

The Earthquake Exchange

Special points of interest:

- Want to contribute to this newsletter? Contact us. Prepare@UtahEarthquake.org
- Ask Mary Jane! Use the address above to send your preparedness questions.
- Set one preparation goal per month and then actually do it! Get the family involved. Start with the basics in home & personal safety.

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A Time to Prepare For Winter

Aesop's fable *The Grasshopper & The Ants* tells of a grasshopper who lazes about during the summer while the ants around him prepare for winter. "Poor fools!" he called. "Why do you work when the sun is high in the sky? This is a time for singing and playing." When the snow came, and the ants were protected in their store-house, the grasshopper was forced to beg for food and shelter.

Intermittent days of warm and cold may have you thinking about the proximity of winter. And while the sunshiny days of summer are long gone, there's still time to gather supplies for dark, cold months ahead.

72-Hour Emergency Kits

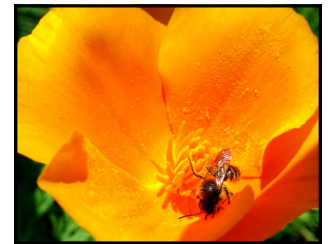
Emergency kits can get bulky fast, so many of us pack our kits with shorts & t-shirts to minimize space & weight. That may not be a problem in July, but you'll feel differently if there's an emergency in January. Consider adding warm clothes & socks, hats, gloves, blankets and instant hand warmers.

Pocket & toe warmers are sold at many stores at the advent of ski season. You can minimize space and protect material from water with vacuum sealed bags, sold commercially.

Winterize Your Car

Simple steps may be taken to winterize your car. Pack a basic winter emergency kit. Include provisions such as hand-warmers, gloves, an ice-scraper, blankets, extra water & food, a collapsible shovel for digging out & kitty litter for traction if you get stuck in the snow.

Be sure your windshield washer fluid also de-ices, and replace old windshield wipers. Use a tire gauge to check tire pressure, as air contracts in cold weather. Be certain you have a spare tire, filled, and tire-changing equipment. You may want to consider using snow tires. Keep your gas tank as full as possible to keep moisture from freezing in gas lines. (You can also check belts & hoses, the battery, antifreeze mixture, brakes, lights & 4-wheel-drive.)



Busy Bee
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Prepare Your Home

If your windows shatter in an earthquake, strong winter gusts will make you cold & wet in a hurry. A roll of heavy-duty plastic sheeting and duct tape in your home-storage could be used to block wind while still allowing light. Also be prepared with other sources of heat & light such as flashlights, candles, matches, lanterns, portable Kerosene or propane heaters, stoves (coal, gas, wood,) sleeping bags, & durable tents. Store emergency food and water for at least two weeks. Having extra light & a small indoor garden, or sprouting seeds, can help ward off winter depression.

What Are Plates, and What Is Plate Tectonics?

By Jamie Robinson

Plates are broken pieces of Earth's rocky skin. They consist of Earth's crust and uppermost mantle. The mantle has frozen to base of the crust like ice in a pond. Plates, which are broken parts of Earth's lithosphere, 'float' on a mush of partially molten mantle known as the asthenosphere. It is this weak layer beneath

the lithosphere that allows causes plates to break and move. The movement of plates is the cause of most earthquakes.

The earth's surface is broken into seven large and many small moving plates. Most of these plates include both continental and oceanic crust, each about 30-70 miles thick.

The plates move relative to one another an average of a few inches a year. Like cars in a demolition derby, plates crash together, pull apart, or sideswipe each other. These interactions cause earthquakes along faults at plate boundaries.

--Continued on page 3

Helping the Community: Voters! Help School Districts on Nov. 7th!

Alpine School District: Vote YES for School Bond

Vote YES for the Alpine School District Bond & Leeway. The bond funds will be used in part for major seismic upgrades.

In addition to new schools for growing areas, the bond provides for the rebuild of Orem High (built in 1956) specifically due to its lack of seismic safety. Other seismic upgrades to various schools will also be conducted. According to Rob Smith, Asst. Superintendent of Business Services, every school

in the district has been seismically assessed and ranked according to retrofit need. Schools will be renovated based on that assessment. The school district has also added a seismic category to its rolling 5 year capital facility plan.

Wasatch School District: Vote YES for New School

Wasatch county will see a proposition on this year's ballot to replace the current high school with a new facility. An independent Facilities Evaluation Committee, reporting in

May 2004 on the condition of Wasatch High School, concluded that "In 1964 when the main core of the high school was built the adopted 'Building Code' did not address much earthquake and wind design loads. Thus it can be safely assumed that the current main core of the building is under-designed by current standards for such events and could cause partial structure failure and loss of life during such an event."

Ask Mary Jane: "Most large modern buildings have glass windows everywhere. Is this as serious a danger in an earthquake as I think?" — David B., SLC, UT

"After I made it to the doorway, the window that I was standing next to broke and a lot of glass flew. It seemed to kind of explode. Later on I found that the door frame was such that the front door wouldn't close. All of the framing was bent. The window just couldn't stand the bending." (Loma Prieta Oral History)

The more windows, the greater the risk. A California company involved in earthquake education wrote, "Shattering glass is usually responsible for a significant percentage of injuries in a

serious earthquake. In the Loma Prieta California earthquake of 1989, for example, half of the 3,700 injuries were caused by broken or breaking glass."

What occurs in high-rise buildings varies. On lower floors, the shaking may be violent, as in a home. On upper floors, movement will be slower, but the building will move farther from side to side. Glass may shatter inward or outward. Glass from high-rise buildings does not always fall straight down; it can catch a wind current and travel

great distances. Tempered, laminated or polyester shatter resistant glass and even lowered blinds may help. Windows in newly constructed stiffer buildings may be more resistant.

No matter where you experience an earthquake, you should protect yourself from glass and other falling objects. If you can, duck under a strong barrier or move to an interior wall and protect your head. If you are outside next to a high-rise building, protect your head but do not move closer to the structure.

Monthly Preparation Tip: Owning & Using Fire Extinguishers

The Red Cross claims that four out of five Americans are unaware that fires are the most common disaster in the U.S. Fires may occur in conjunction with earthquakes due to lit candles or other open flame, damaged electrical wires or damaged gas lines.

Fire extinguishers have ratings: **A** - for ordinary combustibles such as wood, paper, cloth, trash & plastics, **B** - for flammable liquids such as gasoline, oil & paint as well as flammable gases such as propane & butane, **C** - for electrical equipment such as motors & appliances.

Most fire extinguishers made for homes & cars have multi-class

ratings, A-B, B-C, or A-B-C. You can purchase a fire extinguisher at stores like Target, Wal-Mart & Lowe's for \$10-\$30.

When you buy a fire extinguisher, be sure to read the specific instructions on & inside the box. For example, if your fire extinguisher does not have a C rating, it is important not to use it on electrical fires due to shock hazard.

The Hanford Fire Department writes, "Although fire extinguishers come in a number of shapes & sizes, they all operate in a similar manner." They suggest the acronym **P-A-S-S: Pull, Aim, Squeeze, Sweep**.

1st - Pull the pin at the top of the extinguisher that keeps the handle from being accidentally pressed. **2nd** - Aim the nozzle toward the base of the fire. **3rd** - Stand about 8 feet away from the fire and squeeze the handle to discharge the extinguisher. **4th** - Sweep the nozzle back & forth at the base of the fire.

Fire extinguishers often come with wall-mounting brackets. These should be employed for accessibility and safety. In an earthquake, proper storage is paramount to prevent your fire extinguisher from falling and being damaged. If your fire extinguisher does not come with a strap bracket, you can purchase one at Home Depot or Lowe's for ~\$6.



Alpine & Wasatch District voters have an opportunity to make a major difference in school seismic safety.

"Whether at work, school, home, or the mall, face away from windows in an earthquake. Don't stand under a skylight."



Fire extinguishers are an inexpensive preparation and can even save you money on home insurance.

**Educate
Prepare
Communicate
Share**

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We're on the Web!

Past newsletters are now posted on our web site. Go to www.UtahEarthquake.org and click Free Newsletter.



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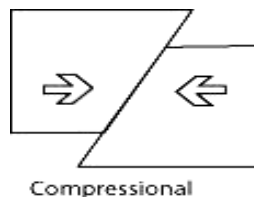
UtahEarthquake.org is a not-for-profit educational tool. Originally created with help from three junior-high students, it was conceived during a UNICEF lecture about natural disasters. The website's mission is to fill a community need for concise earthquake preparation information. The website and newsletter serve to provide easy access about everything from the physical laws of plate-tectonics to home retrofits, emergency instruction, food & water storage, community action, public events, and disaster & supply planning.

Although every reasonable effort is made to ensure information is accurate, information, data, suggestions, links, instructions and guidelines are provided for informational purposes only. UtahEarthquake.org makes no guarantees of any kind. This newsletter, and the information posted herein, may contain personal opinions.

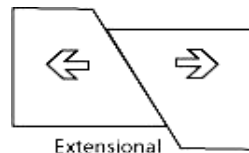
Cont'd from Page 1 — Plate Tectonics

Plate tectonics is the branch of geoscience that deals with the process by which rigid plates move, and the way plate movement shapes Earth's surface. It has helped to explain the formation of mountains, ocean basins, and the distribution of earthquakes and volcanoes.

Where plates converge Earth's crust is thickened to form mountainous regions such as the Himalaya, Andes and Rocky Mountain Systems. Convergent boundaries cause Earth's largest earthquakes, such as the 2004 magnitude 9.2 Sumatra event and associated transoceanic tsunami that killed nearly 300,000 people.

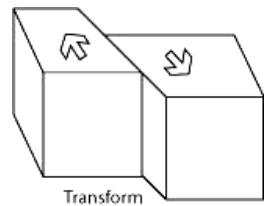


When plates move away from each other Earth's crust is stretched and thins, which forms ocean basins and continental basins like Salt Lake and Utah Valleys. Earthquakes that occur along divergent boundaries are caused by extensional faults, such as the Wasatch Fault. Rocks are not as strong in tension as they are in compression, so earthquakes along extensional faults are mostly less than magnitude 7.5.



When plates side-swipe they create transverse boundaries with mostly near vertical faults that allow blocks of Earth's crust to slide horizontally past each other. There is commonly no thickening or thinning of Earth's crust as a result. The San Andreas Fault is an example of a

transverse plate boundary that can generate earthquakes up to a magnitude 8.5.



<http://geology.er.usgs.gov/eastern/plates.html>

www.seismo.unr.edu/ftp/pub/louie/class/100/plate-tectonics.html