EARTHQUAKE PREPAREDNESS GUIDE

A PRACTICAL APPROACH
TO INDIVIDUAL
EARTHQUAKE PREPAREDNESS

Compiled by:

John Cairns
Certified Safety Technician
World Safety Organization

The information contained in this brochure was compiled from many sources. Primary among these are the American Red Cross, Pacific Telephone, General Telephone, and Ralphs Markets. Most of the credit, therefore, belongs to these fine organizations. My involvement was to gather information from available sources and compile it into a single document. I have added comments or details throughout the brochure for clarity or to expand upon facts and recommendations.

I have taken many hours and great care in the preparation of this document. Although the information contained herein is believed to be accurate, it is subject to error and no guarantee is expressed or implied as to completeness or accuracy. In no event shall I accept any liability , whether direct or consequential, for damage or injuries resulting from implementation of the recommendations presented in this guide. This information is presented as a public service only. Special circumstances and

your own good sense may modify your individual approach to earthquake preparedness.

I release this brochure to the public domain in the spirit of universal brotherhood and friendship. No fee or royalty is to be charged for its distribution.

THE EARTHQUAKE POTENTIAL

Geologists have forecast a 50/50 chance of Southern California being struck by a great earthquake (8.0 or greater) along the southern San Andreas Fault within the next 15 years. When it happens, the impact on Southern California will be enormous. Police, fire, utilities and medical services will be overwhelmed. Cities within Southern California Counties that would normally help each other in a large emergency may be too busy with their own problems to provide mutual aid. It may take days or weeks in many areas to restore electricity, gas, water or telephones. Devastated roads will make travel anywhere difficult or impossible.

Disaster planners have warned
us to be prepared to be
"on our own" for at least
the first 72 hours after
the earthquake.

Much can be done to prepare
now, before the great earthquake
strikes Southern California

By learning the potential hazards of earthquakes and by taking certain preparedness measures NOW, you can survive an earthquake and minimize its dangerous and damaging impact.

There will never be a better time than NOW for you and your family to prepare for this cataclysmic event. PLEASE take the time to read and understand this brochure. Follow the directions for preparing your three-day survival pack. Store this brochure with your survival pack for later reference.

EARTHQUAKE PREPAREDNESS GUIDE

THE DANGER

The actual movement of the ground in an earthquake is seldom the direct cause of death or injury. Most casualties result from falling objects and debris because the shocks can shake, damage, or demolish buildings, bridges, and other man-made structures. Earthquakes can also trigger landslides and generate huge ocean waves called tsunamis. Both of these can cause great damage and loss of life.

Earthquake-related injuries are commonly caused by:

1. Partial building collapses, such as toppling chimneys, falling bricks from wall facings and roof parapets, collapsing walls, falling ceiling plaster, light fixtures, and pictures.

2. Flying or falling glass from broken windows. (This danger may be greater in modern high-rise buildings.)

3. Overturned bookcases, fixtures, and other furniture and appliances.

4. Fires from broken chimneys, broken gas and electric lines, or spilled flammable liquids. The danger may be aggravated by the lack of water due to broken water mains.

5. Fallen Power lines.

6. Human panic reactions, such as crowds stampeding for stairways or exits.

WHAT CAN YOU DO?

There are many actions you can take to reduce the danger from earthquakes to yourself, your family, and others.

A. BEFORE AN EARTHQUAKE OCCURS:

1. As a homeowner or tenant:

   a. Check your home for earthquake hazards. Bolt down or provide other strong support for water heaters and other gas appliances, since fire damage can result from broken gas lines and appliance connections. Use flexible connections wherever possible. Place large or heavy objects on the lower shelves. Securely fasten shelves to walls. Brace or anchor high or top-heavy objects.

   b. In new construction or alterations, follow building codes to minimize earthquake hazards. Sites for construction should be selected and engineered to reduce the hazards of damage from an earthquake.

2. As a parent or head of family:

   a. Hold occasional home earthquake drills to provide your family with the knowledge to avoid injury and panic during an earthquake.

   b. Teach responsible members of your family how to turn off electricity, gas, and water at the main switch and valves. If in doubt, check with your local utilities offices for instructions. CAUTION: NEVER SHUT OFF THE GAS unless you suspect a gas leak or can smell gas. If the gas is ever shut off, all pilot

lights MUST be re-lit.

c. Provide for responsible members of your family to receive basic first aid and C.P.R. (cardio-pulminary resuscitation) instruction because medical facilities may be overloaded immediately after an earthquake. Call Red Cross Safety Services for information about classes.

d. Keep a flashlight and a battery-powered transistor radio in the home, ready for use at all times. Keep fresh batteries with these items.

e. Keep immunizations up-to-date for all family members.

f. Conduct calm family discussions about earthquakes and other possible disasters. Avoid frightening disaster stories, but talk frankly and rationally about the possible consequences of catastrophic events.

g. Maintain a 2-3 day supply of food and water. However, to maintain freshness it is important to rotate this stock periodically.

B. DURING AN EARTHQUAKE:

1. The most important thing you can do during an earthquake is to remain calm. By doing this, you will

be in a better position to assess your situation and instill confidence in those around you. Think through the consequences of any actions you take. Try to calm and reassure others.

2. If indoors, stay there. If you happen to be in the kitchen, turn off the stove at the first sign of shaking. Watch for falling plaster, bricks, light fixtures and other objects. Watch out for high bookcases, china cabinets, shelves, and other furniture or appliances which might fall or topple. Stay away from windows, mirrors, and chimneys. If in danger, get under a table, desk or bed; in a corner away from windows; or in a strong doorway. Encourage others to follow your example. Do not run outdoors - you may be hit by falling debris or electrical wires.

3. If in a high-rise office building, move away from windows and outside walls. Get under a desk or table. Do not dash for exits, since stairways may be broken or jammed with people. Power for elevators may fail.

4. If in a crowded store, do not rush for a doorway since hundreds may have the same idea. If you must leave the building, choose your exit as carefully as possible.

5. If outside, avoid high buildings, walls, power poles, and other objects which could fall during the

earthquake. If possible, move to an open area away from all hazards.

6. If in an automobile, pull your car to the side of the road and stop in the safest place available. Avoid bridges, overpasses, and power lines. Remain inside your car until the shaking is over. Turn on your radio for news and information. Proceed with extreme caution because of the danger of debris in the road or damage to the road itself.

C. AFTER AN EARTHQUAKE

1. Check for injuries to your family and your neighborhood. Do not attempt to move seriously injured persons unless they are in danger of further injury.

2. Check for fires or fire hazards.

3. Wear shoes in all areas near debris or broken glass.

4. Do not touch downed power lines or objects touched by the downed wires.

5. Immediately clean up spilled medicines, drugs, and other potentially harmful materials.

6. Check for damaged utilities.

a. Inspect for leaking gas lines by smell only; do not use candles, matches, or other open flames. If you smell gas, open all windows and doors so gas can escape. Shut off the main valve at your gas meter, leave the house immediately, and notify authorities of the leak. Do not re-enter the house until repairs have been made and the dwelling has been declared safe.

b. If water pipes are broken, shut off the main valve which brings water into the house.

c. If the house is properly wired, internal trouble with the electricity is very unlikely. If there is a short circuit, turn off the electricity at the meter box.

7. If water is off, emergency water may be obtained from melted ice cubes, from canned vegetables, from toilet tanks (if no blueing or sanitizing chemicals have been added), from swimming pools and spas, and from water heaters (strain this water through a clean handkerchief first).

8. Check to see that sewage lines are intact before permitting continued flushing of toilets.

9. Do not eat or drink anything from open containers

near shattered glass. Liquids can be strained through a clean handkerchief or cloth if the danger of glass contamination exists.

10. If power is off, check your freezer and plan meals to use up foods which will spoil quickly.

11. Use outdoor charcoal or propane broilers for emergency cooking. Do not bring these items indoors. The accumulation of fumes from their use can be deadly.

12. Do not use your telephone except for genuine emergency calls.

13. Check your chimney over its entire length for cracks and damage, particularly in the attic and at the roof line. Unnoticed damage could lead to a fire or collapse in aftershocks. The initial check should be made from a distance. Approach chimneys with caution.

14. Check closets and storage shelf areas. Open closet and cupboard doors carefully and watch for objects falling from shelves.

15. Do not spread rumors. They often do great harm following disasters.

16. Tune-in to local radio stations for information and danger reports.

17. Do not go sightseeing. Do not use your vehicle unless there is a genuine emergency. Keep the streets clear for emergency vehicles.

18. Be prepared for additional aftershocks. Although most of these are smaller than the main shock, some may be strong enough to cause additional damage.

19. Respond to requests for help from police, fire fighting, civil defence, and relief organizations, but do not go into damaged areas unless your help has been requested. Cooperate fully with public-safety officials. In some areas, you may be arrested for getting in the way of disaster operations.

20. Information concerning the welfare of separated family members will be handled by the American Red Cross. Do not call or go to the police or fire department for this information.

THREE-DAY SURVIVAL PACK

Prepare, in advance, a 33-gallon plastic trash barrel to store emergency supplies for yourself and members of your household. The barrel should have a tight fitting or latching lid to keep insects or household pets from disturbing your supplies.

Store the barrel in your garage or (better yet) in a backyard storage shed. Make sure your supplies will be accessible in an emergency. Store the barrel in such a manner that it will not easily tip over and spill or damage the contents.

Store your emergency supplies in the barrel, in quantities sufficient to meet the needs of your household for at least 72 hours.

BOTTOM OF THE BARREL

Bedding
- Plastic sheets/tarp
- Sleeping bag/blankets

Clothing
- One change/person

Personal Supplies
- Good book
- Pencil/paper
- Toiletries
- Towel

Fuel and Light
- Candles
- Matches
- Sterno canned heat

Equipment
- Axe
- Bucket
- Can opener
- Dish pan
- Disposable dishes
- Disposable utensils
- Plastic bag liners
- Shovel

Infant Needs
- If applicable

Money

Other
- Eye dropper
- Liquid chlorine bleach
- Water purification tablets

MIDDLE OF THE BARREL

Food
Three-day supply of food requiring no refrigeration. Date all food items and rotate stock as required to maintain freshness. Write out a menu for each day.

Examples:
Bottle of multi-vitamins

Canned fruit juice
Canned tuna or pork and beans (1/2 lb./person)
Dried fruit (1/2 lb./person)
Graham crackers (1/2 lb./person)
Nonfat dry milk (1/2 lb./person)
Peanut butter (1/2 lb./person)

This supplies daily 2100 calories and essential nutrients.

Water (1 gal./person per day. Store water separately in sealed containers.

TOP OF THE BARREL

Flashlight, Radio, Spare Batteries

First Aid Kit, including:

Drugs
Antibiotic Ointment
Aspirin Tablets (5 grain)
Kaopectate
Medication recommended by your doctor

Bandages
Ace bandage
Adhesive tape, 2" wide roll
Bandages, plastic strips
Bandages, large triangular

Butterfly bandages
Cotton-tipped swabs
Gauze pads (4" x 4")
Sterile absorbant cotton
Sterile gauze bandages, 2" & 4" wide rolls
Misc.
First Aid handbook
Petroleum jelly
Pocket/utility knife
Rubbing alcohol
Scissors
Thermometer
Tissues
Tweezers

The size of your family may require that more than one barrel be used to store your three-day survival pack. Campers' supplies are a good choice for many of the required items, because of their compact and durable design. Remember to check your stock regularly and replace out-of-date items.

If you have a tent, store it near your three-day survival pack. If your house is severely damaged during the earthquake, your tent may be your only shelter.

PURIFICATION OF DRINKING WATER

HOW TO PURIFY WATER FOR DRINKING:

If water is polluted with dirt or sediment, strain it into a container through paper towels, paper coffee filters, or several layers of clean cloth to remove any sediment or floating matter.

Disinfect the strained water with a 5.25% sodium hypochlorite solution (liquid household chlorine bleach) OR with tincture of iodine. DO NOT use the granular form of household bleach, it is POISONOUS! To disinfect water, use the following formula:

	Amount of chlorine bleach to add to:		Amount of tincture of iodine 2% to add to:	
Amount of water	Clear water	Cloudy water	Clear water	Cloudy water
1 Quart	2 Drops	4 Drops	3 Drops	6 Drops
1 Gallon	8 Drops	16 Drops	12 Drops	24 Drops
5 Gallons	1/2 Tsp	1 Tsp	3/4 Tsp	1 1/2 Tsp

NOTE: If liquid chlorine bleach is older than one year, the amount used should be doubled, as it loses strength over time.

Purchase an eye dropper to add bleach or iodine to the water.

Use the eye dropper for this purpose ONLY.

Mix well by stirring or shaking the water in a container. Let stand for 30 minutes before using. A slight chlorine odor should be detectable in the water. If not, repeat the dosage and let stand for an additional 15 minutes before using.

If the water can be boiled, boil at a rolling boil for 5 minutes. This should remove any harmful bacterial contamination. If you are in the mountains, add one additional minute for each 1,000 feet of altitude. Boiling for longer than 5 minutes is safer, but do this only if you have the gas or fuel to spare.

Water purification tablets are available in drug stores and sporting goods stores and are recommended for your first aid kit. Follow the directions on the package to purify water. Water purification tablets have a shelf life of 2 years and lose their effectiveness if they get damp before use.

Purify only enough water at one time to last for 48 hours. This will minimize the chances of re-contamination.

==========

WHAT YOU CAN DO TO COPE WITH EFFECTS OF EARTHQUAKE

Following is a list of reminders of what to do to cope with earthquakes.

PREPARE SUPPLIES, including:

- Flashlights with spare batteries.
- A first aid kit and instructional handbook.
- Portable radios with extra batteries.
- Fire extinguishers.
- Airtight containers of water and purification tablets or liquid chlorine bleach to disinfect water.
- A supply of canned or dehydrated foods, powdered milk, juices and nutritional food items that do not require water for preparation.
- A manually-operated can opener.
- A barbecue, camp stove or other alternate means of cooking.
- Plastic trash bags.
- Gloves.
- Matches.
- Bathroom items including toothpaste, toilet paper and soap.
- A pipe wrench and crescent wrench for turning off gas and water mains.

PREPARE PLANS, including:

- How to shut off electricity, water heaters, water mains and gas. (Do not, however, shut off the gas unless you suspect a leak or can smell escaping gas).
- How to purify water.
- Where to reunite your family.
- The safest places to take cover in your dwelling.

DURING THE EARTHQUAKE:

- If indoors, stay there. Duck under a desk or table. Stay clear of windows, fireplaces and heavy appliances.
- If outside, get into the open. stay away from buildings, trees and

power lines.
- If in a car, pull to the side of the road. Stay away from overpasses, bridges or power lines.

For further information, the front section of telephone directories includes a survival guide with first aid information for earthquakes and other emergencies.