

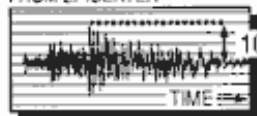
MICRONS OF AMPLIFIED MAXIMUM GROUND MOTION

(Note Rapidly Changing Vertical Scale)

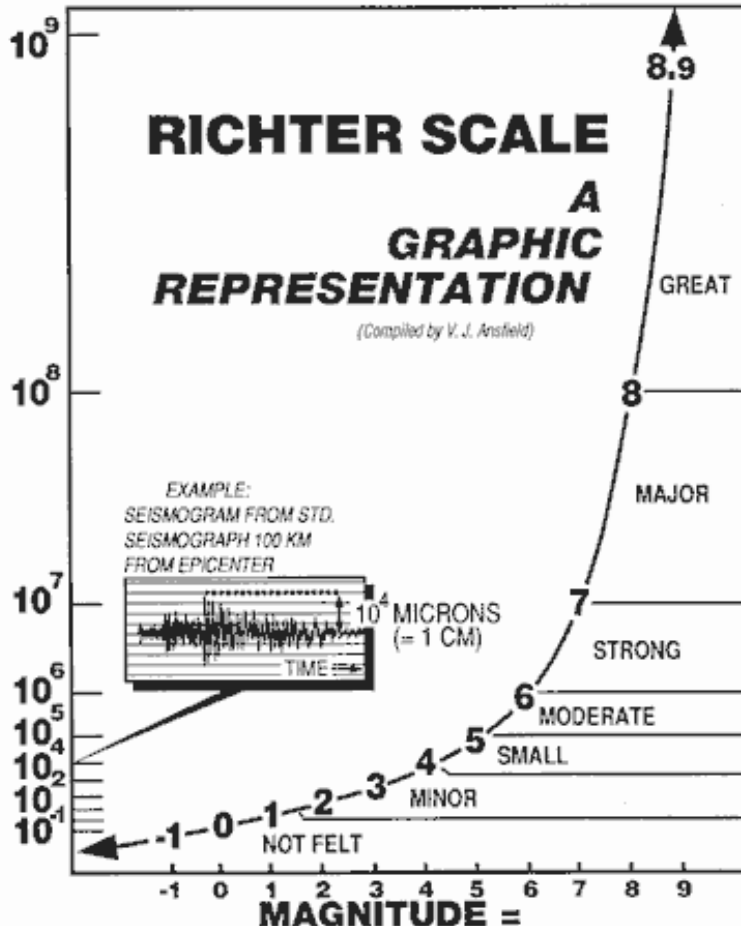
RICHTER SCALE **A GRAPHIC REPRESENTATION**

(Compiled by V. J. Arisfield)

EXAMPLE:
SEISMOGRAM FROM STD.
SEISMOGRAPH 100 KM
FROM EPICENTER



10⁴ MICRONS
(= 1 CM)



LOGARITHM (BASE 10) OF MAXIMUM AMPLITUDE MEASURED IN MICRONS **

* EFFECTS MAY VARY GREATLY DUE TO CONSTRUCTION PRACTICES, POPULATION DENSITY, SOIL DEPTH, FOCAL DEPTH, ETC.

** MICRON = A MILLIONTH OF A METER

*** EQUIVALENT TO A MOMENT MAGNITUDE OF 9.5

Largest Recorded ***
(Offshore Chile, 1960)

Alaska, 1964

New Madrid, MO, 1812

San Francisco, 1906

Great Devastation
and Many
Fatalities Possible *

Loma Prieta, CA, 1989

Damage Begins *
Fatalities Rare

RICHTER SCALE

Magnitude	Description	What it feels like	Frequency
Less than 2.0	Micro	Normally only recorded by seismographs. Most people cannot feel them.	Millions per year.
2.0–2.9	Minor	A few people feel them. No building damage.	Over 1 million per year.
3.0–3.9	Minor	Some people feel them. Objects inside can be seen shaking.	Over 100,000 per year.
4.0–4.9	Light	Most people feel it. Indoor objects shake or fall to floor.	10,000 to 15,000 per year.
5.0–5.9	Moderate	Can damage or destroy buildings not designed to withstand earthquakes. Everyone feels it.	1,000 to 1,500 per year.
6.0–6.9	Strong	Wide spread shaking far from epicenter. Damages buildings.	100 to 150 per year.
7.0–7.9	Major	Wide spread damage in most areas.	10 to 20 per year.
8.0–8.9	Great	Wide spread damage in large areas.	About 1 per year.
9.0–9.9	Great	Severe damage to most buildings.	1 per 5-50 years.
10.0 or over	Massive	Never Recorded.	Never recorded.

BEFORE

The key to effective disaster prevention is planning:

- ✓ Know the earthquake hazards in your area.
- ✓ Follow structural design and engineering practices when constructing a house or building.
- ✓ Evaluate the structural soundness of the buildings and houses; strengthen or retrofit if necessary.

Prepare your homes, workplace or schools:

- ✓ Strap or bolt heavy furniture/cabinets to the walls.
- ✓ Check the stability of hanging objects like ceiling fans and chandeliers.
- ✓ Breakable items, harmful chemicals and flammable materials should be stored properly in the lowermost secured shelves.



Familiarize yourself with the exit routes.

Know where fire extinguishers, first aid kits, alarms, and communication facilities are located. Learn how to use them beforehand.

Prepare a handy emergency supply kit with first aid kit, canned food and can opener, water, clothing, blanket, battery-operated radio, flashlights and extra batteries.



Conduct and participate in regular earthquake drills.

DURING

STAY CALM.

When you are **INSIDE** a structurally sound building or home... **STAY THERE!**

- ✓ If possible quickly open the door for exit.
- ✓ Duck under a sturdy desk or table, and hold on to it, or protect your head with your arms.



- ✓ Stay away from glass windows, shelves, cabinets and other heavy objects.
- ✓ Beware of falling objects. Be alert and keep your eyes open.

If you're **OUTSIDE**..move to an open area!

- ✓ Stay away from trees, powerlines, posts and concrete structures.
- ✓ Move away from steep slopes which may be affected by landslides.

- ✓ If you're near the shore and feel an earthquake, especially if it's too strong, move quickly to higher grounds. Tsunamis might follow.



If you're in a moving vehicle, **STOP** and get out! Do not attempt to cross bridges, overpasses, or flyovers which may have been damaged.

AFTER

Be prepared for aftershocks. Once the shaking stops, take the fastest and safest way out of the building.

Don't...

- ...use elevators.
- ...enter damaged buildings.
- ...use telephones unless necessary.
- ...PANIC.

Check...

- ✓ yourself and others for injuries.
- ✓ water and electrical lines for damages.

- ✓ for spills of chemical, toxic and flammable materials.
- ✓ and control fires which may spread.

If you need to evacuate your residence, leave a message stating where you are going and bring your emergency supply kit.



Keep updated on disaster prevention instructions from battery-operated radios.