

Reinventing Civil Defense

The U.S. Government Hasn't Made It Easy To Know What to Do When the Bomb Drops.



Although they might be aware of North Korea's Kim Jong Un's threats to incinerate American cities or the latest line of Russia's hypersonic nuclear weapons most Americans—particularly younger ones who did not live through the most dangerous days of the Cold War—have no practical or conceptual idea of how to respond to the warning of an actual nuclear emergency. Witness the scenes of mass panic that took place in Hawaii last January after what, fortunately, turned out to be a false alert of an imminent North Korean attack.

Kristyn Karl, a political psychology professor and Alex Wellerstein, a historian of science and technology at Stevens Institute of Technology in Hoboken, New Jersey, along with many other experts, lay much of the blame for this alarming nuclear unpreparedness among the general public on the federal government and its failure to communicate how to prepare for such an eventuality. “The government has given Americans no good sense of what, specifically, to do when the next nuclear crisis occurs,” says Michael O’Hanlon, a senior fellow at the Brookings Institution.

To be sure, this is not an easy task. The original version of civil defense (also known as Duck and Cover, after its famed guidance to schoolchildren to protect themselves from a nuclear attack by ducking under their school desks when they saw the tell-tale flash outside) is often remembered as silly and misleading—particularly the impression it gave about how easy it would be to survive a full-scale nuclear war. But Wellerstein and Karl feel that a lot about the original, oft-mocked program was constructive and worth resurrecting—particularly the fact that, at the very least, it did get Americans to think about the unthinkable.

International events seem to be pushing the initiative along. Last fall, after North Korea successfully tested its first intercontinental ballistic missile and threatened to use it against the U.S., “the project took on much higher stakes,” says Wellerstein, who, at 36, is best known for NUKEMAP, his Google Maps mash-up that allows one to calculate the effect of a nuclear detonation based on factors such as targeted city and nuclear yield. And Wellerstein doesn’t feel this development is necessarily an unwelcome one. For years, “the assumption was that anyone who cared about civil defense had to be either a Cold War holdover or ‘a doomsday prepper,’” he says. “Neither Kristyn or I are either of those things,” he says. “Basically we just want people to think about nuclear risk—even if they don’t want to think about it.”

There are at least three different types of credible nuclear threats that exist today—two more than during the Dr. Strangelove days.

- **Scenario 1** is the fear that set the original civil defense program in motion—an apocalyptic exchange between the United States and Russia or China involving hundreds of thermonuclear weapons. The U.S. population would theoretically have a 20- to 30-minute warning before the multi-megaton bombs began bursting in air, spreading radioactive fallout in overlapping lethal circles and the lights started going out—for good.
- **Scenario 2** is the nuclear terrorist scenario, i.e., the detonation of a smaller, 10-kiloton device in a major American city. Those fortunate enough not to be among the tens of thousands killed during the initial blast would have a short time to protect themselves from the subsequent, less serious fallout.
- **Scenario 3** is the recently emergent North Korea scenario, involving the airburst of a 100- or 150-kiloton device over an American city, perhaps Los Angeles, with, hopefully, a 30-minute warning. The result, according to NUKEMAP, would range from an estimated 195,000 to 241,000 deaths and 510,000 to 629,000 injuries from both the blast and radioactive fallout, depending on the bomb’s yield.

Scenarios 2 and 3 are the most likely—and also the ones that the RCD researchers are focused on (for the moment, at least). They are also survivable, if you and emergency management officials know how to respond. But RCD’s first challenge is how to untangle the star-crossed history of the first version of civil defense, says Wellerstein.

It all began with Bert the Turtle—the smiling, helmet-adorned mascot of the first, much-derided civil defense program, which was run by the Federal Civil Defense Administration (the ancestor of the Federal Emergency Management Administration). Bert is the star of a famous 1951 instructional cartoon, called Duck and Cover. “Bert the Turtle walks down the road,” goes the chorus in the famed serial, as our smiling hero confidently sashays down the road in the cartoon. “And Bert the Turtle was very alert, when dangers threatened him he never got hurt. He knew just what to do.”

The reason Bert and his fellow Americans knew what to do was that they were familiar with the instructions in the upbeat government pamphlet *Survival Under Atomic Attack*. “You can live through an atom bomb raid and you don’t need a Geiger counter or special training to do it!” the leaflet fatuously

advised. “You should hide underground if there is time. Otherwise, you should jump into the nearest gutter or ditch. And don’t forget to shut the window!” Since then, the issue and practice of civil defense waxed and waned with the rise and fall of international tensions over the following decades, along with the evolving outlook and experiences of the chief occupants of the White House, as historian Rodric Braithwaite writes in his new history of the nuclear threat, *Armageddon and Paranoia*.

President John F. Kennedy, who took office in January 1961, at the start of the second, tensest decade of the Cold War, was a big booster of civil defense. As part of the program, the president announced the federal government would initiate a \$700 million nationwide fallout shelter plan, while also encouraging Americans to build their own fallout shelters. Kennedy’s brother Robert was an even greater civil defense enthusiast. He pressed for a scheme that would require all American citizens to practice evacuation and shelter drills once a week. As Braithwaite writes, “a kind of hysteria” about the subject of civil defense and nuclear safety ensued. At the height of the craziness, in a column for the Catholic magazine *America*, the Rev. L.C. McHugh actually argued that it was permissible “to shoot your neighbors if they tried to break into your fallout shelter.”

The high anxiety of those thermonuclear times seeped into popular culture. In “The Shelter,” an episode of the popular TV program *The Twilight Zone*, a celebratory party for a doctor who has heeded JFK’s advice and built a bomb shelter takes a terrifying turn after a radio broadcast announces unidentified objects heading for the United States. Of course, in those uneasy days, everyone assumes the objects are ICBMs. Within minutes the amicable group has besieged the shelter to which the doctor has fled with his family, while the latter chastises his hysterical friends for not building their own shelters “because it meant recognizing the kind of world we live in.” Just as the frenzied group is about to burst in comes another announcement on the radio: The unidentified objects are in fact harmless satellites.

Eventually, Kennedy’s interest in civil defense waned as he became convinced of the impracticality of a nationwide shelter program, as well as the unwinnability of nuclear war. (As Harvard economist and key Kennedy adviser John Kenneth Galbraith wrote in a personal letter to the president, “Those Americans who did manage to survive a nuclear exchange would emerge into a desolate world “with no food, no transportation and full of stinking corpses.”) So did the skeptical Congress, which whittled JFK’s request for \$700 million down to a mere \$80 million.

Jimmy Carter tried to inject new life into the civil defense program by creating the Federal Emergency Management Agency in 1979. FEMA consolidated the work of several agencies into one, mixing nuclear preparedness with preparedness for floods, tornadoes and earthquakes. But the nuclear issue took a back seat.

Ronald Reagan, who came into office convinced that the Soviet Union’s nuclear arsenal had overtaken that of the United States, conflated civil defense with the national defense. “[The Reagan hawks] believed that civil defense was part of being prepared to fight a nuclear war with the Evil Empire and that being thus prepared was necessary for deterrence,” Wellerstein says. “So it fit very firmly into their political ideology.” Toward that end, in 1982, the Reagan administration proposed a comprehensive civil defense program costing \$4.2 billion. However, Reagan, like Kennedy, lost interest in the program once he became convinced that nuclear war was unwinnable and unsurvivable. Instead, he decided to direct the nation’s

monies towards building up other elements of the national defense—like his proposed missile shield known as Star Wars. Congress lost interest as well.

Thus, in July 1986, in a report to Congress, FEMA could state that “U.S. civil defense capabilities are low and declining.” “National survival would be in jeopardy” in the event of a nuclear attack, it declared, while asking for a mere \$130 million to keep the network of emergency operation centers established 20 years before at a minimal functioning level—an amount that was further pared down.

By then, says Wellerstein, the concept of civil defense had become so fraught in the public’s imagination as to obscure what was useful about it, including and particularly keeping the idea of nuclear risk in the forefront of the public imagination. “The Cold War perceptions are unfortunately the ones that guide a lot of our discussions about civil defense and nuclear preparedness today,” he maintains, “even though the strategic situation of today is very much different than it was then.”

Ironically, as Braithwaite writes, “the cheery recommendations in Duck and Cover and ‘Survival under Atomic Attack’ would have been of little use against a strategic bombardment by thermonuclear weapons”—Scenario 1. But they would work, more or less, in the more likely and survivable scenarios 2 and 3. It seems that Bert the Turtle had the right message at the wrong time.

You might be surprised to hear that Uncle Sam has a cogent message about what the public should do in case of a nuclear attack. The advice is basically a revised version of Duck and Cover: Get Inside, Stay Inside, Stay Tuned. Broken down, that means once you receive a warning or alert of a nuclear detonation you should get inside the nearest building or other standing (preferably concrete) structure, stay there for at least 12 to 24 hours—the period when the outdoor fallout radiation level is most dangerous and wait for further news from emergency management officials about which areas downwind from the blast are safest to evacuate to next.

One of the chief progenitors of that advice is Brooke Buddemeier, a certified health physicist at Lawrence Livermore Laboratory in California. Buddemeier, who has been on the staff of Livermore since 1989, is also on the advisory board of Reinventing Civil Defense. Buddemeier concedes that until recently he and his colleagues have been focused on what would happen, and how the public should respond to a Scenario 2 level event—a terrorist attack. But he points out that the same slogan would also apply for a Level 3 event. “I cannot speak to theoretical yields of any specific nation-state,” the government scientist says. But, he maintains, the basic message which he and his colleagues at Livermore and their sister federal agencies are trying to put out there would work for, say, a Level 3 missile strike on California by parties unknown.

Incidentally, Buddemeier is decidedly not a booster of the bomb shelter business, which has seen a surge on the West Coast in recent months, as fears of a possible North Korean attack have risen. “I’m glad that people are thinking about emergency/disaster preparedness,” he says. “However, I hope that the concern for the nuclear threat does not result in anxiety, depression or using your savings on expensive preparedness measures.” He points out that, even if you had a shelter, most likely you would not be able

to reach it in time to protect you and your loved ones. It all sounds very sensible, if grim. So, where are these recommendations? Why haven't we seen them?

It turns out they are located on page 66 of a 130-page document compiled by a federal interagency committee in 2010 known as "*Planning Guidance for Response to a Nuclear Detonation*." It reads: "The best initial action following a nuclear explosion is to take shelter in the nearest and most protective building or structure and listen for instructions from authorities."

Former Secretary of Defense William Perry says he has "mixed feelings" about civil defense. His own nuclear educational project, the William J. Perry Project, aims to educate the public on the dangers of all the aforementioned nuclear scenarios, including the Armageddon-level Scenario 1 for which he believes the only and best defense is disarmament. "I believe that there is NO level of civil defense that could provide meaningful protection against a large scale nuclear attack," he says.

However, Perry acknowledges, referring to the Level 3, nuclear terrorist scenario, "there is much that could be done to lower the casualties of a terror-based nuclear attack," including better educating the public about what to do before, as well as after such an attack. "But we are not doing these things." Perry was one of the participants in the Preventive Defense Project, a group of leading federal government civilian and military officials, scientists and policy experts who convened in Washington in 2007, five years after the 9/11 attacks, to answer the then much more urgent question, "On the day after a nuclear weapon goes off in a U.S. city, what will we wish we have done to prevent it?"

Perry co-authored the report that came out of the meeting. Entitled "*The Day After: Action Following a Nuclear Blast in a U.S. City*," the bluntly expressed document called the federal government to account for not yet coming up with a realistic contingency plan for dealing with the aftermath of a nuclear terrorist incident, or "informing the American public of its particulars." "Remarkably such a plan does not yet exist," wrote the authors, who also included future Secretary of Defense Ashton Carter, "although," they added hopefully, "it is being drafted."

Perry, et al., also recommended a new type of fallout shelter program supplied with stocks of food, water and other supplies for several days, somewhere along the lines of the thousands of shelters with which civil defense-minded Switzerland has equipped its towns and cities, as well as a computer modeling system for rapidly measuring radiation to enable both emergency workers and the public to determine the safest zones downwind from the blast. Ten years later, as Perry notes, it is questionable whether these measures have been taken. Although, the government does have a rapid radiation modeling capability, there has been little movement on the national fallout shelter system idea.

As far as the contingency plan is concerned, in her response to this reporter's query, Michelle Laver, director of strategic communications for the National Nuclear Safety Administration, notes that since 2007 "federal teams have worked together to issue documents on nuclear and radiological response, including the now eight-year-old *Nuclear/Radiological Incident Annex*." "Additionally," Laver adds, in the patois of the preparedness bureaucracy, "federal communicators have developed interagency guidance in the form of the *Emergency Support Function 15 Standard Operating Procedure* and *Annex Nuclear to Emergency Support Function 15 External Affairs: Radiological*."

Whether either the clunky, hard-to-find “Planning Guidance for a Nuclear Detonation” mentioned above, or the highly technical annex and its addenda comprise the contingency plan called for in “The Day After” is debatable. What is inarguable is that the public was never informed of its particulars. Or, as Wellerstein notes, “A lot of guidelines on how the government should communicate with the public, but almost no communication with the public. FEMA has suddenly shown a lot of interest in this,” he says, “but it’s clear that for the last few decades this sort of threat has been on the back burner for them.” “There is some irony there,” he continues, “in that FEMA was created in part to consolidate and encourage civil defense planning.”

Finding a better way of conveying crucial nuclear survival advice to the public is the essential challenge that the Reinventing Civil Defense investigators have set themselves. For the record, Wellerstein emphasizes, RCD is occupied with the communications dimension of the next generation of civil defense, rather than the practical one, as it were. “We are not doing research into what one ought to do. We are leaving that to the labs and their experts. We are looking instead into what a communication program might look like. So we take for granted the models used by emergency planning can do what they are supposed to do.”

Wellerstein adds that RCD has no formal relationship with the federal government: “Although at least one government employee”—Buddemeier—“is involved in an advisory way and we have been talking to people who work for the government. But, he adds, “we aren’t taking money from them and they are not obligated to take anything from us. We hope our work will be useful to the government but our scope is not limited to things FEMA could do.”

So what sorts of things is RCD doing? For one, there’s, “*Drawing Doomsday: Using Comics for Civil Defense*,” a graphic novel project designed to “apply the tools of visual storytelling to a reinvented Civil Defense.” There’s also “*Nuclear Worriers: Stories From a Nuclear World*”—“a podcast and network for communicating stories relating to nuclear risk and salience among the public.” And then there’s the darker “*Mark 17 User’s Manual*,” “a graphic fictional operation and maintenance guide” to the first 15-kiloton, 1957 model U.S. hydrogen bomb.

Those are just some of the subprojects that the RCD principals have commissioned from the artists and writers they are working with as part of their cutting edge initiative. “Times have changed, and the way we communicate with each other has changed, too,” says Karl, who oversees the new-media end of the RCD. “We believe it is important to meet people where they are. The things that capture our attention, particularly among millennials and younger generations, have also shifted,” she explains.

As far as Buddemeier’s advice about how your family can survive a nuclear detonation, Wellerstein would prefer to alter his adviser’s message. “If I had my druthers, I would change the ‘can’ in ‘your family can survive a nuclear detonation’ to ‘might’ survive. I think any communication about nuclear attacks needs to emphasize that the number of dead would be staggering, even with perfect execution of civil defense procedures.”

This, to Wellerstein is one of the reasons it is important for today's civil defense planners to study the Civil Defense messaging of the 1950s and '60s, as the RCD group is now doing. "One of the ways the early Cold War messaging went wrong is that it overemphasized the ease of surviving a nuclear attack." "It's a tricky balance," he concedes. Wellerstein also thinks that the "stay tuned" part of Buddemeier's mantra may be too hopeful. "Will people have telephones or the internet after a nuclear detonation? I don't know." He adds, "I am not sure that the government can communicate on this as openly as they ought to. But there are many ways for a nongovernmental entity to do this." The basic problem, Buddemeier and Wellerstein agree, is that the message isn't really getting out there at all, as seen by last January's chaotic scenes in Hawaii.

For his part, Buddemeier continues to be a big fan of RCD. "I think it's a great program," he says, particularly in the way RCD is trying to identify "new and effective means, including apps and games to help bring a little bit of knowledge that can save a lot of lives. I believe it is important to motivate personal preparedness by making it interesting—or even fun—and not by fear." "Stop, Drop and Roll' doesn't make you afraid of fire," he adds, "but it can save your life in the unlikely event that your clothes catch fire."

For her part, Michelle Laver, head of strategic communications for the National Nuclear Safety Administration, says that, thanks to January's false alert, federal and state officials "are working harder to better educate the public in safety measures that can be taken in case of a nuclear incident." Stay tuned. "There are many things one can say about the [Hawaiian] episode," says Wellerstein. "I worry that a false alarm like that, based on such a basic miscommunication, has undermined public confidence in such warnings."

But, on the other hand, he says, "Until recently, if you want to make [the possibility of a nuclear detonation] heard then you really had to come up with complex arguments about why it was still relevant." Now thanks to recent events, he says, "we don't have to do that anymore." "I am not convinced that the scale of the next generation of CD ought to be the same as it was during the Cold War," says Karl. "But if you believe the threat is non-zero and that there are steps we can take to minimize the negative impact on society and save lives, that seems like an easy calculation to me."

[Source: Politico Magazine | Gordon F. Sander | June 11, 2018 ++]