How to Survive A Disaster

By AMANDA RIPLEY

When a plane crashes or the earth shakes, we tend to view the survivors as the lucky ones. Had they been in the next seat or the apartment across the street, they would have perished. We marvel at the whimsy of the devastation.

The recent earthquake in China and the cyclone in Burma, not to mention the battery of tornadoes and wildfires ripping through the U.S. this season, remind us that disasters are part of the human condition. We are more or less vulnerable to them, depending where we live.

But survival is not just a product of luck. We can do far more than we think to improve our odds of preventing and surviving even the most horrendous of catastrophes. It's a matter of preparation--bolting down your water heater before an earthquake or actually reading the in-flight safety card before takeoff--but also of mental conditioning. Each of us has what I call a "disaster personality," a state of being that takes over in a crisis. It is at the core of who we are. The fact is, we can refine that personality and teach our brains to work more quickly, maybe even more wisely.

Humans are programmed with basic survival skills. When frightened, we get a shot of performance-enhancing hormones, and the blood pumps to our limbs to help us outrun whatever enemy we face. But in modern times, we're hardly aware of such natural skills, and most of us do little to understand or develop them.

We could, for example, become far better at judging threats before catastrophe strikes. We have technological advantages that our ancestors lacked, and we know where disasters are likely to occur. And yet we flirt shamelessly with risk. We construct city skylines in hurricane alleys and neighborhoods on top of fault lines--as if nature will be cowed by our audacity and leave us be. And we rely on a sprawling network of faraway suppliers for necessities like warmth and food. If the power cuts off, many of us still don't know where the stairs are in our skyscrapers, and we would have trouble surviving for a week without Wal-Mart. Hurricane season starts June 1, and forecasters predict a worse-than-average summer. But for many of us, preparation means little more than crossing our fingers and hoping to live.

Yet the knowledge is out there. Risk experts understand how we could overcome our blind spots and more intelligently hedge our bets. In laboratories and on shooting ranges, there are people who study what happens to bodies and minds under extreme duress. Military researchers conduct elaborate experiments to try to predict who will melt down in a crisis and who will thrive. Police, soldiers, race-car drivers and helicopter pilots train to anticipate the strange behaviors they will encounter at the worst of times. Regular people can learn from that knowledge, since, after all, we will be the first on the scene of any disaster.

Of course, no one can promise a plan of escape. But that doesn't mean we should live in willful ignorance. As Hunter S. Thompson said, "Call on God, but row away from the rocks."
Over the years, I have interviewed survivors of unimaginable tragedies. Most say that during their ordeals, almost nothing felt, sounded or looked the way they would have expected. Reality was in some ways better, in other ways worse. They say there are things they wish they had known, things they want you to know. Here, then, are three of their stories, accompanied by some of the hard wisdom of loss and luck:

Panic Can Be Your Friend
When disaster strikes, a troubling human response can inflate the death toll: people freeze up. They shut down, becoming suddenly limp and still. That's what happened to some people on Sept. 28, 1994, when the M.V. Estonia went down in the Baltic Sea, the worst sea disaster in modern European history.
The huge automobile ferry had left its home port in Tallinn, Estonia, on a routine 15-hour trip to Stockholm. Although the weather had been stormy all night, the crew did not expect serious problems. A band was playing in the Baltic Bar, and the 10-deck vessel churned through the inky waters as it had for 14 years.

Kent Härstedt, now a member of Sweden's Parliament, was then a 29-year-old passenger. That night he was hanging out in one of the ship's bars, with about 50 other passengers. "There was karaoke music,"

he recalls. "Everybody was laughing and singing." But just after 1 a.m., the Estonia suddenly listed starboard 30°, hurling passengers, vending machines and flowerpots across its passageways. In the bar, almost everyone fell violently against the side of the boat. Härstedt managed to grab on to the iron bar railing and hold on, hanging above everyone else.
"In just one second, everything went from a loud, happy, wonderful moment to total silence. Every brain, I guess, was working like a computer trying to realize what had happened," he says. Then came the screaming and crying. People had been badly hurt in the fall, and the tilt of the ship made it extremely difficult to move.

Härstedt began to strategize, tapping into some of the survival skills he had learned in the military. "I started to react very differently from normal. I started to say, 'O.K., there is option one, option two. Decide. Act.' I didn't say, 'Oh, the boat is sinking.' I didn't even think about the wider perspective." Like many survivors, Härstedt experienced the illusion of centrality, a coping mechanism in which the brain fixates on the individual experience. "I just saw my very small world."

But as Härstedt made his way into the corridor, he noticed something strange about some of the other passengers. They weren't doing what he was doing. "Some people didn't seem to realize what had happened. They were just sitting there," he says. Not just one or two people, but entire groups seemed to be immobilized. They were conscious, but they were not reacting.
Contrary to popular expectations, this is what happens in many disasters. Crowds generally become quiet and docile. Panic is rare. The bigger problem is that people do too little, too slowly. They sometimes shut down completely, falling into a stupor.

On the Estonia, Härstedt climbed up the stairwell, fighting against gravity. Out on the deck, the ship's lights were on, and the moon was shining. The full range of human capacities was on display. Incredibly, one man stood to the side, smoking a cigarette, Härstedt remembers. Most people strained to hold on to the rolling ship and, at the same time, to look for life jackets and lifeboats. British passenger Paul Barney remembers groups of people standing still like statues. "I kept saying to myself, 'Why don't they try to get out of here?'" he later told the Observer.

Later, when interviewed by the police, some survivors said they understood this behavior. At some point, they too had felt an overwhelming urge to stop moving. They only snapped out of the stupor, they said, by thinking of their loved ones, especially their children--a common thread in the stories of survivors of all kinds of disasters.

At 1:50 a.m., just 30 minutes after its first Mayday call, the Estonia vanished, sinking upside down into the sea. Moments before, Härstedt had jumped off the ship. He climbed onto a life raft and held on for five hours, until finally being rescued. All told, only 137 of the 989 people on board survived the disaster. Most of the victims were entombed in the Estonia while they slept. They had no chance to save themselves. Investigators would conclude that the ship sank because the bow door to the car deck had come unlocked and the sea had come gushing into the ship.

Firefighters, police trainers--even stockbrokers--have told me similar stories of seeing people freeze under extreme stress. Animals go into the same state when they are trapped, evolutionary psychologist Gordon Gallup Jr. has found. Playing dead can discourage predators from attacking. In the case of the Estonia and other disasters, the freezing response may have been a natural and horrific mistake. Our brains search, under extreme stress, for an appropriate survival response and sometimes choose the wrong one, like deer that freeze in the headlights of a car.

But the more encouraging point is that the brain is plastic. It can be trained to respond more appropriately. Less fear makes paralysis less likely. A rat with damage to the amygdala, the primitive part of the brain that handles fear, will not freeze at all--even if it encounters a cat. If we can reduce our own fear even a little bit, we might be able to do better.

Fire drills, particularly if they are mandatory and unexpected, can dramatically reduce fear, should the worst come to pass. Just knowing where the stairs are gives your brain an advantage. Likewise, research into plane crashes has found that people who read the safety briefing cards are more likely to survive. These rituals that we consider an utter waste of time actually give our brains blueprints in the unlikely event that we need them.

We can also help each other do better. A loud sound will cause animals to snap out of their stupor. Likewise, many flight attendants are now trained to scream at passengers in burning planes, "Get out! Get out! Go!" People respond well to leadership in a disaster, and then they can do remarkable things.

We All Have Our Role to Play

Even in the most chaotic moments, our social relationships remain largely intact. That cohesion can have positive and negative consequences, but it helps to know what to expect.

On May 28, 1977, one of the deadliest fires in the U.S. broke out at a place called the Beverly Hills Supper Club, a labyrinth of dining rooms, ballrooms, fountains and gardens located on a bluff 5 miles (8 km) south of Cincinnati. Darla McCollister was there. She got married that evening at the gazebo in the garden and then, as her party began to move inside for dinner, a waitress informed her that there was a small fire in the building. It had begun as an electrical fire in the Zebra Room, adjacent to the bride's dressing room. Before the night was out, the flames would tear through the Beverly Hills, led by a roiling advance of smoke. There were nearly 3,000 people packed into the sprawling club on that Saturday night. All told, the fire would kill 167 of them.

The disaster delivered many brutal lessons. Some were obvious--and tragic: the club had no sprinkler or audible fire-alarm systems. But the fire also complicated official expectations for crowd behavior: in the middle of a crisis, the basic tenets of civilization actually hold. People move in groups whenever possible. They tend to look out for one another, and they maintain hierarchies. "People die the same way they live," says disaster sociologist Lee Clarke, "with friends, loved ones and colleagues, in communities."

At the Beverly Hills, servers warned their tables to leave. Hostesses evacuated people that they had seated but bypassed other sections (that weren't "theirs"). Cooks and busboys, perhaps accustomed to physical work, rushed to fight the fire. In general, male employees were slightly more likely to help than female employees, maybe because society expects women to be saved and men to do the saving.

And what of the guests? Most remained guests to the end. Some even continued celebrating, in defiance of the smoke seeping into the rooms. One man ordered a rum and Coke to go. When the first reporter arrived at the fire, he saw guests sipping their cocktails in the driveway, laughing about whether they would get to leave without paying their bills.

As the smoke intensified, Wayne Dammert, a banquet captain at the club, stumbled into a hallway jammed with a hundred guests. The lights flickered off and on, and the smoke started to get heavy. But what he remembers most about that crowded hallway is the silence. "Man, there wasn't a sound in there. Not a scream, nothing," he says. Standing there in the dark, the crowd was waiting to be led.

The Beverly Hills employees had received no emergency training, but they performed magnificently. The exits were few and hard to find, but Dammert directed the crowd out through a service hallway into the kitchen. "My thought was that I'm responsible for these people," he says. "I think most of the employees felt that way." McCollister, still in her wedding dress, ushered her guests outside. "I was pushing people out the door, kind of like cattle, to show them where to go," she recalls. She felt responsible: "This is my party. They were there because of me."

Norris Johnson and William Feinberg, then sociology professors at the University of Cincinnati, managed to get access to the police interviews with hundreds of survivors--a rare and valuable database. "We were just overwhelmed with what was there," says Feinberg, now retired. People were remarkably loyal to their identities. An estimated 60% of the employees tried to help in some way--either by directing guests to safety or fighting the fire. By comparison, only 17% of the guests helped. But even among the guests, identity shaped behavior. The doctors who had been dining at the club acted as doctors, administering cpr and dressing wounds like battlefield medics. Nurses did the same thing. There was even one hospital administrator there who--naturally--began to organize the doctors and nurses.

The sociologists expected to see evidence of selfish behavior. But they did not. "People kept talking about the orderliness of it all," says Feinberg. "People used what they had learned in grade-school fire drills. 'Stay in line. Don't push. We'll all get out.' People were queuing up! It was just absolutely incredible."

All of us, but especially people in charge--of a city, a theater, a business--should recognize that people can be trusted to do their best at the worst of times. They will do even better if they are encouraged to play a significant role in their own survival before anything goes wrong. In New York City, despite the pleas of safety engineers, meaningful fire drills are still not mandatory in skyscrapers. Among other concerns, the city's Real Estate Board was worried that mandatory drills could lead to injuries that could lead to lawsuits. A lawsuit, then, is more frightening than a catastrophe, which is a shame. Because if a real disaster should come to pass, people will rise to the expectations set by their CEO or headwaiter, and they will follow their leader almost anywhere.

How One Person Made a Difference

In every disaster, buried under the rubble is evidence that we can do better. Much of that work is physical--building stronger buildings in safer places, for example. But the work is also psychological. The more control people feel they have over their predicament, the better their performance. When people believe that survival is negotiable, they can be wonderfully creative. All it takes is the audacity to imagine that our behavior matters.

When the planes struck the Twin Towers on Sept. 11, 2001, Rick Rescorla embodied that spirit of survival. The head of security for Morgan Stanley Dean Witter at the World Trade Center, Rescorla believed that regular people were capable of great achievements, with a bit of leadership. He got Morgan Stanley employees to take responsibility for their survival--which happened almost nowhere else that day in the Trade Center.

Rescorla learned many of the tricks of survival in the military. He was one of those thick-necked soldier types who spend the second halves of their lives patrolling the perimeters of marble lobbies the way they once patrolled a battlefield. Born in England, he joined the U.S. military because he wanted to fight the communists in Vietnam. When he got there, he earned a Silver Star, a Bronze Star and a Purple Heart in battles memorialized in the 1992 book by Lieut. General Harold G. Moore and Joseph L. Galloway, We Were Soldiers Once ... and Young.

He eventually moved to New Jersey and settled into the life of a security executive, but Rescorla still acted, in some ways, like a man at war. His unit, Morgan Stanley, occupied 22 floors of Tower 2 and several floors in a nearby building. After the 1988 bombing of Pan Am Flight 103 over Lockerbie, Scotland, Rescorla worried about a terrorist attack on the Trade Center. In 1990, he and an old war buddy wrote a report to the Port Authority of New York and New Jersey, which owns the Trade Center site, insisting on the need for more security in the parking garage. Their recommendations, which would have been expensive, were ignored, according to James B. Stewart's biography of Rescorla, Heart of a Soldier. (The Port Authority did not respond to my requests for comment.)

Three years later, Ramzi Yousef drove a truck full of explosives into the underground parking garage of the World Trade Center, just as Rescorla had predicted. Afterward, Rescorla had the credibility he needed. Combined with his muscular personality, it was enough to change the culture of Morgan Stanley. Rescorla implicitly understood that he could turn office workers into survivors. He respected the ability of regular people to do better. He understood the danger of lethargy, the importance of aggressively pushing through the initial stupor and getting to action. He had watched employees wind down the staircase in 1993, and he knew it took too long.

Rescorla felt it was foolish to rely on first responders to save his employees. His company was the largest tenant in the Trade Center, a village nestled in the clouds. Morgan Stanley's employees would need to take care of one another. He ordered them not to listen to any instructions from the Port Authority in a real emergency. In his eyes, it had lost all legitimacy after it failed to respond to his 1990 warnings. And so Rescorla started running the entire company through his own frequent, surprise fire drills. He trained employees to meet in the hallway between the stairwells and go down the stairs, two by two, to the 44th floor.

The radicalism of Rescorla's drills cannot be overstated. Remember, Morgan Stanley is an investment bank. Millionaire, high-performance bankers on the 73rd floor did not appreciate the interruption. Each drill, which pulled brokers off their phones and away from their computers, cost the company money. But

Rescorla did it anyway. His military training had taught him a simple rule of human nature: the best way to get the brain to perform under extreme stress is to repeatedly run it through rehearsals beforehand. After the first few drills, Rescorla chastised employees for moving too slowly in the stairwell. He started timing them with a stopwatch, and they got faster. He also lectured employees about some of the basics of fire emergencies: Because roof rescues are rare and extremely dangerous, people should always go down.

On the morning of 9/11, Rescorla heard an explosion and saw Tower 1 burning from his office window. A Port Authority official came over the P.A. system and urged people to stay at their desks. But Rescorla grabbed his bullhorn, walkie-talkie and cell phone and began systematically ordering Morgan Stanley employees to get out. They performed beautifully.

They already knew what to do, even the 250 visitors taking a stockbroker training class. They had already been shown the nearest stairway. "Knowing where to go was the most important thing. Because your brain--at least mine--just shut down. When that happens, you need to know what to do next," says Bill McMahon, a Morgan Stanley executive. "One thing you don't ever want to do is to have to think in a disaster."

On 9/11, some of the dead might well have survived if they had received Rescorla's warnings to always go down rather than up. But in the absence of other information, some people remembered that victims had been evacuated from the roof in 1993. So they used the last minutes of their lives to climb to the top of the towers--only to find the doors locked.

As Rescorla stood directing people down the stairwell on the 44th floor, the second plane hit--this time striking about 38 floors above his head. The building lunged violently, and some people were thrown to the floor. "Stop," Rescorla ordered through the bullhorn. "Be still. Be silent. Be calm." In response, "No one spoke or moved," Stewart writes. "It was as if Rescorla had cast a spell."

Rescorla had once led soldiers through the night in the Vietcong-controlled Central Highlands of Vietnam. He knew the brain responded poorly to fear--but he also knew it could be distracted. Back then, he had calmed his men by singing Cornish songs from his youth. Now, in the crowded stairwell, Rescorla sang into the bullhorn. "Men of Cornwall stand ye steady. It cannot be ever said ye for the battle were not ready. Stand and never yield!"

Between songs, Rescorla called his wife. "Stop crying," he said. "I have to get these people out safely. If something should happen to me, I want you to know I've never been happier. You made my life." Moments later, he had successfully evacuated the vast majority of Morgan Stanley employees. Then he turned around. He was last seen on the 10th floor, heading upward, shortly before the tower collapsed. His remains have never been found.

Rescorla taught Morgan Stanley employees to save themselves. It's a lesson that has become, somehow, rare and precious. When the tower collapsed, only 13 Morgan Stanley colleagues--including Rescorla and four of his security officers--were inside. The other 2,687 were safe.
To learn more about survival skills in a disaster, go to www.TheUnthinkable.com

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5 Ways to Refine Your Disaster Personality

A number of you have emailed me to ask for the news-you-can-use side dish to the TIME adaptation of my book. Unfortunately, TIME did not put this piece of the story online. So I figured it might be fun to summarize it here--and elaborate a bit.

1. **Attitude:**
It turns out attitude really does matter. People who perform well in crises and recover well afterwards tend to have three underlying advantages: 1) They believe they can influence what happens to them. 2) They find meaningful purpose in life's turmoil. 3) They are convinced they can learn from both good and bad experiences.

If you're like me, you're thinking: Yeah, right.
But we should probably consider these incredibly perfect and cheery outlooks as simply aspirational. Like all human behavior, they occur on a spectrum, and no one achieves all of them all of the time. Again and again, survivors have told me that their confidence in their own ability to shape their destiny helped propel them forward. And in any case, it makes sense to encourage this kind of outlook in yourself in your kids--especially because this kind of burning optimism is helpful even if no disaster ever strikes.

2. **Knowledge:**
The brain is amazingly malleable. We constantly underestimate it.
If you understand how you are likely to react to a disaster, you can learn to override your worst instincts. If you learn more about your actual risks--or the risks that scare you most--you will probably be calmer should something go wrong someday. For example, did you know that most serious plane accidents are survivable? Yes, it's true. Of all passengers involved in serious accidents between 1983 and 2000, 56% survived. (Serious, for those of you who still don't believe me, is defined by the National Transportation Safety Board as accidents involving fire, severe injury, AND substantial aircraft damage.) So now that you know that, you know that your behavior can make a difference. And now that you know that, you might have a better attitude (see no. 1) in the extremely unlikely event that your plane goes down.

3. **Anxiety Level:**
People with higher everyday anxiety levels may have a greater tendency to freeze or totally shut down in an emergency. That is not always a bad thing, as my chapter on paralysis details. But it's a very common reaction, and it's important to recognize this risk and override it if you need to...if, say, your house is burning down or your ferry is sinking.
As in regular life, if you can learn tricks to control your anxiety, you will probably perform better. For example, some police officers are now trained to do rhythmic breathing (in for four, hold for four, out for four) whenever their guns are drawn.

4. **Body Weight:**
The harsh truth is that overweight people move more slowly, are more vulnerable to secondary injuries like heart attacks and have a harder time physically recovering from any injuries they do sustain. On 9/11, people with low physical ability were three times as likely to be hurt while evacuating the Towers.
Once again, what helps us in regular life helps us in disasters.

5. **Training:**
By far, the best way to improve performance is to practice. Make a list of your biggest risks (try to use data to do this, not just emotion). Then think creatively about how to give yourself or your family a dress rehearsal. The brain loves body memory. It is much better, for example, to stop, drop and roll than to talk about stopping, dropping and rolling.

For example, we know that fires generally kill more people than all other disasters combined. (If you are poor or African American, your chances of being in a fire are particularly high.) So give your brain something to work with. Make surprise drills an annual tradition in your office or home. Take the stairs down to the ground--don't just stare at the stairwell door. Create incentives so that people want to do this. For example, have the boss tell everyone they have to go. Have him or her explain why it matters (because your brain turns to mush in a real fire, and you often lose your eyesight because of smoke). And have him announce that the official meeting spot will be the coffee shop two blocks away, where he will buy everyone coffee and donuts. That way, you boost office morale at the same time, so you get something out of the experience even if nothing goes wrong.