

BDPNN meeting minutes
30 Oct 2014
Home preparedness
Glen Granholm

Norine Smith opened the meeting and asked how many new people were attending this meeting. About 1/3 of around 35 total people were new. She introduced the board members and reminded everyone of our non-profit status. Any donation you make now is fully tax deductible. The field manual is available online, and it is a checklist that any group can use to build a neighborhood earthquake response. There are also several instructional videos available. If you are a new group, you should get into the group database so nearby folks can contact you. Pam Grossman does training in neighborhoods if you can get at least 10 of your neighbors to attend. Recently we posted information about a clean-burning bio-fuel stove that can be used for camping or after a disaster. If you are interested, go to the Yahoo group to see more information. If you are interested in ordering a stove, please send an email to info@bdpnnetwork.org.

Then Dave Peattie introduced our guest speaker, Glen Granholm, and his wife Trish. Glen owns Essrig Taylor Construction Company, which specializes in helping businesses fasten large or dangerous objects to withstand earthquakes. Glen is also part of the Earthquake Country Alliance, a USGS-run group which has quarterly meetings of private companies and citizens to better prepare for the next big quake. Their website is here: <http://www.earthquakecountry.org/>

Glen talked first about some examples of earthquake preparedness. By law, all hospitals must secure large objects. This is how Glen's company got started. He also mentioned a specific location that should get the Best Practice Award for preparedness. That is Sun City, in Palm Desert CA. It all started years ago when one person took it upon himself to figure out how to secure everything in his home, and then he used it as a model home to show everyone else in the area how to do it. They developed their own disaster plan before CERT or any other formal entity was in existence.

Then Glen went over a possible scenario for a family in their home when the big quake happens, a family that has not prepared. It's Christmas time, and the parents are watching TV while the kids are in their rooms studying. Bam, the big one happens. The parents are thrown to the floor while everything around them falls down. All the lights go out when the electricity fails, so the house is pitch black. After the shaking stops, the parents run up the stairs to the kids' bedrooms. They cut their feet on the broken glass from all the pictures that fell off the walls and shattered on the floor. Their kids are screaming for help, but a dresser in one bedroom has fallen in front of the closed door, and in the other bedroom the door is jammed shut because the frame of the house has shifted. The parents run back down the stairs to get tools to help the kids, but the last few stairs have collapsed, and they fall to the ground. They start to smell something burning and notice that the Christmas tree is sparking and starting to smolder. As they get to the kitchen, they smell gas. We all know there are MANY simple things that this family should have done to prepare for this situation, and we will cover them.

Looking at a shake intensity map, you see that a 7.0 on the Hayward Fault means that "we are all screwed" because the shaking intensity will be severe. The Napa quake occurred on an unknown fault line and was only a 6.0, which is 10 times less severe than the 7.0 that we are expecting. The damage to Napa was extensive, and we can expect at least 10 times more damage. Building facades crashed into the streets, and there would have been many fatalities if it wasn't 3:30 in the morning. Wine barrels were neatly stacked inside warehouses, but they were thrown around like toys. The office ceiling of the County Commissioner collapsed, even though the building was up to code. However, it was not up to seismic code, only up to building

code. Rivers which had formerly been dry are suddenly flowing again due to changes in the aquifer and water supply underground.

We know that quakes happen and cause lots of damage. We all need to assess our own homes to determine what is important to secure. You need to think about everything in your house based upon these 5 criteria: (1) Hurt, (2) Block, (3) Explode, (4) Bankrupt, and (5) Trouble to clean up. Ask yourself if you will get hurt by something, ask if something will block your path, ask if something might explode, ask if you would go bankrupt if something was damaged, and ask yourself how much trouble it would be to clean up. These are the items that you need to secure and/or take care of.

Examples of what falls into each category: (1) Hurt: if it can fall on you, secure it. This typically covers all tall heavy items. (2) Block: if it's big enough to block your way, secure it. (3) Explode: gas-powered appliances such as water heaters, clothes dryers, stoves should be braced. (4) Bankrupt: priceless items, either in actual financial value or sentimental value. (5) Trouble to clean up: just like the grocery stores, which make great photos after quakes because of all the stuff on the floor. Secure items that might fly out all over the place, such as kitchen cabinets, countertop items, etc. One person had a marble collection that crashed all over the floor, with marbles going everywhere and becoming a slipping hazard too.

Glen then went over the Napa 911 calls. Napa was lucky that the phones still worked normally, although 911 was overwhelmed. Most people who called in were stuck in their rooms but uninjured. These calls were tracked, but emergency teams were not sent immediately. Homes that were on fire, or had gas leaks, or had major injuries were responded to right away. However, Napa and County emergency services were overwhelmed with even those calls. It turned out that neighbors helping neighbors were responsible for many rescues.

Items that you need to buy as a minimum to prepare your family:

- Pry bar: It costs \$4 at Home Depot to get a small pry bar for each bedroom.
- Securing straps: for every TV, washing machine (especially stacked models), tall objects such as bookcases, etc. All items must be secured directly to the wall studs or else it does no good. About \$10-15 each. Glen's company makes these straps, called Safe-T-Proof.
- Stud finder: The cost is \$9 for a CH Hansen stud finder, extremely accurate and easy to use
- Child-proof latches for cabinets: easy-to-install and low-cost ways to keep items inside cabinets
- Seismo-Latch: for cabinets, normally unlocked, but the motion of an earthquake locks the latch mechanically and keeps items inside cabinets until the shaking stops
- Quake Hold: putty to secure loose items like vases, large objects on shelves, etc.
- Emergency light: a night light that comes on when the electricity goes out, \$6 each
- Pictures: get Extreme Velcro and put on bottom corners of each frame to keep the pictures from jumping off the nails, or else buy the deep-hook fasteners or other such fasteners.
- Automatic gas shutoff valve: closes your gas valve automatically with a 5.2 or greater earthquake. Costs about \$200 for the valve and installation.

For bracing large objects, you want to use FLEXIBLE bracing (cloth straps, plastic straps, not metal L-brackets) that allows for all the motions of an earthquake, including the initial vertical earthquake wave followed by the side-to-side motions that come after that. And you must find a wall stud or else it does no good. The USGS library bookcases fell over after the Napa quake because they were not braced to the studs. Also, heavy objects have more ability to do damage because they are heavy, and their motion carries more punch (more momentum).

Everyone in the family should have an earthquake kit filled with basic essential items but also some comfort items to help calm you after the quake. Additional items include: mouthwash (can also be used as disinfectant), playing cards (can also be used as finger splints), fire extinguisher in the master bedroom in case the quake happens at night (you are already armed to put out any fire you find after the shaking stops). Also, you can use your own

toilet to hold the heavy-grade 3-mil plastic bags and some kitty litter that will serve as your temporary toilet. You don't need to use a bucket that is uncomfortable. Remember that you will not use any drain in your house (sinks, toilets, etc.) until you know that the sewer system is functional, and that won't be for several days minimum.

Store your own food! Don't force your family to wait in line for food at the shelters. Pick foods that you like and that you will eat. Think camping trip, non-perishable, no cooking required. Pick comfort foods that will help you cope. For Glen's family, this includes Capt Crunch cereal and chardonnay.

So, let's go back to the scenario with all the preparedness actions in place. The parents are watching TV and the kids are in their rooms. The shaking starts, but everything is secured to the wall studs. The lights go out, but the emergency lights in the hallways light the way and show the dangers. The kids are able to get out of their bedrooms because the dresser didn't fall in front of the door, and you could get the other door open with the pry bar. There was no glass on the floor from broken pictures because they all stayed on the walls. The stairs did not collapse because the house was retrofit. The Christmas tree fire was easily put out by the fire extinguisher that you keep in the kitchen. There is no leaking gas because the shutoff valve shut it down automatically 3 seconds into the shaking. Each member of the family grabs their Go-Bag from under their bed and puts on their emergency gear. You use the flashlights from your Go-Bag to check outside to see if it is safe to go outside. Everyone puts on sturdy shoes and clothing to get around without hurting themselves.

Now that you and your family are okay, you can go outside and check on your neighbors. See who needs help. Organize your neighborhood in advance to respond to medical needs. Take a first aid course. Think like MacGyver and figure out how to help each other survive the next 3-7 days until outside help can arrive and assist the overwhelmed local emergency services.

For lath and plaster houses, there is a molding at the bottom of the wall that is usually fasted to the studs. You can fasten large objects from the bottom in that case. Use concrete rebar detectors to find out where the strength members are in the wall. Studs are usually evenly spaced around 16 inches apart.

FYI, about 2 weeks after the Napa quake, there was a huge rush to buy bracing supplies. Engineering and architectural firms were booked solid. Everyone was finally getting ready for an earthquake, AFTER the quake happened. At least they will be prepared for future quakes.

Napa was also extremely lucky that they had a big chimney retrofit in 2004 after another quake that knocked down a lot of old chimneys. The number of people injured in this quake would have been much worse without all the retrofits. The people who were injured by chimneys had chimneys that were NOT retrofit. No damage occurred to retrofit chimneys.

Miscellaneous information:

Glen's company has a mobile earthquake simulator. In the simulator, they simulate a big earthquake but with all the furniture properly braced so that nothing moves.

There is a book written by Peter Yanev, a retired engineer, called "Peace of Mind in Earthquake Country." It talks about the balance between preparedness, insurance and risk.

There is a website called quakesecure.com which is run by Larry Guillot. He does home assessments for a fee, and he also installs earthquake shutoff valves.

Glen's company will train handymen on how to do the installation of earthquake bracing devices properly. The company's website is: www.safe-t-proof.com

Another website called flash.org/quakesmart is a Federal alliance for safe homes where you can find additional information on how to prepare.

If you have a fire extinguisher on a hook, make sure it is a quake-safe hook or else that pressurized canister will fall and potentially break off the valve. Then the fire extinguisher becomes a missile inside your house.

If you have a refrigerator surrounded by cabinets, it probably doesn't need to have an earthquake brace to hold it up (the cabinets will do this).

When installing the earthquake straps on large furniture, you will attach it using a sticky pad. Make sure the surface is smooth, or else you will need two 1-inch screws to hold the pad in place. To prepare the smooth surface, use a little bit of sand paper followed by 70% alcohol, then let it dry. Push and hold the sticky pad for 30 seconds. Instructions are on the package of straps. To remove the sticky pad, use "denatured alcohol" and a putty knife on one corner. You should have no residue at all.

The best way to keep books on bookshelves is to use Shock Cord, which is strong but flexible. Put the cord across the spines of the books. You can still get to the books without a problem.