

Earthquake Awareness and Preparedness

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On June 18, 2002 Mother Nature reminded us that we are living in Earthquake country when a good part of the state was rattled by a 5.0 quake along the Wabash Valley Fault system in southern Indiana. A couple of lesser tremors have also occurred this week along the Wabash and New Madrid Seismic Zone as well as a few others out in the Central US around Nebraska and Texas.

During the winter of 1811 and 1812 this region of the nation was jarred by the strongest series of quakes ever in U.S. history. They were so strong they were felt in the new capital city of Washington DC and many other areas. We are long overdue for another round by many years. People go about their everyday business without much thought to the dangers lurking under the surface of our state and region. This week we'll look at the threat we face and in future weeks we'll review planning and preparedness for quakes.

Many people do not realize that the Richter Scale increases exponentially in terms of effects as each number of the scale increases. Going from a five to a six is bad enough, but going from a five to a nine (which is about what the 1811-1812 quakes were rated at) is roughly ten thousand times stronger.

The New Madrid Fault System is thought to be our chief threat zone as seismologists predict a 40-60% chance of a 7.8 Richter Scale earthquake along this system in the next decade. There is also a probability of 97% for this quake to occur within the next 50 years. We also have numerous other faults within our region that have also produced earthquakes in the past. The "Sharpsburg" Fault near Bath County in eastern Kentucky, The Wabash Valley Fault (the source of last Tuesday's event), The East Tennessee and Charleston, South Carolina systems could each have an impact on our area as well. Differences in the soils of our region versus those of California will also cause a quake in our area to have much wider effects than a similar magnitude occurrence along the San Andreas Fault. There is also a major separation between the types of faults of our area and California. The San Andreas Fault is along a division between the North American and Pacific tectonic plates. Our fault systems are a result of stresses building in the middle of the plate on which we live.

In some areas of Kentucky there is a ratio of 1 emergency response person to every 150 citizens. In a major earthquake, the numbers of people and locations in need of assistance could overwhelm our response system. Cities, of course, are most at risk from this danger as the larger populations and larger buildings increase the odds of this to alarming figures. Rural areas cannot be overlooked however, as in many areas, particularly during daytime hours, fire, EMS and often police coverage are at minimum levels as local volunteers have gone to their jobs in nearby cities and towns. These rural volunteer responders, if caught by the earthquake, in these towns and cities may find it impossible to return home for extended periods. Likewise, any family may be caught in the same situation and if phone systems are down, lack of communications to verify the well being of family members may be of almost debilitating concern. Power, telephone, Internet, and cellular communications may be lost for days to weeks in some areas. Natural gas lines crisscross Kentucky in underground networks running in all directions and should any of these lines rupture during a quake the explosion risk will be only one of the resulting problems as heating fuel may be cut to areas far removed from our state.

Buildings would not be the only victims of structural damage. Bridges, overpasses and dams may suffer damage to the extent of being either unsafe for use or collapse. Few man made structures of any kind within our state were built with earthquake survivability in mind.

Sound hopeless? Not quite. IF we realize the threats and associated dangers and plan for action NOW, BEFORE THE EARTHQUAKE. Let's examine steps you can take to turn the odds a little more in favor of you and your family.

If you will recall there are several fault systems that can have an impact on our state and seismologists currently predict a 40 - 60 % chance of a 7.8 Richter Scale quake along the New Madrid System within the next ten years. Which if it were to occur would affect the entire state in some fashion regardless of the location of the epicenter. While earthquake prediction is still not an exact science, we have state-of-the-art equipment and those trained in its use on the job 24/7 to monitor activity. They are doing their best to look out for us. It is our job to be prepared and plan for the day when the big one comes. Lets look at some readiness and preplanning steps you can take to reduce the dangers of personal and property damage to your family environment.

All families should have a good Family Disaster Plan. If you do not, begin by looking at the lifestyle of you and your family members. Talk with your employers about disasters plans at the workplace. What do they expect of you if you are at work during a disaster? What if you are away from work when one occurs?

If you have children in school you may want to review the school system's disaster plans. Are they going to hold the children at school, try to send them home or what? Next talk with family members about what will likely happen in these situations. Make sure all understand what they can expect to occur in all situations. Plan with family members the action steps to take in case a fire occurs in the home. Also don't forget severe storm and earthquake safety measures regarding where to go and what to do for each. Discuss how you can make contact with one another if phones, e-mail and pagers are not functioning. If you have other amateurs in the family discuss simplex frequencies you could use if your repeater was off the air. 146.52 may or may not be a good choice in some cases. Designate two family members who live at great distances from you who know they are to serve as information points in case long distance service will work. Be sure children know how to make these long distance calls without money.

Make sure all responsible family members know how to shut off the water, gas, electricity etc. and know how to use a fire extinguisher. Consider having these responsible family members take first aid and CPR courses if they have not already done so. Plan for the care of your pets and identify neighbors who may need assistance in a disaster. Review your plans regularly with all family members.

Plan and build a family disaster supplies kit using a 72-hour period as a bare minimum time frame. Longer time periods would be better. Plan one gallon of water per day per family member. Remember to rotate this every 3-6 months so you always have a fresh supply. Mark our containers with a marker showing the date of purchase and use the oldest first while always replacing it with new.

Store non- perishable food and items which require minimal or no cooking. Eating and drinking utensils and manual bottle and can openers. Also keep either a supply of water purification tablets, 2 % tincture of iodine or household bleach on hand for additional water purification needs.

Heating sources such as Canned Heat, camp stoves etc. are nice additions but carry addition dangers as well from explosion hazards to carbon monoxide poisoning which require extra caution in their use. Don't forget battery operated radios and or TV's, flashlights and extra batteries for all items stored. Plan for optional ways to charge amateur radio equipment batteries as well. Several manufacturers now sell universal chargers that work well for most batteries and even have DC cords for automobile use.

Matches in waterproof containers can be a blessing, away from gas leaks of course. Work Gloves, shovels, wrenches, screwdrivers and pliers can be helpful items as well. Extra clothes and bedding, sturdy work shoes, rain gear and sleeping bags can make disaster extremes a little more pleasant.

Small items such as towels, washcloths, sewing kits, shaving kits and writing materials may sound like small concerns now, but could be important in a disaster environment.

Don't forget extra supplies of medications and first aid supplies. Some extra cash and your important papers need to be stored in a safe location as well. Photographs in a safe deposit box can be very important in settling damage claims with either insurance or disaster assistance workers.

Let's take a trip around the house and workplace in a hazard hunt and pay a visit to the local department or hardware store to pick up a few items for your disaster-fighting arsenal. Look around a little first and see if we can spot the hazard sites. Items such as bookcases and water heaters can fall over in earthquakes. TV's computers and other electronic devices can sail from their shelves and tables creating a number of hazards, not to mention the costs of later replacement of these damaged items. Plants and other items may fly from ceiling hooks in an earthquake to smash into furniture and other items as well as unsuspecting humans who happen to be in their paths.

All manner of breakable objects line shelves, tables and other places in our homes and job sites. Stoves and other gas appliances can move and have their rigid fuel lines snap in violent earthquakes creating terrible fire hazards. Heavy pictures and mirrors over beds can fall from their hangers onto sleeping victims. Cabinets can open during a quake, unleashing havoc as their contents are spilled into rooms and hallways. Masonry chimneys can break and fall through unsupported roofs onto the occupants below.

As bad as this may sound most problems are fairly easy and inexpensively taken care of with a trip or two to the local department or hardware store. Bookcases can be mounted to walls with lag bolts to keep them upright. Water heaters can be fastened to the wall with plumbers tape to prevent their overturning. TV's, computers and other devices can be secured to tables with Velcro and poster putty, which can be removed later with a minimum of mess. Ceiling hooks can have tape crossed over them to help their cargos stay put. Breakables can be kept in place with either a shelf edging or even rubber cement. Rigid supply lines on stoves and other appliances can be replaced with reinforced flexible lines that will move more freely without severing. The easiest way to handle the problem of heavy items of beds is to simply move the to other locations and reinforce them with some poster putty to their reverse side. Small hooks can keep cabinet and closet doors closed and their contents contained. Roofs can be reinforced with plywood and 2 x 4 timbers in the attic to prevent collapse from chimney failure or other flying objects. With as few dollars and a little work on your part you have just reduced your chances of being injured in an earthquake to a large degree

When the quake comes, many will be indoors. **DO NOT RUN OUTSIDE** when the quake begins. You are far safer staying inside as many are killed or injured by falling masonry and other debris. Drop, Cover and Hold. Get under sturdy furniture like a desk or table if possible, tuck your head and place your hands over you neck and head. If that is not possible, brace yourself in a doorway being mindful of any doors that may swing closed or position yourself against an interior wall and cover you head and neck with your hands. Wait until the shaking stops before moving also remember many aftershocks can follow in the hours and days after an earthquake. Some may be small tremors while others may be as strong or even stronger than the initial quake.

If you are outside during the quake, try to move into an open area away from buildings trees and utility lines. Drop, Cover and Hold until the quake subsides. In a vehicle, pull off the roadway and remain in the automobile until things settle down. Watch for downed utility lines and damaged roadways, overpasses and bridges in your path.

After the quake you will want to check for injuries and property damage around you. Keep an eye out for gas leaks and water line breaks. Use the phone ONLY if you have an emergency requiring immediate attention. Do not be surprised if the system is down. Check your radio or portable TV to get general information on the incident. If you have your amateur gear available and functioning, check in on the local designated emergency frequency and remember to check 3.888 and 7.228 MHz. for the KY Emergency Net if you have HF capability. If the net has not been opened, go ahead and open the net if possible and you feel that the situation warrants. You can always close the net or hand net control off to someone else later. Do not be afraid to open an emergency net if you see that it is needed.

To many times amateurs will sit and listen or a group will congregate on an emergency net frequency and wonder aloud, "Where's so and so and why isn't the net open?" Good question, you're here, OPEN IT. DO NOT WAIT ON SOMEONE TO DO IT FOR YOU!!! I often hear hams say, "Gee, there must have been six or seven of us here on frequency and the net control did not show up so we went on and did something else". Why any one of them did not take charge of the situation and open the net, I have no clue. Granted sometimes you may not be in a position to take charge of a net. BUT, out of several stations sitting on a frequency, surely one could have done something even on a temporary basis.

We need to realize the dangers out there and take the steps that we can to be as prepared as possible before they strike. Earthquakes, like storms, will come in their own good time. We must prepare now so that we are ready when nature's alarm clock rings.