EMP Q&A: North Korea's EMP Threat Explained

The world we live in relies on electricity totally. The heating and cooling, the hospitals, and banks, the communications and transportation and even working land for food would go into chaos with only one killing EMP shot.

Humankind is working hard to make it possible, just take a look at North Korea. And before asking about Koreans' capability to drop an EMP on US, remember the critics who mocked the Japanese before WW2.

History is prone to repeat itself. Prepare yourself in time to survive its lessons. Keep reading to discover how the North Korea's EMP threat is explained.

This guide will help you survive more than an EMP!

A Threat Like No Other

Once people become aware of the threat posed by EMP, they naturally have questions about EMP preparedness. Actually, EMP is one of those subjects where the more you learn about it, the more questions you tend to have.

I was pleased to be invited back to PrepperCon 2017 to host EMP Survival Question & Answer Sessions again this year, on behalf of Survivopedia, and address some of these questions. Feel free to ask your own questions on EMP survival in a comment, and I'll do my best to find the proper answer for each of them!

The types of EMP that present a threat to mankind are incredibly powerful pulses of energetic radio waves that can pass through the human body undetected, yet wreak devastation upon the systems mankind depends on to sustain life.

The electrical grid, fossil fuels, water, food, healthcare, banking, communications, internet and transportation are critical to our way of life. Even a temporary loss of any of these system is catastrophic.

When we consider how much these systems are interdependent, the loss of all of them at once would paralyze the nation to a degree which is difficult for most people to comprehend.

Why & How North Korea Can Drop an EMP On The US

Question: Is it possible that North Korea could pose a threat to the US?

I heard that they would need thermonuclear weapons, better missiles, bigger nukes or the ability to miniaturize them in order to be able to harm the USA.

Answer: Any country that has nuclear weapons and can orbit satellites has the technology and ability to carry out an EMP attack on the USA. I have noticed a great deal of ignorance on this subject in social media posts and blogs.

It does not take thermonuclear weapons, ICBMs or miniaturization to create a Nuclear High-Altitude EMP (HEMP). The USA created the first HEMP I am aware of with the Hardtack Yucca nuclear test. In that test, a small warhead was carried high enough to make use of the Compton Effect, resulting in a 1000-fold increase in EM field strength. The weapon does not have to be large, at most 10 kilotons, which is the size of tests North Korea has been carrying out.

To affect nearly the entire Lower 48 states with a single weapon, optimal height of burst would have to be 300-400 km, but still lower than the orbit of North Korean Satellites, which overfly the US. Dropping a nuclear weapon that would detonate lower in the atmosphere is certainly within the country's capabilities.

The last two satellites have payloads sufficient to house a nuclear weapon. North Korea has committed a lot of resources to both satellite and nuclear programs. North Korea has also practiced launching missiles from cargo vessels just like Iran.

The US has few defenses to shoot down such an attack launched from international waters in the gulf coast unless we specifically station a carrier battlegroup there. Even a detonation at much lower altitude could affect a city or even an entire state.

North Korea's latest test may have been a nearly 10 kiloton neutron bomb optimized for maximum gamma yield. This what we would refer to as a superEMP or enhanced radiation weapon. These points, taken together amount to quite a body of evidence that North Korea has been planning an EMP attack or to create the appearance of the ability of such an attack for over a decade.

Critics point to past failed launches, overlooking the fact that we also had failed launches early on and our first

attempt to orbit a satellite also failed. They only need one to succeed. They also point to the fact that putting weapons in space is a breach of international law.

North Korea has a history of violating international law with abandon even when it has meant harsh sanctions so it puzzles me why anyone would see this as an obstacle. Miniaturization of nuclear weapons was not a serious obstacle to the US and was achieved within a couple of years even before we had microcomputers.

Critics mocking North Korea's military capability sound very much like critics who mocked the Japanese before we engaged them in combat in WW2. History seems to be repeating itself.

Why Fixing the Grid Would Take Years of Survival

Questions: I heard it could take 3.5 years or longer to fix the grid. Don't we have stockpiles of Large Power Transformers (LPT's) that we could just swap out if they were damaged by an EMP? Why would it take so long to fix the grid?

Answer: The 3.5 year number assumed that only the USA was affected, that the rest of the world was undamaged by cascading failure and that other nations would help us. In senate hearings, committees have the luxury of examining the question in a bubble.

In the real world, nations are highly interdependent and growing more so every year. e.g. the loss of the US economy could bring down the world economy with it since the EU economy is closely tied to the US economy and without the US and EU, China would lose its consumer base.

Let's say an EMP has knocked out the electrical grid and it is our job to fix our little part of it. We need a LPT (Large Power Transformer) to replace the one that was damaged by the

EMP. An LPT at a power generating plant steps up voltage for transmission over long distances through transmission lines.

At the destination where the electrical energy will be consumed, another LPT then steps the voltage back down to a voltage that is useful to the destination city's electrical grid, so we will suppose that our hometown needs a step-down LPT.

LPT's are custom built, can weigh between 100 and 410 tons, can cost up to $10M each and take up to 2 years to build even in a *fully functioning* world. Considering the obstacles to obtaining a LPT in a post-EMP world demonstrates the difficulty of estimating how long it would take to get an EMP-ravaged grid running again with any degree of accuracy.

Ordering a New LPT After an EMP? Prepare to Wait!

Normally, we would create a request for proposals, evaluate the bids and award the contract to build our LPT. This will take longer with the **phone system and computers down**. The red tape would need to be sorted out somehow, and we would need to

establish limited communications through **radio operators**.

The factory that would build our LPT would not be able to start production because they **lack electric power to the run the factory**, but we will imagine top priority is given to LPT factories and we are able to get power to build. Our order would normally sit in a queue, the factory would need incentive to **rush our order** past other orders just as urgent as ours.

The plant would want their **$10M**, but the **world banking system could be paralyzed or even collapse**. We might have to **pay in gold or leaders might attempt to coerce cooperation**.

The factory would have to **get workers to leave their families** in the middle of a protracted grid-down emergency. Even if it could, they wouldn't work for funny money.

The workers would not be able to work without food, which could be a real problem because just-in-time inventory management virtually guarantees a food crisis. The **world food system could collapse**. But farmers would have **no fuel to run giant tractors** guided by **GPS that also would not work**.

Companies would likely have to pay workers in food.

A solar storm of this magnitude would also **knock out satellites**, meaning **no satellite phones, communications satellites or GPS**.

To build the needed LPTs, we would need **vast stores of high grade electrical steel and copper** which can account for more than half the cost of an LPT. The US produces no more than 20% of these raw materials annually.

Most LPT's were **built between 1954 and 1978.** We would need to get the manufacturer **copies of the schematics**. While this might seem trivial with the aid of computers and telecom equipment, it would likely further delay replacement LPT's.

Our **LPT would probably be ready to ship between 6 months and 5 years after the order was placed**. But even before the MHD EMP, special transport had to be arranged to ship a **410-ton** After the MHD EMP there would not be **enough fuel** or **functioning refineries. DoD would probably have to handle transport of the LPT,** but most military bases are dependent on civilian power infrastructure.

The naval vessel transporting the LPT could run into bad weather or navigation problems because **weather satellites would be down** and **GPS navigation inoperable**.

With around 2,000 LPTs in service, the USA has more LPTs in service than any other nation, which also means the **US grid has more major points of vulnerability than any other nation.** The combined production capability of the entire world has never exceeded 600 units/year, even at its peak over 44 years ago.

The total combined LPT production of the whole planet has not exceeded 400 LPTs/year since 1973. It would take time to ramp that production back up.

Why to Fear the Power of Solar Storms Too

Question: How long could it take to recover from EMP caused by the sun?

Answer: The type of EMP that occurs due to solar activity can cause power surges in the electrical grid, overloading it and causing physical damage. This type of EMP is known as magnetohydrodynamic EMP (MHD EMP). Magnetohydrodynamics is the study of magnetic properties in electrically conductive fluids, like the hot, electrically conducting plasma the sun is comprised of.

Solar activity such as Coronal Mass Ejection (CME) can send a

mass of solar energized particles toward the earth that can arrive in as little as a day, interacting with the earth's magnetosphere and causing a geomagnetic storm. The result can be brilliant aurorae (Northern or Southern Lights), damaged satellites, disruption of radio communications and damage to the electrical grid.

Depending on the intensity and duration of the event, a MHD EMP event could affect an area as small as an Eastern state and the grid could be back up the same day. It is also possible that a severe MHD EMP could affect the entire planet.

Studies presented to the congressional EMP Commission estimated that the USA could have its grid back up in 1.5 – 3.5 years, but I am doubtful of this number. For starters, there is no manual on how to restart the grid. It has simply never been done. The electrical grid was slowly pieced together over more than 100 years. Fixing the grid will be delayed by a bit of a chicken – egg problem.

You can't get the grid back up without Large Power Transformers (LPT's) and you can't build LPT's without electricity, transportation, food, safe drinking water, security for the workers and their families and everyone who supports each of those systems, their families and so on.

Any way you look at it, recovery from a server MHD EMP event would be a process, not an event, and a long, non-linear process full of obstacles that we could not possibly predict, at that.

To Ground or not to Ground the Faraday Cage?

Question: I have heard conflicting answers. Should I ground my Faraday cage or not?

Answer: Yes … and no.

If your Faraday cage is the size of a refrigerator or smaller and is not wired with electric outlets and a breaker box like you have in your home, then, no, do not ground it. Grounding a small Faraday cage can do more harm than good.

You could think of it in terms that the ground could act like an EMP antenna, receiving the electromagnetic energy (radio waves) of the EMP, converting into power and possibly radiating into the space you are trying to shield.

If your Faraday cage is the size of a room or building or is wired for mains electricity (AC power), then yes, it should be properly grounded.

If You Still Have Questions About EMP Survival

EMP is one of the greatest threats mankind faces and I do not want you to leave your preparations on hold for lack of information. Please ask questions in the comments below or email them to us. Speak up, reach out and remember that imperfect preparations are better than none.

This survival guide is the perfect tool to help you prepare. Click the banner below for more!

CLICK HERE

To get your hard cover copy of Darkest Days and find out how to survive more than an EMP!

*This article has been written by **Cache Valley Prepper** for Survivopedia.*