



SECURITY BULLETIN ***10-04***

AMERICAN EMBASSY QUITO
3/2/2010



Family Natural Disaster Preparedness and Survival

As evident from the earthquakes that struck Haiti and Chile this year, it is vital that you and your family are prepared to respond if a natural disaster strikes Ecuador. Please note that Quito is located in an area that has experienced earthquakes and volcanic eruptions in the past. The destruction and disruption of services caused by a major natural disaster makes it important to plan ahead of time. The key to surviving a natural disaster is planning. The following information will help you plan for a major disaster. Remember it is important to involve your entire family in the planning. Because an earthquake or volcanic eruption can occur without warning, it is important to take steps now to minimize their effect on your family.

HOW TO DESIGN YOUR EARTHQUAKE PREPAREDNESS ACTION PLAN

Developing a family emergency plan is each employee's responsibility. The following information should help you develop an earthquake plan:

1. Discuss individual duties, evacuation plans, etc. Rehearse the plan on a regular basis, making sure the serious intent of the exercise is understood. Going through the planning process may help you to respond calmly during an emergency.
2. Sketch a floor plan of each floor in your residence, identifying main and secondary exits and safe and dangerous areas for each room. An example of a

floor plan is included in this document. Mark safe spots (under doorways, in an inside corner of room, etc.) and dangerous spots (next to large windows, tall furniture, etc.) in each room. Doorways in masonry (brick, clay tile, etc.) walls should not be considered safe because the masonry directly above the door may fall. The best places to be during an earthquake are beneath supported archways, against inside walls and corners, or in doorways. Stay away from windows, hanging objects, mirrors, fireplaces, bookshelves, or tall unsecured furniture. Do not crawl under desks or beds as they could crush you if a heavy load falls on top of them. Reinforce this knowledge, especially with small children, by physically placing yourself and family members in safe locations during drills.

3. Identify potentially dangerous items such as:

- tall and heavy furniture that can topple (e.g., bookcases, china cabinets, or modular wall units).
- appliances which could move enough to break electrical connections.
- hanging plants which could swing free from hooks.
- heavy pictures frames or mirrors. **DO NOT HANG ANYTHING ON A WALL OVER THE BED!**
- latches on kitchen or other cabinets which will not hold the doors closed during an earthquake.
- breakable or heavy objects that are on high or open shelves.
- a masonry or brick wall structure that could collapse and fall through an unsupported roof.
- flammable liquids, such as painting or cleaning products, should be stored in a garage or outside shed.
- avoid storing these products in glass containers and never store them indoors.

STAY AWAY FROM ALL POTENTIALLY DANGEROUS ITEMS DURING AN EARTHQUAKE! FOLLOW THE SUGGESTIONS OF THE RESIDENTIAL HAZARD REDUCTION LIST (PAGE 4) IN ORDER TO FIND WAYS TO REDUCE THE RISK OF POTENTIALLY DANGEROUS ITEMS BEFORE THERE IS AN EARTHQUAKE!

4. Keep your radio charged and practice using it during Embassy radio checks. Teach all family members how to use the radio.

5. Practice and teach responsible members of your family how to turn off electrical and water mains.

6. Practice plugging drains to prevent sewage back-up.

7. Learn how to shut off utilities - gas, water and electricity. Mark the location of shut-off valves and switches on the floor plan. Review shut-off procedures with

capable family members. Locate and verify the operability of fire extinguishers and smoke detectors.

8. Decide how to contact family members if they are away from home remembering that phone service may be unavailable. If possible, know where your family members are at all times. Keep a list of emergency contacts in a handy location.

9. Tell your children what to do if they are in school or are separated from you. Check the school emergency plan.

10. Tell your maid, especially if she takes care of your children, the name of your closest trusted neighbor, who may need to take responsibility for your children in your absence.

11. Have on hand the following emergency supplies:

It is important to remember that regular services such as utilities, communication, and transportation may be disrupted for several days. Plan now to be self sufficient for at least 72 hours.

- **Flashlights with spare batteries.** Always keep a flashlight close by your bed. Candles and matches should be available, but should be stored in a safe place and used only when it is certain that no gas leaks or other flammable substances are present.

- **Portable commercial radio with spare batteries.** A commercial band AM/FM radio will be your best source of information.

- **Embassy hand-held radio.** The Embassy radio net will be used for emergency communications. Immediately after the earthquake DO NOT call the Embassy by phone or radio unless you are in need of emergency assistance. Unnecessary phone and radio calls will delay real emergency calls getting through. Follow the instructions given via the radio net by MSG Post One. Times will be given to monitor the network periodically and opportunities will be provided for family members to relay messages to the employees at the Embassy after the initial emergency situation has improved.

- **First Aid Kit.** Familiarize yourself with first aid procedures. Have a first aid book such as Standard First Aid & Personal Safety by the American Red Cross. Contact the health unit for information on how to put together a useful first aid kit. (Know where the nearest hospital or emergency center is located.)

- **Fire extinguishers.** Keep a fire extinguisher handy for small fires. Some extinguishers are good for only certain types of fires: electrical, grease, or gas. The Embassy supplied Class C extinguisher is designed to be used safely on any type of fire: paper/wood, electrical or gas.

- **Food.** Keep a supply of non-perishable food on hand. Have a sufficient supply of canned or dehydrated food, powdered milk, and canned juices to last for more than 72 hours. Dried cereals, fruits, and non-salted nuts are a good source of nutrition.

- **Emergency water.** This is extremely important since water mains may be broken and delivery trucks may not be able to deliver water due to debris filled streets. Maintain a minimum five days supply of bottled water per person in your residence. Estimate two gallons of bottled water per day per family member. Periodically replace stored water supply to keep it fresh. Water purification tablets can be essential and are a small storage item. Obtain plastic water storage containers or other means of portable water storage. Consider obtaining hand pumps for removing water from cisterns or swimming pools where available.

- **Charcoal grill and charcoal.** If you have frozen meat and vegetables in the freezer, be prepared to start cooking these within 24 hours after the electricity is off.

- **Special items.** Have at least a week's supply of any medications and special foods.

- **Tools.** Have a pipe wrench and an adjustable wrench available for turning off gas and water main.

- **Suitable clothing and thick soled shoes** stored near your bed.

- **Blankets or sleeping bags and a plastic ground cloth.**

- **Sanitation supplies.** Toilet tissue, plastic bags, anti-bacterial soap, buckets, and powdered chlorine or lime for emergency sanitation purposes should the sewers be blocked

- **Tools.** Wrenches, hammers, pliers, shovels, screwdrivers, plastic sheeting, axe & pry bar, ladders, heavy gloves, rope, and wire.

- **Fuel.** If you house is equipped with a generator, keep the fuel tank full.

- **Cash.** Banks may be closed for some time.

RESIDENTIAL HAZARDS REDUCTION CHECK LIST

Each person can make an individual contribution to the seismic safety of their immediate environment. Heavy, unstable items can lead to injuries by falling or being knocked over during earthquakes. Exit routes should be free from

obstructions. Part of planning for an earthquake includes inspecting your surroundings for items which you can secure. If the hazard cannot be easily secured, move either yourself or the hazard to a safer location (i.e., move beds away from large windows). The following checklist includes many of the items which need to be secured; it should be supplemented with your own inspections and judgment.

- **Propane tanks and kerosene heaters.** Provide flexible connections to the tank. Anchor storage tanks to the ground. Earthquake related fires are frequently caused by gas leaks.
- **Tall, heavy furniture**, such as bookcases, should be secured to prevent sliding or tipping, perhaps by using metal L-brackets. To prevent rolling, remove castors or wheels.
- **Flammable or hazardous materials**, such as gasoline and paint thinner, should be stored in covered containers, on a low shelf, floor, or in a remote location.
- **Chimneys are a common falling hazard.** Check for weaknesses such as damaged or missing bricks. If possible, install plywood above ceiling joists to keep bricks from falling through.
- **Cabinet doors.** Make sure latches are strong enough, especially in the kitchen to prevent contents from falling out. You may want to install safety latches.
- **Heavy picture frames and mirrors.** Make sure these wall hangings can't fall on people at desks or in beds. Move beds and desks away from large glass windows if possible.
- **Hanging plants.** Secure using closed hooks, so they cannot fall.
- **Storage racks and shelves** should be braced and bolted to the floor and walls. Secure contents so they can't slide off.
- **Computer equipment and copy machines** should be braced to prevent sliding or falling.
- **Water heaters and compressed gas cylinders.** Use flexible connections for water and gas. Use metal straps at the top and bottom of the water heater which are bolted using expansion bolts to a masonry wall, or lag bolts to a wood stud wall. Block in the space between water heater and wall to prevent rocking.

WHAT TO DO DURING AN EARTHQUAKE

During a major earthquake, you may experience shaking that starts out gently and within a second or two grows violent and knocks you off your feet; or, you may be jarred first by a violent jolt, as though your house was hit by a truck. A second or two later you'll feel the shaking, and, as in the first example, you'll find it very difficult (if not impossible) to move from one room to another. While there is shaking tell yourself to remain calm. Do not do things that will upset or panic others such as shouting or screaming.

- If you are indoors, stay there. Stand under a door frame, archway, or near an inside wall or corner. **COVER YOUR NOSE WITH A PIECE OF CLOTH** to filter as much dust as possible. Remember to stay clear of windows, bookcases, china cabinets, mirrors, and fireplaces until the shaking stops. Do not hide underneath tables or beds.
- If you are in a high-rise apartment building, stay in the building on the same floor. Do not use the elevator. A power failure or elevator equipment failure could leave you trapped between floors. Be careful with stairs, they may be weakened. As a general rule, **DO NOT RUN OUT OF A BUILDING**. Falling debris around a building is a common hazard. It is better to seek safety where you are, wait until the earthquake is over, then, if evacuation is necessary, leave the building calmly.
- If you are using a gas stove, turn off the stove at the first sign of shaking and quickly move to a safe place under a door frame, archway, or corner. If you are outside, get into the open, away from buildings, trees, walls, or power lines. If you are in a crowded public building, do not rush to the doorways, since other people will have the same idea. Move away from display shelves containing objects which may fall.
- If you are in your car, pull to the side of the road and stop. Do not park under overpasses (falling concrete) or power lines (electrical shock hazard) or near utility poles. Stay in your car until the earthquake is over.
- If you are inside a car and power lines have fallen on the vehicle, do not attempt to exit the vehicle. If you are outside a car and power lines have fallen on the vehicle, do not touch or attempt to enter the vehicle.
- If the earthquake has been severe, do not attempt to cross bridges or overpasses that may have been damaged.
- Do not be surprised if the electricity goes out, and car and building alarms or sprinkler systems activate.

ACTION TO BE TAKEN AFTER THE INITIAL SHOCK

After the initial earthquake ends, the Embassy's Emergency Action Plan (EAP) will go into effect. This plan's goal is to utilize the cascade system to effectively coordinate Embassy search and rescue efforts. However, while the EAP is being activated, please follow the below guidelines:

- CHECK for injuries. Give First Aid to those in need. Do not move seriously injured people unless they are in an immediate danger of injury or death should they remain in their present location.
- TURN your radio on to channel 1 and await instructions. Do not transmit except for vital emergency information to insure that the radio net is clear for emergency traffic and to conserve your battery. A fully charged radio battery will last at least eight hours when not transmitting. If you need to leave your residence, make sure that you have your fully charged radio with you at all times.
- CALL the Embassy by phone or radio to request assistance if you have an **emergency**, such as a family member trapped in a building, or if you are taking injured people to the emergency room. If you are unable to contact the Embassy, your next point of contact is your closest American neighbor. If no life threatening injuries have occurred, do not call the Embassy. You will be contacted by the Embassy using the cascade system or the radio.
- TAKE any injured person to the nearest emergency center. Be prepared to have long waits as the centers are expected to be quickly inundated beyond their capacity. Use your best judgment to treat cuts, sprains, etc. until emergency medical personnel have taken care of severe cases. Embassy emergency personnel will contact you at a later period to check on how you are doing.
- MSG Post 1 will attempt to contact by phone or radio any American employee who has not reported in through the cascade network.
- If your child is at school, the Embassy will transmit information on his/her well-being as soon as possible and inform parents of pick-up plans. **DO NOT ATTEMPT TO RETRIEVE YOUR CHILDREN FROM SCHOOL UNLESS INSTRUCTED TO DO SO.**
- Emergency Action Committee (EAC) members and all personnel with responsibilities for security, health, communications and maintenance should report to the Embassy as soon as they determine that their own families are safe.
- Wear thick-soled shoes to protect against injury from fallen debris and broken glass.

- If possible, put out small fires that you can safely extinguish. Do not attempt to extinguish large fires and do not endanger yourself while trying to fight a fire. Instead, immediately leave the building.
- Check gas, water, electrical lines, and appliances for damage.
- Switch off electrical power if there is damage to your home's electrical wiring. Do not touch downed wires or broken appliances.
- Clean up spilled medicines, bleaches and flammable liquids.
- Check to see that sewer lines are intact before using the toilet. **PLUG THE BATHTUB AND SINK DRAINS TO PREVENT SEWAGE BACKUP**
- Check closets and cupboards. Open doors cautiously. Beware of objects falling from the shelves.
- Turn on your battery-powered commercial radio (or car radio) for damage reports and information.
- If you must leave your home for work or safety, post a large sign on the front door indicating your destination, your physical condition, the names of family members or other Americans who are accompanying you and their physical conditions. If you leave your home en route to the Embassy, do not assume that the Embassy will know you are headed to the Embassy compound. If all members of your household are safe and accounted for, hang a white sheet where it can be seen from the road to notify security and rescuers that no emergency help is required.
- In the event of a serious earthquake, mission members should work within their cascade system to relocate temporarily, if necessary, to the most secure and safe location within their area. Further movement will be based upon damage assessments. If you relocate, carry equipment/supplies listed below:
 - Medicine and first aid kit.
 - Flashlight, radio and batteries.
 - Carnet, passports, and cash.
 - Food, sleeping bags/blankets and extra clothing.
 - Embassy hand-held radio.
- Remember that aftershocks are common. Move into a safe area of your home, if necessary remove all potentially dangerous items that may fall. Gather and keep all your emergency supplies and your handheld radio next to you.

FLOOR PLAN TEMPLATE

Floor 1

Floor 2

P = Primary Exit
S = Secondary Exit
E = Electrical Shut Off
G = Gas Shut Off

W = Water Shut Off
F = Fire Exit
Safe = Place to Take Cover
Hazard = Hazardous Area Due to _____

VOLCANIC ASHFALL



EL TUNGURAHUA – JANUARY 2010

Volcanic ash is not "ash" at all. It is pulverized rock. A one-inch layer of dry ash weighs ten pounds per square foot as it lands. It often contains small pieces of light, expanded lava called pumice or cinders. Fresh volcanic ash may be harsh, acid, gritty, glassy, smelly, and thoroughly unpleasant. Although gases are usually too diluted to constitute danger to a normal person, the combination of acidic gas and ash which may be present within a few miles of the eruption could cause lung damage to small infants, the very old, the sick, or those already suffering from severe respiratory illnesses.

- A heavy ash fall blots out light. Sudden, heavy demand for electric light may cause power supplies to "brown out" or fail.
- Ash clogs water courses, reservoirs, sewers, sewage plants and machinery of all kinds.
- Ash drifts onto roadways, railways, and runways like snow, but resembles soft wet sand.
- Fine ash may be slippery.
- The weight of ash may cause roofs to collapse

WHAT TO DO IF VOLCANIC ASH IS FALLING

- Don't panic, stay calm.
- Stay indoors.
- If outside, seek shelter (e.g., car, building); use a mask - or a dampened handkerchief or cloth.
- If at work, go home if possible, before ash begins to fall. If ash is already falling, stay indoors at work if possible, until the heavy ash is settled.
- Go directly home, do not run errands on the way.
- Unless an emergency, do not use the telephone.
- Use your radio for information on the ash fall.

HOW TO BE PREPARED FOR AN ASH FALL

- Whether in a car, at home, at work, or play you should always be prepared.

Your Home:

- Extra face masks. Hardware stores usually carry effective masks.
- Have enough food stored for two weeks.
- Water (one quart per day, per person) in clean plastic containers
- Medicines, especially asthma medications or other prescription medications that are taken regularly
- First aid kit
- Battery operated radio with extra batteries, (Ash may interrupt telephone, T.V. and electricity)
- Candles, lanterns, or flashlights with extra batteries
- Extra wood, if you have a fireplace or wood stove
- Extra blankets
- Extra vacuum cleaner filters and cleaning supplies

Your Auto:

Any vehicle can be considered a movable, second home. Always carry a few items in case of delays, emergencies, or mechanical failures.

- Face masks
- Blankets
- Fire extinguisher
- Extra clothing
- Emergency food rations
- First aid kit
- Flashlight (and extra batteries)
- Basic tool kit
- Portable radio (and extra batteries)
- Water
- Shovel, axe

- Road map
- Emergency flares
- Candles and matches
- Waterproof tarp
- Heavy rope or tow cable
- Survival manual
- Extra air filters
- Extra oil filters
- Extra motor oil
- Extra windshield washer fluid
- Extra window wiper blades in good condition

Your Children:

- Have quiet games and activities available.
- Explain what a volcano is and what they should expect.
- Teach children safety procedures if they are caught in an ash fall.
- Consider organizing a community or neighborhood day-care center to relieve economic and other stresses on working parents during ash fall clean-up, and to keep children in a cleaner environment.

Your Pets or Animals:

- Extra dry and clean food

WHAT TO DO DURING AN ASH FALL

Your Home:

- Close doors and windows, use tape to seal cracks if necessary.
- Close dampers and chimney flues.
- Place damp towels at door thresholds and other draft sources.
- Do not run exhaust fans or clothes dryers.
- Remove ash from flat or low pitched roofs and from rain gutters to prevent thick accumulation.
- If water source is contaminated, use clean stored water in your hot water heater or toilet tank (turn off main water valve). To purify water, use 10 drops of chlorine bleach per gallon of water. Let sit 30 minutes, or purify by boiling for 5 minutes.
- Dust often. Using vacuum attachments rather than dust cloths, which may scratch. Vacuum furniture, carpets, etc. and try not to wipe as ash will scratch.
- To clean clothes: brush, shake, and pre-soak. Use detergent, not soap, as soap will gum up. Use extra detergent in washer. Use full load of water and two rinse cycles. Front load washers are more effective than top loaders.
- Keep refrigerator closed.

- Bagging lawn clippings and mowing lawns when damp will cut down on dust. Blades will dull faster.
- Use battery operated radio to receive information.

Your Auto:

- If possible do not drive. If you must drive, drive slowly (15mph). Remember ash fall will decrease visibility. Do not follow the car ahead too closely.
- Use windshield washer fluid and wipers.
- Change the air filter**, ash is abrasive rock; therefore it will clog the engine, damage the motor and scratch the finish of automobiles.
- Change oil and oil filter
 - Every 50 to 100 miles in heavy dust. (Less than 50 feet visibility).
 - Every 500 to 1,000 miles in light dust. (Up to 200 feet visibility).
- Do not drive without an air filter.

If the car stalls, push it off the road to avoid collisions, and stay with the auto.

**Do not change air filter until you notice a loss of power in your car's engine. A dirty filter is more effective as long as it allows air to reach the engine. If you cannot change the air filter, clean it by blowing air through from the inside out.

Your Children:

- Do not attempt to pick your children up at school unless instructed to do so. Schools will put in place emergency procedures, be familiar with them.
- Keep children indoors.
- Minimize exertion to reduce inhaling ash.
- If possible, maintain normal routines for children.
- If there is prolonged ash fall, take children outside as weather conditions permit. (Use protective masks. Some approved masks may be adjusted to fit children.)

Your Pets or Animals:

- Keep pets indoors.
- Get clean water to pets as soon as possible.
- If pets go out, brush or vacuum them before letting them inside. Don't let them get wet or try to wash them.
- Keep extra dry and clean food available.

Major Volcanoes in Ecuador



Topinka, USGS/CVO, 2003; basemap modified from:
CIA, 1997; volcanoes from: Simkin & Siebert, 1994