner.
- Description of what constitutes substantial commencement of the project.

### **What not to do when hiring a contractor:**

- Don't hire an unlicensed contractor.
- Don't hire a contractor without shopping around.
- Don't act as an owner/builder unless you have experience in construction.
- Don't sign anything until you completely understand what you are signing and agree to the terms.
- Don't make any payments without the proper receipt.
- Don't make agreements with subcontractors or workers without consulting the prime contractor.
- Don't make payments without checking with your lender.
- Don't hesitate to ask your contractor questions regarding the project.
- Don't let your payments get ahead of the contractor's completed work.
- Don't make final payment until you are satisfied with the job.
- Withhold payment until all building supplies used have been paid for.
- Require receipts for all materials used.

### **Things your contract should include:**

- The name and address of the contractor.
- The approximate dates the project will commence and be completed.

### **The Role of Government after a Typhoon**

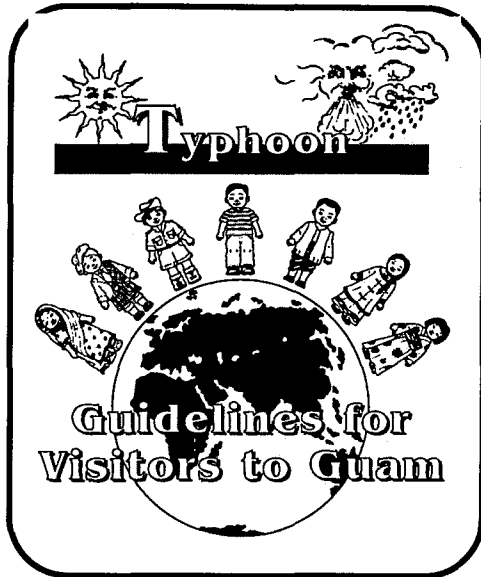
After a preliminary damage assessment report has been completed, the Governor can request a major disaster or emergency declaration from the president.

### **DECLARATION OF AN EMERGENCY**

The President can issue a Declaration of Emergency to supplement the effort to save lives and protect property. The President can act only after the governor has requested a Declaration of an Emergency be issued. Total assistance provided in any given emergency declaration may not exceed \$5 million.

### **DECLARATION OF A MAJOR DISASTER**

A major disaster declaration may be requested by the Governor to the President after a natural catastrophe occurs. Assistance is offered to both the public and private sectors. With the declaration, the **Federal Emergency Management Agency (FEMA)** has the authority to engage the services of 12 federal departments, two agencies, one commission, one corporation and one authority offering 97 different Federal assistance programs. These 97 programs provide many different services to help people, state, territory and local governments deal with recovery from a disaster.



Guam is always in Typhoon Condition Four, meaning typhoon strength winds are likely within 72 hours. By taking these simple precautions, you can make it through the storm easily and perhaps even enjoy the spectacle.

When Guam enters Typhoon Condition Three, it means a tropical cyclonic storm is approaching and that typhoon strength winds are likely within 48 hours. You must begin taking action.

If your hotel provides emergency wall-mounted flashlights or candles, be sure they are in your room. Make sure they are functional. If your hotel does not supply these items, it's wise to buy them yourself, bearing in mind that you probably have less than 24 hours before all stores shut down for the duration of the typhoon. If you are scheduled to leave Guam within 72 hours, call the airport or your airline about the status of your departure. The airport building itself will not close for the duration of the storm, but most flights into and out of Guam will be canceled.

When Guam enters Typhoon Condition Two, it means typhoon strength winds are likely within 24 hours. If you have a balcony or sliding glass doors, lock them securely and close the curtains completely. Pull furniture and personal belongings away from windows and store them in the middle of the room or in the bathroom. Store your clothing and valuables in zip-lock or plastic bags. Check your flashlight, candles or other emergency lighting. Ask the hotel management where regularly updated information on the typhoon's progress will be posted. Ask whether the

hotel has its own source of emergency power.

When Guam enters Typhoon Condition One, it means typhoon strength winds are likely within 12 hours. All functions are closed on the island and only emergency vehicles are allowed on the roadways. Stay inside the hotel. Fill your bathtub, sink and other containers with water. In a water outage, you can flush the toilet by filling the toilet tank with a bucket of water. Ask the hotel management if they are organizing a typhoon party or other activities during the storm. If that kind of activity doesn't interest you, supply yourself with books, games or other diversions.

## Helpful Phone Numbers

### Department of Civil Defense

..... 475-9600-02  
 ..... 477-3727 (fax)

### Department of Public Health and Social Services

..... 735-7399/7499

- *Division of Environmental Health*

..... 7335-7210-1/7215

- *Health Education*

..... 475-0670  
 ..... 477-7826 (fax)

### Guam Fire Department

..... 911 for emergency

### Guam Memorial Hospital

..... 647-2444/2330  
 ..... 647-2552/2554

### Guam Police Department

..... 475-8473-5 or  
 911 for emergency

### Guam Power Authority

- *Emergency*

..... 475-1568-9

### Customer Service Offices:

- *Central Main Office (Agana)*

..... 477-8855-8

- *Northern Office (Upper Tumon)*

..... 637-1152/1168  
 ..... 637-1209/1217

- *Southern Office (Agat)*

..... 565-2908-9

**Guam Telephone Authority**

- *Northern District*  
..... 632-9310-9
- *Central District*  
..... 646-2100
- *Southern District*  
..... 475-2951-5

**Guam Visitors Bureau**

- ..... 646-5278/9
- ..... 646-8861 (fax)

**Port Authority of Guam**

- ..... 477-5931/5
- ..... 472-7678

**Public Utility Agency of Guam**

- ..... 646-4211/7319
- ..... 647-7861-2
- ..... 649-0158 (fax)

**Food Safety Inspection Service (FSIS)**

- ..... 649-8187
- ..... 472-7143 (fax)

**Small Business Administration**

- ..... 472-7419/7244
- ..... 472-7365 (fax)

**American Red Cross**

- ..... 472-6217/19
- ..... 477-2721 (fax)

**Animal Control and Quarantine**

- ..... 734-7248

**Metric Conversion Table**

1 inch	=	2.54 centimeters
1 foot	=	.3048 meters
1 gallon	=	3.785 liters
1 ounce	=	28.35 grams
1 mile	=	1.609 km

*Temperature conversion from Fahrenheit to Centigrade 5/9 (F-32)*

*For Example: 65 degrees Fahrenheit equals: 5/9 x (65-32) = 18.3 degrees Centigrade*

**Conversion of Horsepower to Wattage**

Motor HP	Wattage Required To Start	Wattage Require To Run
1/6	1,000	300
1/4	1,500	500
1/3	2,000	600
1/2	2,300	800
1	4,000	1,300
5	18,000	6,000
7.5	28,000	9,000
10	36,000	12,000

*Generally, the wattage stated on the manufacturer's name-plate refers to the running wattage of the appliance. However, if in doubt, refer to the Table below, which depicts the typical wattage requirements of selected home and farm appliances.*

**Typical Wattage Required of Selected Appliances**

Appliance/Equipment	Running Wattage*
Air Conditioner (110 Volts)	800 to 2,000
Air Conditioner (220 Volts)	3,000 to 4,000
Air Conditioner (Central Units)	4,000 to 5,000
Electric Fan	75 to 300
Electric Skillet	1,150 to 1,500
Electric Stove	3,000 to 4,000
Freezer	600 to 1,000
Microwave	2,000 to 3,000
Refrigerator	400 to 800
Washing Machine	400
Water Heater (110 Volts)	1,000 to 2,000
Water Heater (220 Volts)	3,000 to 5,000
Water Pump	800 to 2,500

*\*Running Wattage. To find the start-up wattage, multiply above given figures by 3. For example, to start-up a refrigerator and freezer at the same time, you would need a generator capable of supplying 5,400 watts.*

# APPENDIX

## Family Typhoon Supply Kit

**1. Food:** Store at least a 3-day supply of non-perishable food. Rotate these foods into the regular diet frequently to keep the supply fresh. The supply should include:

- Ready-to-eat canned meats, fruits and vegetables
- Canned juices, milk and soup (if powdered, store extra water)
- Staples such as sugar, salt and pepper
- High energy foods such as peanut butter, jelly, crackers, granola bars and trail mix
- Vitamins, infant food and food for special diets
- Comfort/stress foods such as cookies, hard candy, instant coffee and tea bags

## 2. Drinking Water

- Store water in clean plastic containers such as thoroughly washed and rinsed soft drink bottles with tight fitting screw-on caps.
- Store 1 gallon per day per family member (2 quarts for drinking, 2 quarts for food preparation/sanitation). Children, nursing mothers and ill people will need more.
- A 3-day supply of water should be stored for every family member.
- Replace water every 6 months.

**3. First Aid Kit:** An approved American Red Cross Kit may be purchased, or one may be assembled with the following items:

- Latex gloves (2 pairs)
- Needle
- Antiseptic
- Moistened towelettes
- Cleansing agent/soap
- Tongue blades (2)
- Hypoallergenic adhesive tape
- Triangular bandages (3)
- Assorted sizes of safety pins
- Sterile adhesive bandages in assorted sizes
- 2-inch and 4-inch sterile gauze pads (4-6 of each)
- 2-inch and 3-inch sterile rolled bandages (3 rolls each)
- Tube of petroleum jelly or other lubricant
- Scissors
- Tweezers
- Thermometer
- Sunscreen

### Non-prescription drugs

- Anti-diarrhea medication
- Antacid (for stomach upset)
- Aspirin or non-aspirin pain reliever
- Syrup of Ipecac (use to induce vomiting if advised by the Dept. of Public Health & Social Services)

- Laxative
- Activated charcoal (use if advised by the Dept. of Public Health & Social Services)

**4. Tools and Supplies:** Various tools and supplies may be needed for temporary repairs or personal needs. Include these items:

- Cash
- Tape
- Pliers
- Mess kits
- Disinfectant
- Paper, pencil
- Aluminium foil
- Needles, thread
- Extra batteries
- Medicine dropper
- Personal hygiene items
- Soap, liquid detergent
- Feminine hygiene supplies
- Plastic bucket with tight lid
- Plastic storage containers
- Map of Guam (for locating shelters)
- Emergency preparedness manual
- Shut-off wrench, to turn off household water
- Utility knife
- Signal flare
- Compass
- Whistle

**5. Special Items:** Family members may have special needs. Other items you may add to your typhoon emergency supply include:

### For Babies:

- Bottles
- Powdered milk
- Medications

### For Adults:

- Heart & high blood pressure medication
- Insulin
- Prescription drugs
- Denture needs
- Contact lenses and supplies
- Extra pair of eyeglasses

### Entertainment:

- Games & books

### Important Family Documents:

- Keep these items in a waterproof and portable container: Wills, insurance policies, contracts, deeds, stocks and bonds; Passports, social security cards and immunization records; Bank account numbers; Credit card account numbers and companies; Important telephone numbers; Inventory of valuable goods; and Family records (birth, marriage, death certificates, etc.)

## Additional Resources

For further information on Typhoon preparedness or recovery, the following resources are suggested: *Contact your local American Red Cross chapter or write to FEMA, P.O. Box 70274, Washington, D.C. 20024 for the following information:*

**Your Family Disaster Supplies Kit.** Federal Emergency Management Agency brochure L-189 and American Red Cross brochure 4463, March 1992.

**Your Family Disaster Plan.** Federal Emergency Management Agency brochure L-191 and American Red Cross brochure 4466, September 1992.

**Emergency Preparedness Checklist.** Federal Emergency Management Agency and American Red Cross brochure 44471, November 1991.

**Helping Children Cope with Disaster.** Federal Emergency Management Agency and American Red Cross brochure 4499, September 1992.

**Preparing For Emergencies: A Checklist for People with Mobility Problems.** Federal Emergency Management Agency brochure L-154(M) and American Red Cross brochure 4497, October 1992.

**Preparedness For People With Disabilities.** Earthquake Hazard Reduction Series 9, FEMA 75.

**Are You Ready? H-34, Item #8-0908.**

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University of Guam  
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