

September 13 Meeting Notes

Earthquakes

The September 13 Dover Shores CERT meeting went over new information about earthquakes based on a presentation from Jason Ballman from USC's Southern California Earthquake Center presented at the Earthquake Awareness Workshop and from Dr. Lucy Jones, *The Earthquake Lady* contained in her recently published book [The Big Ones](#). I highly recommend that everyone read this book.

San Andreas

In her book, Dr. Jones explained facts about the southern San Andreas fault that I was unaware of. Unlike most faults and even the northern part of the San Andreas, the southern portion does not normally generate small earthquakes, only big ones with the expected magnitude of 7.8-8.2. There are complicated seismic reasons for this but basically the magnitude of a quake is related to the length of the fault that moves. Once a portion of a fault starts to move, the movement spreads up the fault until it hits a blocking structure. The southern San Andreas has no such blocking structures between the Mexican border and San Luis Obispo, about 200 miles, so once it starts to move, it will continue over the entire length producing a 7.8+ earthquake. Historically this portion has moved, on average, once per 200 years. The last such movement was in 1680 or 330 years ago.

The duration of a quake is related to the magnitude. A 7.8 earthquake is expected to shake between 50-60 seconds, longer in some places like the LA basin because of reverberations.

When it moves, the fault is expected to shift the ground by 20-30 feet and any infrastructure, roads, pipes, power lines etc crossing the fault will be split by that amount.

Though there probably would not be foreshocks, there would be more than 10,000 after shocks, some of them in the magnitude 6-7 range.

In 2008, Dr. Jones and others created a detailed simulation model to estimate the damage that a 7.8 San Andreas quake would produce in the LA basin. This simulation estimated the 10% of all new buildings would be red-tagged and 1% would experience partial collapse. There would be 300,000 structures with severe damage and 1500 structures collapsing. The scenario estimated that this would also create 1600 fires with 1200 large enough to require multiple engines to fight. The scenario estimated 53,000 casualties needing hospitalization and 1800 deaths. You can read a vivid description of this scenario [here](#).

If the overall damage statistics hold in Dover Shores, from our 310 homes we should expect 31 red-tagged and 3 to collapse. As a CERT team we will need to conduct search and rescue for these homes and then find long term housing for the displaced

people, either in local shelters or in our own less damaged homes. Because of the wide-spread damage, there will be no way to evacuate and we will need to shelter in place for days and possibly weeks.

Key Messages from The Big Ones

Dr. Jones' book is about more than earthquakes. It addresses other natural events including volcanoes and floods. The key message is that these are natural events with predictable frequencies and size range. Humans turn these natural events into disasters in the way we prepare (or don't prepare) and how we respond to them once they occur.

Across many such disasters, people's behavior has been pretty consistent. People tend to plan (if at all) for what they have experienced, not what science tells us is possible. Since big events are rare and hence outside people's experience, they usually come as a shock even when science has predicted that they could occur.

Another common behavior is the people feel a need to assign blame for the disaster, usually to someone beside themselves. Blame is very often assigned to "the others" people outside the most common demographic such as minorities. Retribution is often swift and brutal. For example, in the Tokyo earthquake of 1923, most of the damage was caused by the subsequent fires. Rumors spread that these fires were being set by the tiny Korean population living in Tokyo working mostly as servants and many were murdered. Similar unjust accusations occurred during the US Mississippi floods of 1927 with blacks as the primary victims.

Another key message is that the event only starts the response and for big events the response extends over weeks and months. People who are organized, disciplined and who persevere can make a huge positive contribution months after the event. In CERT we tend to focus on the immediate first aid, search and rescue and other short term responses. For a big event like the coming San Andreas earthquake, our services may be needed for months.

Staying Safe Where the Earth Shakes

A consortium of agencies has produced a good document about 7 steps to take before, during and after an earthquake to stay safe. You can download it [here](#). I encourage everyone to print this out and review it carefully. It includes many things that CERT people are familiar with such as:

- Identifying a place to meet and ways to contact family
- Organize disaster supplies and water

But it also includes many detailed suggestions that we may have overlooked. Even something that we treat as a cliché like "Drop, Cover and Hold" has nuances that you might not have considered like - don't put your head on the floor or you may end up with a concussion.

Jason Ballman warned that there is an article circulating on the Internet called The Triangle of Life that asserts that the recommended protocols like drop, cover and

hold are part of a government conspiracy to kill us, and suggests alternatives. Some of the suggestions like staying in an interior corner are accepted by experts, but much of the article is rubbish like running outside during the earthquake. You can read the Snopes comments on this article [here](#).

Neighborhood Watch

We don't have a lot of new information on the neighborhood watch front. Since Andi Querry retired, we haven't heard much from the PD. I printed out the latest request for service log on the [NBPD web site](#) and it includes two burglary reports from our area that did not appear on Nixle or NextDoor.

I included some observations reported on Next Door from the PD that include good suggestions and some current information.