**EMP Risks**

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The risk of electromagnetic pulse devastation is greater than ever. Why does Washington dismiss it?

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Sunlight fills the bedroom. It's past 8 a.m., and it's cold. Why didn't the alarm go off? The bathroom lights are out. The house is without power. The battery-operated radio plays nothing but static. The phone is dead. What on earth has happened?

In fact, what happened was not on Earth. It was above it. A nuclear weapon has detonated high over North America, an explosion so far up that neither the flash nor bang disturbed anyone slumbering in darkened bedrooms across the United States. Electrical systems and computers from New York City to San Francisco cease to function. City streets turn into chaos. Fires break out, and no communications are available to send trucks to fight them. The sick and injured perish in overwhelmed, energy-sapped hospitals. Survivors, unable to fill their gas tanks, slowly walk away from the dead zone, unsure where to go or what they will find.

This scenario may sound like the plot of a science-fiction movie, but Bill Graham, former science adviser to President Reagan, says it's a realistic portrayal of what would happen to the United States after a massive electromagnetic pulse from a nuclear explosion.

The former deputy administrator for NASA now chairs the Commission to Assess the Threat to the United States From Electromagnetic Pulse (EMP) Attack. In July 2008, Graham testified before the House Armed Services Committee on the commission's latest report. Only a handful of the committee's 60 members showed up for the hearing.

"It's obvious that there's not very much interest," sighed Rep. Roscoe Bartlett, R-Md., a committee member who pushed for the commission's establishment. In a radio interview, another committee member actually derided the subject as "science fiction." Such mockery and indifference could very well come back to haunt the commission.

Graham and many of his fellow commissioners are distinguished scientists, not paranoid alarmists, and their conclusions are sobering. At the hearing, Graham described EMP as "one of a small number of threats that could hold our country at risk of catastrophic consequences."

The greatest danger: a large nuclear warhead exploding upwards of 25 miles above the earth. The explosion would create a tsunami of ionized particles racing toward the planet's surface. Electrical cables and wires would act like lightning rods, attracting and absorbing the intense burst of electromagnetic energy. Anything connected to them could be disrupted, disabled or destroyed. Delicate, integrated circuits and components would be burned out.

Graham, for one, knows that the recognition of EMP is not new. When a nuclear weapon detonates near, on or under the surface of the earth, the ground absorbs much of the EMP effect. Nuclear explosions in space are different. Operation Starfish was a July 1962 high-altitude nuclear test conducted over a remote area in the Pacific Ocean before such tests were banned. In the course of the test, the recording instruments went haywire. Graham, then a young Air Force scientist, was charged with figuring out why. He found the answer: EMP.

That discovery changed the way our military operated during the Cold War. We hardened many of our strategic defense systems, such as missile silos, against the EMP threat. But little thought was given to protecting civilian infrastructure. After all, a nuclear exchange with the Soviets would have reaped such massive destruction, EMP damage was viewed as a secondary concern at best.

**The Present Danger.** Today, the nature of a nuclear threat is different. The United States is less concerned about massive retaliation from another nuclear-armed state and far more worried about a rogue nation or transnational terrorist group that might try to land a sucker-punch, especially if they think they can deliver the blow without leaving a return address.

Several credible scenarios present themselves. One is called the "Scud in a bucket." A short-range ballistic missile, the Scud was developed by the Soviet Union in the 1950s. It's been used in combat for more than three decades, starting with the Yom Kippur War of October 1973, when Egypt used it against Israel. Others Scuds include Libya, the Soviet Union and its Afghan allies, and Iraq, which launching Scuds on Israeli civilians and U.S. troops during the first Gulf War. Today, Scuds are pretty much available anywhere in the global arms supermarket.

Put a nuclear-tipped Scud on any kind of ship, and you have a "Scud in a bucket." The idea seems to have occurred to some who do not wish us well.

Terrorist-friendly Iran, for example, is developing the capacity to build its own nuclear weapons. The Iranians have also conducted missile tests from sea-based platforms. In these tests, they have detonated warheads at the high point of the missile trajectory rather than at the aim point over the target (that was documented 10 years ago in the Rumsfeld Commission report on missile threats).

Connect these dots, and you get an unpleasant picture. The tests certainly appear to be part of a research program to develop a covert means of launching an EMP attack against the United States. A short-range ballistic missile could be carried on board one of the thousands of commercial freighters sailing in U.S. waters every day. Without ever piquing the interest of the Navy, the Coast Guard or the Customs and Border Protection, a ship could sail within range and deliver its payload over U.S. territory. Even a modest warhead placed at the right spot over the east coast could take down 75 percent of the electrical grid.

**State of Unpreparedness.** The latest report by the Graham Commission suggests a number of initiatives to reduce the EMP threat to our national infrastructure. They include more research into the threat; having plans in place to recover from an attack; and taking measures to mitigate the vulnerabilities to key electrical, communications and water systems as well as other vital assets.

Missile defense is another measure that should be pursued. The mission is simple: shoot down the enemy missile as it is being fired into space. That would not only minimize the EMP threat, it would also address the danger of anyone shooting a missile tipped with a nuclear, biological, chemical or explosive warhead at a U.S. city.

Missile defense is a game-changer. It severely reduces the danger posed by ballistic missiles. And make no mistake: ballistic missiles are the scourge of the 21st century. An entire country can be held hostage with just a missile and a warhead.

Many Americans think we already have a credible missile defense system; they are only partly right. The United States has the capability to stop a limited number of ballistic missiles fired from North Korea, and we are developing limited sea-based defenses. We've also just penned a deal with the Czech Republic and Poland to build radars and a limited number of missile interceptors in Europe that could deal with a missile attack from Iran. But even if all goes well, that system won't be in place for four or five years. To make matters worse, there are no plans whatsoever to build comprehensive space-based interceptors that could interdict missiles shortly after they are launched.

**Capitol Indifference.** Unlike most Americans, Congress does not really seem to care whether we and our allies have comprehensive missile defenses. The anemic attendance at the EMP Commission hearing is symptomatic. The Congressional Missile Defense Caucus is small and boasts almost no members from the majority party.

That indifference carries over into budgeting. Congress spends as little as it talks about missile defense. In the last appropriation, Congress cut the missile-defense budget and allocated a paltry $5 million to study the problem - about as much as it dedicated to "wood-utilization research" in the past fiscal year.

For years, the common argument against missile defense was simply that it's infeasible. However, technology has advanced steadily. Dozens of tests have been conducted successfully in recent years. Gen. Trey Obering, commander of the Missile Defense Agency that oversees the Pentagon's missile-defense programs, says, "They used to say that you can't hit a bullet with a bullet. Well, now we can hit a spot on a bullet with a bullet."

Another frequent complaint was that missile defense would cost too much. "Missile defense comprises less than one-70th of what the nation is spending each year for defense," writes missile defense expert Robert Pfaltzgraff. "And defense spending represents only about 4 percent of our national wealth as an expression of GDP. By reasonable standards, missile defense is a modest national security investment." Pfaltzgraff adds that those calculating the costs of missile defense should also add up the cost of a devastating missile strike in America.

Consider the 9/11 attack. That atrocity left 2,819 people dead and crippled the heart of a great city. It shuttered the Stock Exchange for six days. More than 400,000 New Yorkers suffered post-traumatic stress disorder. Cleanup alone cost more than $600 million. It is estimated that the city lost more than 146,000 jobs and suffered an economic drain exceeding $105 billion.

These costs are only a tiny fraction of the toll that would have been paid had New York suffered an EMP attack. "The problem, of course, is that practically everything in our 21st-century society depends on electronic chips and other pieces of equipment," writes Frank J. Gaffney of the Center for Security Policy. "Most especially, America's electrical grid relies on a small number of transformers that manage the flows of energy within and between the country's various regions. We no longer manufacture transformers, and replacing one from overseas suppliers can take up to a year. Hurricane Katrina was a vivid example of what can happen when the electrical system goes down even briefly, let alone for one year's time."

**Call to Action.** Long-standing arguments against missile defense no longer hold water - not after a decade of steady technical and scientific progress. Yes, there are countries that want us to trade away or give up plans for missile defense. That's because they want the United States to remain vulnerable.

Diplomacy that leaves Americans vulnerable to missile attack, or allows peace to rest on the threat of mutually assured destruction, is illogical and immoral in an age when we can eliminate the danger. Missile defense will not solve all the world's problems, but it will significantly reduce the threat of ballistic missiles and the possibility that some madman could realize his crazed dream of a "world without America."

What we need now is a government that takes the issue seriously.

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