

How to Survive an Earthquake – Two Schools of Thought

Tim Padgett, Time Magazine, 2-1-10

Most of us know to stay low to the floor if we're caught in a fire, or head to the basement if a tornado's coming, or board up the windows in a hurricane. But, because relatively few of us live along fault lines, the massive earthquake that hit Haiti this month was a reminder that we're far less versed on what to do when the ground below us convulses. If we're in a house or building, for example, our first impulse might be to run outside — but, counterintuitive as it might sound, experts warn against that since people are too often killed by falling or fallen debris as they try to escape.

Given how many of us travel in quake-prone regions today — including, tragically, the four students and two professors from Lynn University in Florida who perished in the Haiti quake — even folks who don't reside in California should know how to survive a temblor. But there are two different, and at times competing, schools of thought on the matter — both of which are considered valid but perhaps not always in the same situations.

The first, and most conventional and widely accepted by the disaster-response community, is the "drop, cover and hold on" approach, which urges people to take cover beneath something like a heavy table to avoid falling objects. The second, newer method is known as "the triangle of life." It recommends lying down in a fetal position not under but next to furniture; as roofs and walls collapse atop those sofas and desks, buffer spaces are created that protect people from being crushed.

Over the past decade, a consensus has been building that "drop, cover and hold on" is a more appropriate method for developed countries like the U.S., where improved construction has greatly reduced the likelihood of structures imploding. The triangle of life is thought to be more pertinent in developing nations like Haiti, where shoddy building codes make finding a "survivable void" inside collapsed buildings more important than shielding yourself from falling chandeliers. "You have to think about the hazard level of the area you're in," says Gary Patterson, a geologist and director of education and outreach at the Center for Earthquake Research & Information at the University of Memphis in Tennessee. "If you're going to play the odds, drop-and-cover may be the best way to go, but a lot of emergency responders might say triangle-of-life because they're the ones who see the fatalities in buildings that do collapse."

One such responder is Doug Copp, who heads up a private California-based organization called American Rescue Team International, which aids rescue efforts during disasters like the Haiti quake. Copp, a leading triangle-of-life proponent, began his work amid the epic 1985 earthquake in Mexico City. Inside that vast rubble he says he kept finding that schoolchildren who had dived under their desks were still crushed to death, but that kids who had curled up on the floor between desks survived, thanks to the falling tonnage above them being cushioned by the desks themselves. Since then, Copp, 58, insists he's seen much the same thing play out in all the quakes he and his team have rushed to, be it in the First or Third World.

As a result, he's become an outspoken and controversial opponent of drop-and-cover in any earthquake scenario, even where buildings are likely to withstand the seismic shock. "To me, [drop-and-cover] is not an applicable or safe thing to do in any building in any part of the world," says Copp. "There is nothing built by man that nature can't destroy in a flash."

Many disaster experts call that a gratuitous if not irresponsible position — especially since triangle-of-life, while it may leave pockets of survivability in collapsed structures, can still expose people to deadly falling debris. Government bureaus like the Federal Emergency Management Agency (FEMA) and major non-

governmental organizations like the American Red Cross still favor drop-and-cover as the best quake survival technique in the U.S. — and a 2004 Red Cross report called Copp's blanket assertions "inappropriate and misleading."

Copp argues they're too wedded to a drop-and-cover culture embedded in U.S. thinking since the 1950s, when school kids were taught to scramble under their desks during nuclear attack drills. But the Red Cross points to research, much of it developed by the California Emergency Management Agency (Cal EMA), that reports that lives were saved during U.S. quakes in recent decades because people exercised drop-and-cover. "We don't discount either earthquake survival approach, but drop, cover and hold on is simpler for people, like drop and roll if you're on fire," says Cal EMA spokesman Jay Alan. That's important, he adds, given that people have only a matter of seconds to react to an earthquake.

Organizations like the Red Cross also deny they're clinging to old mindsets. For much of the last century, for example, the public was taught that standing in a doorway was smart during an earthquake; but the Red Cross has since discarded that recommendation since it's more recognized today that "many doorways are not built into the structural integrity of a building." What's as important as knowing what to do during an earthquake is what to do before it, says Alan, whose agency urges preparedness steps such as securing bookshelves to walls and knowing where to turn off gas lines.

Meanwhile, U.N. security experts this week sent out a triangle-of-life Power Point presentation to staff in Latin America who are still shaken by the more than 100 U.N. workers killed in the organization's Port-au-Prince headquarters this month, including the head of the mission there. Drop-and-cover may be the way to react in the U.S. and the developed world, but people in the developing world still need as many reliable ways to stay alive as they can get their hands on.