

TYPHOON

SURVIVAL TIPS: BEFORE, DURING & AFTER



GUAM'S TYPHOONS

SURVIVAL TIPS BEFORE, DURING AND AFTER A TYPHOON

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General Information



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.

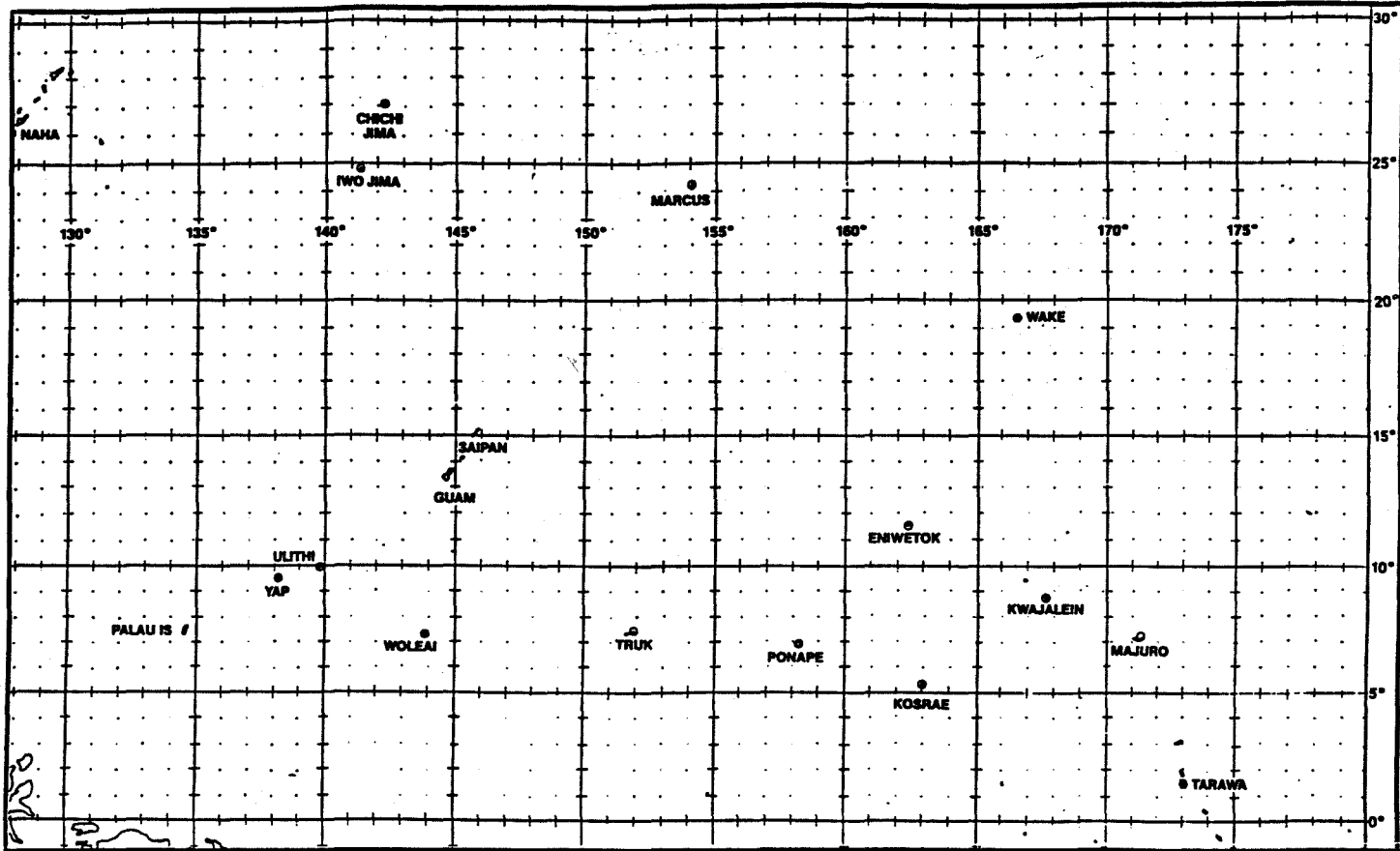
**Be
Prepared**

Storms are generally grouped as:

- **Tropical Depression:** Maximum sustained surface winds of 40 miles (64 km) per hour or less.
- **Tropical Storm:** Maximum sustained surface winds between 40 and 75 miles (64 and 121 km) per hour.
- **Typhoon:** Maximum sustained surface winds between 75 and 150 miles (121 and 214 km) per hour.
- **Super Typhoon:** Maximum sustained surface 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 nonessential 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 premature labor. For more information, call Guam Memorial Hospital Authority at 646-2000, exts. 104 or 105.
- **Condition One:** A typhoon is imminent and may strike within 12 hours. Only emergency traffic is allowed on roadways.



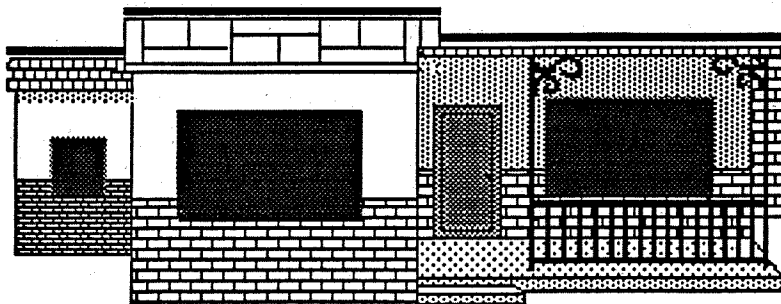
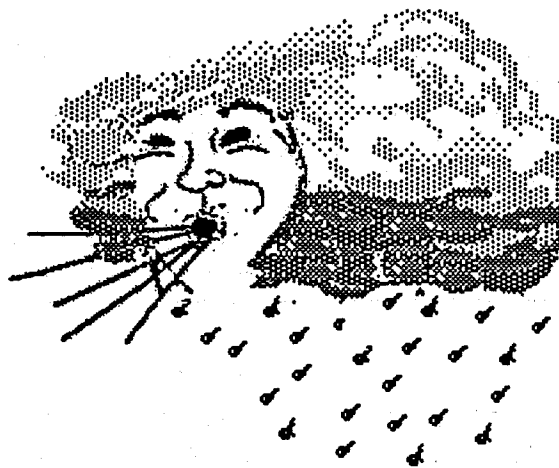
DATE	TIME	COORDINATES	DATE	TIME	COORDINATES

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 measure (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 180°. 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.

Household Tips



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 nonflammable surfaces, such as plates, to prevent accidental fires.

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.

**Have
alternate light
sources available**

ITEMS NEEDED IN THE EVENT OF A TYPHOON

SUPPLIES

- Camp stove
- Gasoline and cooking fuel
- Large garbage cans and plastic bags
- Windup clock
- Battery-operated radio
- Masking tape
- Fire extinguisher
- Rope and flares
- Battery backup and surge devices
- Toilet paper
- First Aid Kit: Band-Aids®, bandages, aspirin and medicines
- Flashlights, lanterns &/or matches and candles
- Auto and generator supplies
- Styrofoam® ice chest
- Mattress covers
- Liquid chlorine bleach and dish washing detergent
- Baby food and diapers
- Books and games
- Non-perishable foods and snacks, powdered milk and cereal
- Ice

UTENSILS

- Paper plates and cups
- Plastic cutlery
- Bottle and can openers
- Easy-to-clean pots and pans

HOUSE REPAIR LIST

- Heavy plastic
- Hammer and nails
- Plywood and 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:

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

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:

- Fill your vehicles with fuel. Most service stations cannot operate after a storm when power is out. 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 all aerials, lawn umbrellas and temporary palapas.
- 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.
- Remove or waterproof window air conditioners because winds and air pressure differences can blow water through them.
- 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.

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 precautions 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-sole 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.

If there is a gas supply, shut it off at the main valve

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 glass. 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 down spouts, take time to inspect and clean them if clogged. You can collect rain water from your gutters/down spouts for use in cleaning activities.

Once sufficient structural repairs are made, clean and dry all furniture and other water-soaked personal items. Most home furnishings 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 cases 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 floor 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 AND 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 airborne 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 foodstuff, 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 physical attraction or in soils, greases or oils. Such soils require pretreatment using either a laundry cleaning aid or a dry cleaning solvent.

CARE OF WET CLOTHING/TEXTILES AFTER THE TYPHOON

Wet clothing and household textiles tend to promote mildew and to 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 them in a covered, 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 cleaners with the stained area marked and labeled as "mildew."

PREVENTION AND 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 mothproofing 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 an insecticide that has residual action.

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

After a typhoon, stains on wood furniture can be a problem. Furniture with a natural finish needs only a thorough cleaning to be restored. For a smooth finish, use a furniture cleanser-conditioner.

White toothpaste can be used on dark spots if the stain is only a few days old. Older stains require a cleanser-conditioner.

Water-soaked furniture is likely to warp. Badly warped veneered/press-

board furniture is difficult to restore.

BOOKS

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.

WALLS

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 causing 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 fireproof 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 cleanup 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.

Cleanup 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.

Food, Water & Cooking Tips



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 on highest setting and try not to open the door.

**If you doubt
the safety of
any food,
throw it away**

Destroy the following foods if they have come in contact with contaminated water:

- Fresh fruits and vegetables;
- Foods in cardboard or paper cartons;
- 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.

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 are disinfected prior to opening. To disinfect contaminated cans, take off the labels, wash with soapy water, rinse in a chlorine bleach solution (10 drops of bleach to one gallon of water) and relabel. The cans may also be sanitized by boiling for at least 10 minutes.

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. Allow 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 (**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.

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.

WATER STORAGE FOR DRINKING AND 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 snapping 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 no water outage is experienced during and after a typhoon, try and utilize all stored water as a conservation measure.

In the event 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 announces it is safe to consume. In the meantime, following a 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 guideline:
 - One drop of bleach for a glass of water, or
 - Ten drops of bleach for one gallon of water.

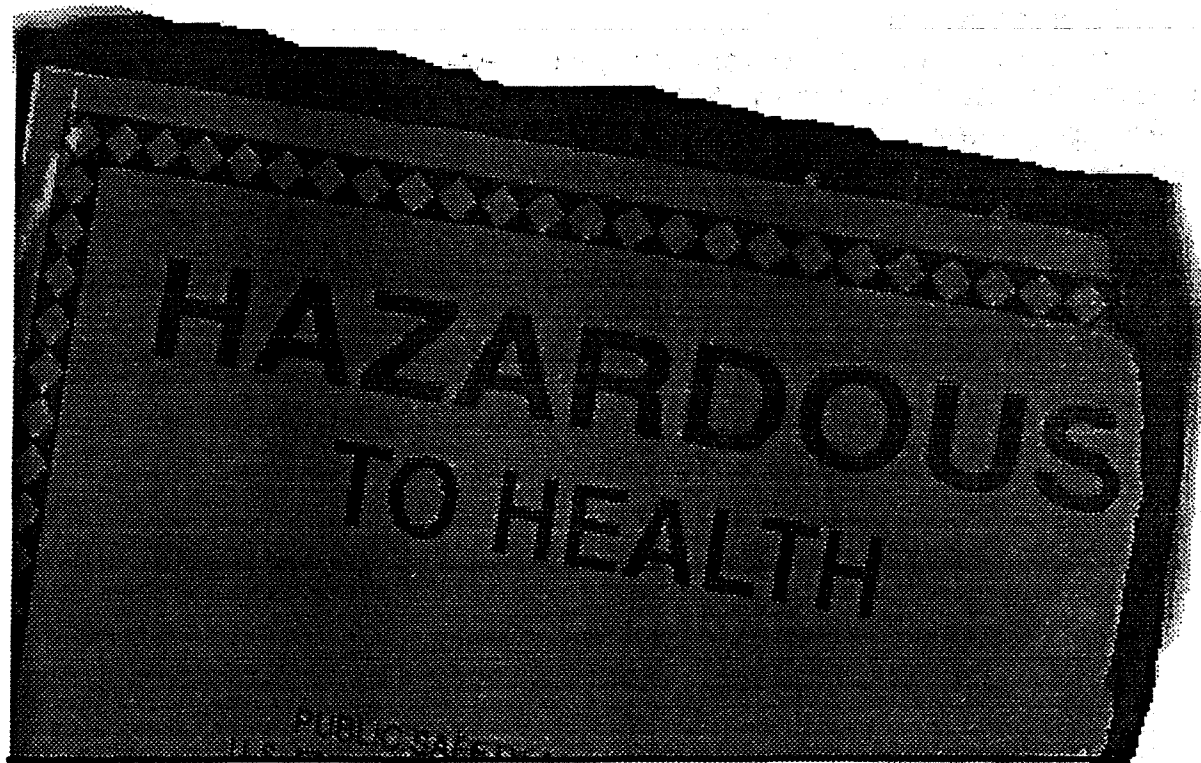
Be sure to allow all chlorine treated water to stand 20 minutes before use.

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.

**Plan ahead
and have
available large
amounts of
potable water**

Sanitation & Disease Prevention



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. And because 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 at all 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 in cases of 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 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. **WARNING: BEWARE OF CONSTANT FIRE DANGER ANYTIME YOU USE PETROLEUM FUEL PRODUCTS.** Keep a fire extinguisher on hand at all times.
- 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 additional 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 swim suit 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 outhouse.
- 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

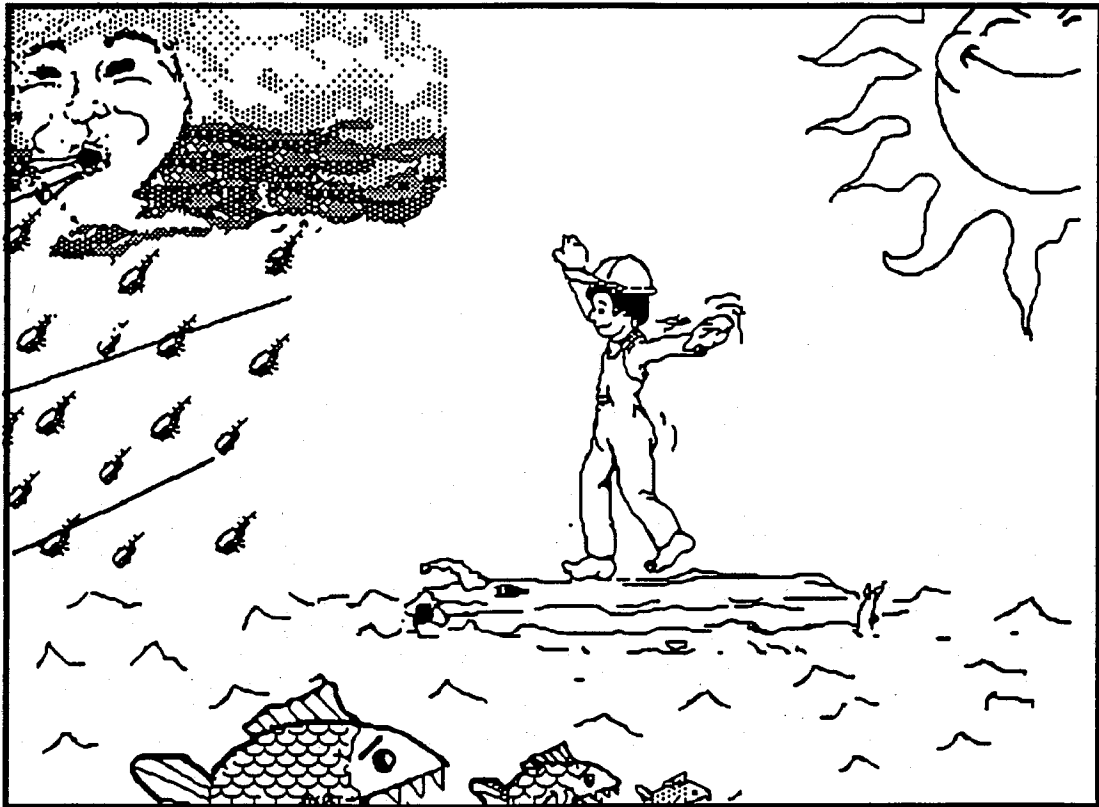
In the aftermath of a typhoon, there is a higher rate of vector borne diseases. Dengue Fever, also known as Breakbone Fever, is caused by a virus that is transmitted by mosquitos.

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 holes 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.

Family Life



DEALING WITH STRESS AFTER THE 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 CHILD 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.
- have 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.

**Reassure
your
children**

WHAT PARENTS CAN DO:

- 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, 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 assurance. 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 Extension office, mental health agency or a ministry.

PETS AND LIVESTOCK

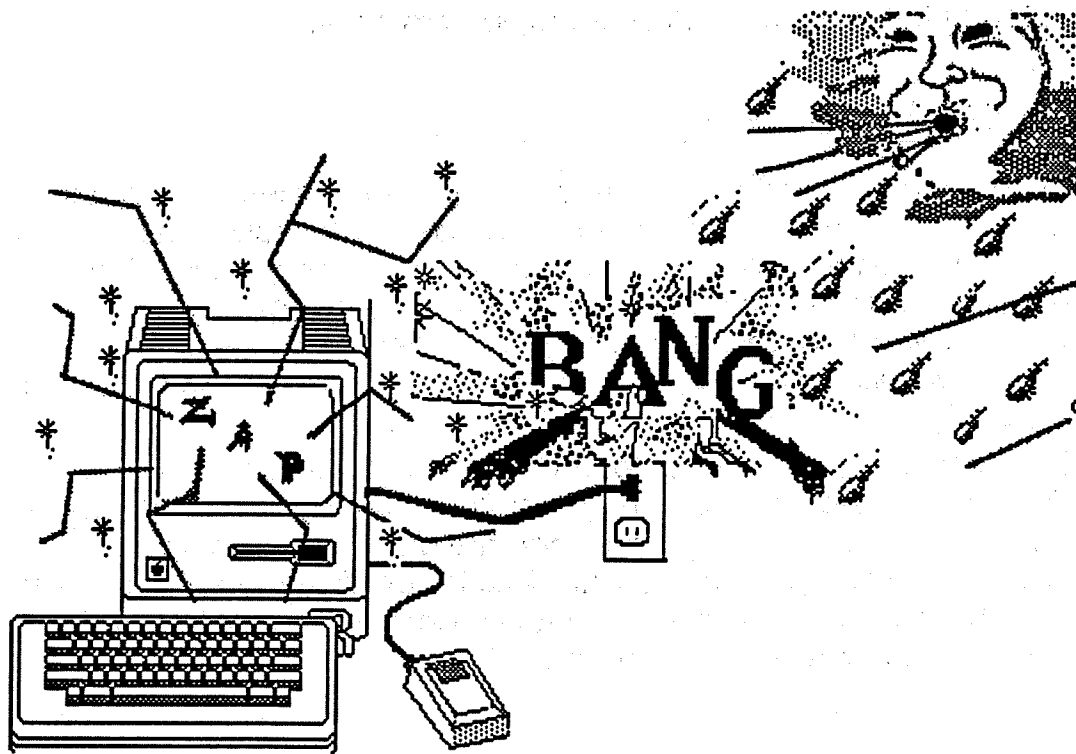
Do not leave pets tied up during a storm. Place them in a secured shelter. If you do not have one, keep them in the house, preferably in the bathroom or laundry room. Line the floor with paper to make cleaning easier. Provide them with enough water and food to last through the typhoon.

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.

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.

Care for Electronics



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 (backup battery power) can help you save your work in the event of a power outage. However, operate from an interior location, if possible, 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 equipment comes in contact with water, if it is not already disconnected, disconnect it, 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.

**Disconnect and
cover all
equipment**

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, though, 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 hookup 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 hookup.

The discussion that follows applies only to direct appliance to generator hookups.

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 nameplate on the appliance. If the wattage requirement is not found on the nameplate, 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 below.

Conversion of Horsepower to Watts

<u>Motor HP</u>	<u>Watts Required To Start</u>	<u>Watts Required To Run</u>
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 nameplate refers to the running wattage of the appliance. However, if in doubt, refer to the Table on the next page, which depicts the typical wattage requirements of selected home and farm appliances.

Typical Wattage Required of Selected Appliances

<u>Appliance/Equipment</u>	<u>Running Wattage*</u>
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
Waterer Heat (110 Volts)	1,000 to 2,000
Waterer Heat (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.

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.

Agriculture



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 overexposure 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 expected 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.

**Keep feed
dry and
pest-free**

DISPOSAL OF DEAD ANIMALS

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

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

INJURED ANIMALS

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

INSECT PESTS, RODENTS AND SNAKES

After a storm, insect pests, rodents and snakes - like other residents - may be left homeless. It is not uncommon to find these pests and animals seeking shelter and food in areas where people reside. Damaged structures, with their many accessible entrances, have a higher probability of attracting rodents and 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 and feet when removing or cleaning debris. Wear gloves and 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 and 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 and allow the animal to proceed on its way. A person 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, Department 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 replant 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 and 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 and papaya plants by cutting all but the three youngest, healthy leaves; cut these three leaves in half lengthwise and 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.

TREES AND PLANTS

Damage to trees and damage 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, smaller branches found between older more mature branches.

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

**Harvest mature
fruits, especially
coconuts**

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 and property. Older and 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 and 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 freestanding and hanging, are best protected by being kept indoors. 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 and bush type ornamental plants can suffer wind burn and 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:

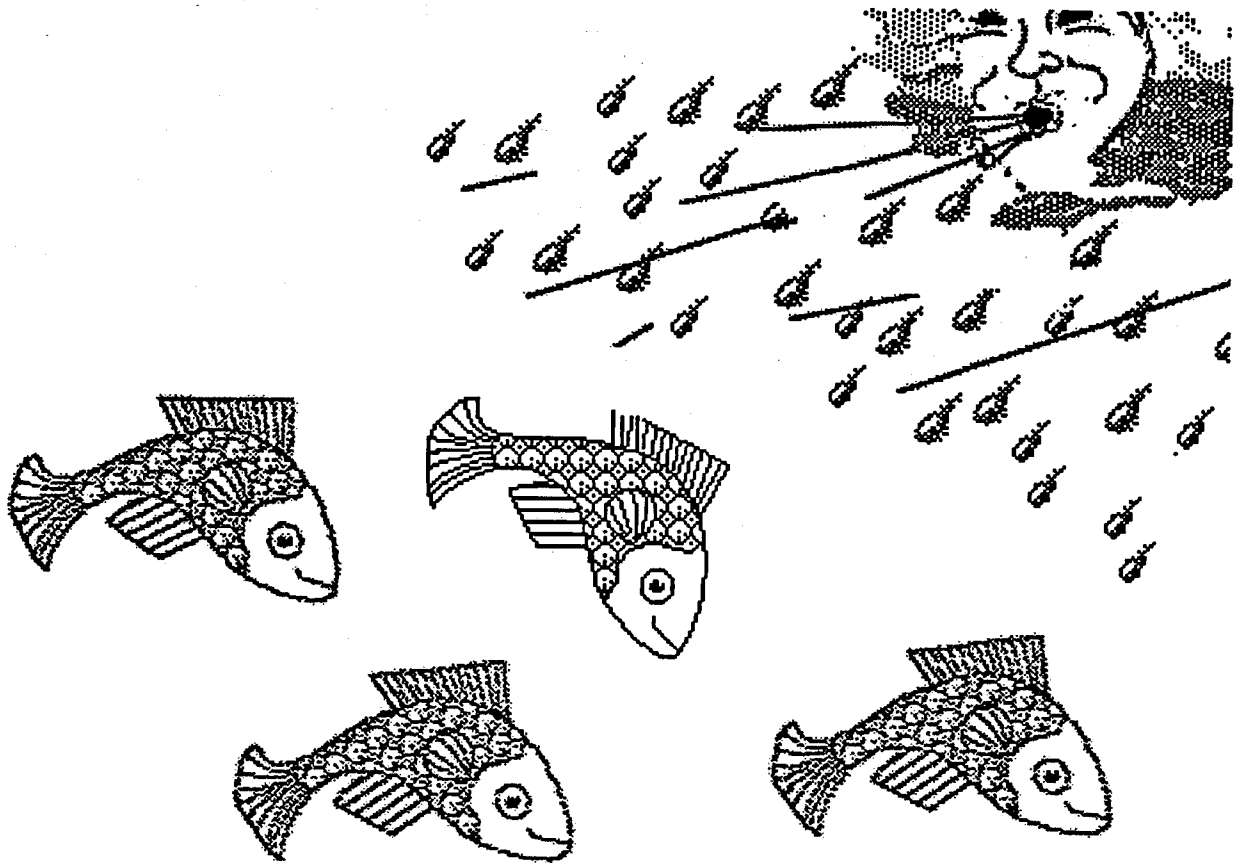
- Where wind damage is significant, pruning should be as light as possible. If large areas of bark are striped, the plant probably will not survive without proper attention. Make clean cuts to minimize bark stripped areas. Several growing seasons may be needed for the plant to regain its former size.
- 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 and 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, thoroughly 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 and other submerged parts need to be serviced.
 - If machinery was flooded, thoroughly clean and 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 and flush clean if it has been flooded.
 - If the engine heats up after starting, stop and recheck your work.

Aquaculture



TYPHOONS AND AQUACULTURE FACILITIES

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 backfilled.

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 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.

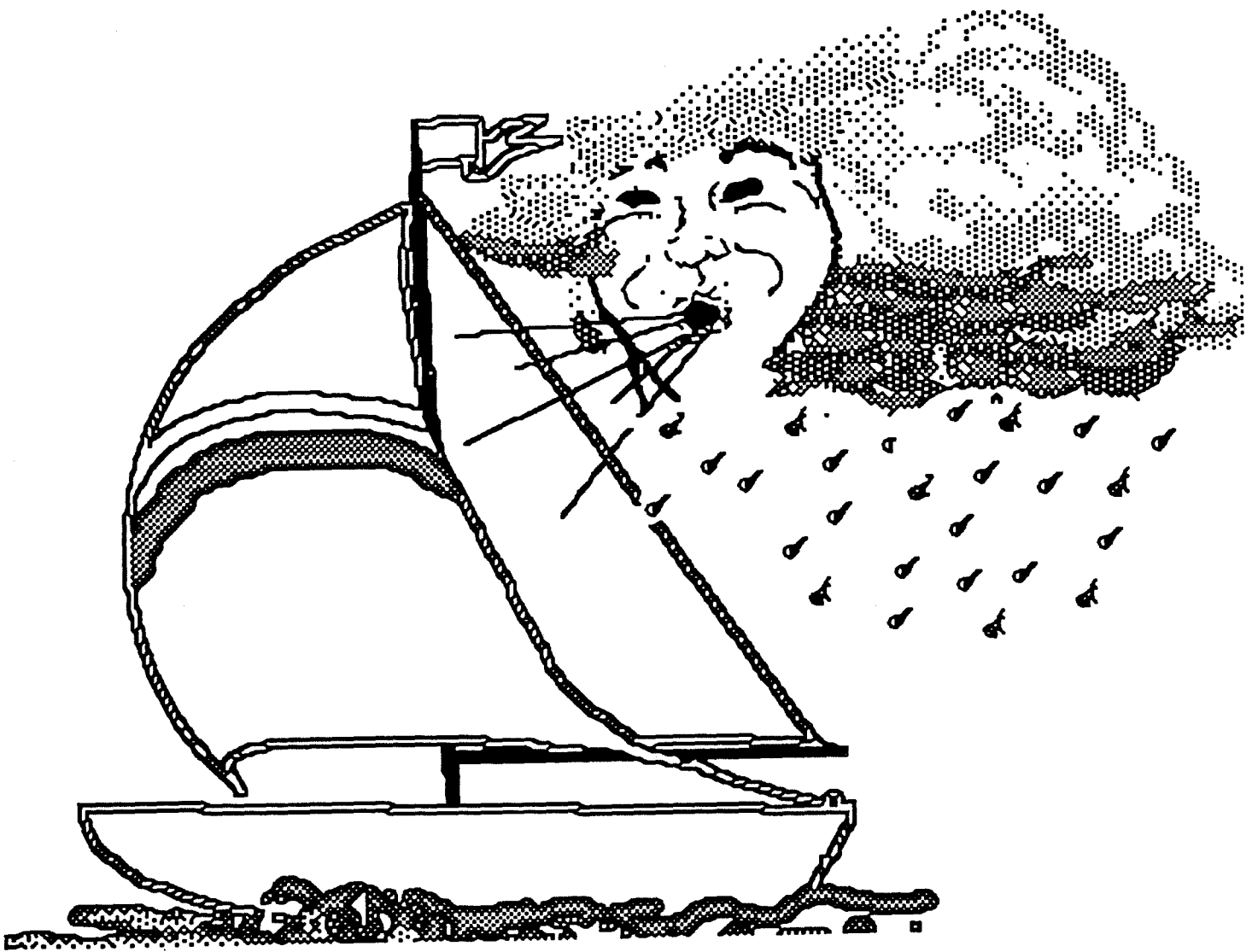
Build wooden buildings according to FEMA standards. Regular maintenance will help you save preparation time. This includes clearing overgrowth and debris from your water source, clearing drains and pipes, and replacing termite-ridden structures. Buy, install and regularly maintain an independent gas 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.

Secure debris and equipment, then shore up structures

Boats



SECURING BOATS

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.

**Secure small
boats to a
trailer**

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.

Emergency Procedures



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:

- Stop the burning by putting out flames or removing the source;
- Cool the burn with large amounts of cool water; and,
- Cover the burn with a dry and 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 and 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 objects from the mouth. Tilt the head back and reattempt breaths. Repeat steps until the breaths go in.

IMMOBILIZATION

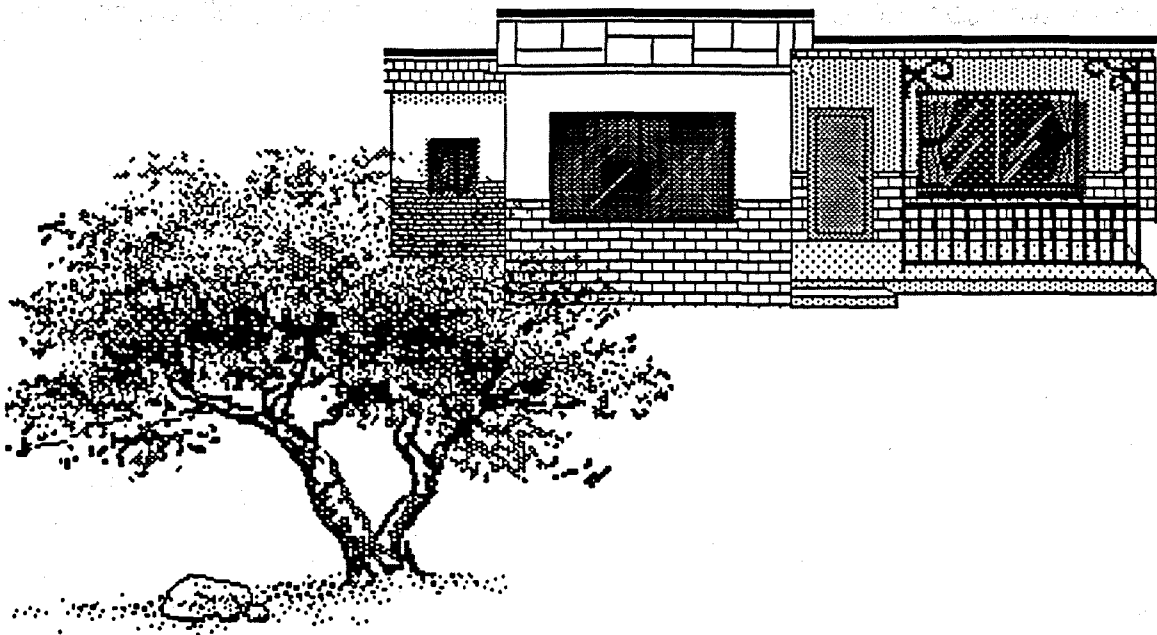
If the victim is unable to move or use a body part:

- Keep the injured part from moving;
- Apply ice to the injured area; and,
- 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 bandages.

Information for Homeowners



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 Company to make sure. 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 include:

- **The Red Cross**, which grants assistance for immediate building repairs and living expense 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 other credit is not available. Qualifying farmers in disaster areas can get short-, medium-, or long-term loans with moderate interest rates.
- **Small Business Administration**, 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, businesses 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.

FILING INSURANCE CLAIMS

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

- 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.

- 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.
- 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.
- Keep damaged materials for proof of loss.
- 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.
- If looting should occur, report any theft to the police.
- 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.
- 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.
- 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 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 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 repairs are necessary to restore the property to its pre-typhoon condition.
- The amount spent on repairs is not excessive.
- The replacement or repairs do no more than take care of the damage sustained.
- The 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:

- Using 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 and after the typhoon.
- Keeping receipts to support claims for repair and 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:

- 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.
- Parties involved in a contract must be at least 18 years of age and mentally competent.
- 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.

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.
- 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.

HELPFUL PHONE NUMBERS

Department of Civil Defense	477-9841
Department of Public Health & Social Services: Division of Environmental Health Health Education	734-7222/10 734-7129/47
Guam Fire Department	911 for emergency
Guam Memorial Hospital	646-5801/6710
Guam Police Department	475-8547 or 911 for emergency
Guam Power Authority Emergency Executive Office (Agana)	472-8817/8/9 472-8614/6745 477-9100
Customer Service Offices Central Main Office (Agana) Northern Office (Upper Tumon) Southern Office (Agat)	477-8855/6/7 649-9254/9297/9295 565-2908/09
Guam Telephone Authority Northern District Agana Office Central District Southern District	632-9310 475-2951-5 646-2100 565-2951
Guam Visitors Bureau	646-5278/9
Port Authority of Guam	477-5931/5
Public Utility Agency of Guam	649-7824/8891-6

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

$$\frac{5}{9} (F-32)$$

For Example: 65 degrees Fahrenheit equals:

$$\frac{5}{9} \times (65-32) = 18.3 \text{ degrees Centigrade}$$

Typhoon Guidelines for Visitors to Guam



GUIDELINES FOR VISITORS

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.

Stay inside the hotel. Fill your bathtub, sink and other containers with water.

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