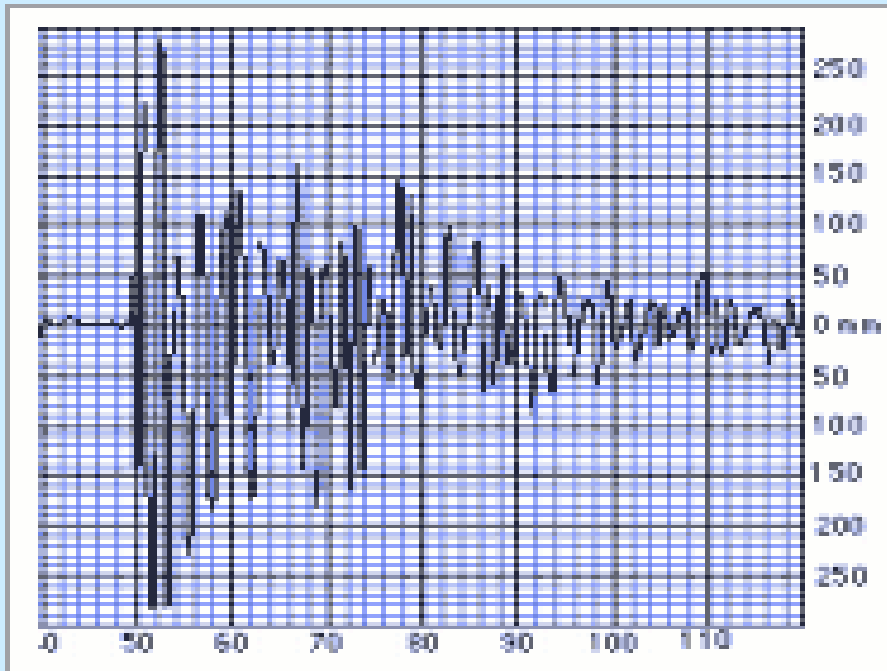


EARTHQUAKE & SAFETY MEASURES



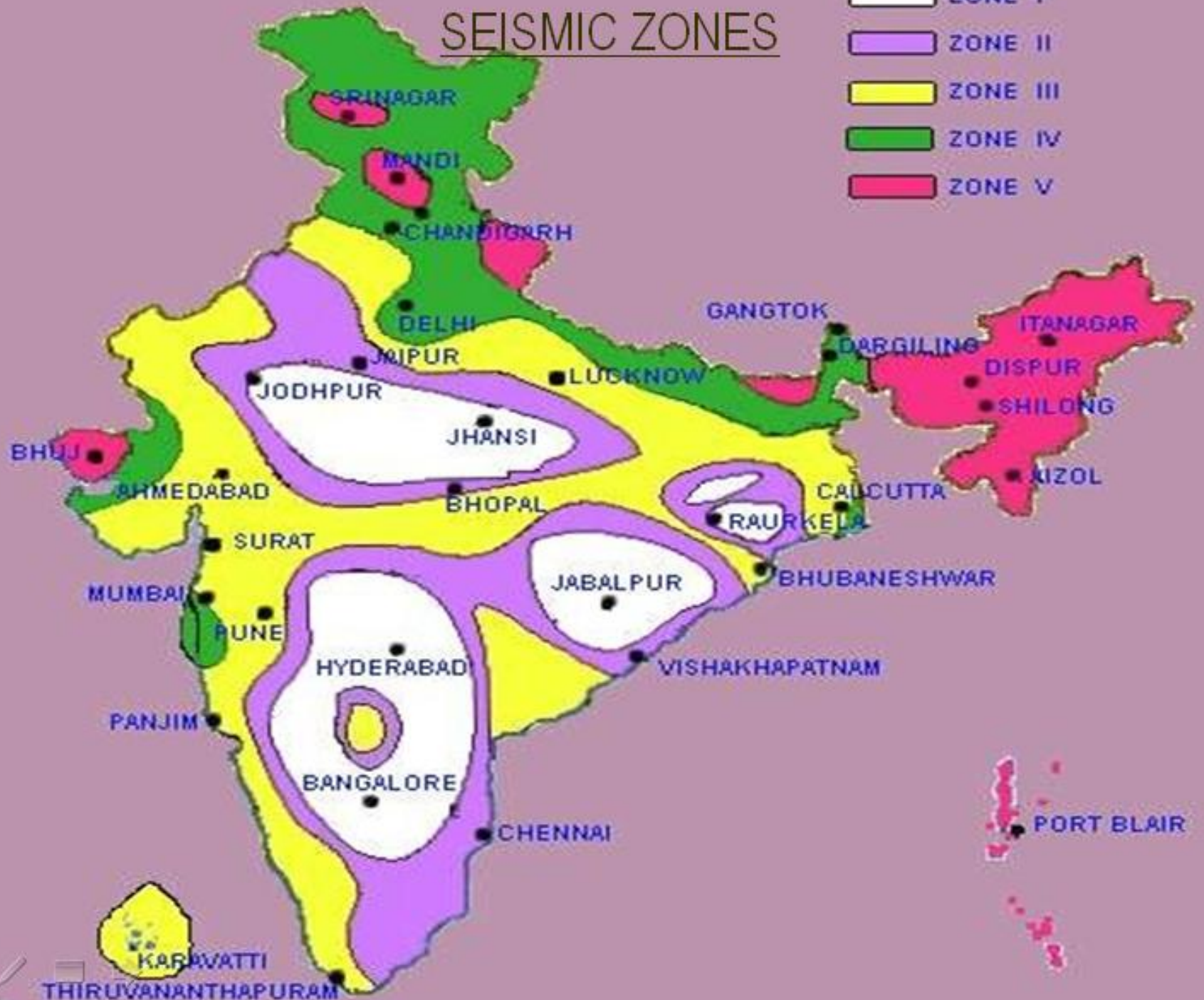
By

K K JHA

**SECOND-IN-COMMAND,
SDRF**

SEISMIC ZONES

- ZONE I
- ZONE II
- ZONE III
- ZONE IV
- ZONE V

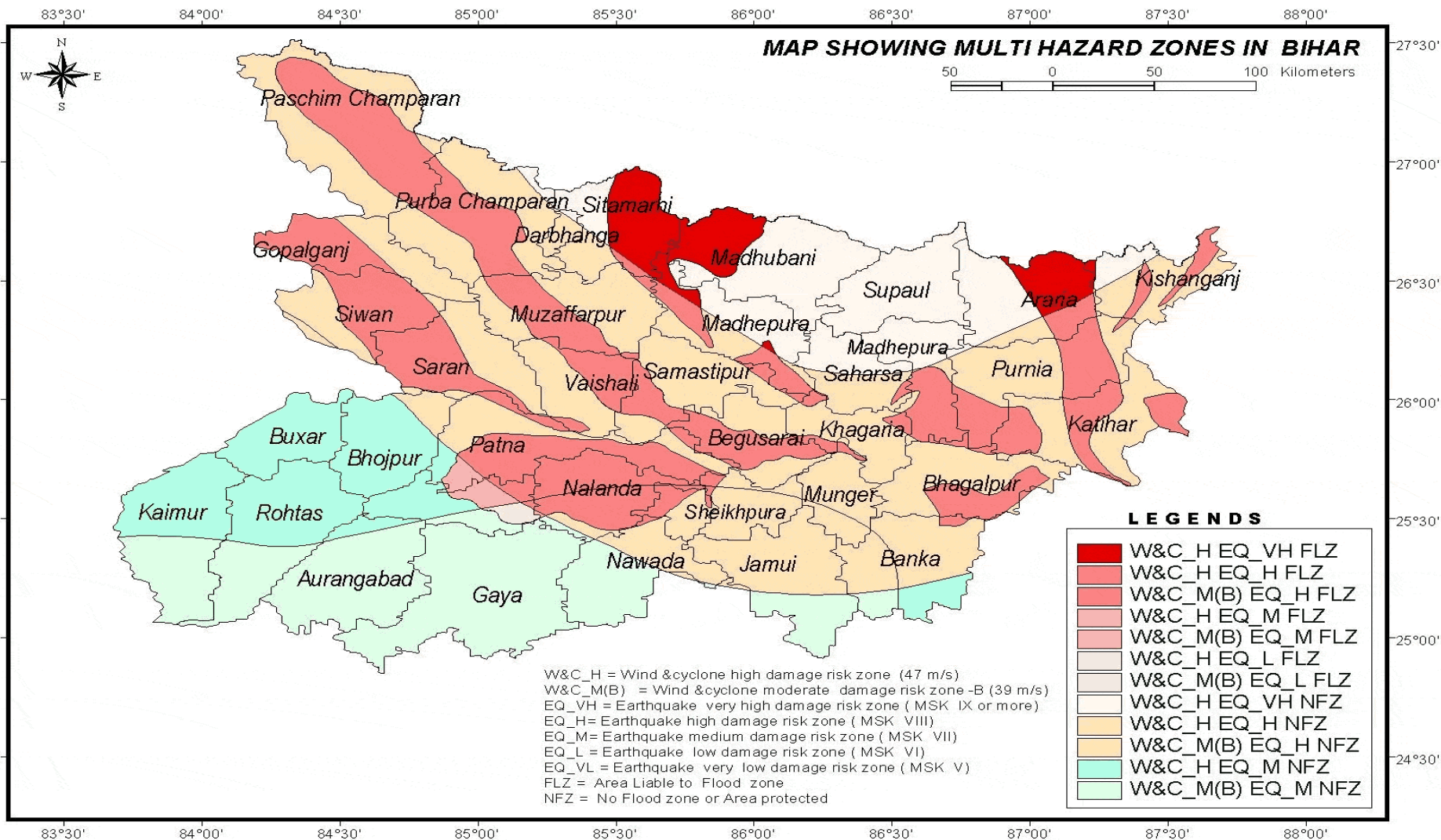


Vulnerability Profile : Bihar

- Bihar is multi disaster hazardous prone state.
- Bihar is located in the high seismic zone that falls on the **boundary of the tectonic plate** joining the Himalayan tectonic plate near the Bihar-Nepal Border.
- Of the 38 districts of Bihar, **8 dists fall in Seismic Zone V** while 24 dists fall in Seismic Zone IV and 6 dists in Seismic Zone III.

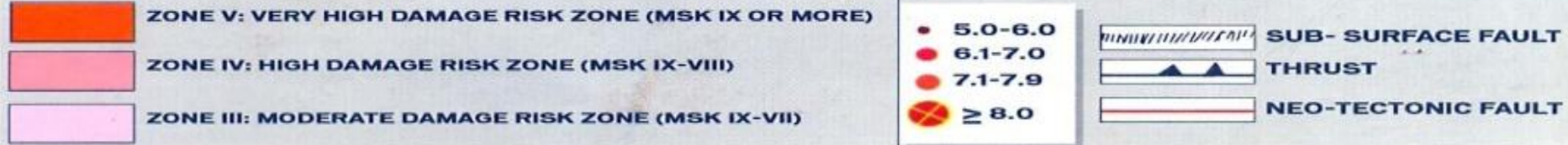
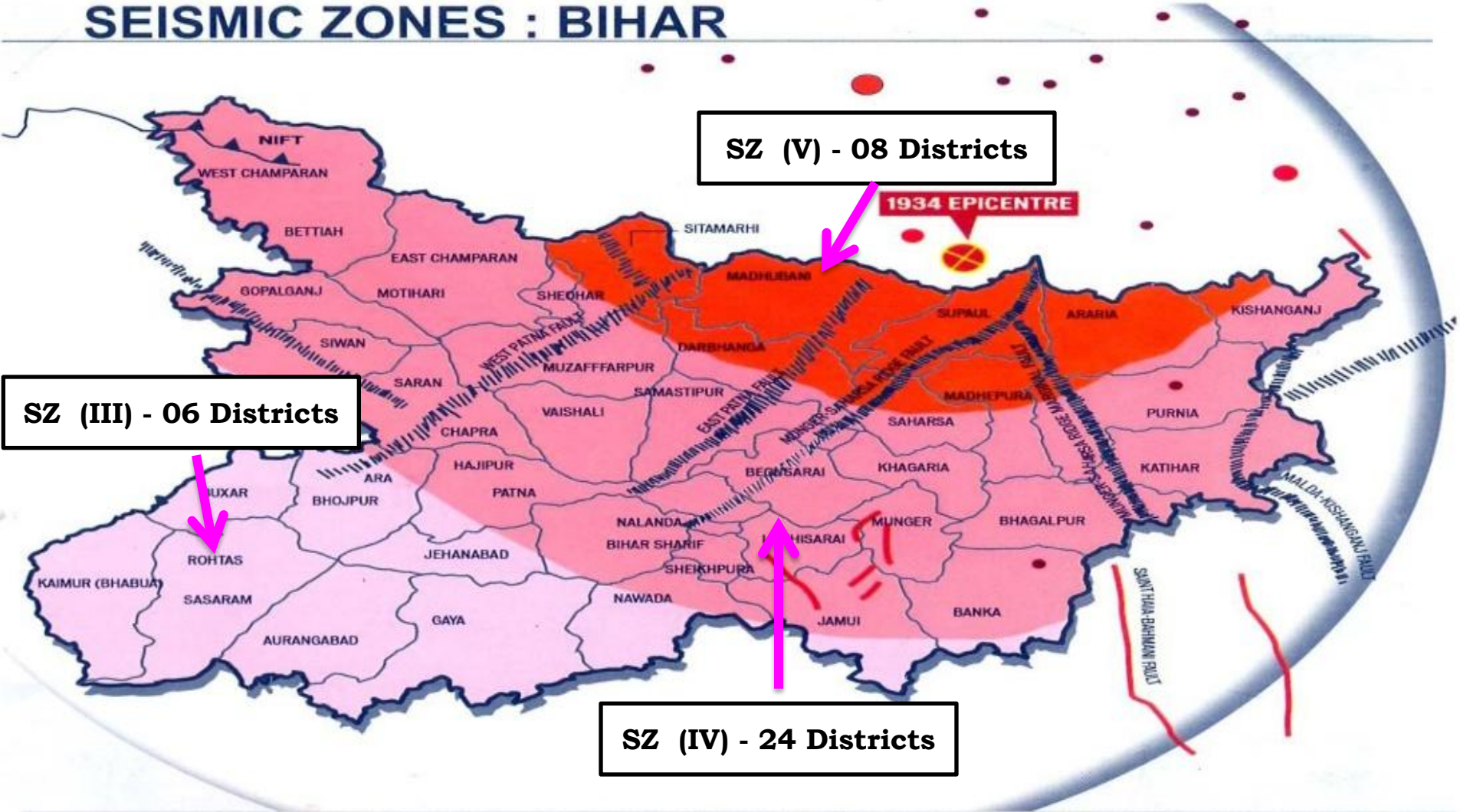
Contd...

MULTI HAZARD ZONES IN BIHAR

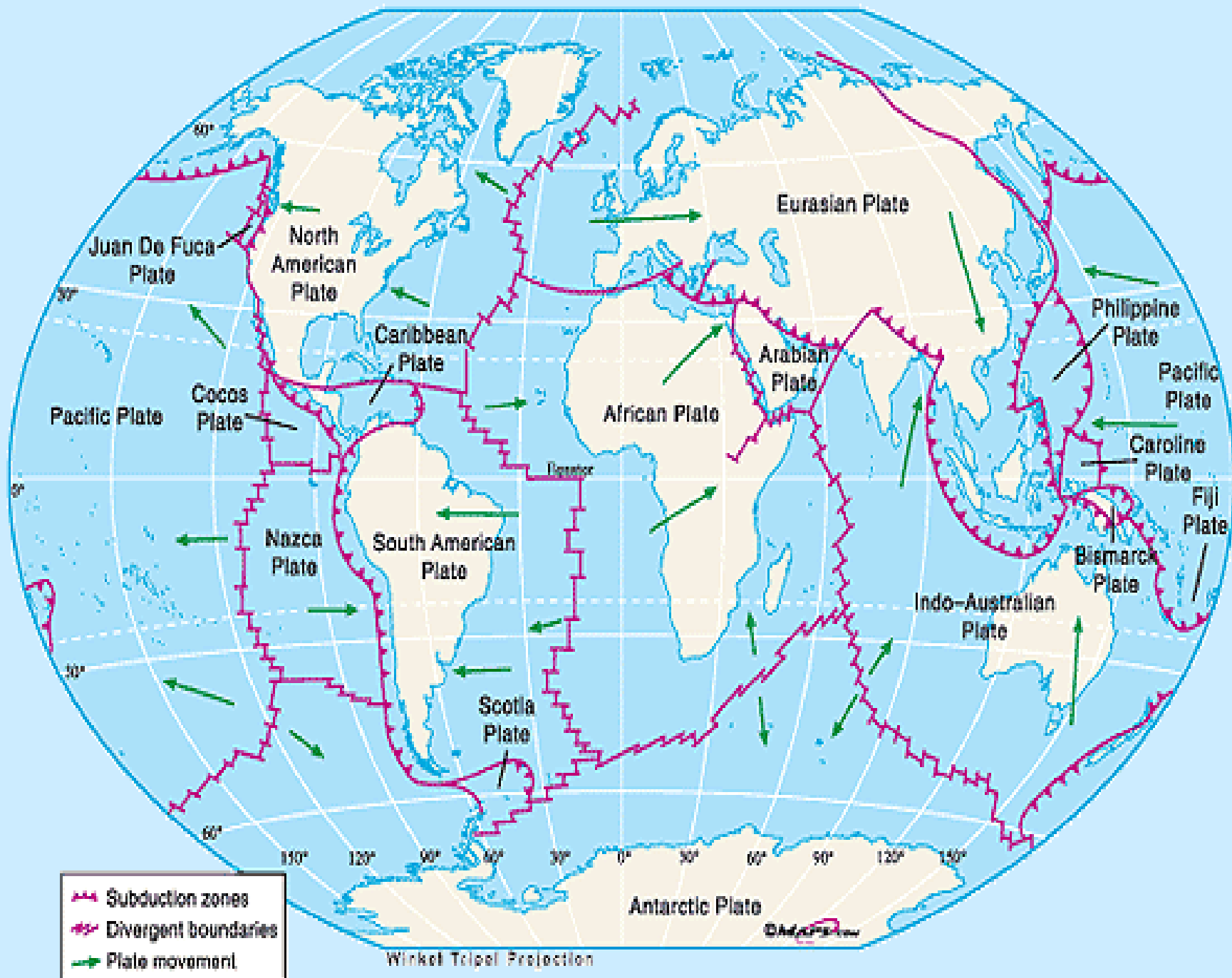


SEISMIC ZONES IN BIHAR

SEISMIC ZONES : BIHAR



Earth's Tectonic Plates



The Floating Earth

- The mantle is the layer of Earth just below the crust. It is made up of a liquid.
- Because the mantle is liquid, the hard surface of the Earth is actually floating.
- The crust floating on the mantle is similar to crackers floating on top of soup.

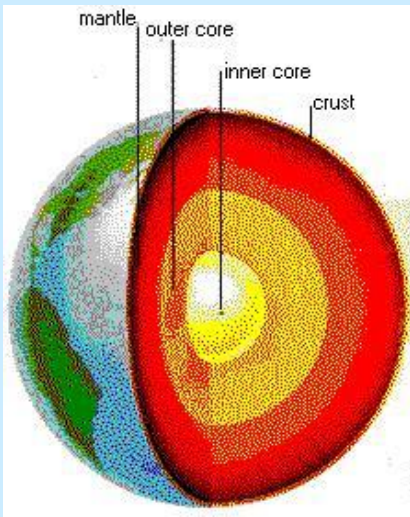


Plate Movement

- Earth's plates can move in three directions:

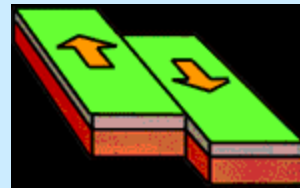
– Divergent



– Convergent

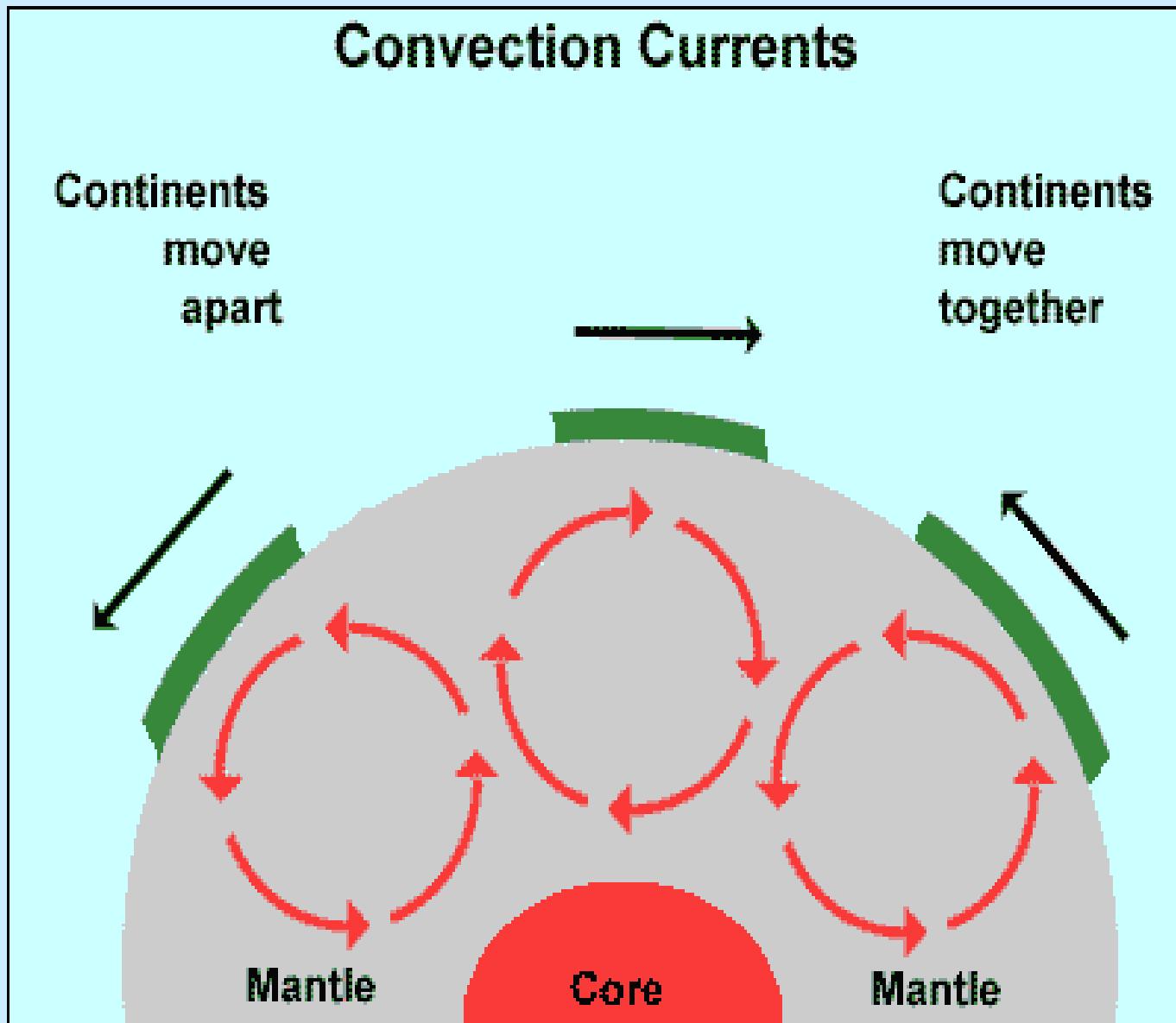


– Transformational



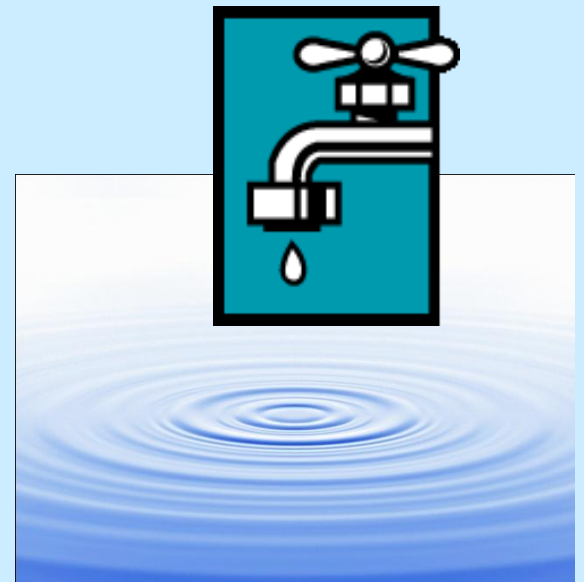
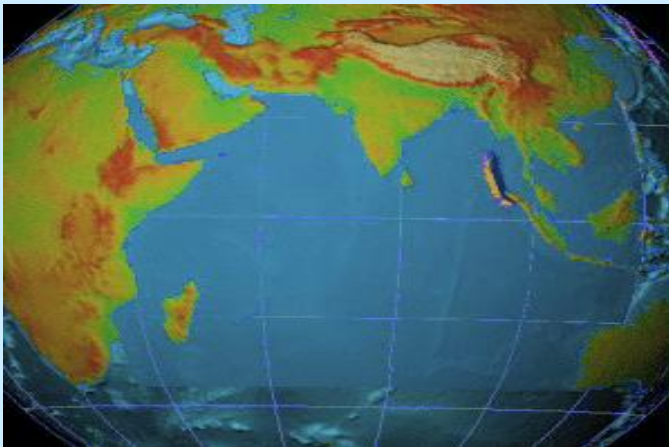
This movement forms an earthquake

पृथ्वी के प्लेट्स क्यों घुमती हैं ?



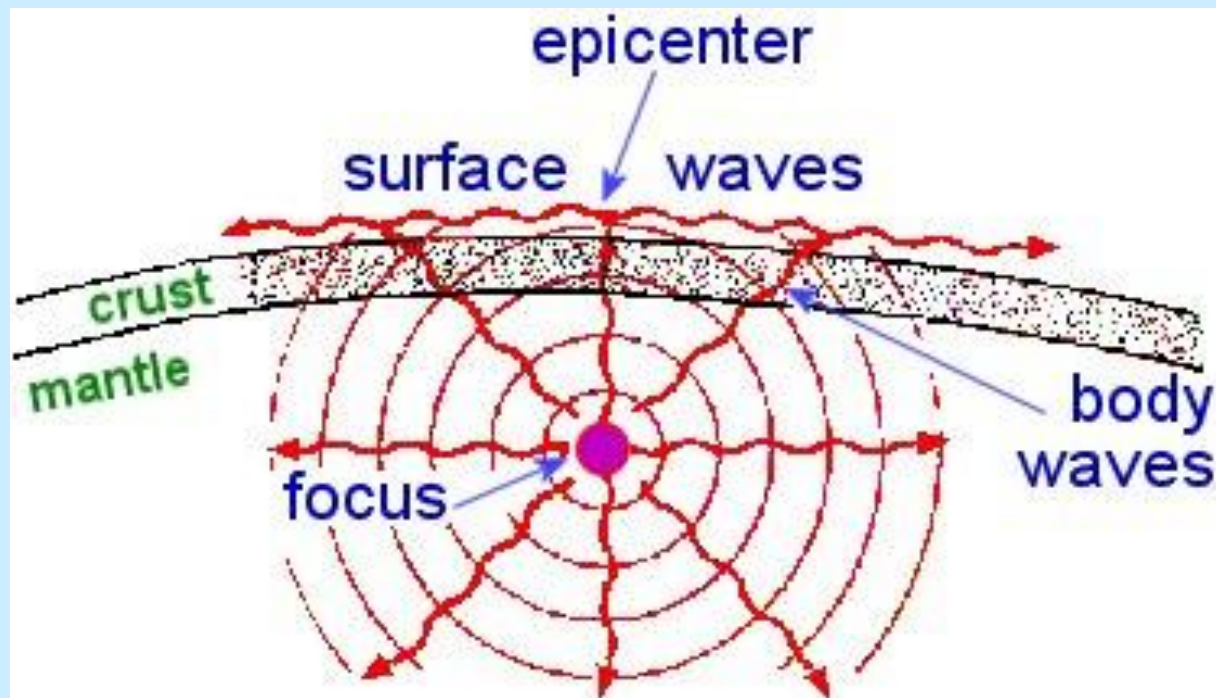
Who feels the shaking ?

- The shaking starts at the epicenter and spreads in circles outward much like the ripples of water dripping into a puddle.



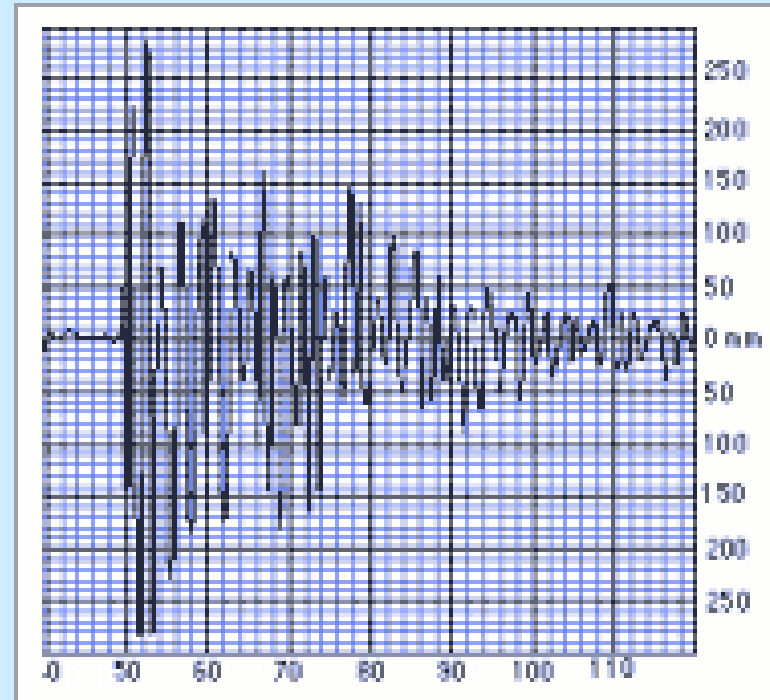
Seismic Waves

- The waves of shaking are called seismic waves.



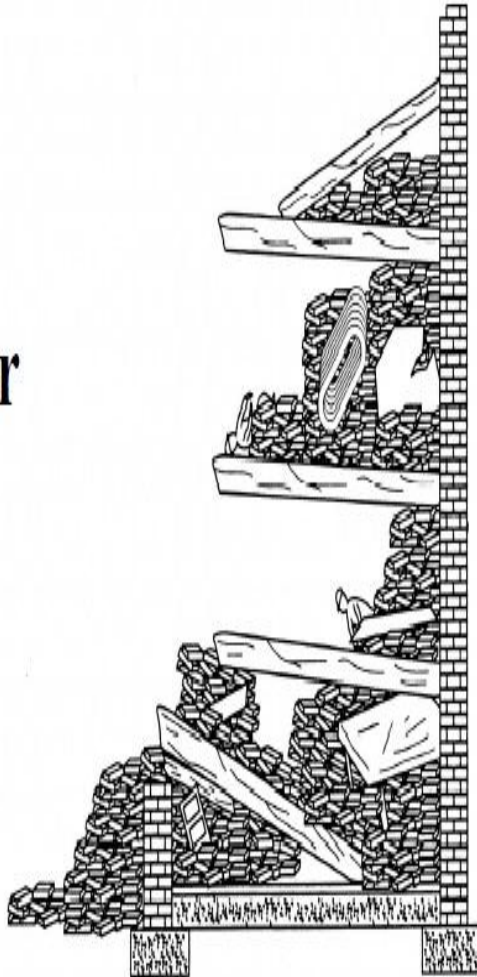
How do an Earthquake measure ?

- Earthquakes are measured using a seismometer.



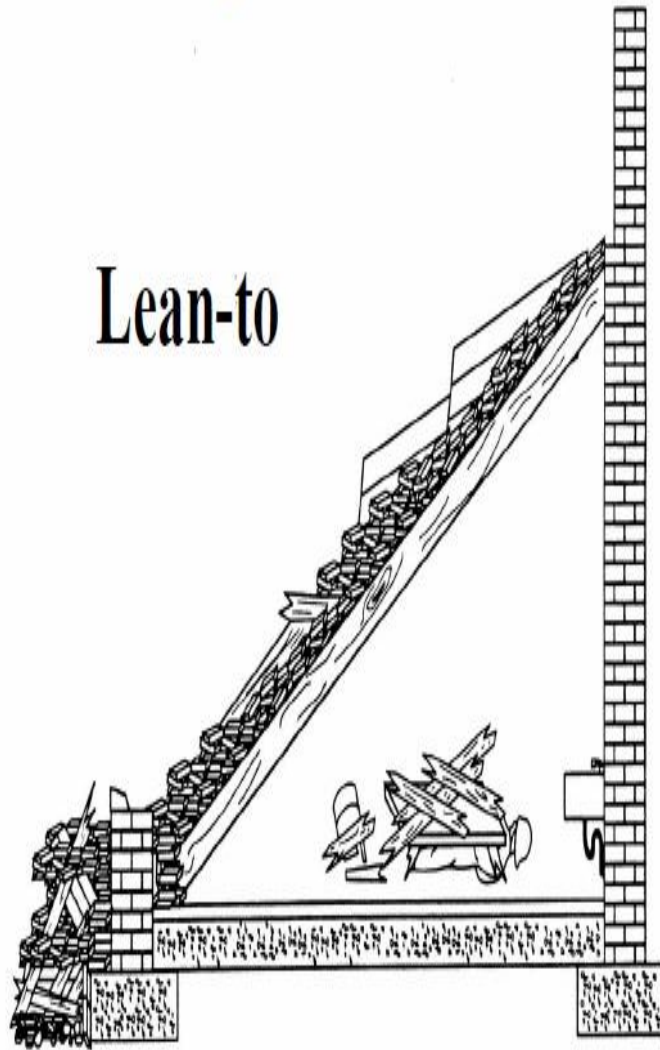
Basic Collapse Patterns

Cantilever



Contd...

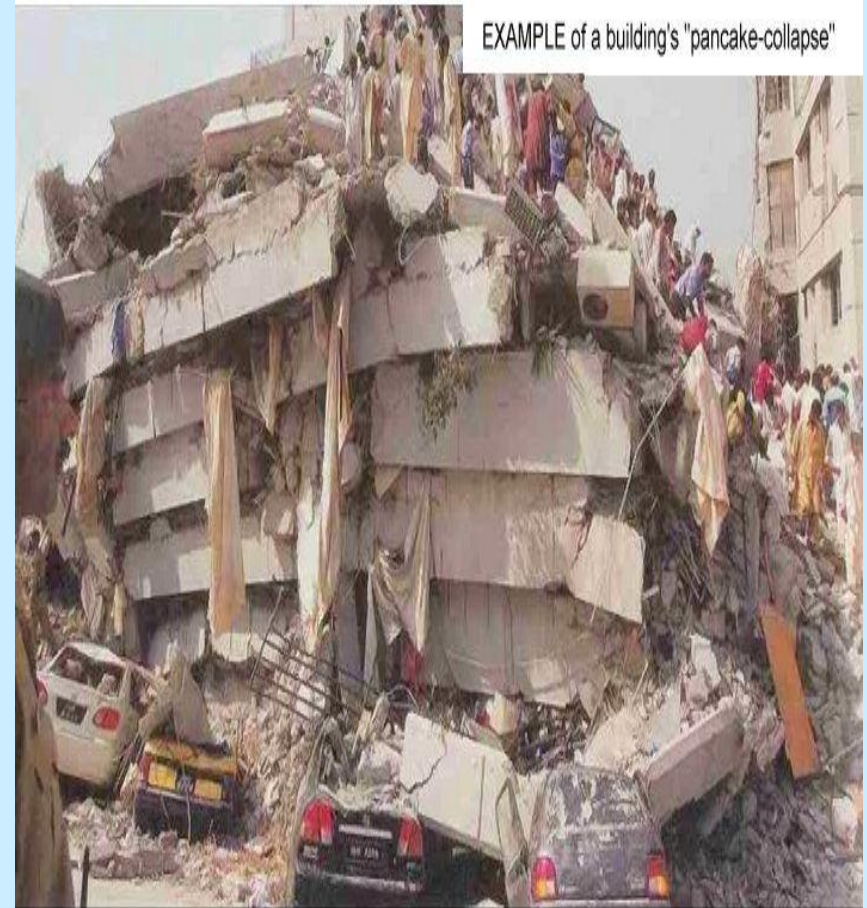
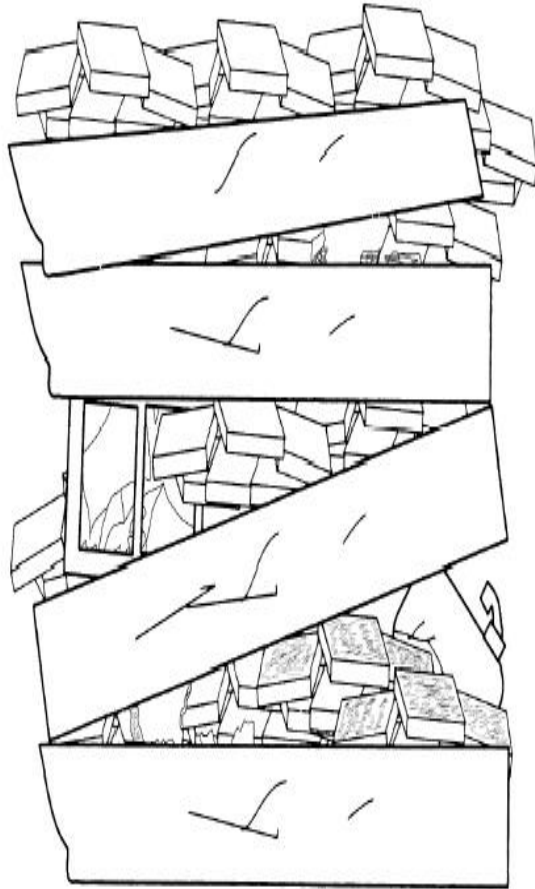
Basic Collapse Patterns



Contd...

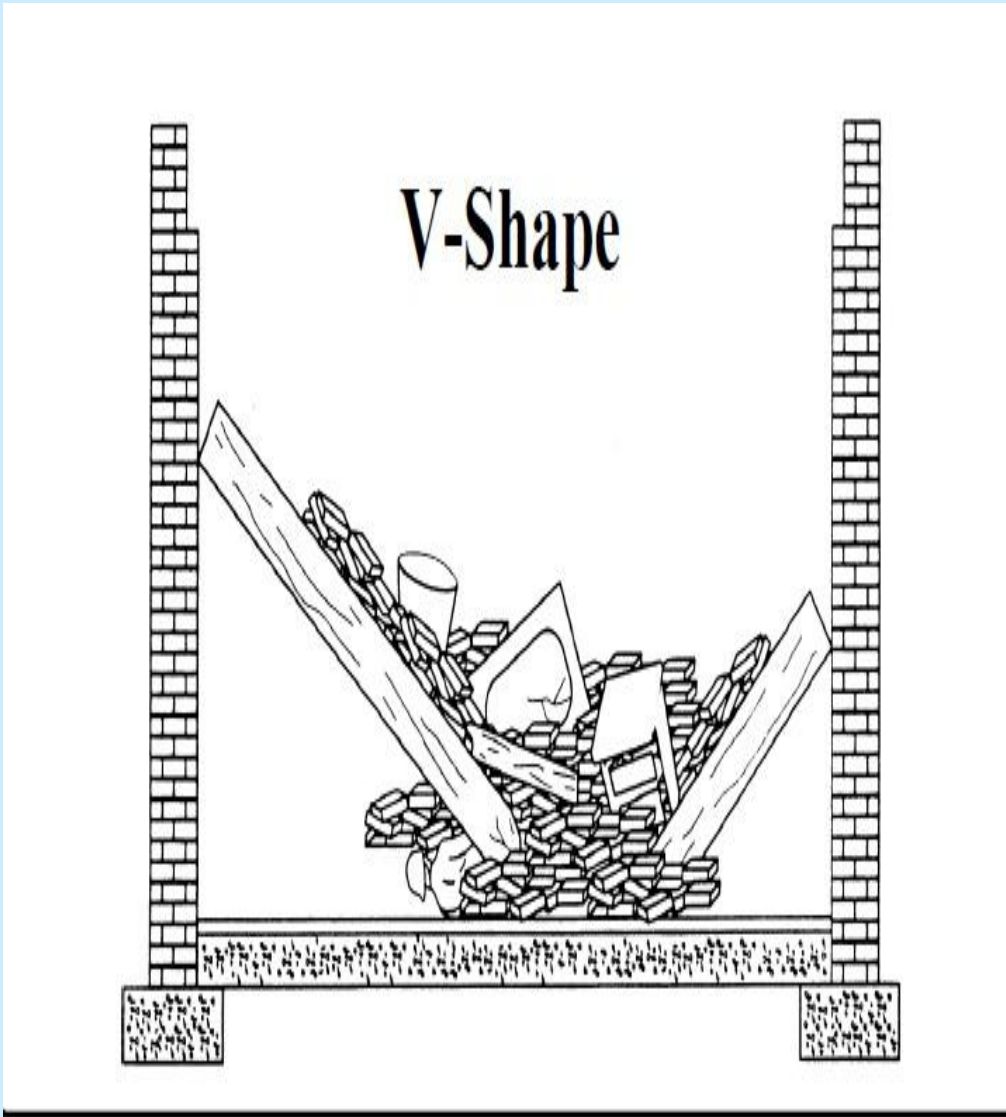
Basic Collapse Patterns

Pancake



Contd...

Building Collapse Patterns

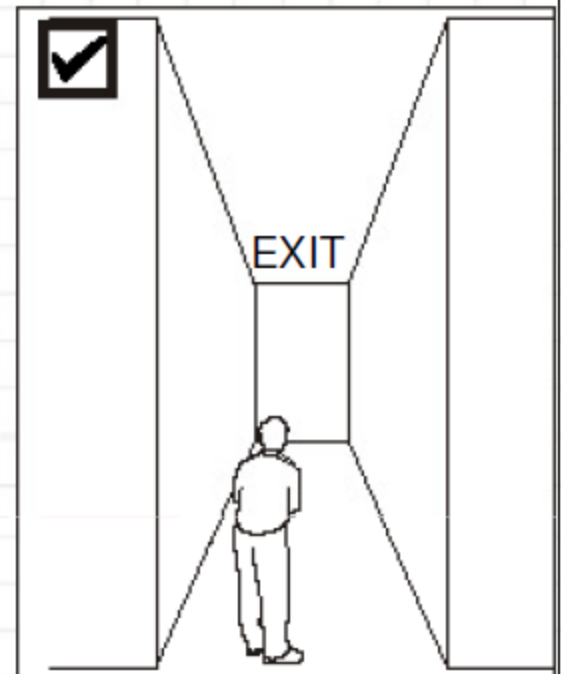
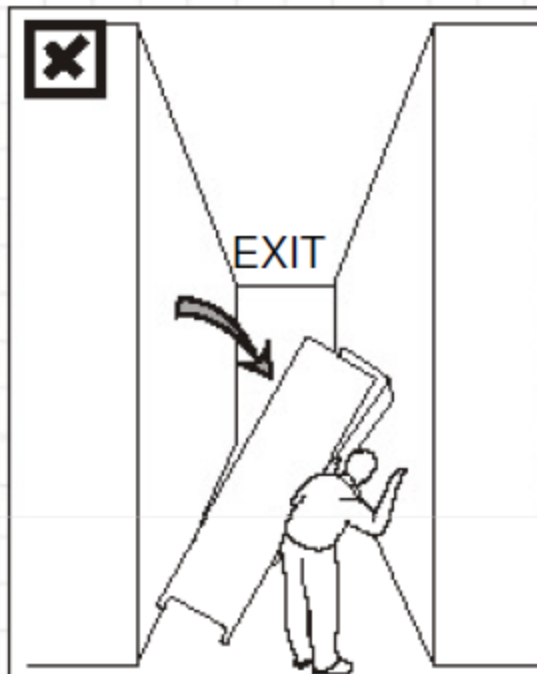




Spot the hazards!!

Exits

CLEAR CORRIDORS, DOORWAYS AND EXIT PATHS



During the Earthquakes

- *If indoors*, do not run outside in panic to avoid stampede.
- **DROP** to the ground; take **COVER** by getting under a sturdy table or other piece of furniture; and **HOLD ON** until the shaking stops.



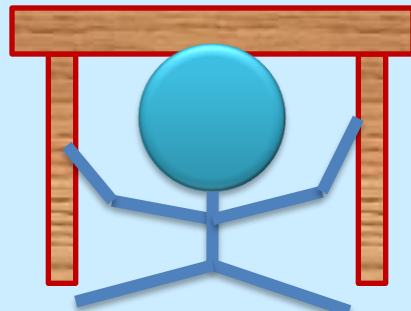
DROP



COVER



HOLD



Contd...