

Earthquake: The Question Is When And Where?

(First of a two-part series.)
By Don Reeves

Sentinel Staff Writer

The "if" of a major California earthquake has been replaced by "when" and "where."

Nearly all Californians are familiar with slight quakes, which rattle windows, slosh fishbowls and maybe knock a dish or two from the shelves. Many have been in 'quakes which caused some damage and some can tell tales of living through terror and destruction.

You never know when that little sway and shake may continue until walls crack, ceilings collapse and chimneys tumble. Under the absolute maximum conditions, it might continue until most of downtown Santa Cruz is in shambles, and the Newell Creek dam cracks, sending 2.5 billion gallons of water down the San Lorenzo River to meet an on-coming tsunami or tidal wave as it leaps from the bay to engulf the debris.

Impossible? Improbable to this degree, but not impossible.

The most remembered California 'quake was the San Francisco rumble of 1906, but even this 'quake took only 452 lives.

Compare this to the 1556 'quake in Shensi, China, where 820,000 people died, the 1737 Calcutta, India, 'quake in which 300,000 lives were lost, or the Northwestern Iran 'quake in 1962, where 10,000 died.

The 1964 Alaskan 'quake, as destructive as it was, claimed only 115 lives. An additional 12 people were killed when the wave it caused crashed through Crescent City.

Californians have learned to live with the threat of earthquake just as they have the threats of fire, smog or an atomic bomb attack. Most of them are not about to sell out and move to a safer area, although some religious groups have done so.

There are some things you can do to prepare for an earthquake. In case of major disaster, these seemingly trivial steps may mean the difference between life and death.

If a major 'quake comes, the first lucky factor will be just to be alive when it's over. As for the clean-up, emergency hospitals, food centers and the eventual restoration of order, these matters will be in the hands of the civil defense crews, the police and volunteer agencies and probably the military. You will follow their directions, probably by a battery-operated radio.

Whether or not you will be killed depends a lot on where you are when the 'quake hits. The safest place to be when the world seems to be ending is in an older, single-wall wooden frame house in an open field.

The most dangerous place would be on a Pacific Avenue sidewalk near older brick buildings which would be the first to tumble into the street.

The worst time for the 'quake to come would be on a busy weekday afternoon when streets and buildings are crowded. The best time would be just after dawn when most people would be asleep in their frame homes.

"You can't design a building to withstand the ultimate potential of an earthquake," explains Bill Nunes, inspection services supervisor for the City of Santa Cruz.

Nunes has carefully studied earthquakes and the damage they cause. The 1964 Alaskan 'quake has given him and other inspectors a chance to see how buildings built under modern codes hold up. Codes may be changed to make future buildings safe.

Nunes said California has had the Riley Act since 1933, which sets safety standards for "nearly everything but residential dwellings which are not for

more than two families or over two stories high."

"Public stores, schools, libraries and such are covered," Nunes said.

The Alaskan 'quake showed buildings built to these standards "withstood pretty well."

Nunes agreed that frame houses are the safest structures.

In any building, you should brace yourself in a doorway, because this is the strongest place, or get under a desk or table for protection from falling debris.

Nunes knows frame houses are safest, because he was in one when a major 'quake hit Santa Barbara. He said the wooden cottage was turned one quarter on its foundation, but still held together. No one in-

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side was injured. Brick buildings split and collapsed.

George Washington, of Capitola, who has some 40 years of experience as a structural engineer, was asked what would take place in Santa Cruz during a major 'quake.

"There would be basically a tremendous amount of damage to the older buildings, including, probably, many collapses.

The wooden frame houses probably would come out of it fairly well, outside of large amounts of superficial damage. This is primarily because wooden frame buildings have a capacity to absorb violent movement without collapse.

"The primary problem in many earthquakes is the heavier types of structures, by virtue of the position of the weight being up in the air, this tends

to cause large stresses in the structure and create a greater probability of collapse.

"One of the safest places to be in an earthquake is in a doorway in the interior where none of the ceiling is so likely to fall on you and none of the glass is likely to hit you. The doorway can distort considerably and not harm you and you have something to hold on to," he said.

If you can be outside in an area where there are no trees, buildings or power lines to fall on you, just lie down and ride it out.

"You're much better off if you're out in the open," Washington said.

The stories of the earth cracking open and swallowing people stem from a bit of truth, but are primarily the product of Hollywood movie scenes.

"It's spectacular, of course, and it makes you think this is the thing which causes the injuries. The possibility of your standing where the earth is going to open up is remote," Washington said.

(Tomorrow: What to do if an earthquake hits violently.)

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