

The background of the entire image is a city skyline at night, likely New York City, with various skyscrapers illuminated. The sky is a deep, ominous red with dark, swirling clouds, suggesting a post-apocalyptic or disaster scenario. The title 'DARKEST DAYS' is prominently displayed in the upper half of the image.

DARKEST DAYS

HOW TO SURVIVE AN EMP
ATTACK TO THE GRID

DARKEST DAYS

How to Survive

An EMP Attack to the Grid

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1 DISCLAIMER

THE INFORMATION CONTAINED IN “**DARKEST DAYS**”, AND ITS SEVERAL COMPLEMENTARY GUIDES, IS MEANT TO SERVE AS A COMPREHENSIVE COLLECTION OF TIME-TESTED AND PROVEN STRATEGIES THAT THE AUTHORS OF THIS COURSE LEARN OVER THE YEARS, RELATED TO EMERGENCY PREPAREDNESS AND HOW TO SURVIVE AN EMP.

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2 . INTRODUCTION

“Darkest Days: How to Survive an EMP Attack to the Grid” will allow you to take a look at what you need to do to prepare for the aftermath of an Electro Magnetic Pulse (EMP). A single High Altitude EMP (HEMP) caused by the detonation of a nuclear weapon at an altitude greater than 20-40 kilometers high in our atmosphere would cause extreme threats and vulnerability to you, your loved ones, your community, and possibly even your entire nation.

A full detailed, lay explanation of HEMP has been included below. First, though, let’s take a moment to consider why you and your family must have an emergency plan in the event of such a major disaster.

It is important to have a plan ahead of time because trying to prepare at the last minute will leave you in the dark, literally. When a HEMP strikes there will be no time to go back and wish you had been better prepared.

When a HEMP occurs, many things that you take for granted, that run on electricity, will come to an abrupt end. Widespread power outages will cause repercussions beyond your wildest imagination. Food, fuel, medications, and other necessities will quickly disappear.

Have you seen images on the news of empty grocery shelves? Panic buying occurs when people have been forewarned of an impending disaster. An HEMP will occur without any prior warning whatsoever. If you don’t take the time to plan ahead, you will not only put yourself in harm’s way, you will also put your family in a life threatening situation.

Have you ever lived somewhere that a tornado, hurricane or other natural disaster has hit and the electrical lines have been torn down? Power outages caused by these

types of natural disasters usually affect a relatively small area and are normally fixed within a matter of days or weeks depending on the severity of the disaster.

Consider the repercussions of the abrupt and total loss of electricity needed to run businesses, homes, hospitals and vital services for weeks, months or even years in the event of an EMP.

Now consider that the power outage doesn't just affect a city, county or State, but affects from 70%-100% of the entire continental US, parts of Mexico and Canada. An EMP of sufficient magnitude will destroy the national power grid's largest transformers.

The executive report and critical infrastructure reports by the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) Attack and written testimony submitted to the US Congress in 2004 and 2008 indicate that it would likely take 2 to 4 years for power to be restored to the entire United States after a deliberate HEMP attack.

Faced with the devastating effects that a power outage of such a long duration and widespread scope will have on our electricity-dependent society, and considering the high probability that an HEMP will occur at some point during your lifetime, it is only prudent to make reasonable preparations and to take what you consider to be reasonable precautions against the threat of HEMP.

While it may not be possible or prudent to prepare for every conceivable man made or natural disaster, it does make sense to take measures to be prepared for the scenarios that are most probable to affect you and your loved ones to the greatest degree.

This book will present the more important and universal areas you want to start with but your preparations must be individually tailored to meet your specific needs and those of your family.

Water, shelter, food, medical supplies, safety, fuel, transportation and communications are some of the basic necessities to keep in mind as you prepare.

You definitely want to get started...now...no...yesterday.

You do not want to put off preparing because you want to survive and you never know when an HEMP is going to hit.



3 . HEMP

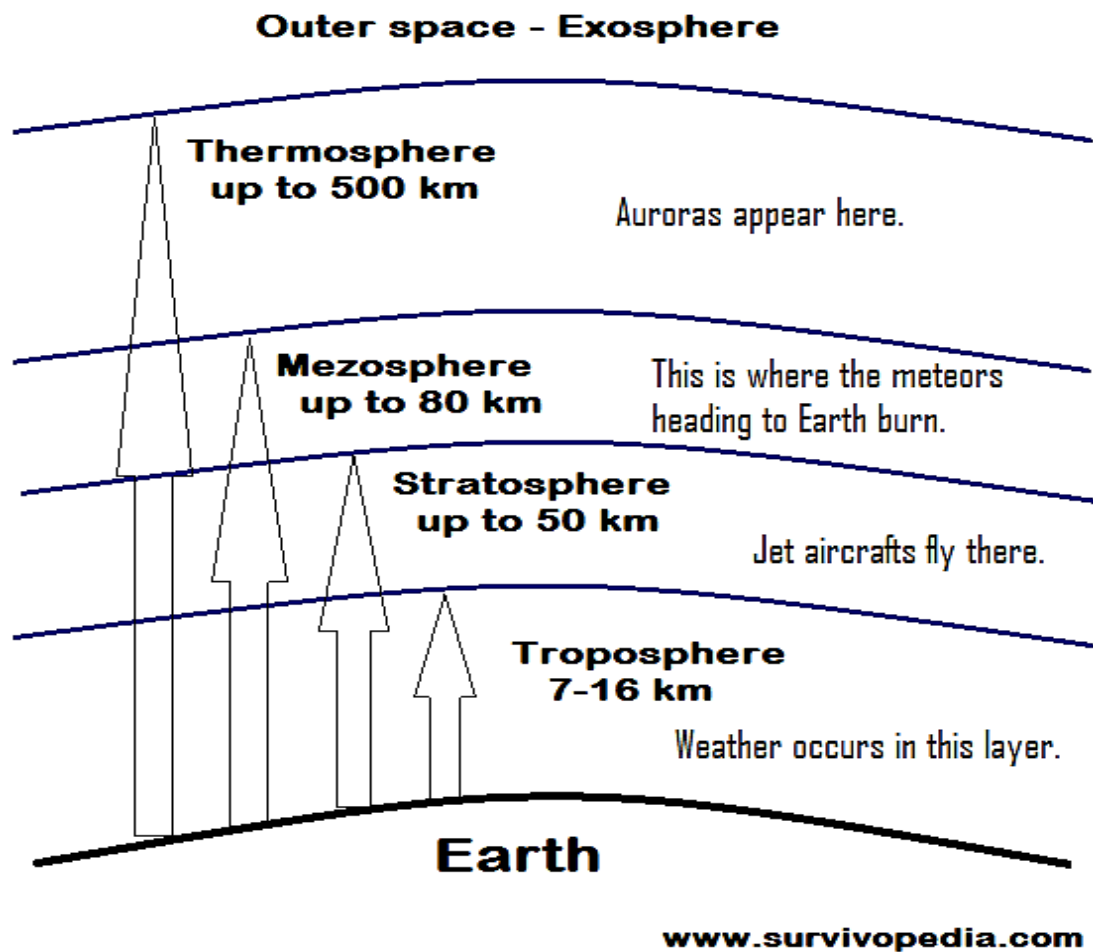
What Is HEMP?

HEMP stands for High Altitude electromagnetic pulse and because of the proliferation of nuclear and other technology, this power is no longer limited to a few powerful nations and held in check by the doctrine of mutually assured destruction.

An HEMP is caused by detonating a nuclear weapon at an altitude above approximately 20-40 kilometers.

This power is now in the possession of governments known to sponsor terrorism against the US and is within the grasp not just of nations, but of the extremist factions within nations.

THE LAYERS OF EARTH ATMOSPHERE



When a nuclear detonation occurs higher than the earth's upper stratosphere, a portion of the total energy is released in the form of gamma rays traveling at the speed of light. Gama rays collide with air molecules in the upper-stratosphere, ionizing them or stripping them of electrons.

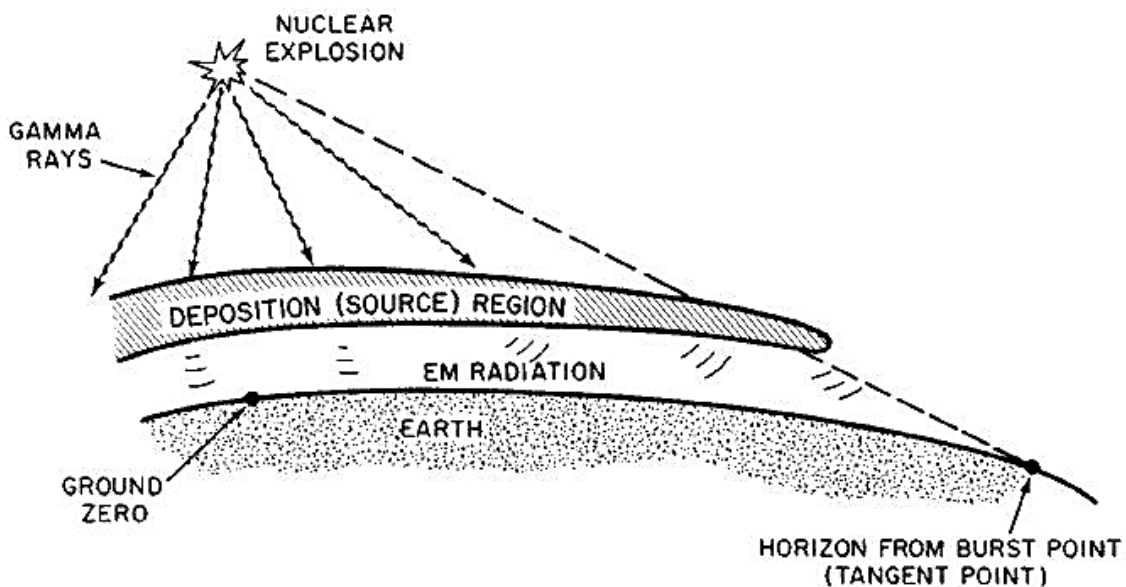
The resulting current interacts with the earth's magnetic field.

In the middle-stratosphere, gamma rays collide with molecules causing a special effect called the Compton Effect. The electrons ionized in the collision are called Compton Electrons. These high energy Compton electrons have about 3 times their normal mass and will travel toward the surface of the earth at 94% of the speed of light. They produce a powerful current (in excess of a million volts) called the

Compton Current which interacts with the earth's magnetic field, causing it to radiate a powerful electromagnetic pulse downward toward the surface of the earth.

The near-light-speed electrons carrying their powerful negative charge interact with the earth's magnetic field, causing a powerful, brief electromagnetic pulse or EMP.

HOW THE ELECTROMAGNETIC PULSE OCCURS



Source: <http://www.jrwhipple.com/>

The resulting EMP will couple into conductive objects such as unshielded or insufficiently shielded power lines, pipelines, telecommunications lines, copper computer network cables, power cords and even individual microelectronic circuits (which normally run on very small voltages.)

The massive voltages created by the electromagnetic pulse will overload cables in overhead telephone and power lines, sometimes causing them to detach from poles and fall to the ground.

They similarly cause massive overload of electrical and electronic circuits, especially newer, transistor-based microelectronics that we have become so increasingly dependent on in today's highly interconnected, high-tech society.

The unthinkable result of a nuclear HEMP is the damage it will do to all of the unshielded electrical systems within roughly line of sight of nuclear explosion. In our modern society, we rely heavily on electricity to run almost everything in our personal lives.

This “pulse” lasts only about a second, but the electromagnetic field that it produces induces a powerful electric current in conductive material according to Faraday's Law of Induction.

EMP and HEMP cannot directly damage the human body. A nuclear HEMP during daytime would occur so far away from most of us that we would only see a brief flash in the sky. During nighttime, we would see a flash followed by a faint, lingering light.

How Were the Effects of Nuclear HEMP Discovered?

EMP is a byproduct of a nuclear explosion. Early nuclear physicists knew that nuclear reactions would produce EMP and put instrumentation in place to measure it during early nuclear testing. British testing in the early 1950's attributed failure of data measurement and collection equipment to “radio flash,” which was what British Scientists called EMP at the time.

Before scientists really understood how nuclear detonations high in the atmosphere make use of the Compton Effect to cause the earth's magnetic field to radiate EMP, an early high altitude nuclear test carried by a balloon, called the Hardtack Yucca shot, produced a thousand times more EMP than nuclear physicists expected.

At first, it was dismissed as an anomaly. But eventually, it came to be understood.

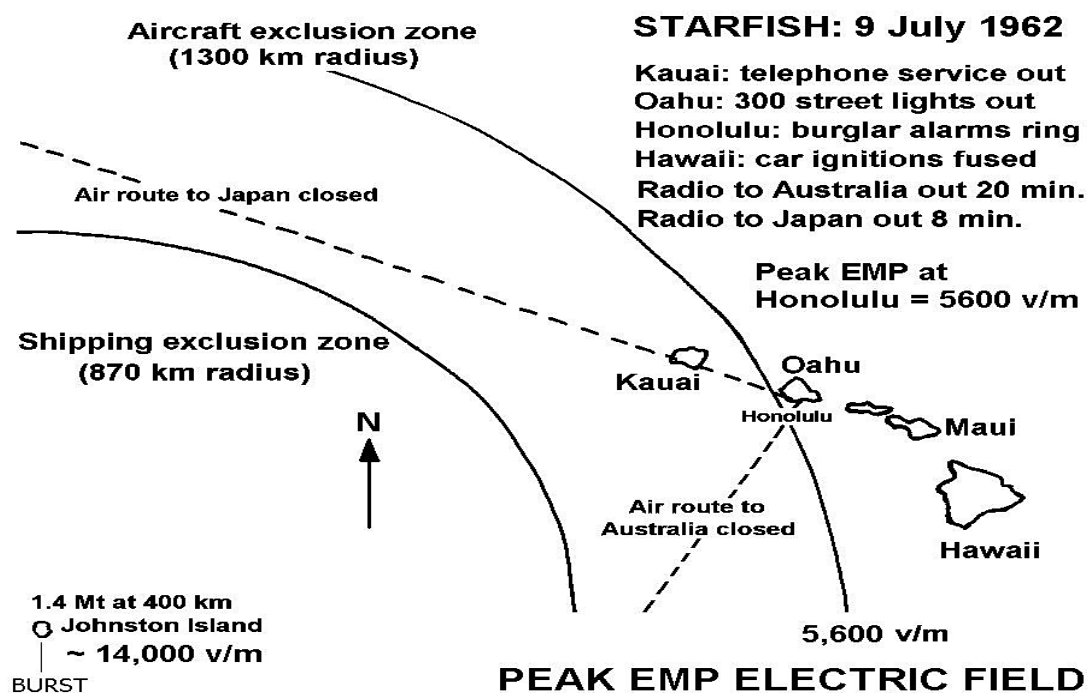
The profound and unexpected effects of HEMP were first brought into the public domain of knowledge during the 1.44 Megaton Starfish Prime detonation that was part of the Fishbowl Series of nuclear tests in the South Pacific by the USA in 1962.

Starfish Prime was carried to an altitude of 680 miles by a Thor missile and detonated at an altitude of 240 miles on its return to earth. Yet again, recording instruments at ground level were maxed out and no useful data was able to be recorded about the EMP (HEMP) effect because the instrumentation was calibrated for an expected range far below that which actually resulted.

The effects of the nuclear HEMP were felt 898 miles away in Hawaii where the resulting EMP effect overloaded about 300 streetlamps, tripped burglar alarms and damaged a microwave relay link operated by the telephone company.

The first US telecommunications satellite, Telstar 1, was later damaged as it passed through the energized Van Allen belt which had been irradiated by the Starfish Prime detonation. Some of Telstar 1's fragile transistors were damaged and upon subsequent passes, the satellite eventually was damaged beyond repair.

Later in 1962, the Soviet K-series nuclear tests in the atmosphere over Kazakhstan yielded similar results, destroying a 350 mile section of telephone lines that Soviet scientists were monitoring with instrumentation.



Source: www.ed-thelen.org

Back in 1962, the electrical circuits in use were far more resistant to the effects generated by EMP and the Starfish Prime warhead was not optimized for a high EMP yield.

If a warhead of similar (small by today's standard) size, but utilizing a thinner casing which would be much more transparent to gamma rays and would therefore produce a much higher gamma ray yield, and a symmetrical implosion detonation system was used in place of a gun type detonation system (a super EMP weapon) was detonated over the central continental US, the results to unshielded microelectronics in use today would be utterly devastating, burning out our electrical infrastructure and all unshielded electronics in the entire continental US.

Other ways to further increase gamma ray yield and the destructive HEMP affect along with it surely have been studied by various governments in classified weapons development programs. There is no way that military research would overlook the world's most devastating asymmetric weapon. The USA is especially vulnerable to EMP because of the shape of magnetic field lines over the USA, our dependence on microelectronics and our dependence on imports.

Nuclear EMP weapons which are optimized for maximum EMP yield are referred to as Super HEMP Weapons.

How Would an EMP Weapon be Launched?

Detonating a nuclear weapon at sufficient altitude to cause a HEMP is not as scientifically difficult a task as people would like to believe.

A small nuclear warhead in place of cameras and weather instrumentation aboard North Korea's "Weather Satellite" could be detonated as it passes over the Northern Continental US. Iran has been experimenting launching ballistic missiles off of cargo

ships. Such a launch initiated just outside US territorial waters (or even inside them) would do the job.

After the fall of the Soviet Union, an inventory was taken of the former Soviet nuclear arsenal. 107 nuclear weapons were missing, including many small-yield tactical neutron nukes often referred to as “backpack nukes” or “suitcase nukes.” Where are they? Are they already in the US in sleeper cells? They could be lofted to sufficient altitude with a balloon.

Coincidentally, that is right about the same number as there are primary targets in the US. A routine drug checkpoint at the German border stopped a Mercedes with enough highly enriched uranium from the former USSR in the trunk to build three super-HEMP nuclear weapons the size of Starfish Prime.

If so much nuclear material and over 100 completed nuclear weapons, already set for use, are known to be missing, how much material and how many nuclear weapons got out and into the black market to be sold to the highest bidder?

Then add to the mix that Abdul Qadeer Khan, the scientist responsible for the Pakistani nuclear program has admitted to traveling around the Middle East and Asia proliferating the spread of nuclear weapons like a nuclear Johnny Appleseed to any nation that would pay.

Worries about a nuclear weapon going off in Los Angeles, New York or Washington D.C. are not ill-founded. We would never even know who did it unless they took credit for the attack. Far worse than the threat of a nuclear ground burst looms the specter of a nuclear HEMP strike. Every one of our enemies and the enemies of our Western European and Israeli allies must be treated as already having nuclear HEMP capability.

The fact that a singular asymmetric strike could cripple the USA is common knowledge in military and scientific circles, and it will continue to be our Achilles heel

until the average American voter is educated about the threat enough to shrug off the denial that we are so vulnerable and votes to harden our critical infrastructure.

One only needs to listen to level of hateful rhetoric pouring out of our enemies, consider the volume of missing Soviet nuclear weapons and recent nuclear proliferation to conclude that is a virtual miracle that it hasn't happened already and that we have been living on borrowed time for decades.

A HEMP does not have to be a surgical strike. An attack could be launched with the intent to cause damage to one area but it could actually be hundreds of miles off course when detonated and still cause massive levels of damage.

The ideal target altitude for operatives to explode a nuclear weapon would be up in the upper stratosphere of beyond, between 40 and 400km above the surface of the Earth. A burst at lower altitude would cause some EMP damage for hundreds of square miles, but in would not harness the power of HEMP.

Here are some of the potential delivery methods for lofting a weapon to the appropriate altitude for a successful HEMP strike:

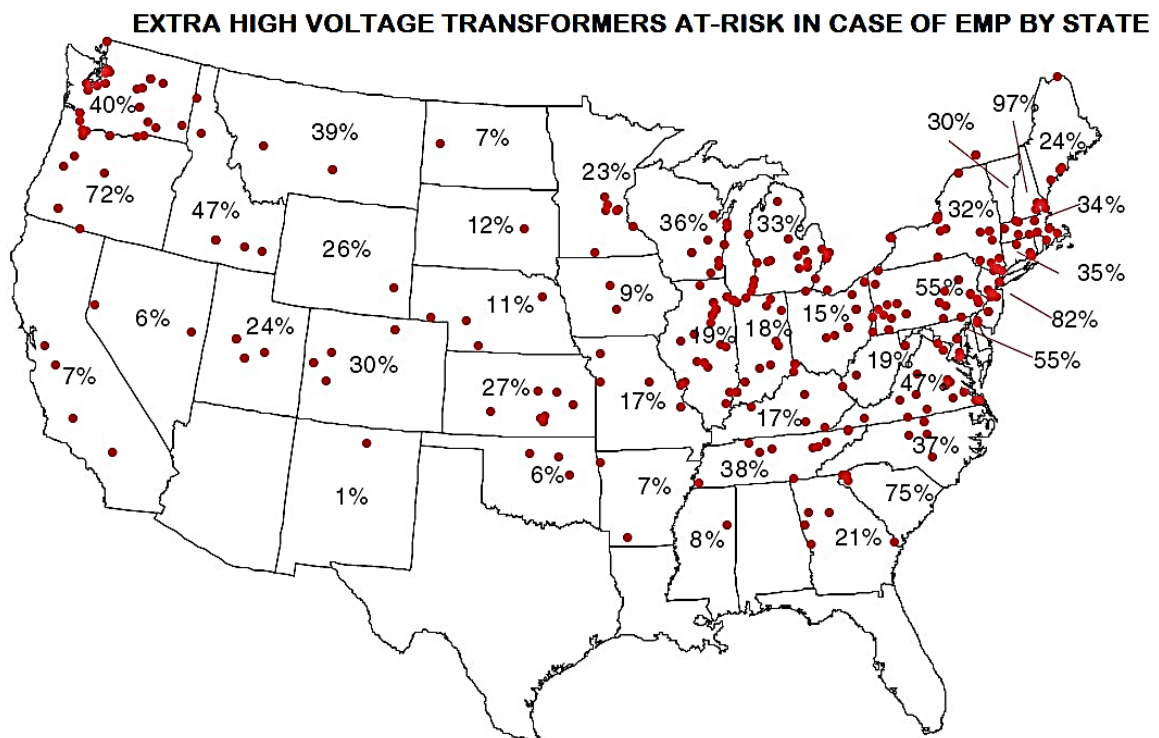
- High altitude weather balloon.
- Jet aircraft; i.e. several civilian aircraft are capable of being modified to fly at sufficient altitude with relatively minor modifications.
- Medium range ballistic missile launched from a ship (2-200 miles off the coast)
- Low earth orbit satellite.

Why You Want To Prepare for a Nuclear HEMP or Geomagnetic Storm

HEMP radiation couples into conductors within line-of-sight of a nuclear detonation and can burn out electrical and electronic circuits from the very largest transformers in our power grids down to the low-voltage microelectronics in computers and cellular phones.

Are you prepared in case this unparalleled disaster strikes? What will you do when a widespread power outage lasts not just longer than a few weeks, but up to 2-4 years or more?

Doesn't sound plausible? Think again. It could and has happened in the blink of an eye (although they have occurred over not-so-populated areas or back in the days when we were far less reliant on EMP-sensitive, low-voltage microelectronics than we are today).



Source: J.Kappenman - "The Future: Solutions or Vulnerabilities?", space weather workshop, May 23, 2008

A HEMP will cause most modern electronic devices to stop working. It will cause permanent damage to so many things that we take for granted today: our civilian infrastructures such as power, internet, telephone, electrical, water, sewer, natural gas and a percentage of all forms of modern transportation built after the early 80's.

Some modes of transportation will be disabled temporarily, some will require extensive repairs. Some planes will plummet from the sky, others will lose navigation and communications equipment. All air traffic control will likely be rendered ineffective. Many traffic accidents will occur. Street lights will fail. The roads will be utter parking lots because of stalled vehicles, heavily damaged electric vehicles, disabled vehicles and potentially hundreds of thousands of traffic accidents. Even more accidents will likely occur if a HEMP occurs at night due to loss of streetlights and LED lighting.

Have you thought about the convenience of that debit or credit card that you enjoy so much today? What happens when the banking system goes down? Large-scale commerce dependent on computers, communications, shipping, perishables or banking, will cease, to eventually be replaced by small-scale barter.

With all connected and unshielded computer memory destroyed, what will happen to your bank accounts, IRA's, stocks that you own ... your life savings?!

Gas stations will no longer pump gas because their pumps depend on electricity. It takes power and a three year lead time to manufacture and transport our largest replacement transformers that will be burnt out.

They will have to be manufactured in other countries or areas that still have power and who are not our enemies. Only two such manufacturers exist in the entire United States even if there was some way to get them back on line. But it would take power to manufacture them. It also takes power to restart our electric power plants.

There isn't even a procedure written to cold start our power plants because it has never been done, not once. It will be a long, slow process to repair our damaged power grids and all of the electronics that they service. A long slow process, that we will have no way to finance after the loss of most of our financial records.

How about your food supply? Grocery stores refrigerated sections will shut down and all of the dairy and meat products will spoil in a matter of hours. Shelves, which are normally stocked with plenty of food for all, will empty in a matter of a couple of hours.

Without trucks to transport replacement inventory or pumps to refuel trucks, without cranes to unload ships, money to pay for orders or pumps to refuel ships for the round trip, how will we be resupplied? Our migration to "just-in-time" inventory systems will cost us dearly.

What will happen when emergency services are no longer available? Who will take care of you or your family in a medical emergency?

Learning how to take care of health concerns will be extremely important to prevent death and disease. Even a small cut can turn into an infection which in turn can lead to sepsis and death if not treated properly. Without our modern sanitation infrastructure or modern medicine, cholera and other diseases long held in check will once again ravage centers of dense population.

Have you ever thought about how dependent we have become on the internet super highway, or "cyberspace" and what would happen if it were to cease to exist?

We would effectively be thrown back to the era predating the industrial age if such an attack were to occur. Only our level of preparation will decide how far back we go.

How Does the EMP Cause Damage?

A similar type of energy occurs naturally, caused by geomagnetic storms. In order to understand how to protect ourselves from EMP, we must first understand how the three different components of HEMP, described as E1, E2 and E3, affect electronics, because each component affects them in a different way.

Understanding these components and how they affect electronics will clear up misunderstandings, confusion or myths about geomagnetic storms and nuclear HEMP. Only by understanding each individual component can we protect our electronics against them because HEMP is a three part pulse.

While a geomagnetic event is possible, and strong examples such as the Carrington Event have occurred in the past, the EMP from a solar event is similar to only the E3 component of a nuclear HEMP. Although the area affected by a solar event could be even greater than the area of effect of a nuclear HEMP, it would lack the E1 and E2 components. All three components are explained below so you can protect yourself from both types of events.

Either a geomagnetic event or a nuclear HEMP could shut down the entire power grid, travel through railroad tracks, conductive pipelines, communication and power lines, and other metallic conductors. Since EMP energy travels line-of-sight, ground bursts actually have much more localized effects. Ground bursts also fail to make use of the Compton Effect to cause the earth's magnetic field to radiate EMP energy as explained earlier.

The three principle destructive components of a nuclear HEMP are:

[The E1 pulse component](#) is caused by gamma rays interacting with the earth's magnetic field causing it to radiate EMP energy.

E1 is a very fast (5-1000 nanoseconds) pulse that will overload and burn out any unshielded micro-electronics within roughly line-of-sight of the explosion.

E1 will destroy computers and phones by inducing very high voltages in them and is too fast for the surge suppressors and lightning protectors that are in everyday use by consumers and utilities because it peaks in just 5 nanoseconds and drops to half its power within 200 nanoseconds.

Although surge protection products that can clamp fast enough to defeat the E1 component already exist, they won't be used to protect our critical infrastructure until Americans become more educated about the threat of HEMP and vote to start using them.

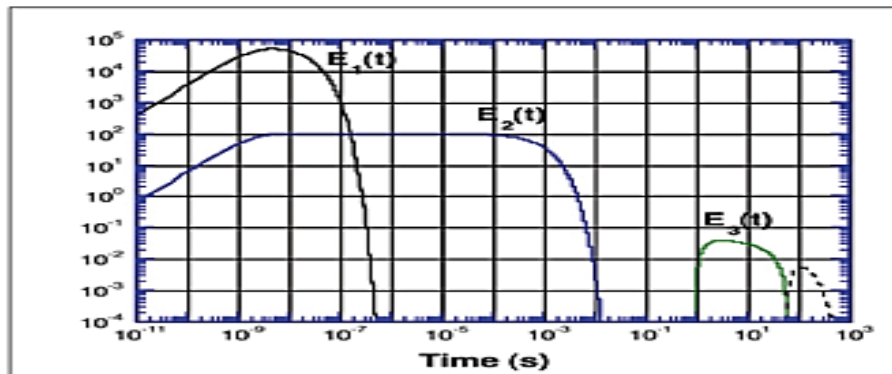
Unlike the EMP caused by a geomagnetic storm, the E1 component of HEMP can damage sensitive electronics that aren't even connected to the grid.

Storing electronics inside sufficiently shielded and insulated enclosures such as Faraday cages with their antennas collapsed and power cords stowed, or using powerful enough surge protection with sufficiently fast clamping times will protect against this component.

[The E2 pulse component](#) is caused by scattered gamma rays and creates a slower (1 microsecond to 1 second) pulse, creating very high-voltage electrical charges when it ionizes (strips molecules of electrons) molecules in the atmosphere, similar to lightening.

This could normally be protected against, but the problem is that the E1 pulse that comes before the E2 pulse will destroy circuits that would normally protect against lightening and similar effects.

**THREE PORTIONS OF HEMP
ELECTRIC FIELD WAVEFORM IN
VOLTS/METER**



Source: www.eprimus.com

Sufficiently shielding (to 80dB) and insulating vulnerable electronics, using grounded lightning protection and surge suppression with fast enough clamping times (that will not be rendered ineffective by the E1 component) will protect against the E2 pulse component.

The E3 pulse component is much slower, lasting from tenths to hundredths of a second and is caused when the nuclear explosion bends the earth's magnetic field lines from their normal orientation and they snap back into place like rubber bands, radiating energy toward the earth's surface. Think of an electromagnet passing along a conductor generating a charge.

Effects of geomagnetic storms and solar weather caused by sunspot activity and coronal mass ejections are most like this third component, and very similar to when a geomagnetic storm hits the earth; great currents are induced in long conductors such as long power lines, long telephone lines, and metal pipelines.

This component induces huge currents in the electrical grid, potentially destroying anything connected to it, even beyond the line-of-sight of the nuclear explosion which caused the HEMP!

Since this component only affects electronics that are connected to the grid or other long conductors, unplugging your electronics from power, network and telephone cables will protect them.

Understanding this component teaches us that protection against the first two components is not necessary to protect against the effects of a geomagnetic storm.

What Equipment and Components are Vulnerable to a Geomagnetic Storm or a Nuclear HEMP Attack?

Broken down simply, an EMP has the potential to affect the following:

- Electrical power generation – Power Plants, Transformers, Generators, Solar Panel, Wind Generators, Charge Controllers, Grid or Cable-connected Batteries
- Communication – Cell Towers, Cell Phones, Antennas, Satellites, Radios, Computers, and Servers
- Transportation – Not all cars will be affected, but all cars later than early 1980's models are vulnerable. Computers, electronic ignition, starter coils, electronic fuel injection and anti-lock braking systems and distributors are the more vulnerable technologies. A car's metal body will sometimes provide enough shielding, but it will be hit and miss.

Without refueling, traffic control and communications to coordinate efforts to clear the roadways of accidents and disabled vehicles will be slow at best.

Train, sea and air travel will also be affected. Long rail lines will act as conductors of E3 destroying rail infrastructure. Without power plants, fuel

pumps, communications and command and control functions, most rail travel will cease to function.

Many airplanes will lose communication, navigation, radar, air traffic control and re-fueling capabilities. Some will likely lose flight control and/or electronics in flight, causing many in-flight emergencies and some catastrophic failures.

- Microelectronics – Any silicon chip-based technology which pretty much covers any modern consumer electronics.

Basically, and to put it into perspective, anything electrical on Earth that isn't properly shielded and insulated can be wiped out by a nuclear HEMP.

Anything connected to phone, power or data grids or networks can be wiped out by a geomagnetic storm.

Why Bother Protecting Electronics?

Having the ability to communicate via radio and generate power can give you a huge tactical advantage when trying to survive in a powerless world.

Making copies of important files that are currently reside on your computer is another way to safeguard yourself. Keep data on a CD-Rom, Flash or USB drive. If you have an old laptop PC, it may be a dinosaur but would be well worth saving.

Keep the laptop, storage media and all cords unplugged and stored in a Faraday cage (discussed later) so they will not get fried during an EMP.

You can still pop these items into a flash drive or CD-Rom that has survived the event to access your information. Just be sure that you also protect some renewable energy gear to power it since the electrical grid will very likely be down.

Although non-magnetic and non-electronic storage media (such as optical media like CD ROM and DVD media) should survive, you will need electricity and a computer with the appropriate drive or reader to read them.

By virtue of reading this book, you have been forewarned, and forewarned is forearmed. It will be up to you to protect any electronics, data and renewable energy gear that you would like to survive such an event. How to do so and some suggestions of what you may want to protect will follow.

Protect Your Paper Documents

Well worth mentioning is to also keep copies of paper documents as they are equally important. Make copies of your financial records such as the title to your house, titles to your cars and any other items you feel are of importance.

Copy life and other insurance policies, photos of your home, vehicles and other personal property for insurance purposes, wills, marriage certificates, birth certificates, legal documents, digital copies of family photos, data, books, genealogical records, your family disaster planning ... anything that could be lost in an EMP or its aftermath that you cherish, consider to be of value or importance.

Paper copies will retain their utility even without electricity. Electronic copies have the benefit of being extremely light and compact. With the advancement of inexpensive scanning technology, copy technology and flash memory, it makes sense to make both paper and digital copies of very important documents.

The usefulness of a library of paper books combine with a large, EMP-shielded digital library would be difficult to over-estimate in the aftermath of an EMP.

WHAT DEVICES ARE VULNERABLE TO EMP

Class	Type	Vulnerable to EMP
Electrical power generated equipments	power plants, transformers, generators, generators	YES
	solar panels, wind generators,	YES
	charge controllers, grid / cable-connected batteries	YES
Communication	computers, servers, electronic devices connected to metallic conductors	YES (if unplugged and not stored in a Faraday cage)
	cell towers, cell phones, antennas, satellites, radios	YES
	field phones operated by hand power or batteries	NO
Transportation	cars later than early 1980's	YES (computer, electronic ignition, anti-lock braking system, starter coils, electronic fuel injection)
	train, rail lines	YES
	airplanes, sea transportation	YES (loose of communication and flight control)
Microelectronics and other small devices	any silicon chip-based technology	YES
	electronics with very short conductor lengths	NO (if they are disconnected)
	CD-Rom, flash drive, USB drive, HDD	YES (if unplugged)
	home appliances	YES (if not turned off and unplugged)
Medical appliances	pacemakers	YES (if it has wires connected to a battery that could act as an antenna)
Humans and pets	humans	NO
	animals	NO
	birds	NOT PERMANENTLY (the movement of earth's magnetic field lines will be temporarily)
Other devices	magnetic compass	NO

www.survivopedia.com**EMP Questions and Myths**

Now that you understand the three components of a nuclear HEMP and that you only need to protect against the third component in the event of a geomagnetic storm, you should better understand why there is so much confusion about how to protect against one threat or the other and resolve some of the common myths and questions surrounding EMP.

Most people do not understand the difference between EMP caused by a geomagnetic storm and HEMP caused by a nuclear weapon detonated high in the atmosphere, so let's make a short review:

- EMP will not directly harm you or your pets. The only possible dangers are indirect such as from detached phone lines or power lines, electrical shock from voltage energizing a long, ungrounded conductor or aviation and auto accidents resulting from traffic signal failures, engine failures or similar circumstances.
- EMP will not affect the migration or navigation of animals on long term. Any movement in the earth's magnetic field lines will be momentary and temporary. They may flex slightly for a moment, but they will snap right back into place.
- EMP will not affect a magnetic compass. It won't break your compass or affect lines of magnetic declination.
- EMP will probably not affect electronics with very short conductor lengths which are not grid connected, such as an electronic wristwatch. It may affect a small device like a pacemaker if it has wires connected to a battery that could act as antenna.
- Not all cars will be affected, but no automobiles are 100% safe. Metal car bodies can shield electronic components. Older vehicle with less electronics and more metal in the bodies will fare better than newer models with anti-lock brakes, computers, electronic ignition, fuel injection will be more susceptible to damage. But even older vehicles without any solid state electronics could be damaged. (This will be examined in greater detail later in the book.)

- EMP can still damage electronics that are turned off. It would help to turn it off so that its operating current won't be added to that of the EMP, but it could still be damaged. It would also help to disconnect it from the electrical grid as it then could not be damaged by a geomagnetic storm, but EMP from a nuclear HEMP could still damage it even if it is unplugged.
- New nuclear powers or terrorist organizations not having the capability to loft a nuclear weapon high enough for it cause HEMP, is simply untrue. A balloon or modified commercial aircraft would do the job.
- That a hydrogen bomb or other more advanced would be needed and if it could be obtained, it would need to be miniaturized to fit on a ballistic missile to be an effective nuclear HEMP weapon system is also false. Basic nuclear weapon designs and relatively small yields produce enough energy in the form of gamma rays to achieve the desired result. Even a small nuclear weapon will produce enough energy and the portion of the energy expressed as gamma rays can be maximized by using a thin casing on the weapon allowing more gamma radiation to escape the reaction.

Words of Caution

We sincerely hope that such an occurrence never takes place. But, that being said, it never hurts to be prepared. It is better to err on the side of caution and over-prepare rather to be being "left in the dark" after a nuclear HEMP attack.

Keep in mind that your particular needs will depend on a couple of things: the area in which you live including the geography/climate and the needs of your own family.

If you'd like to further research you should be looking up topics such as lists of food to store, survival supplies, ways to store water, firearms to purchase, how to reinforce your house, communication devices, etc. We are touching on these subjects here but there is an endless supply of EMP survival information out there if you just start looking.

Start making several lists of items you will need to depend on during a long-term survival period. And, as an extra word of advice, start doing it now and do not put it off.

Gather "How-To" books doing things the old-fashioned way. Since hardly anyone today remembers how to do things the "old world" way, this information will allow you to restart your life at the mid-1800s level even if the power doesn't come back on for a while.

Stores that cater to the Amish and Mennonite communities are especially good resources for affordable EMP resistant technology.

There won't be a chance to go back and prepare, or look up anything about how to survive an EMP once the lights go out. And, surviving is the name of the game in a post-EMP world.



4 . PREPARATION IS THE KEY

The Basics

Preparing has never been a bad thing. Am I mistaken in thinking that back in the early days, people would prepare their crops and store food for the entire winter? These people were self-reliant and that was their way of life. If they didn't prepare they didn't survive.

A survival mindset keeps you and your family alive in a time of crisis. It is this type of person who is going to make sure that their families aren't going to have to do without.

Just because you prepare for an EMP it does not mean that you hope one WILL happen. Rather, you are someone who can think about the future and the “what if” scenario should the unthinkable happen.

Think of it as a physical insurance policy. Sometimes it's better to have smoke detectors, carbon monoxide alarms and fire extinguishers than fire insurance. There are many things that insurance just can't replace.

Natural disasters have proven how unpredictable they can be. Not only are there nuclear HEMP attacks you have to think about but what about geomagnetic events? A major (x-class) geomagnetic event caused by a coronal mass ejection is thought to occur about once every 150-200 years, so we're about due for another.

The last one, and only one that has occurred since man harnessed the power of electricity occurred in 1859. It was called The Carrington Event and it built up massive charges in telegraph lines, destroying telegraph equipment, batteries and starting fires.



The solar storm from 1859 is known as the Carrington Event. A major coronal mass ejection travelled toward Earth in 17.6 hours instead of three to four days, as it normally takes. From August 28 to September 2 1859, aurorae were seen all over the world, including Queensland (Australia), Caribbean area and Rocky Mountains.

*According to Lloyd's London, a similar event would produce a current cost to the world economy of **\$2, 6 trillion and would take up to a decade to repair the damage.***

It was much like the E3 component of a nuclear HEMP discussed earlier. Although it would not destroy many unconnected electronic devices, how would you run them without any power grid?

It could still destroy many of our largest electrical transformers in power plants and substations, plunging as much as half the earth (or more in a series of ejections) into darkness.

We have some satellites and sensors monitoring solar activity and it is possible that there may be some warning before such an event today, possibly allowing some people time to disconnect some devices from the grid or possibly even some precautionary blackouts of the electrical grid in an effort to minimize damage. This may mean a quicker recovery time than after a nuclear HEMP, although not necessarily because of the potentially larger affected area.

Of course, someone who prepares for an EMP or other natural occurrence causing a power outage does not hope that one will happen but they do believe in doing whatever it takes to prepare for such disasters in order to survive.

Since the majority of public at large has only been exposed to the acronym EMP, for the rest of the book, we will refer to HEMP as EMP so that someone performing text based search on the topic will find this work under the subject of EMP as opposed to plant often called hemp.

You Don't Have to Be Rich to Start Planning

No matter how much or how little money you have, you can plan for your survival in the event of a crisis. Start making a plan and follow through by purchasing a little at a time.

Unfortunately, it has been proven that those with less income tend to not fare as well as those who took a little bit of time and money each month to prepare. It is understandable but ANY small thing you can do today will help get you prepared and improve your chances of survival.

If you are on a budget, start out buying the most important items. What are most important items? These are things that you absolutely need to have on hand and are essential for your survival. Purchasing a few items at a time will add up quickly and build your supply stash.

When an EMP strikes, you are almost going to have to think as a self-sufficient unit. There will be opportunities to join your community, but when it comes right down to it, you need to be able to survive on your own before you will be able to contribute to the greater good.

Food storage is an extremely important task to put on your list. We will cover a few ways to grow, prepare, and store food within a chapter of the book. But, those who know how to live off the land will know that if nothing else, they will be better able to meet their basic need of sustenance than most other people will.

You can start growing a small garden and grow your own fruits and vegetables just to try it beforehand. This way, you'll be able to do a "trial and error" period so that when you do need to rely on these skills, you will have gained the knowledge ahead of time as to what works and what doesn't. Once you can grow food you can learn how to can and stock up that way, too. You can even store some meat for the long haul by canning.

Water is essential for survival. Gather enough water for everyone in your family. You should have a gallon of water set aside for each person for each day that will be needed. We will also discuss different ways to gather and store water. You will want to have on hand some water purification tablets, bleach, 2% iodine tincture and a good water filter if you can afford it.

Have the **medication** that's needed for each family member. When a HEMP hits, pharmacies and doctor's offices will be closed and you won't have access to medicine if you run out. Make sure you keep a three-month supply of all medicines if possible. You can do this through a mail order pharmacy that will give you three months' worth of a prescription at once. You're going to use them anyway, so having them on hand for a disaster is just smart preparation.

Do you have a baby? Stock up on **baby supplies** like diapers, baby wipes and formula a little at a time. Make sure you have baby medicine in case of a fever or other illness. Have extra clothing for the baby to make sure you can keep him or her warm if you live in a cold area.

You probably wouldn't give this a second thought but you are also going to need **toiletries**. Cleanliness may not be on the top of your list in this type of situation but you can easily store discount shampoo, deodorant, razors, soap, toothpaste, toothbrushes and toilet paper.

In a post-EMP disaster, as mentioned before, you will not be living in the same world you were before the EMP. You are going to have to learn to live meagerly and learn that you are probably not going to be able to enjoy those long, fifteen minute hot showers.

Granted, if you try to plan and do all of this preparing at once, you could end up breaking the bank. But, if you break it down into smaller chunks, pick up a few items every time you go to the dollar store, the grocery store or your local pharmacy, you will be surprised at how much you can accumulate in a short period of time.

Preparing to survive an EMP can become second nature to you after you just get in that frame of mind. Preparing does not mean that you believe in gloom and doom but rather you are thinking ahead and preparing for your survival.

Turn Preparation into a Family Experience

You can **involve the family** by letting the children become a part of the preparations. Let them pick out some of the supplies. Let them pick out some food staples that they enjoy and make a chart so they can mark off each an item each time they collect one of their favorite food items.

Take the kids with you to the dollar store and let them pick out some fun games that are not going to require electricity. As we know, everything they do in today's world requires something that has to either be plugged in or recharged.

Show your kids that there are such things as "board games" that do not require electricity in order to be played. Card games and puzzles are another great source of entertainment that does not require a remote control. Not only will they like being in charge of the entertainment, but spending time together as a family doing something fun, even in the event of a disaster, is reassuring to children that their family is still okay.

As you buy kerosene lamps, you can talk about what children did before there was electricity. When you purchase or make your stove or oven, let them help and tell them how people used to prepare and cook food. Make it fun for them so it won't be scary when an EMP strikes.

Have a meeting place in mind. If you and all of your family are proceeding through their everyday routines—shopping, work, school, etc.—and an EMP strikes make sure you have a place set where everyone will meet.

Make sure that you have made a communication plan between family members before the EMP. Gathering up your family will become your number one priority after the disaster to ensure everyone's safety and survival.

Disasters and threats of disasters create pandemonium in the world in which we live today. Can you imagine if you have not taken the time to prepare for an EMP what such an event will look like for you and your family? Panic will hit and it is going to be a catastrophic event. Chaos will reign and knowing that you will be taken care of because you prepared will give you peace of mind.

People will start feeling the stress and fear of how they are going to eat and how they are going to survive. You will be steps ahead of the game by alleviating these emotions because of thinking ahead.

By **taking the time to prepare and stock up** on food, for instance, well in advance of an EMP, you will be ready to feed yourself and your family members. With planning, you will also be able to provide shelter, comfort and safety. By thinking ahead about the water you will need, which is a basic human need, you will not have to worry about it when the water is shut off. You will have your own water supply.

When the power grid goes down, you will have provided the means for light and ways to cook your food. You will have stocked up on batteries and battery-powered devices.

Providing protection for you and your family will also give you peace of mind when the lights go out. Usually after a disaster of any kind, an EMP or one caused by nature, a period of lawlessness occurs as people begin looting.

One final thought before we dig into the specifics of how to survive an EMP. Remember that preparing ahead of time in all areas of surviving an EMP and planning gives you a huge advantage over those who do not.

Don't worry about what other people think – just keep in mind and know that keeping your family safe and prepared for the future is your number one priority.

Faraday Cages

What Is a Faraday Cage?

A Faraday "Cage" is a sealed enclosure that has an electrically conductive outer layer that is insulated from its contents. It can be in the shape of a box, cylinder, sphere, or any other closed shape.



The enclosure itself can be conductive, or it can be made of a non-conductive material (such as cardboard or wood) and then wrapped in a conductive material (such as aluminum foil).

Such an enclosure blocks external static and non-static electric fields by channeling electricity and providing constant voltage on all sides of the enclosure. Faraday cages are named after the English scientist Michael Faraday, who invented them in 1836.

What Does a Faraday Cage Do?

A Faraday cage works to safeguard its contents from excessive electrical charges. The "cage" is extremely useful for protecting electronics against an EMP attack.

Faraday cages are very important tools that can protect sensitive electronics from EMP caused by a nuclear HEMP attack but are not necessary to protect equipment from a geomagnetic event. Electronics which have been turned off, disconnected from electrical sockets and sealed inside a Faraday cage will be protected against all components of nuclear HEMP.

As discussed earlier in this work, storing electronics inside a Faraday cage is not necessary to protect them from a geomagnetic event because the EMP resulting from geomagnetic events is similar only to the E3 pulse component of the nuclear HEMP multi-component pulse.

In the event of a solar flare, it would be wise to unplug your electronics from the grid since even high-grade, quality surge protectors like the ones you would buy at the store could be overwhelmed by the currents generated from a geomagnetic EMP, so any electronics connected to the grid could potentially be destroyed.

Even very expensive three-phase uninterruptible power supplies used in computer data centers and surge protection used in electric utility substations can be over-matched by these powerful currents, so disconnecting components from wall sockets is the best protective measure that you can take against a geomagnetic storm.

Storing microelectronics in a Faraday cage won't hurt for this application, but we don't want to misunderstand the physics involved in the two different threats.

How Do I Build a Simple Faraday Cage?

One of the simplest ways to build a Faraday cage is with a new galvanized steel trash can that has a tight fitting lid.

Because you need to keep the items inside the can from touching the inside metal of the can, line the trash can with cardboard or another non-conductor. If a foil wrapped item touches the inside of the can it could end up focusing the EMP directly towards the device. Not a good thing.

One of the better insulators for your electronics is a zip-lock static bag. Companies even sell Zip-lock static bags marketed as Faraday bags specifically for the purpose

of shielding against EMP, although any zip-lock static bag that provides 80dB or more shielding should work for our purposes.

Once you have your items shielded and the can is lined, place the items in the can and put the lid on. You may want to duct tape the lid in place, or better yet, fasten it in place with conductive tape so that the lid doesn't get accidentally knocked loose. Any gap between the lid and the can and it will lose its ability to function as a Faraday cage.

If you have some spare space, wrap the items in more cloth such as old towels to further protect them from accidentally shifting and causing a tear or hole in the foil when you move the can you are using tin foil.

If you chose to use tinfoil, use heavy duty tin foil and make sure that it overlaps by a couple of inches to form a tight-fitting seal and just like with the trash can, don't forget to insulate the electronic device from its foil shielding or you will just be attaching a big EMP antenna to the device.

This is why static bags designed to shield sensitive electronics from electrostatic discharge are so convenient for this purpose. They have the shielding and non-conductive layers built in. They are also much lighter in a backpack than a steel trash can.

If you decide to use Faraday bags to protect electronics, be sure that the vendor discloses the level of shielding provided by the bag. Most products marketed as Faraday bags offer less than the 80 dB of shielding recommended to protect against EMP (nuclear HEMP). You will most likely need to use at least two layers of these bags to attain 80 dB of shielding as none of the products currently for sale for this purpose provide enough shielding.

Don't be like the scientists, who underestimated the effects of EMP from nuclear weapons detonated at high altitudes. Remembering the three components of HEMP,

how much shielding would a Faraday cage need to protect against a geomagnetic storm?

The correct answer is that you wouldn't need a Faraday at all. Since geomagnetic storms only produce the E3 component, you wouldn't need a Faraday cage at all. It wouldn't hurt if you used it, but all you would need to do is unplug your electronics from the grid and any other long conductors such as phone lines or copper networking cables.

A 31 gallon metal trash can is a great size for fitting quite a few of your electronics items, but any size can will provide the necessary shielding so you can size the can to the amount of electronics you have to store and your available storage real estate.

When packing the can, pack the items that can be left sealed in foil or static bags indefinitely on the bottom. Near the top, place items that need their batteries charged or that need to be checked at various intervals. It is also a good idea to store electronics cached for use in an emergency with their batteries removed from the device.

It would be a shame to go to the effort to cache spare electronics for emergency use and have them ruined by battery leakage. It's also not a bad idea to include a desiccant packet to absorb any moisture sealed in the bag, especially if you live in an area of high humidity.

If you are filling a can with equipment, make sure that you place a non-conductive layer of old clothes, towels or any other non-conductor on the top so that nothing can touch the inside of the can lid or the top around the sides. Also, make sure that you have metal-to-metal contact between the lid and the can all away around the lid.

Do not put paint, tape or install a rubber gasket that would obstruct the conductive connection between the lid and the can. If this were to happen, the can could possibly become ineffective as a Faraday cage.

WHAT YOU NEED TO BUILD YOUR FARADAY CAGE



31 GAL. TRASH CAN
approx. \$25



ALUMINIUM FOIL
approx. \$5



**STATIC ZIPLOCK
BAGS (small)**
\$4 to \$6



**CONDUCTIVE
TAPE**
approx. \$40



DESSICANT
approx. \$11
(10 pieces)

www.survivopedia.com

As a final precaution, if an EMP should happen, if you can survive a couple of days without opening the can I would advise you to do so or only remove what you need to use at the time.

Why you ask? What if the enemy decides to detonate multiple EMPs a few days apart? It could happen and think of what would happen if you had already opened all of your protected electronics and gear.

For this reason, I would recommend setting up two or more Faraday cages or using convenient shielded bags. You could make a small one and have a few items in it and make the second one larger.

Even if you open up the smaller one and the enemy detonates additional super HEMP weapons, you will still have your larger cage of items safely tucked away.

Equipment to Consider Storing in a Faraday Cage

If there is an electronic item that you deem important for your survival, then by all means put it in your Faraday cage.

Also, you might want to put some items in there that will give you a tactical and strategic advantage.

Here are a few items that might be considered necessities but by no means an exhaustive list:

- Laptop PC which has a flash drive and CD-Rom player (put all cords in there as well)
- Smartphones, Kindles, iPads, Extreme SD, Micro SD, USB and other Flash Memory Devices and Adapters with backups of your important data including an emergency preparedness library
- Ham (Amateur), CB, NOAA, GMRS/FRS, MURS, Marine, Air Band, AM, FM and/or Short-Wave Radio equipment
- Emergency Radio or Police Scanner
- Rechargeable Batteries, chargers, battery diagnostic devices and charge testers
- Solar Panels, solar charge controllers, transformers, batteries, wiring and battery meters.
- Flashlights, especially LED flashlights and lighting
- Extra fuses
- Extra electronic generator parts
- Repair parts for cars, trucks, tractors, etc. that would be damaged in an EMP
- Night vision and other electronic optics
- Gear to monitor your surroundings, radiation meters, radiation dosimeters and dosimeter chargers
- Solar battery chargers, portable solar arrays and 12v DC charge controllers
- Medical Devices: blood testers, O2 concentrators, CPAP, hearing aids etc.
- Cordless tools: drills, saws, etc.

- Calculators (preferably solar), Battery powered smoke and carbon monoxide detectors

Cost-Effective DIY Alternatives to a Faraday Cage

- Dryer w/metal doors
- Ammo Box
- Microwave Oven

FAQ about Faraday Cages

Can a Faraday cage have holes?

Although many of the Faraday cages you will see used in science experiments have gaps in them, a HEMP covers such a broad frequency range that even a hole made by installing and removing a screw could compromise the cage for our application.

When protecting an entire building that needs light to penetrate the cage where windows or solar panels have been installed, use two layers of 20 opening per inch (OPI) conductive wire mesh to allow light to pass through the cage while still maintaining our target of 80dB shielding.

Most leaks occur in the lid or door so be extra cautious when reinforcing these areas. A rubber gasket or a layer of paint (such as on an ammo can) may compromise the integrity of the Faraday cage for our purposes, so be sure to remove them or replace them with conductive gaskets or paint when re-purposing metal containers for use as Faraday cages to shield against EMP.

Using a good conductive tape will help to reduce leakages.

Can you use existing conductive enclosures?

Yes, you can actually find things around your home to use as “cages.” If you have ammo cans, anti-static bags or even a microwave oven, you may use them to shield vulnerable electronic devices.

The key to a good cage is to eliminate gaps, non-conductive gaskets and paint around closures to allow the free flow of current through the skin of the Faraday cage.

Does the cage need to be grounded?

A Faraday cage would work even if suspended in a vacuum without any ground. But grounding the cage will keep your cage from re-radiating or becoming charged, and discharging its charge into you when you touch it to open it.

Either way, the contents are well-protected. But you may want to consider touching it with a ground strap before you open it in order to discharge any charge built up in a large cage like a cage protecting an entire building.

Can a whole home or building be shielded?

The short answer is yes, a whole home or building can be shielded against nuclear HEMP. Unfortunately, most of the information on how to do this is classified, but by understanding the physics involved, we know that the technology is available and that it is possible to do using existing technologies.

The advantage of protecting an entire building is that all of the buildings contents will be protected so you won't need to worry about protecting hundreds of individual electronic devices.

This subject is worthy of multiple books by itself but we can present a short synopsis of what it would involve.

Shielding an entire building involves the following steps.

- The outside skin of all walls, the ceiling and floor must be enveloped by a bonded, grounded conductive skin providing 80dB of shielding. (If you applied the conductive skin to the inside of walls, the electrical wiring in the walls would act as an EMP antenna, shunting the EMP into the building through its wiring. This skin can be comprised of conductive paint, metal roofing material and other conductive materials as long as they provide the required shielding.)
- Since the conductive skin must cover all of the windows and solar panels, where we will need light to penetrate it, cover these areas in two layers (one is all we need, but since it will degrade over time and even a small hole could compromise it) of 20 OPI (opening per inch) conductive metal mesh. This will allow light to penetrate through the windows and to the solar panels.
- Disconnect the building from the power grid, phone grid, use non-conductive water and sewer pipes water pipes and run the home of building on alternative energy such as solar energy. This will prevent huge currents induced in power and phone lines or pipes from being induced into our building and provide us with the electric power that we need to maintain our standard of living.
- Shielded revolving doors must be installed to permit entry and exit or install a mud room or other foyer with two sets of doors, only one of which can be opened at a time since we wouldn't want to go to all this trouble just to make the structure vulnerable every time someone opens a door.

What would these modifications cost? They would be much cheaper to implement in the building's construction than to retrofit the building.

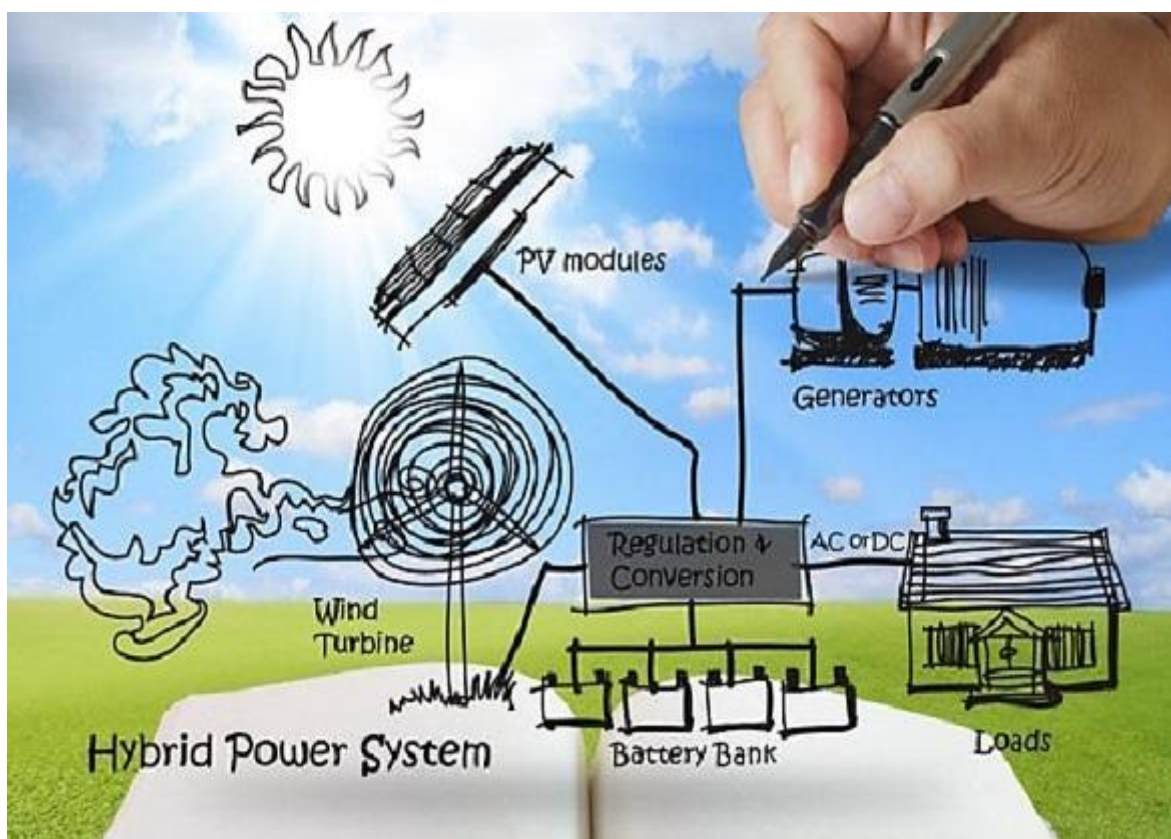
Shielding a building from EMP and adding a shielded rooftop solar power system with a battery bank and generator would cost approximately 30% more than a normal home for new construction or about \$85K for a \$280K home. About 30K of

that is the solar installation and the other \$55K in shielding. To retrofit an existing home would cost more. To build a commercial building would cost less.

10 years from now, the solar installation will cost much less than it costs today since it will take less material to achieve the same result and production will be streamlined.

You would have to install some small antennas with specially protected circuits using surge suppression with less than 1 nanosecond clamping times in order to be able to send and receive communications from inside the home since the shielding would completely block all signals of any kind.

Without them, you wouldn't be able to receive phone calls, TV or internet access. Fortunately the necessary components are already commercially available.



5 . MAKE YOUR OWN ENERGY

After a large-scale EMP, the only electricity that will be able to be produced will be solar, wind, micro-hydro, wood gasifier, fossil fuel generator, hydrogen generator or whatever you are able to devise to generate your own electricity.

Renewable energy devices such as solar or wind generator may be the only sources to recharge your batteries to keep all of your battery-driven devices running.

Making Energy Using Wind

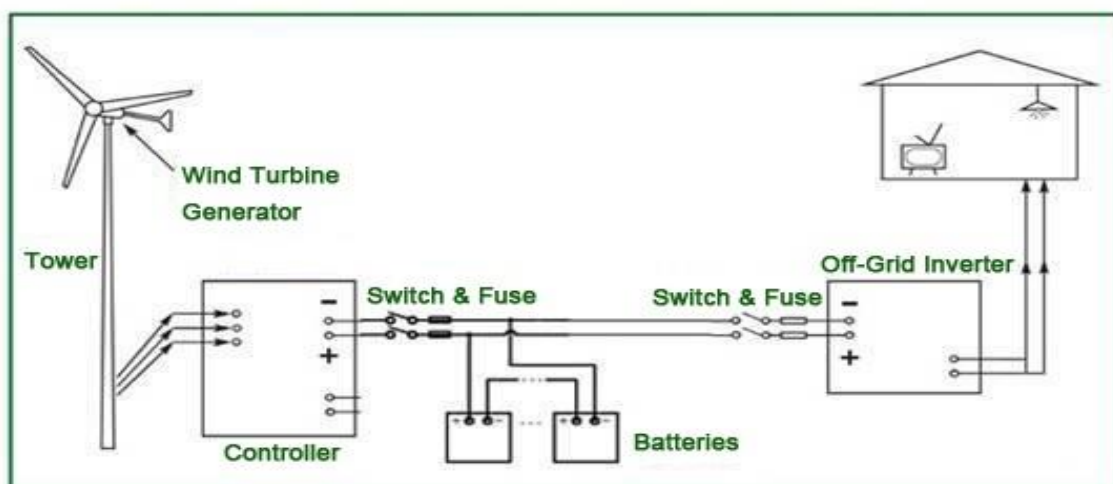
Winds of at least 6-10 mph are necessary for wind-generated electricity. If there is little to no sun in your area, this is a better alternative than solar power. As with solar power, make sure you live in an area that is a high wind environment.

A wind turbine should be a minimum of 30' above obstacles within 300 feet so that wind is not blocked. You can purchase a wind power system for anywhere from \$400-\$2,500 or more. Research your particular needs for the area in which you live and see if wind is the right solution for you.

Wind systems are not as easily maintainable as solar power because wind turbines do have moving parts, but they can generate electricity at night, which solar can't. The cost of the addition of a wind generator to your grid independent power system may be partially offset by being able to get by with a smaller battery bank.

If you choose this method, **make sure that you have plenty of spare parts available** because after an EMP there will not be a chance to go out and buy or replace them.

OFF-GRID WIND TURBINE SYSTEM



Source: www.energor.com

Making Energy Using Sunlight

Solar Power can provide backup power for your basic lighting and communication needs. Solar panels are a great item to buy...now! Don't wait until there is a demand and you can't find a solar system within 200 miles of your home.

You can purchase a complete solar panel system for less than \$500 with the option to purchase additional solar panels as you can afford them.

If you look online or go to a store that has specialty items such as solar equipment it would be well worth the investment today. You can even buy a portable solar array, lightweight charge controller and a lightweight 12v DC battery that will fit in a Faraday bag in your backpack when not in use.

Solar panels are typically used to recharge a deep cycle battery or bank of batteries which can last anywhere from 5-10 years and are available in 2, 4, 6, or 12 volts of DC power. You can then use the battery to power for low-voltage DC lighting, to run DC equipment and recharge rechargeable batteries.

To run 120v AC equipment off the (usually) 12v DC power produced by your solar array, you will need a 12v DC to 120v AC charge converter.



Be sure that you live in an area that has abundant sunshine and you are not living under a blanket of clouds every day. If you are in an area without a lot of direct sunlight, then second generation, thin film solar panels will be more efficient than first generation silicon panels which need more direct sunlight. Interestingly, most of the world's solar installations to date have been installed in Europe, which doesn't get nearly as much direct sunlight as the Southwestern US or Africa.

There are whole-house systems which are great if you can afford them. But to be useful after an EMP, they need to be disconnected from the power grid and your entire home including all renewable energy gear would have to be shielded to 80dB. So the average person who does not have deep pockets will want to look for smaller, less expensive solar power systems.

Making Energy Using Water

Water Wheel

Water Wheels have traditionally been used to power mills with kinetic energy as opposed to electricity.

More recently, water wheels have been adapted for the production of electricity. Small scale water wheels are being used to power generators, creating clean electricity. A water wheel consists of a large wooden or metal wheel, with a number of blades or buckets arranged on the outside rim forming the driving surface.

Most commonly, the wheel is mounted vertically on a horizontal axle. Vertical wheels can transmit power either through the axle or via a ring gear and typically drive belts or gears; horizontal wheels usually directly drive their load.



DIY MINI-WATER WHEEL

Needed for the project:

- *cardboard or foam board 15 x 20 inches,*
- *wooden skewer*
- *box cutters, protractor, pencil, ruler,*

- *hot glue gun*
- 1) *Cut off a 2 inches long slice of 1 side of the cardboard, or foam board. Divide this slice into 10 equal sections, which will create your paddles, and will be glued onto both sides of the water wheel.*
 - 2) *Mark a 6 inches diameter circle on the cardboard, or foam board, and mark the center of the circle. This is where the axle will be placed in order to connect the 2 sides of the water wheel.*
 - 3) *Outline the water wheel's stand by tracing a 4 x 4 inches wide "A" shape on the cardboard or foam board. At the very top middle point of the "A" shape, mark a small "v" shape, for the inlet that the axle is placed in. Outline an extra 2 1/2 inches long x 3/4 inch wide rectangles for the water wheel stand support.*
 - 4) *Cut along your outlines that you created for the wheel sides as well as the water wheel stand and its supports.*
 - 5) *Lay one of the circular sides of the wheel on the ground. Measure and mark where your paddles will go on the water wheel's side, setting each paddle at a 40 degree angle from the next one. Each paddle should be positioned at a diagonal towards the center of the water wheel.*
 - 6) *Glue the 1 1/2 inches side of each paddle to the side of the water wheel along each marking you have just created. Attach the other side of the water wheel to the paddles that you have just attached to the first side of the wheel.*
 - 7) *Push a wooden skewer through the center marking of the wheels. It goes through both sides and sticks out of each side equally. Set the wheel aside.*
 - 8) *Glue together the "A" shaped water wheel support system, by attaching the rectangular support beams to the left side of one of the "A" shapes, directly under the horizontal line across the middle of the shape. Do the same for the second support beam on the right hand side.*

9) *Place the water wheel on its stand, using the wooden skewer as its axle. Place the axle in the "V" shaped grooves at the top of each "A" shape. This will allow your water wheel to spin.*

10) *Test your water wheel by placing it under a very gentle stream of running water to ensure it spins correctly. Test how much weight your water wheel can lift by attaching 1 end of a string to the handle of your miniature bucket and the other end to the axle of the water wheel.*

For a bigger water wheel, increase the dimensions proportionally, and use more resistant materials (wood, for example).

Hydro-Electricity

On your property, you may be able to have a means of generating your own electricity. If you have access to a steady-flowing amount of running water with a drop in elevation, this would be great for harnessing hydro-electricity.

You can make a micro-scale hydro-electric system by making an enclosed water wheel or turbine, which is made to spin by jets of high-velocity water.

The turbine is connected to an electrical generator and the electricity is then available for running appliances or charging batteries 24-hours a day, decreasing the size of battery bank needed.

If you have the requisite water source and drop in elevation on your property, this is by far the most efficient and cost-effective renewable energy system that you could own despite that fact that it has moving parts.

By storing spare mechanical parts, generator bushes, and by storing necessary replacement electronics and cabling in a Faraday cage (even building a shielded, non-grid connected renewable energy solution is not out of the question) and resisting the temptation to connect it to the power grid, you will be able to get your system back into operation after parts failures or an EMP.

Self-Powered Energy

There is always the old-fashioned, reliable way to generate power called "human power generators." If you have an old bicycle, you can pedal your way to charging a battery and provide basic lighting.

If you have an old car battery and it survived the EMP, (cars with metal bodies often offer a degree of shielding) you can still use the bicycle, chains and belts to create enough of a mechanical advantage to build a small human-powered power source.

Battery-Friendly Lights

Virtually everything electronic today has some form of microprocessor control. Obviously if the power is down then this is a moot point, but what about the large number of battery powered devices that rely on these controls?

Consider what an EMP is. It is an electromagnetic pulse. When any magnetic or electromagnetic wave crosses a wire, it will induce a current into that wire. Whatever is attached to that wire will then be subject to that current.

Electronic devices have coiled wire components and when a wave crosses all those wire windings, the current is increased; the more winding, the more current. In addition, the high speed impulse also causes a voltage spike.

In order for an EMP to cause damage, it has to induce a high enough voltage with enough current to overload components in the device, i.e. burn them out.

Some flashlights that use bulbs instead of LED's are encased in conductive metal bodies, which may not develop enough voltage to arc into other components of the flashlight, making them more resistant to EMP than LED lights which have sensitive low-voltage microelectronic circuits.

Also, if a mechanical switch is in the off position, an EMP may not be able to induce enough of a charge in the relatively short conductors to arc across the gap and burn out the bulb's filament or otherwise damage the flashlight.

Batteries

Look for a shelf life of at least 4 years and be sure to keep all standard sizes on hand. Lithium batteries have much longer shelf lives than alkaline batteries.

Rechargeable batteries have lower total cost of use and environmental impact than disposable batteries. Some rechargeable battery types are available in the same sizes as disposable types.

Rechargeable batteries have higher initial cost but can be recharged very cheaply and used many, many times over with proper care and maintenance.

It is worth the money to buy a high quality super-rapid charger with auto-diagnostic, dead cell detection and auto discharge features. It will keep your rechargeable batteries in top operating condition and ensure the longest possible service life.

You will also want a couple of battery charge testers that don't need batteries so you can quickly determine that charge state of stored batteries.

Make sure that you can test all sizes of batteries that you plan to use. Although they contain EMP sensitive components, compact florescent and LED lighting use less

power than incandescent lighting. With that being said, no one is for sure what will happen.

But, there are also lights that do not require batteries:

- Dual-fuel (Unleaded & White Gas or Coleman Fuel) or Liquid Propane Gas (LPG) "Coleman-style" Lanterns
- Kerosene Hurricane Lanterns
- Candle Lanterns
- Candles
- Oil Lamps & Lanterns
- Propane/Butane Mixture Cartridge Backpacking Lanterns

Just be sure that you have plenty of fuel, wicks and lantern mantles, a candle tamper and sharp scissors to trim wicks to match the shape of the burner so they won't smoke excessively.



DIY OIL LAMP

*A simple **oil lamp** can even be improvised by using a little vegetable oil or other fat in a tuna can with the lid peeled back.*

Use a strand of cotton or other natural fiber as a wick.

Bend a piece of wire into a coil to hold the wick straight.

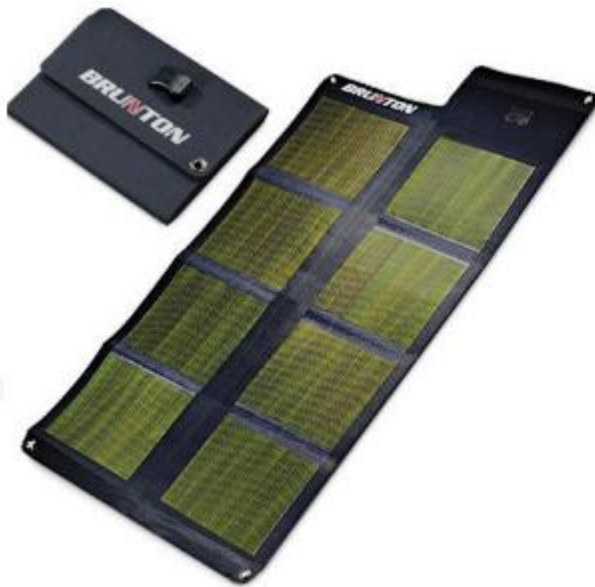
A cotton mop head purchased at a dollar store is a great source of improvised wick material that will likely outlast your oil supply unless you are raising livestock or growing oil producing plants.

A quarter strand of one of the mop strings is enough.

Solar Powered Lighting Solutions

In addition to a solar panel system, there is a number of self-contained sustainable lighting solutions for people without electricity when an EMP occurs. Since they rely on the sun to charge self-contained rechargeable batteries, you do not need to worry about batteries. Just pick up a set of solar yard lights for your Faraday cage.

PORTABLE SOLAR CHARGERS



Brunton Solaris 26 is a 2nd Gen, 26 Watt, 12 volt folding solar array which folds down to about 8.5" x 11" x .75" except for the port that the cables plug into, but it folds out to 8 times that area and has grommets so you can hang it on your tent, boat, truck or from lines between tree, etc.



Brunton Restore integrates a couple small 1st Gen solar panels, a 2200 mAh Li-ion battery, a charge controller and a charging cable to charge USB devices. It's good for charging small devices with rechargeable batteries.

Its battery can be charged from external power sources, so it can be charged by a computer or in a car with the provided USB 12v DC cigarette adapter or in a wall socket with a USB 120v AC wall socket adapter.

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Solar Powered Lanterns

These types of lanterns normally have a 4-hour usage time for the lamp and 48 hours on a built-in LED flashlight. They recharge in only 6 hours.

The lanterns are safer for indoor use than lighting sources that use a flame. They have a small integrated charge controller so there is no danger of overcharging and they

are deep-discharge protected. These are another great item to store in your Faraday cage.

Solar Home System with Mobile Phone Charging Capability

A great way to keep items running in your home is to purchase a whole home system. A USB port is included to keep your phones charged just in case the electricity does come back on. One minute you could be in total darkness and the next minute your phone could be ringing off the wall signaling the end of the power shortage!

It's also important to note that especially in areas along the periphery of an area affected by EMP or in mountain valleys that may be partially shielded from a low level EMP, some systems may be damaged while others remain working.

Just because you can't get a call through on your cell phone, it doesn't mean that you should give up on it completely yet.

Try a text message. Text messages operate on a more robust system that uses much less bandwidth and text messages often will get through during emergencies when voice lines are overly busy or out of commission.

The solar home system can recharge itself in 8 hours. The system, as well as the solar power lanterns, uses a 1st generation silicon solar panel. They usually have a long usage time with up to 5 to 10 hours at a time depending on whether or not the energy has to be split between the 2 units.

The system usually includes at least 10 LED lights with cable length capability to stretch to 2 rooms if necessary. Again, the system includes a charge controller that protects it from overcharging.

Solar Reading Lights

These lights are great for individual use and can be used like a small task light for reading and writing. The lights also charge within 8 hours and contain their own solar panel. You can use these types of lights up to 5 hours on 2 long-life LED's.

Again, the solar reading lights are extra safe and are not susceptible to overcharging.

Solar LED Torch with Mobile Phone Charging Capability

These unique lights have two ways of charging: either solar energy or by manual cranking them.

One minute of cranking can provide 30 minutes of light. If you crank for 2 minutes, you can charge your mobile phone enough for a text message or short call. These devices are maintenance free and have a long-life LED source.

Emergency Backup Lighting – Indoor and Outdoor

The battery takes over the power supply automatically if the power is cut and provides backup light for up to 4 hours wherever and whenever you need it.

These types of lights can be mounted on a wall and also provide overcharging protection. They are connected to the building's internal wiring, so they would be useful in a shielded building that is not connected to the grid.

Vintage Electronic Devices

It couldn't hurt to take a trip down memory lane and purchase a few of the older electronics from days gone by. These items do not have the modern circuitry

included in so many of our devices today so they have better chances that they may still work in the event of an EMP.

Purchasing vintage, solid state stereos, turntables, radios, telephones and even televisions is another strategy to maintain quality of life after an EMP. In a post-EMP world do you really think that all of the microelectronics that we have in our home nowadays will work or that you will be able to replace them easily? Not likely.

Vintage analog electronics from the pre-digital era were made with much simpler and more robust components.

Today, everything runs on extremely efficient and extremely low-voltage microchips and microprocessors so they will be much more vulnerable to the high voltages generated by an EMP.



It will take years for manufacturers to get up and running again to produce items we are used to in today's world.

Even with products brought in from outside the affected area or retrieved from shielded caches, it will still take electricity to run them.

Getting our electrical grid will be a process, not an event.

All of the scientific panels assembled thus far have agreed that there will be widespread starvation before power is restored.

Generators

Gas Generator

Gas engine generators are great to have on hand for emergencies. Gas generators can serve several purposes including providing much needed portable AC power in all situations. Select smaller, portable generators are perfect for small jobs or light power tools. There are heavier duty generators with serious power and longer run-time for bigger jobs or use in an emergency after an EMP attack.

Gas generators are durable and built to last, but many models have vulnerable components such as electronic ignition, starter coils, electronic fuel injection and distributors instead of points and microcomputers. The more of these features a particular model has, the harder it is going to be to store replacement parts to get up and running after an EMP. In the long term, fuel will likely be unavailable to run them unless you have stored it and properly stabilized it beforehand.



DO NOT BRING A GENERATOR WITH A COMBUSTION ENGINE INTO THE HOUSE AND USE IT!

In-Home/Whole House

Whole House Generators provide peace of mind with 24/7 automatic power protection from all types of emergencies backing up preselected circuits or the whole house. When connected to your existing LP or natural gas fuel supply, or its own diesel fuel supply (depending on the model you choose) this type of generator

automatically kicks in within seconds of determining power loss. Natural gas is much cheaper than diesel or unleaded fuel. The cost of running these generators on a constant basis to keep frozen food frozen will become all too apparent after just a week of run time.

Large NG or LPG tanks can be buried on your property to provide a much safer, less conspicuous and cheaper fuel mid-term fuel source than liquid gasoline fuels. There is also a line of tri-fuel generators to consider. Conversion kits are also made to replace the carburetor of an unleaded generator so the generator can run of LPG or NG instead. You may not know what fuel, if any, may be available after an EMP so having options may be a good strategy.

For people whose lives are dependent on dialysis machines, oxygen concentrators or limited stockpiles of refrigerated insulin, some type of backup system will be a question of life or death instead of a question of quality of life. Farmers producing large crops that can be used for the production of bio-diesel may want to invest in systems to produce bio-diesel in order to run their farms.

When an EMP attack occurs, the generator will only run as long as there is a supply of natural gas, LP or diesel fuel. You can turn it off and on manually to conserve energy. The other down side is that they contains many vulnerable components and are wired directly into your home's electrical system, all of which must be shielded in order to survive an EMP.



Purchase a generator that produces as much electricity as you need running at a lower RPM so it will be quieter and consumes less fuel.

Stabilized diesel fuel stores longer than stabilized unleaded fuel, because it is less highly-refined.

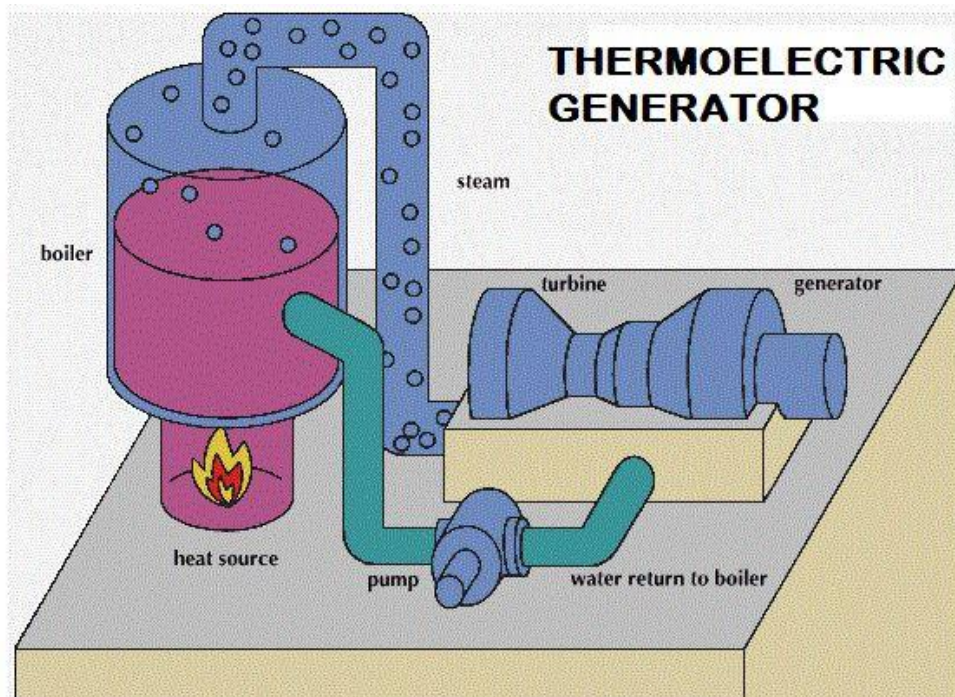
Thermo/Electric Power Generators (TEG's)

These devices utilize the Seebeck effect (the opposite of the Peltier effect) to generate electrical energy. (The **Seebeck effect** is the conversion of temperature differences directly into electricity. The **Peltier effect** is the presence of heating or cooling at an electrified junction of two different conductors.)

The only requirement is that each face of the device must be exposed to different temperatures; a "hot" side and a "cold" side. The greater the temperature difference, the more power generated.

The TEG is capable of temperatures up to 320 Celsius.

You will want to make sure that you can seal the device so you will also need some graphite foil thermal interface material (TIM) pre-applied to both sides.



Source: kids.britannica.com

Propane (LPG) Heaters

Propane heaters come in all shapes and sizes. They bring warmth and comfort to your family with a temporary emergency heat source. You will want to stock up on propane bottles or tanks in order to provide heat for any length of time.

Small propane heaters can heat up to 400 sf and can last anywhere from 1 ½ - 6 hours on a single 1 lb. propane cylinder on a low to medium setting.

Some of the smaller propane heaters can hold two 1 lb. bottles which will provide heat anywhere from 3-12 hours. If you have propane tanks, you can hook it up directly with the appropriate distribution hoses, adapters and a fuel filter.

A portable convection liquid propane heater can be used to heat an outdoor area. This type of heater heats up to 4,700 sq. ft. using a 100 lb. tank. Heat will radiate out of the heater 360 degrees.

They usually have the added safety of an auto shutoff feature and at this size it mostly likely comes with a 10 ft. hose and regulator assembly.



FOR OUTDOOR USE ONLY

Fuel

Gasoline

You will want to try and have some unleaded gasoline stored for use with different small tools or engines such as a chainsaw. A chainsaw may be an extremely important tool if you are harvesting firewood as your primary fuel source. Don't forget that small 2-stroke combustion engines usually run on a fuel/oil mixture. They also need lubricant.

A great way to store gasoline is in a portable gas pump or gas caddy which can hold from 10-30 gallons of gas. The container is usually made out of steel or durable, high-density polyethylene which prevents it from rusting or getting dents. A siphon handle is usually attached to stop and start the flow of gas. The larger portable gas pumps will have wheels for ease of transport so you can take them to a gas station, fill them up and then return them to your storage area (before an EMP). They also come with a long hose to reach other items and usually include a cut-off valve.

Larger generators and tractors as well as many autos run on diesel. Diesel is less highly refined than unleaded fuel and enjoys a longer storage life. If you plan to use a gasoline generator, tractor or vehicles, you should consider buried, stabilized fuel tanks with 12v DC or hand-powered fuel pumps like the B&D Jack Rabbit.

To improve the storage life of gasoline, store it in full containers along with a stabilizer. Diesel should be stored in a like manner but with the addition of an anti-bacterial agent.

Keep in mind that unleaded and diesel versions of stoves, refrigerators, heaters, hot water heaters and other appliances exist even though they may not be popular in the

retail camping market. It is common to outfit ships and sailboats with diesel appliances so they can run off of a single fuel source, simplifying logistics.

Diesel appliances have been adapted for use in Earth Roamer and other off-road expedition vehicles that are also commonly run off diesel power plants. You may have to look in other places, but with some diligent searching online, you should be able to piece together most of the appliances that you rely on for a particular fuel source.

PROPERTIES OF HYDROCARBON FUELS

Property	Gasoline	Diesel	LPG	Kerosene
Boiling Point	80 to 300 F	370 F	-44 to 0 F	572 F
Ignition Temperature	860 F	400 F	950 F	428 F
BTU	114,000	138,000	91,500	18,500
Octane	87	128	106	NO
Toxicity	High	High	Low	Very High
Combustibility	Very High	High	None	Very High

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Kerosene

Kerosene is widely used as a home heating fuel for portable and installed kerosene heaters, stoves, lamps hurricane lamps or even pressurized lanterns like the multi-fuel BriteLyt 500CP that will run off virtually any liquid fuel.

Since kerosene is not a highly refined fuel, it has a longer storage life than more highly refined liquid fuels when properly stored. Be sure to stock up on extra mantles or wicks for heaters, lamps and lanterns.

Propane (LPG)

Propane is a popular choice for barbecues and portable stoves because the low boiling point makes it vaporize as soon as it is released from its pressurized container. A camping stove will use the fuel much more efficiently for cooking than a barbeque grill.

Buy a propane conversion kit for your dual-fuel camp stove, and run it off unleaded, Coleman fuel/white gas or propane. Propane is generally stored and transported in steel cylinders as a liquid with a vapor space above the liquid.

For those with large in-home propane tanks on their property, you might want to look into buying some sort of equipment to retrofit the tank. By this I mean a valve system with the capability to attach a long hose for use with other items.

All manner of distribution trees, adapters, filters and extension hoses are available allowing you to run a great diversity off of propane including fridge/freezers and even generators.

Buying multi-fuel versions of appliances and adding propane conversion kits will give you the added flexibility of being to be able to run off multiple fuel sources, should a particular type of fuel become available or less expensive than another.

Oil

Oil lamps use this product to produce light continuously for a period of time. Oil lamps can burn continuously for hours depending on the size of the lamp. Alladin lamps are extremely bright for oil lamps. They are used extensively by Amish families and others who enjoy oil lamps.

Lamp oil is a little more highly-refined than kerosene so it has a little less storage life, but doesn't have the scent of kerosene or produce as much smoke, soiling the lamp's chimney, dimming the light and requiring more frequent cleaning.

DIY VEGETABLE OIL

Seeds needed per quart of oil

- *Walnuts – 2.9 pounds*
- *Hazelnuts – 3.6 pounds*
- *Peanuts – 4.6 pounds*
- *Pumpkin or sunflower – 5.3 pounds*



Set up your machine. Fill the heating unit with the recommended flammable and light. Allow it to heat – this takes about 10 minutes. Pour your seeds into the hopper. Crank your butt off – it takes about 20 minutes to make 14 ounces of oil. That's about a 2-liter bottle full of seeds.

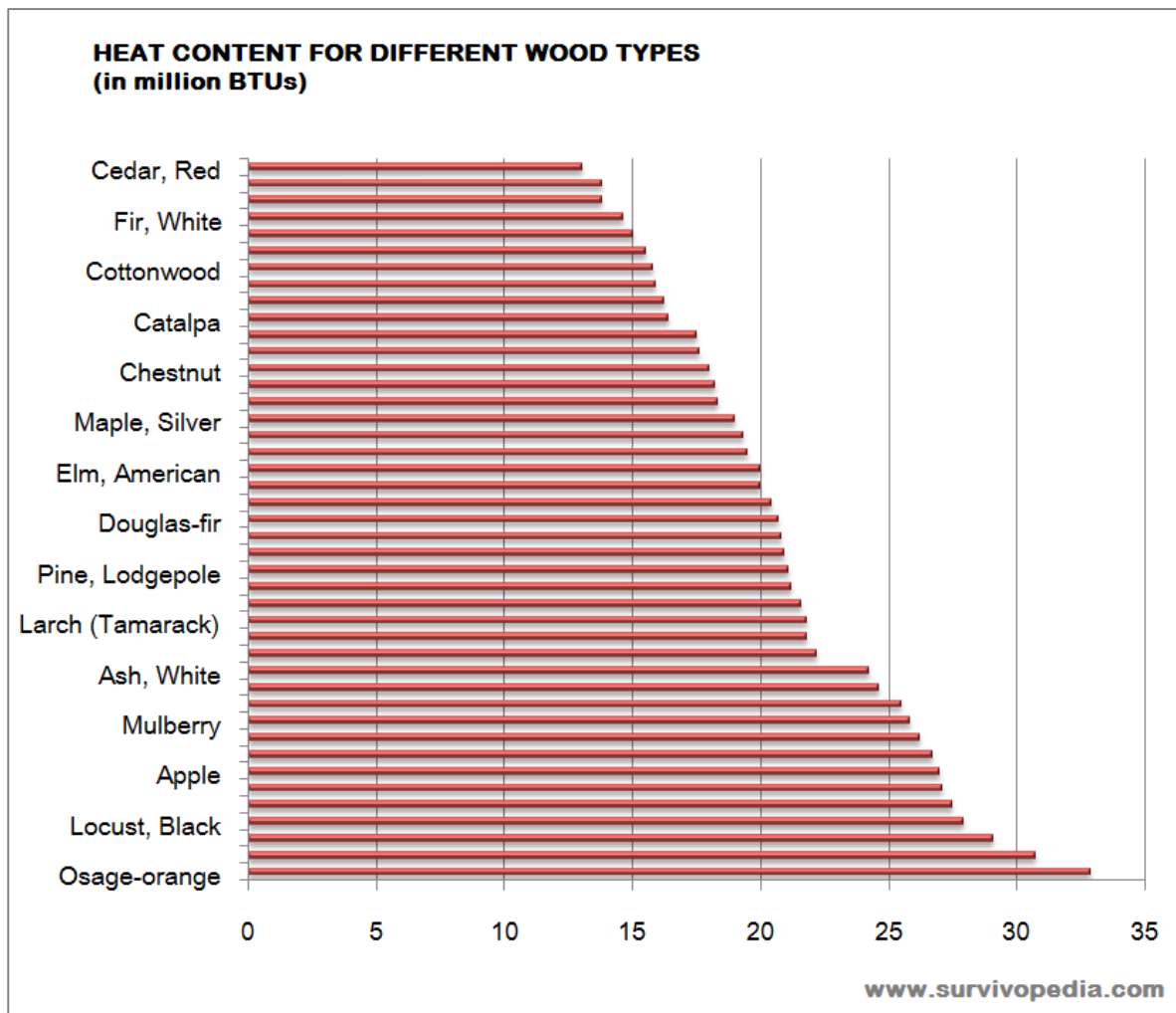
Remove your container of fresh oil and cap tightly. Clean your machine. Your oil will be black, assuming you're using black oil sunflower seeds. Once it sets for a few days, the sediment will settle to the bottom. Siphon off the oil and discard the sediment. Store for up to 2 years in a tightly-sealed container in a cool, dry place.

Firewood

This is by far the most natural choice for an energy source. If you live in an area that is naturally wooded, you may have an unending source of fuel for fire.

While you still have time, research the correct ways to cut and store wood to ensure you have enough to last for a full season. You will want to continually resupply your wood pile.

Wood is usually not readily available to burn as it generally needs time to dry or "season" before use. -



OVERALL QUALITY OF WOODFIRE TYPES					
Species	Ease of Splitting	Smoke	Sparks	Coals	Overall Quality
Osage-orange	Easy	Low	Many	Excellent	Excellent
Oak, White	Medium	Low	Few	Excellent	Excellent
Locust, Black	Difficult	Low	Few	Excellent	Excellent
Apple	Medium	Low	Few	Good	Excellent
Honeylocust	Easy	Low	Few	Excellent	Excellent
Oak, Bur	Easy	Low	Few	Excellent	Excellent
Mulberry	Easy	Medium	Many	Excellent	Excellent
Maple, Other	Easy	Low	Few	Excellent	Excellent
Oak, Red	Medium	Low	Few	Excellent	Excellent
Ash, White	Medium	Low	Few	Good	Excellent
Walnut, Black	Easy	Low	Few	Good	Excellent
Juniper	Medium	Medium	Many	Poor	Fair
Coffeetree	Medium	Low	Few	Good	Good
Hackberry	Easy	Low	Few	Good	Good
Elm, Siberian	Difficult	Medium	Few	Good	Fair
Birch	Medium	Medium	Few	Good	Fair
Douglas-fir	Easy	High	Few	Fair	Good
Cherry	Easy	Low	Few	Excellent	Good
Ash, Green	Easy	Low	Few	Good	Excellent
Elm, American	Difficult	Medium	Few	Excellent	Fair
Sycamore	Difficult	Medium	Few	Good	Good
Maple, Silver	Medium	Low	Few	Excellent	Fair
Boxelder	Difficult	Medium	Few	Poor	Fair
Redcedar	Medium	Medium	Many	Poor	Fair
Willow	Easy	Low	Few	Poor	Poor
Catalpa	Difficult	Medium	Few	Good	Fair
Pine, Ponderosa	Easy	Medium	Many	Fair	Fair
Cottonwood	Easy	Medium	Few	Good	Fair
Spruce	Easy	Medium	Many	Poor	Fair
Fir, White	Easy	Medium	Few	Poor	Fair
Basswood	Easy	Medium	Few	Poor	Fair
Buckeye, Horsechestnut	Medium	Low	Few	Poor	Fair
Cedar, Red	Easy	Low	Many	Poor	Fair

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Some species of wood burn hotter than others after seasoning, so read up on which wood on your property will make the most desirable firewood fuel source. Different species of wood also burn with different properties and flavors, making them more or less desirable to for smoking or grilling various types of smoked and grilled meats.

Charcoal

If you want to start stocking up on charcoal and lighter fluid, this would be another item to collect on that trip to the grocery store or hardware store.

Again, this can all be done over time and does not have to be purchased all at once. The sooner you begin, though, the sooner you will start to see your supplies grow.

Coal

Most wood stoves can be converted to burn coal, especially if you are lucky enough to have a coal seam on your property or near your home. Converting a wood stove to burn coal requires the addition of heat resistant brick to stove body so it won't melt or warp from the hotter burning coal.

As a general rule, more highly refined fuels such as lamp oil, white gas, Coleman fuel and LPG will give off less smoke than less highly refined fuels like kerosene.

The less highly refined a fuel is, the longer the storage life, with the exception of LPG and other compressed fuels, where the storage life is based on the integrity of the seals on their storage tanks.



6 . FOOD PRODUCTION AND STORAGE

Did you know that most households today rely on canned goods for food?

When the electricity goes out, some people won't even be able to open canned food because they don't have things as simple as a manual can opener.

By over-relying on electric companies and supermarkets to meet your family's needs, you could be in BIG trouble in the event of an EMP attack.

Growing Your Food

Growing your own food for your family is a great way to stretch the budget, eat wholesome foods and prepare for an EMP attack, or any disaster for that matter.

What to Plant

In order to grow your own food, do some research now to ensure what it is that you can grow in your local area. Not all food items can be grown in just any region.

Positioning is everything. Write down the foods you want to plant and how much of it you'll need. Check out the climate zone for your area. This will help you learn what kinds of gardening foods will grow best in your area.

Do you live in a cold climate? What can you grow during the warm months to ensure you have enough food stored away for you and your family to survive from one growing season to the next? Do you live in a warm climate? What can you grow in your area? Some items may not grow in an area because it is too hot.

There is a lot of information to be had on this subject. Take the time to learn what you can and can't grow right now before you won't have access to this information.

- Grain and corn can grow well in almost any region.
- Beans, peas, oats, barley, potatoes, carrots and tomatoes do well in a lot of regions.
- Cabbage, lettuce and squash make great foods for gardening as well.
- Broccoli and herbs should be included in your garden, as they have so many properties..
- Fruits from the berry family (blueberries, raspberries and blackberries) are easily grown.

- Plant a section for herbs, for eating and also for medical use.

If you are fortunate enough to live in an area where you can grow fruit trees, by all means grow the trees. You will be able to make jams and jellies from the fruit as well as use it in pies and other desserts for years to come.

Local nurseries will have fruit trees grown from stock that has been acclimated to the soil type and weather patterns of your region for generations.

What You Need

You don't have to have acres of land to plant and harvest foods from your own productive garden.

You can start a garden anywhere you live - even if you happen to live in an apartment. If you live somewhere space is limited, you can start a garden in containers.

If you have a nice plot of land where you can plant, then you need to choose the location wisely because plants have to have **sunlight** in order to survive.

A garden also has to have **good soil**. Use organic fertilizer to enrich your soil prior to planting. Have your soil tested before you start planting to make sure that it's healthy enough to sustain a garden.

Irrigation and **drainage** are important. You'll want to make sure the area where you plant your garden isn't in an area that holds standing water during heavy rainfall. If the water has difficulty running off, it can drown the plants.

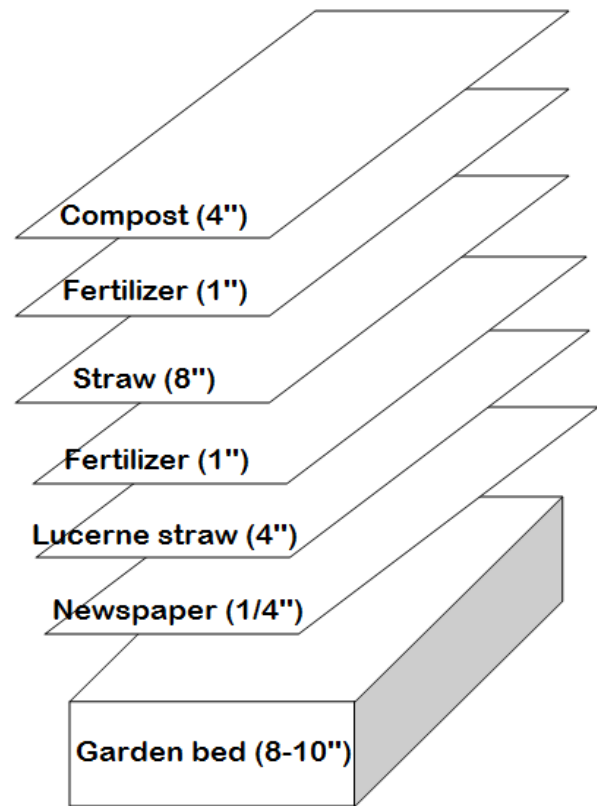
Make sure the plants you choose will be **good neighbors**. The types of food you decide to plant need to be placed in conjunction with their compatibility with other

plants. Some plants will make it more difficult for other plants to survive, so separate them.

Some people plant a garden using **seeds** while others use starter plants. If you want to be able to keep replanting your garden from seeds, then you'll need to buy heirloom seeds since they'll last for many replants.

You can plant your garden using **rows** or you can use the **raised bed** method. There are pros and cons for each method. With simply using rows, you don't have to create the raised beds.

GARDEN BED LAYERS



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But with **raised beds**, you can easily keep track of what food is in what location and you won't have to worry about one food shadowing another food. Raised beds also make it easy to harvest the foods when it's time for them to be picked and if something goes wrong in one raised bed, it won't wipe out the entire garden. Start building a few planter boxes of all sizes now.

Almost everything that you grow in a garden, both fruits and vegetables, can be canned and safely stored as long as you make sure the food boils for at least 10 minutes.

Foods that you can from your garden can keep for years and they're healthier for you and will hold their fresh taste.

Just because you live in a small space doesn't mean that you can't grow your own food, using the **container gardening** method.

Even if you live in an apartment, you most likely have at least one or two windows and possibly even a balcony.

That means that you have plenty of light to grow fruits and veggies in containers. Yogurt and fruit cups, milk jugs, soda and water bottles and coffee cans are all great planting vessels and cost you nothing.

Vegetables that require little space and are great for window boxes include carrots, radishes, lettuce, onions, and even tomatoes and peppers. Herbs are great, too, but since they grow in just about any area of your house, don't waste window space if you want to grow other things.

The only limitation that you have is the size of your container. If you have enough space, you can even grow small fruit trees or berry bushes in containers.



25 Plants for Your Survival Garden and Their Growth Requirements

Plant Name	Light Intensity	Ideal Temp Ranges	Grows Best With	Avoid Planting With
Basil	Full	70 - 80	tomato, pepper, eggplant, broccoli, Brussels sprouts, grapes, parsley	sage
Broccoli	Full	65 - 75	basil, lettuce, spearmint, onion, sage, thyme, tomato, Echinacea,	grapes, strawberries, cabbage, cauliflower

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Brussels Sprouts	Partial	70 +	basil, spearmint, Echinacea, spinach	strawberries
Cabbage	Full	65 - 75	onions, thyme, sage, spinach, lettuce, rosemary, spearmint, Echinacea,	strawberries, eggplant, tomato, grape, pepper, broccoli, cauliflower
Cauliflower	Partial	65 - 75	sage, thyme, Echinacea, spinach	cabbage, tomatoes, strawberries, broccoli
Dandelion	Shade	60 - 75	tomato	shade makes dandelion more competitive
Echinacea	Full	70 - 85	pepper, tomato, broccoli, cabbage, cauliflower, Brussels sprouts, eggplant	none
Eggplant	Full	70 - 85	peppers, spinach, thyme, basil, lettuce, Echinacea	cabbage
Grapes	Full	65 - 85	basil	cabbage, broccoli
Lettuce	Partial	45 - 65	Brussels sprouts, eggplant, onions, spinach, strawberries, tomatoes	Broccoli, cabbage
Muskmelons	Full	70 +	pumpkin, squash, watermelon	none

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Onion	Full	65 +	broccoli, cabbage, lettuce, peppers, rosemary, spinach, tomatoes, strawberries, parsley, squash	sage
Parsley	Full	65 +	onion, tomato, basil, eggplant, spinach, pepper	spearmint
Pepper	Partial	70-80	basil, onions, spinach tomatoes, parsley, Echinacea, eggplant	cabbage,
Pumpkin	Partial	65-90	muskmelon, squash	none
Raspberry	Full	65 - 90	none	strawberries
Rosemary	Full	70 - 80	cabbage, sage, onion	none
Sage	Full	70 -80	cabbage, broccoli, rosemary, cauliflower	onions, basil
Spearmint	Full	70 - 90	cabbage, tomatoes, squash, broccoli, Brussels sprouts	rodent foods, parsley
Spinach	Full	60 - 70	cauliflower, cabbage, eggplant, strawberries, onion, Brussels sprouts, lettuce, pepper, tomato, parsley	none
Squash	Full	70 - 90	onion, spearmint, pumpkin, muskmelon	none
Strawberries	Full	75 - 85	onion, lettuce, thyme, spinach	broccoli, cauliflower,

				cabbage, Brussels sprouts
Thyme	Full		broccoli, cabbage, strawberries, cauliflower, eggplant	none
Tomato	Full	70 - 95	basil, lettuce, melons, onions, parsley, peppers, spinach, thyme, Echinacea	cauliflower, broccoli, Brussels sprouts, cabbage
Watermelon	Full	70 +	tomato, pumpkin, squash, muskmelon	none

Start a Greenhouse

You can make your own greenhouse and it is a great place to start growing seeds in the winter for use in the spring or growing season. You have to think of alternative solutions because running to the grocery store is no longer going to be an option after an EMP.

Buying seeds will ensure you can grow an endless supply of food. You will want to look for survival or heirloom seeds. You want these specific seeds because these seeds are packaged in a way to ensure their viability. Just make sure that they are hermetically stored. You want continually-producing seeds.

There is a big difference between these types of seeds and just regular seeds. There are also medicinal seeds, which will produce plants that are well-known to treat certain ailments.

Aquaponic/Hydroponics

Aquaponics is essentially the combination of Aquaculture and Hydroponics.

Both aquaculture and hydroponics have some down sides.

Hydroponics requires expensive nutrients to feed the plants, and also requires periodic flushing of the systems. Re-circulating aquaculture needs to have excess nutrients removed from the system which means that a percentage of the water is removed, generally on a daily basis.

This nutrient rich water then needs to be disposed of and replaced with clean fresh water. While re-circulating aquaculture and hydroponics are both very efficient methods of producing fish and vegetables, when you look at combining the two, these negative aspects are turned into positives.

Aquaponics can be as simple or as complex as you'd like to make. You can make your containers out of either barrels cut in half or PVC pipe. You will also need to purchase a small drip system to water the plants. PVC pipes can be placed horizontally or vertically. Research has shown that an aquaponic system uses about 1/10th of the water used to grow vegetables in the ground.

Keep in mind that an alternative energy source will be needed to run your system as electricity will not be available.

Electricity requirement is needed for the pump that oxygenates the water. If you can use a windmill, or a small solar panel, or water mill this problem is solved. In case you don't have electricity from the grid you'll have to find a way to create electricity anyway, and this pump consumes so little that it's not an issue. A refrigerator or other big appliances are the main issue.

When electricity goes out it's best you have an emergency back-up generator that you can hook the pump to. This is why it's very important to choose resistant species

like Tilapia and common Carp that are resistant in low oxygenated waters. If you choose trout or salmon, which are carnivorous, they need a high level of oxygen.

In case of emergency, when you don't have a generator or solar panels, you can oxygenate the water by pouring 5-10 buckets of water (from the fish tank) from 4-6 ft high regularly. But this is temporary.

Small systems can be run easily with a bucket- simply by moving water from the tank to the growbed several times a day so that the growbed floods. There are also folks who use a hand pump from time to time to move their water. I also know a guy who uses a sterling engine based pump for his water- a very cool concept that is 100% energy crisis proof.

MINIMUM GALLONS OF WATER FOR AQUAPONICS FISH

Fish Type	Adult Size	2 Gallons Per Fish	2 Gallons for 6 Fish
Goldfish	6 - 12 inches depending on species	12 - 24 gallons	72 - 144 gallons
Tilapia	10 - 20 inches depending on species	20 - 40 gallons	120 - 160 gallons
Minnows	2 - 5 inches depending on species	4 - 10 gallons	24 - 60 gallons
Koi	24 - 36 inches	48 - 72 gallons	288 - 432 gallons
Small Catfish	1 - 40+ inches depending on species	2 - 80 gallons	12 - 480 gallons
Freshwater Sunfish	1 - 8 inches depending on species	2 - 16 gallons	12 - 96 gallons
Yellow Perch	12 - 15 inches	24 - 30 gallons	144 - 180 gallons
Bluegill	6 - 10 inches	12 - 20 gallons	72 - 120 gallons
Crappie	4 - 12 inches	8 - 24 gallons	48 - 144 gallons
Rock Bass	8 to 10 inches	16 - 20 gallons	96 - 120 gallons

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Many different species of fish can be grown in an aquaponic system, and your species selection will depend on a number of factors including your local government regulations. Fish are known to adapt to diverse water quality conditions. Local fish may have significantly different requirements from those listed in this table.

If fish are healthy and active, take note of the water characteristics where the fish comes from and try to match those in your setup.

How to Catch Your Food

Fishing

Tackle

Get organized with a box that has small compartments. That way you can find the appropriate hook, weight or bobber for any fishing situation.

Buy extra hooks, line, lure, sinkers and bobbers.

Rod and Reel

In determining a fishing rod and reel take into consideration that you will be using them most likely for a long period of time. You may want to purchase more than one rod/reel set or in the least, one for each member of your family. Fishing rods and reels have come a long way over time, with new space age materials having been developed for rod construction making them longer and much lighter as well as reels with multiple ball bearings and one piece alloy and graphite frames.

For survival fishing you will probably not be concerned with all of the fish and game rules that you have to abide by. You might want to use fishing Yo-Yo's, Speed Hook snares, trot lines, bow fishing, spear fishing or gill nets to improve your chances to catch fish.



Catching Fish

If you have never fished before in your life, there are certain factors to take into consideration.

- Where or when are you going to fish?
- What is the time of day?
- What is the season and/or weather?

Hopefully, in doing your research on survival, you learned how to cast and work your lure or bait near the area where you live. Fishing is not hard once you get the hang of it.

Where to Fish

In a post-EMP world, and in order to survive and keep your family fed, finding places to fish will be a top priority. Listed below are a few places you might want to look for in your area if you have never wandered outside your own neighborhood:

Pond Fishing - Small pan fish are easy to catch. Larger ponds may hold larger fish, many of which more commonly live in lakes. The only difficulty you may run into is that there are not a lot of fish and if everyone is doing the same thing as you, the fish population may disappear in a short amount of time. Fishing in a pond only requires your rod, reel, bobber and maybe some earthworms.

Lake Fishing - Lakes also contain freshwater fish. Larger fish such as striped bass, sturgeon and large-mouth bass can be found in many lakes. Pan fish and catfish are also commonly found in US lakes. If you happen to have a "john" boat and you have easy access to it, you have the chance to get away from the shore where there will most likely be a bigger variety of fish. Purchase oars and oar locks so you don't need to run the gas engine.

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Stream Fishing - Trout are plentiful in streams and are fairly easy to catch. In order to fish in a stream you can stand on the bank of the water or wade in.

River Fishing - Rivers contain a variety of fish in size and species. There are sometimes runs of spawning fish such as salmon, eels or lampreys in a river vs. a stream during short periods during each year. There is nothing wrong with standing on the shore and fishing as you can still catch a variety of fish.

Ice Fishing - This is a special type of fishing reserved for those who live in places where there is not actually direct access to the water. Ice fishing is the practice of catching fish with lines and fish hooks or spears through an opening in the ice on a frozen body of water. A hole must be cut in the ice before you can fish. Ice fisherman may sit on an upside down bucket in place of a stool in the open on a frozen lake, or in a heated cabin on the ice, some with bunks and amenities. You will need an ice auger, an axe or a chainsaw to cut a hole in the ice. A large ladle with drain holes is helpful to keep the hole clear of ice as the water refreezes.

TYPES OF FISH AND THE SEASON TO CATCH THEM

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Albacore Tuna						X	X	X	X			
Barracuda			X	X	X	X	X	X	X	X		
Bigeye Tuna								X	X			
Bonito			X	X	X	X	X	X	X	X		
Calico Bass			X	X	X	X	X	X	X	X		
Dorado							X	X	X			
Rock Cod	X	X	X	X	X	X	X	X	X	X	X	X
Rockfish	X	X	X	X	X	X	X	X	X	X	X	X
Sand Bass			X	X	X	X	X	X	X	X		
Yellowfin Tuna							X	X	X	X		
Yellowtail	X	X	X	X	X	X	X	X	X	X	X	X

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Hunting & Trapping

Although I would not advise learning to hunt after an EMP has occurred, you still have time to become a hunter right now.

This is one of those areas, though, where you probably want to get a little bit of education and familiarize yourself with the chosen equipment beforehand.

There are two main types of hunting: Firearms and Archery.

Learning to Hunt

Knowing where to begin to learn about hunting can be tough. You want to start the wheels in motion well before it's time to get out there and hunt.

When you do go out hunting for the first time, you need to be educated as well as possible and familiar with your chosen equipment. While there is still time, I would suggest attending a hunter education or safety course.

This should help you understand more about hunting, hunters, and the wildlife in your local area.

Be an Apprentice

When deciding to learn how to use your gun or bow, be sure to learn from someone who knows what they are doing. Be a novice or an apprentice and let them mentor you. You can't learn it all at once. You didn't learn your job in a day and you won't learn how to hunt in a day either.

Get a feel for your gun, for hunting and see what it's like. Let them teach you so that you will feel comfortable getting out there when the time comes.

Review Gun Safety Rules

Before you handle a gun, make sure you understand the rules of basic firearms safety. It's always a good idea to have your mentor review these rules with you even if you think you know everything about guns.

And don't forget that most of these basic safety rules also apply to archery equipment such as bows and crossbows.

Practice! Practice! Practice!

Okay, so now you've fired a few shots from a gun with your mentor watching your every movement. You probably still need to practice with it to become proficient. Although you don't want to waste ammo, a little more practice would not hurt.

Spend some time perfecting your aim. Target practice with .22's will allow you to practice the fundamentals of shooting without breaking bank. Spend some time now, before you need to rely on your newly-formed skill set to feed yourself and your family. Better to learn now than after an EMP. Learning how to use your gun or bow will take practice, practice and more practice. It is not as easy as it looks.

Many experts speculate that more game has been taken with the lowly .22 LR round, pound for pound, than all other calibers put together. A .22 single shot or bolt action can fire low velocity 20 grain bullets powered only by the power of a primer, without any gunpowder at all.

In low velocity ammunition, the bullet travels slower than the speed of sound (subsonic) making it very quiet. Low velocity ammunition offers all of the benefits of a suppressed weapon without any of the hassle.

You can take game or clear the garden of pests quieter than some air rifles. That might be important when you don't want to be noticed any more than absolutely necessary.

Archery

It is more difficult to learn to use archery equipment than firearms. You need to get closer than with a firearm and you very rarely get a second shot at an animal.

If you have chosen bow hunting be sure to practice - a lot. Gain the wisdom and knowledge you need before picking out a bow and archery tackle.

There are different types of bows just as there are different types of firearms. You will have to master stalking, the art of effective camouflage, the use of hunting blinds and tree stand hunting to get close enough for a shot with a bow.

You must learn to be silent, to eliminate your scent, and to read the wind. You will need to learn about the habits, calls and routines of your quarry.

It takes time to become proficient using both firearms and archery. And, even though you may be shooting well at paper targets, it's going to be harder to hit live game, shooting up or down hill and firing from awkward positions or when you may be out of breath.

There are easy shots once in a while, but that is not always the case.

Trapping

Trapping is a great way to catch dinner. Once you set a trap or snare, it will work for you 24/7 while take care of other chores or sleep. Pests raiding your garden can go straight into the stew pot.

Fishing Yo-Yo's and Speed Hook snares can also be rigged for squirrels, birds and other small game in addition to fish. So can gill nets and multipurpose cargo nets or hammocks. To go very in depth into trapping and snaring would be beyond the scope of this book, but there are many good books on the subject.

In addition to the aforementioned tools, you should buy couple dozen Thompson Snares in sizes 0 and 00 for rabbits, squirrels and other small game and half dozen Conibear body grip traps in sizes 110 & 220 and a setter. In a pinch you can fashion effective snares out of picture hanging wire or very fine brass or stainless steel wire.

If none of those are available you can use the inner strands of para-cord, use natural cordage, carve figure four dead fall snares, rolling snare trigger snares or pit traps.

Field Dressing Game

Most game is most active at dawn and dusk, so it's best to get out in the field before dawn. When you do make a kill, field dress big game on the spot especially in warm weather.

When hunting small game and the hunting is good you can wait to field dress your game until you're finished for the morning or evening.

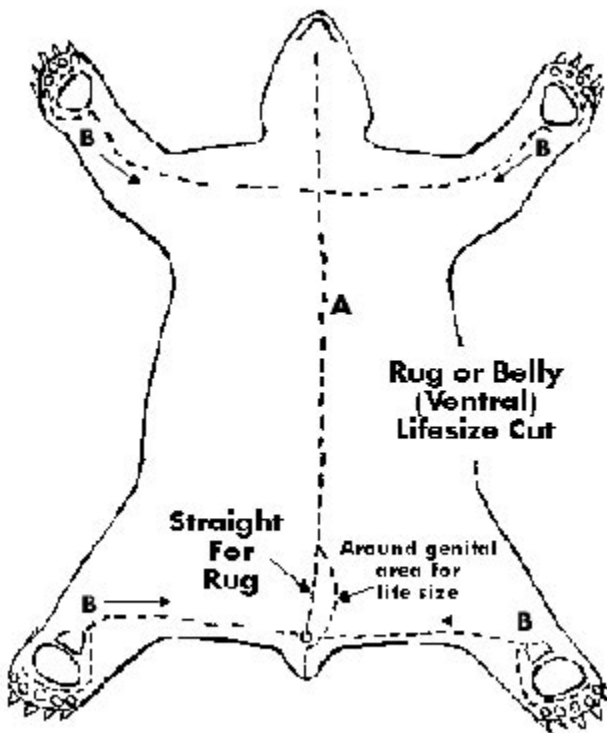
Be careful not to puncture any of the gastrointestinal tract as you remove the gut pile as you don't want its contents to come in contact with the meat if you can help it.

With experience you will be able to easily tell how healthy an animal is as you field dress it. In the beginning, just don't eat any spotted or foul smelling meat. Tumors or

any abnormal anatomy are rare and can just be removed.

A thick pair of long reusable rubber gloves like surplus US NBC gloves make cleanup of game safer by keep blood and innards away from any open cuts you might have on your hands or forearms if animals carry disease in the area where you are hunting.

Make sure that you wash your hands well after field dressing game.



How to Preserve Meat

Why you don't have to barbecue all your meat and have a "gorge-fest" only to starve later...

My recommendation is that you look for books to purchase before an EMP to use as a reference. There are different processing times for all the different animals you will catch or kill and it will affect cooking and preparation times.

There are even rules for different elevations. If there is one thing you do not want when trying to survive is for anyone to become sick by eating improperly processing meats.

Canning

You can take the meat you have just killed, cleaned and dressed and preserve it by “canning” it. At this point, it can be stored in your cold storage locker for a maximum of one day before canning. Here’s what you’ll need to can your meat:

- A pressure cooker or pressure canner,
- A sharp carving knife.
- Clean Mason jars with NEW lids. Preferably use the large mouth, pint size jars since one pint usually holds a pound of meat and that’s what most recipes call for.

MINUTES TO PROCESS FOR PRESSURE CANNING

Meats	Pint	Quart
Chicken or rabbit, cut up, without bones, raw or hot pack	75	90
Chicken or rabbit, cut up, with bones, raw or hot pack	65	75
Ground or chopped meat, hot pack only	75	90
Strips, cubes or chunks of meat, raw or hot pack	75	90
Meat stock (broth), hot pack only	20	25
Fish, raw pack only	100	not recommended
Smoked fish	110	not recommended

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Chicken, Rabbit

Chicken or rabbit can be boiled, steamed or baked until it is about two-thirds done. Add 1 tsp. of salt per quart to the jar, if desired. Fill jars with pieces and hot broth, leaving 1 1/4 inch head space.

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If you choose to go the raw method, add 1 tsp. of salt per quart as well but this time fill the jars with raw meat pieces leaving 1 ¼ inch head space. Do not add liquid.

Bear, Beef, Lamb, Pork, Sausage, Veal, and Venison

Choose quality chilled meat. Remove excess fat. Soak strong-flavored wild meats for 1 hour in brine water containing 1 tablespoon of salt per quart. Rinse. Remove large bones.

For hot packing, precook meat until done by roasting, stewing, or browning in a small amount of fat. Add 1 teaspoons of salt per quart to the jar, if desired. Fill jars with pieces and add boiling broth, meat drippings, water, or tomato juice, especially with wild game), leaving 1-inch head space. If you want to pack raw meat, add 2 teaspoons of salt per quart to the jar, if desired. Fill jars with raw meat pieces, leaving 1-inch head space. Do not add liquid.

Blue, Mackerel, Salmon, Steelhead, Trout, and other Fatty Fish except Tuna.

Remove the head, tail, fins, and scales. Wash and remove all blood. Split fish lengthwise, if desired. Cut cleaned fish into 3-1/2 inch lengths. Fill pint jars, skin side next to glass, leaving 1-inch head space. Add 1 teaspoon of salt per pint, if desired. Do not add liquids.



The texture and the flavor of the canned meat are influenced by the manner in which the animal was gutted and handled after it was killed. Do not let meat stand in water before canning. Prepare enough food for one canner, otherwise it will get spoiled. Disembowel the fish within 2 hours after they are caught. Keep cleaned fish cool until ready to can.

Make Jerky

Select a cut of meat, and remove all noticeable fat. Marinate the meat. Use a solution of olive oil and vinegar, sea salt, or a recipe of your preference. Coat the meat in the seasonings of your choice. Dehydrate the meat. Place the fresh jerky somewhere dry to store.

Salt Curing

Salt-cured meat or salted meat, for example bacon, is meat or fish preserved or cured with salt. Salting, either with dry salt or brine, is the method used today to salt-sure meats. Salt inhibits the growth of microorganisms by drawing water out of microbial cells through osmosis. Concentrations of salt up to 20% are required to kill most species of unwanted bacteria.

Smoking, often used in the process of curing meat, adds chemicals to the surface of meat that reduce the concentration of salt required.

Curing

Meat spoils because it is a good place for bacteria to thrive in. Bacteria need water, and there is a lot of water content in the meat, especially the muscle fibers. This is solved by introducing salt. It will expel a lot of the water from the meat, and creates an environment where bacteria cannot develop and multiply.

Besides the meat, you will also need a mixture of curing salt and brown sugar. For example, half a pound of salt mixed with a quarter cup of sugar should be enough for ten to twelve pounds of meat.

The sugar is necessary in order to counterbalance all of the salt, and will also give the meat a distinct flavor. If you like, other sweet products can be used such as honey or maple syrup. You can also add your favorite herbs and spices if you want, they will also give your meat a unique aroma.

There is another ingredient which, ideally, should be included: sodium nitrite. It is particularly effective at fighting off botulism – a very bad bacterium which you do not want anywhere near your meat.

At the same time, high levels of nitrite can also be toxic, and you need to take special care with this step. There are two safe ways for you to add sodium nitrite:

- Using green leafy vegetables such as celery, spinach and lettuce. They all naturally contain sodium nitrite. You can add juice or extract and you will get the sodium nitrite you need.
- Adding pink salt. Also known as Prague Powder #1, this salt already contains a mixture of regular table salt and sodium nitrite in the appropriate composition.

Once you have the necessary ingredients, start cutting the meat into slabs. Pork is commonly used, but you can also use beef or fish. Take a slab and cover it heavily in the salt mixture. Do this with the rest of the meat. After this place it in jars or crocks for storage. Make sure that the meat slabs are tightly packed together.

Take them to your storage destination of choice. Make sure that the temperature is below 38 degrees Fahrenheit, but that it is well above freezing. 36 degrees Fahrenheit is ideal. After about a month of storage, take the meat out. Take each slab and wrap it in paper or plastic. Either is fine as long as it is moisture-proof. This meat is now ready to be stored and consumed whenever you need it.

Brining

The process described above is referred to as dry curing, but there is also a method for wet curing, also known as brining. This technique involves you keeping the meat submerged in a salty solution.

The steps are similar: the meat needs to be cut the same way and placed in jars or crocks. Wash the meat and sterilize the jars before you do.

Now you need to make the salt water. Adding about a pound of salt and half a cup of sugar to three quarts of water should do. Feel free to mix in other ingredients such as herbs and spices. Repeat this process until you have enough water for all of the jars. Fill each one up. Make sure that the meat is completely submerged. If you are having problems, place a weight on top. Take the meat to your storage area.

Unlike dry curing, the meat will need your attention on a weekly basis. Each week you will have to take the meat out of the jars, stir the brine well and then place it back. After four weeks of repeating this process, your meat is ready. If you find the brine to be getting too thick, you will need to replace it with a fresh batch.

Dehydrate

Overall, if you are looking for a low cost, space efficient method to store foods, few can rival dehydration.

When preparing foods, simply cut the food into evenly sized pieces that do not exceed 1/4 inch in thickness. You will need to experiment with different drying times and thicknesses to determine what will work best for each food type.

In order to get the best results, you should always choose fresh fruits and vegetables. If you buy extra produce from a farmer's market or even the local food store, make

sure that you are prepared to start the drying process within 6 - 12 hours. Even though some foods may last longer, you will get the best flavor and quality by dehydrating as quickly as possible.

Just because you dried foods, it does not always follow that they will be edible, tasty, and visually appealing. For example, once you cut apples into slices, they will begin to turn brown.

To prevent this, simply dip the pieces in lemon juice. You can also use this method for other light colored vegetables and fruits that tend to discolor soon after cutting.

The fastest and easiest way to preserve meat, fish, and some fruits is to sun dry them. Start by removing any tissue that is bruised, discolored, or infected. The wet surface of fruit, fish and meat is an ideal growing area for bacteria and fly larva. Drying greatly reduces this problem plus keeps the dried items fresh.

- Clean and cut the foods to be dried into thin strips.
- For meat and fish, cut the strips 4 inches wide by 10 to 12 inches long by about 1/2 inch thick.
- Cut scoring marks on both sides along the length of the meat or fish to be dried.
- When this is done skewer the meat or fish open and suspend it on the racks or on the rope to dry.

Try to locate the rack or the suspending ropes outside of the camp to prevent scavengers from reaching them. Choose an area where there is plenty of sunlight, and also a light breeze to keep the flies away. If this is not possible, fan the rack or ropes to keep the flies away.

Dried fish and meat can be store for a long time as long as they are stored in air and water tight containers. Once they come in contact with moisture, they must be

consumed or discarded. Dried fish and meat can also be ground and pounded to be added to wilderness soups or stews.

Use a similar process to dry fruits and vegetables. Since plant based foods have different water content levels, you should know how long it takes to dry each one, as well as how long they can be safely stored.



DIY DRYING RACK

- 1. Cut 4 poles about 8 feet tall and 3 inches in diameter.*
 - 2. Cut 5 poles about 6 feet long and 3 inches in diameter for horizontal meat or fish hanging poles.*
 - 3. Take the 4 tallest poles and make 2 sets of 2 poles lashed together about 1 foot from the top.*
 - 4. Lash 4 of the meat or fish horizontal poles into place starting at the top of the "V" of the longer poles across to the other set of longer lashed poles. Each of the horizontal poles should be spaced about 1 foot down from each other. The fifth horizontal pole will be lashed to the back of the rack to help support the structure.*
- Step 5: After you have chosen the location for the drying rack anchor it by burying each leg about 1 foot down.*
-

How to Preserve Vegetables

How are you going to preserve your food when you don't have a refrigerator after an EMP?

And, more importantly: why are you not going to have to barbecue all the meat that was in your freezer and have a "gorge feast" only to starve later?

Preserving foods is not as simple as it might seem and it really is a lost art. Back in the days when most people lived on farms, everyone in the family became involved in the preservation of the food supply.

They did this because they knew that they needed to survive from the end of one growing season to the next and had to ensure they had enough food on hand to feed everyone in the family.

Perishable

Root Cellar

As is evidenced by the name, this type of storage is a place for crop items to be stored until ready for use. You can store most fruit and vegetables in this type of storage unit. This type of "cellar" is usually dug 4-5' down in the ground.

Most cold tolerant or cool season crops will store best between 33-35F or just above freezing and up to 40F. Items such as tomatoes, cucumbers, etc. are either stored above 50F or are processed/cooked or eaten right away.

There are different temperatures for different foods so it is best to do some research. You may need to make a couple of lockers to store items that require various temperatures.

Pot-in-A-Pot Refrigerator

In a community or situation without electricity, storage of food long-term can be tricky.



DIY POT-IN-POT REFRIGERATOR

*A simple **pot-in-pot refrigerator** can even be improvised by using a smaller clay pot within a larger clay pot, adding sand and water in between the smaller and the larger pot.*

Use a rag to cover it until the small pot becomes cool on the inside. The only thing you need to do with this device is keep adding water to the sand to keep it cool.

You can use Pot-in-Pot refrigerator to store a number of items that need to be kept cool from food to medicines.

Wet Canning Using the Water Bath Method

Use mason jars which provide a sterile receptacle for food. The jars need to be boiled in water but the contents of the jar need to be cooked as well. There are special cooking pots for boiling the jars which can be picked up at store that carries canning supplies. Reusable lids will also be important since there won't be any resupply for some time.

Dry Pack Canning

Gather as much of the following items as possible: flour, wheat, rice, beans, powder milk, noodles, corn, barley, oats, beans, etc. Not only can you buy most of these items in bulk, they are great for storing.

Again, check to see the best methods for storage but items like rice and flour can be stored/preserved in Mylar bags and then stored in 5-gallon buckets. You will also need an iron to seal the Mylar bags.

Metal cans, like grandma used to keep on her counter filled with flour, sugar, rice, etc. are excellent storage containers. Nowadays, they put popcorn in large tins around the holidays. Keep those tins for storing some of these bulkier items.

Don't store all of your food items in one place. If your location is compromised and intruders find one stash of food, that doesn't mean you have to be left without anything for your survival. Make several storage locations; hide it in hidden areas where it is out of sight.

Cooking and Canning at Home

Cooking and canning foods at home is so easy that even a beginner can quickly learn how to master it. Making and canning foods at home is also an inexpensive and healthy way to provide food for your family.

The first items that you'll need to line up are enough jars to hold the foods you want to store. How will you know how many jars you need? One way is by checking out what the recipe says. Home canning recipes will usually tell you how many batches of food the recipe will produce.

You can find jars that are specific for home canning. When you have them, you'll want to wash the jars along with their lids and bands like you would hand wash dishes. This is done to remove germs and sterilize the jars.

The next items you will need are **utensils**. You'll need spoons and a spatula. You'll also want to make sure that you sterilize the utensils you use. When you're canning foods, you don't really have to have a lot of items, but you do want to make sure you have a sturdy stockpot.

You might find it helpful to have a funnel, labels and a canning jar holder. If you're canning fruits or jellies, you may also want pectin - but some people can foods

without it – it's a personal preference. Once the water has simmered in the pot, you'll want to fill the jar to the level that the recipe calls for.

Don't put warm foods in cool jars because this will cause the jars to shatter.



The jars need to be at least room temperature. To get out the air bubbles, make sure you don't stir - just run a flat utensil around the inside of the jar. Put on the lid toppers and the rings then place the jars in the jar lifter. If you don't have a jar lifter, you can use tongs in a pinch, but it's easier for the jar to slip with tongs.

Using a jar lifter, you would lower it by the handle into the stockpot until the tops of the jars are completely covered by water. Let the water boil however long the recipe says to let it boil.

You don't want to count the time before the water boils. Once the jars are cool, some people put labels that are dated on the outside of the jars so that they can rotate the foods while they're in storage.

Use a pressure canner for low-acid foods (vegetables, meats), and boiling water canning for high-acid foods only (fruits, tomatoes and pickled products).

Vegetables and meats require different processing times. To be sure that your foods are safe, process them at the proper time for your elevation.

Start with 10 minutes at elevations above 1,000 feet, and add one additional minute per 1,000 feet of elevation.

MINUTES TO PROCESS FOR PRESSURE CANNING

Vegetables	Pint	Quart
Asparagus, spears or pieces, raw or hot pack	30	40
Beans or peas, shelled, dried, hot pack	75	90
Beans, baked (see Beans, dry)	65	75
Beans, dry, with tomato or molasses sauce, hot pack	65	75
Beans, fresh lima-shelled, raw or hot pack	40	50
Beans, snap and italian-pieces, raw or hot pack	20	25
Beets, whole, cubed, or sliced, hot pack	30	35
Carrots, sliced or diced, raw or hot pack	25	30
Corn, cream style, hot pack	85	not recommended
Corn, whole kernel, raw or hot pack	55	85
Mixed vegetables, hot pack only	75	90
Peas, green or english, shelled, raw or hot pack	40	40
Peppers, hot pack only (1/2 pint same as pint)	35	not recommended
Potatoes, sweet, pieces or whole, hot pack	65	90
Potatoes, white, cubed or whole, hot pack	35	40
Pumpkin and winter squash, cubed, hot pack	55	90
Spinach and other greens, hot pack	70	90
Succotash, raw or hot pack	60	85

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PROCESSING TIME FOR CANNING IN A BOILING WATER BATH

Fruit	Pack	Jar Size	Process time (min.) at elevation of:			
			0-1000 ft.	1,001-3,000 ft.	3,001-6,000 ft.	6,001-9,000 ft.
Apples, sliced	Hot	pints or quarts	20	25	30	35
Applesauce	Hot	pints	15	20	20	25
		quarts	20	25	30	35
Berries	Raw	pints	15	20	20	25
		quarts	20	25	30	35
	Hot	pints or quarts	15	20	20	25
Cherries	Raw	pints or quarts	25	30	35	40
	Hot	pints	15	20	20	25
		quarts	20	25	30	35
Fruit Purees	Hot	pints or quarts	15	20	20	25
Grapes	Raw	pints	15	20	20	25
		quarts	20	25	30	35
	Hot	pints	15	20	20	25
		quarts	20	25	30	35
Grapefruit and Orange	Raw	pints or quarts	10	15	15	20
Peaches and Nectarines	Raw	pints	25	30	35	40
		quarts	30	35	40	45
	Hot	pints	20	25	30	35
		quarts	25	30	35	40
Pears, Asian		pints	20	25	30	35
		quarts	25	30	35	40
Pineapple	Hot	pints	15	20	20	25
		quarts	20	25	30	35
Plums	Raw	pints	20	25	30	35
		quarts	25	30	35	40
	Hot	pints	20	25	30	35
		quarts	25	30	35	40
Rhubarb	Hot	pints or quarts	15	20	20	25

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Dehydrating Vegetables

When foods are dehydrated, they typically lose 90% – 94% of their moisture content; it's this lack of moisture that enables dehydrated foods to be stored for such long periods of time, often upwards of 20 – 30 years.

Unfortunately, dehydration causes certain nutrients to break down, since it basically amounts to a slow cooking process as hot air is circulated over the food to sweat the water out of the fruits, vegetables or other dehydrated material.

Dehydrated foods, as a result, take on a shriveled and leathery appearance, and things like fruit are extremely tough and chewy if you don't rehydrate them.

A huge advantage of dehydrated foods, however, is that you can dehydrate your own fruits and vegetables if you have the extra produce.

DEHYDRATION TIMES FOR VEGETABLES

Asparagus	5-6 hours
Beans, Green or Wax	8-12 hours
Beets	8-12 hours
Broccoli	10-14 hours
Cabbage	7-11 hours
Carrots	6-10 hours
Celery	3-10 hours
Corn	6-10 hours
Cucumber	4-8 hours
Eggplant	4-8 hours
Greens	3-7 hours
Mushrooms	3-7 hours
Okra	4-8 hours
Onions	4-8 hours
Parsnips	7-11 hours
Peas	4-8 hours
Peppers / Hot Peppers	4-8 hours
Popcorn	4-8 hours
Potatoes	6-14 hours
pumpkin	7-11 hours
Summer Squash	10-14 hours
Tomatoes	5-9 hours
Turnips	8-12 hours
Winter Squash	7-11 hours
Yams	7-11 hours
Zucchini	7-11 hours

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This is an especially useful skill in the event of an EMP, when there will be a huge interruption of the electrical power, or if you simply have a large garden that produces an abundant harvest each year and you want to save the excess.

DEHYDRATION TIMES FOR FRUITS

Apples	7-15 hours
Apricots	20-28 hours
Bananas	6-10 hours
Berries	10-15 hours
Cherries	13-21 hours
Cranberries	10-12 hours
Figs	22-30 hours
Grapes	22-30 hours
Kiwi	7-15 hours
Nectarines	8-16 hours
Peaches	8-16 hours
Pears	8-16 hours
Persimmons	11-19 hours
Pineapple	10-18 hours
Prune Plums	22-30 hours
Rhubarb	6-10 hours
Strawberries	7-15 hours
Watermelon	8-10 hours

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Another aspect of dehydrated foods is that usually they are comprised of raw materials for cooking with.

So you may have rice, pasta, potatoes, onions, corn and other staples, but you have each of these things individually packaged or in separate cans, and it's up to you to combine the ingredients with water and cook something of them.

Most dehydrated foods also lack seasoning, spices or herbs, so it's up to you to add seasoning or spices to whatever you end up cooking.

In terms of prep time, dehydrated foods also take longer to cook (generally between 20 – 60 minutes or longer depending on the dish) than freeze-dried foods.

Dehydrated foods typically require a larger quantity of water to be properly reconstituted, as well.

Climate Controlled Area

There are a few areas you can store food around your house that are considered "climate-controlled" because the temperature stays constant in the area.

A few of these storage areas are closets, bookshelves, under beds, your basement or metal cabinets with shelves.

Cold Storage

How can you still have what is the equivalent of a refrigerator after an EMP? One option to consider is a propane refrigerator and freezer. They are a little more expensive and they run on LPG fuel.

But, propane does not go bad, so you can stockpile as much as you want. These refrigerators and freezers need no power source to operate. The only reason any models have a power cord is to run the interior light.

Primitive River Refrigerator

If you don't have the ability to can but do have a reliable method of killing and butchering game and an available water source, you can use an ancient method of food preservation where you essentially use a fast flowing water source to pull heat away from a meat source.

Put recently butchered meat in a dense wicker basket, burlap sack, or anything else that will let water flow in but keep fish and animals out. Then, dive into the coolest part of the river, preferably somewhere near the middle that still has a good flow to it.

Next, weigh your sack down under a few rocks, so that they will not be swept away. This won't substitute for a refrigerator, but you can preserve your meat for 24 hours before having to cook it. This means an extra day of protein that required little to no energy to get—or the equivalent of a day's worth of meat you don't need to hunt.

Vacuum Sealer

Food storage in a survival situation can be harrowing because you have to make sure you have plenty of food for yourself and family but at the same time you need to make sure it is kept safe and sealed. One kitchen tool can help with both of those issues – a vacuum sealer.

Your food sealer will usually come with a pack of food sealing bags but if you're preparing for long term storage, you do not want to use the clear plastic bags that come with the sealers. These sealing bags are air permeable, and just like plastic water cartons; they will eventually deteriorate and leak air into your container, compromising the safety of the food.

Use Mylar Bags for long-term storage. And you don't just use the Mylar bags – you use oxygen absorbers along with them. Mylar bags offer more durability (they don't puncture easily like a plastic bag will). Plus, they provide light protection that see-through plastic food sealing bags don't have. Some people use a combination of the two, double sealing each item.

Place your food item (such as grains or beans) inside the Mylar bag and add the oxygen absorber to the bag with the food. Some people use a flat iron to seal most of the bag shut, leaving enough room for a formidable straw (hard plastic, not disposable).

Using a vacuum sealer with an attachment hose, you attach the hose to the straw, which is inserted into the bag, and allow the machine to suck out as much air as possible. Then you seal it with the flat iron and remove the straw.

You may not be able to get out every bit of air, but that's what the oxygen absorber is for.

Another way you can do it is by double-sealing your meals. Place your entire meal into a Mylar bag with an oxygen absorber. Then place the Mylar bag into a regular plastic vacuum sealer bag and let the machine suck out all of the air for you before sealing it.

It takes a while to seal big batches of food because most food sealers require the motor to cool down a bit before using them again and again.

It's good to do a little at a time, purchasing supplies on each grocery trip and sealing them off for storage.

You can reuse some bags, but make sure you have them marked so that you're not putting raw meat with bacteria in a bag first and then putting other foods into the same bag afterward.

Cook Without a Stove

Portable Stove

When you think of a portable stove, you most likely think of a Coleman stove. You can find these Coleman or "camp stoves" along with the propane online or at any outdoor or sporting goods store.

Portable stoves come in the form of something that looks like either a single burner or a dual stove top. With a portable stove you have the convenience of cooking almost the same as if you were using your kitchen stove.

As mentioned before with other propane products, you can purchase an adapter that will allow you to connect a 20lb propane tank.

EASY DIY ALUMINIUM-CAN STOVE

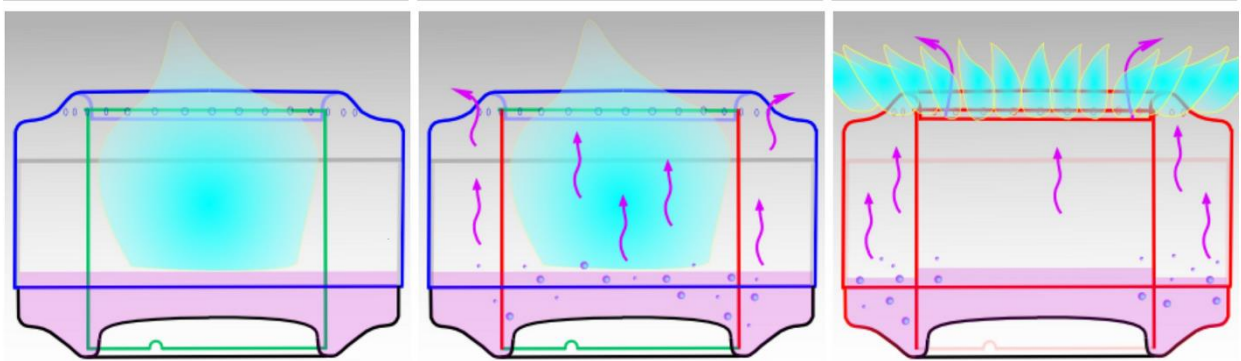


Required parts and tools:

- aluminium can (beverage can)
- scissors or knife for cutting
- epoxy or thermal foil tape
- approx.45ml. fuel (alcohol)

Cut the bottom of an aluminium can (beverage can) at two inches from the top, and pierce holes into the top with a pin, leaving 0.8 inch distance between them. Cut also the bottom at 1.5 inch.

Use the remaining can material to make an inner wall. Place the inner wall inside, then glue one bottom to each other using a high-temperature epoxy or seal them with thermal foil tape.



Source: wikipedia.org

Pour the fuel into the stove and burn it. The flame will heat the mini-stove, causing the fuel to vaporize. When the temperature is high enough, vapor pressure will cause fuel jets through the wholes and a ring of flame.

This is enough to cook 0.5 liters of meal in 12 minutes, using 45 ml of fuel, and twice as much for cooking 1 liter of meal.

Mini-Grill

A mini-grill will not exactly be the same thing as cooking on your outdoor BBQ grill with all the bells and whistles but it will be a way to cook your food efficiently.

There are small charcoal grills or they are sometimes called hibachi grills. These grills are usually rather small and fit on top of a table.



DIY MINI-GRILL

Make **your own grill** by using an aluminum pan like the one you would cook a turkey at Thanksgiving. Purchase an aluminum mesh grill topper to put the food items on and also charcoal.

Place the charcoal in a single layer inside the aluminum roasting pan and poke several holes around the outer edges of the pan. Lay the grill topper on top of the roasting pan and fold the "lid locker" aluminum lip around the grill top to secure it in place.

Open Fire

You will definitely have a lot of choices as to how you want to cook your food over an open fire. Make a tripod out of metal or long wooden poles. With the tripod situated over the fire, hang a pot as they used to do back in the chuck wagon days.

Place a couple of large stones on either side of the fire and place a grill or wire grate over the top to support food and/or pans for cooking. Make a spit and rotate the meat. This is a slow way to cook things but it does get the job done.

Someone will have to stand there and rotate the meat unless you come up with a device to attach to the spit to do the rotating for you.

You can make a grill out of anything you have around your house that is metal. You would probably be surprised to see how creative you can get when you are hungry and you don't want to burn yourself in the process. You could even pull a ventilation return off your heating/cooling system to use. You definitely won't be needing that for a while!

Be sure to keep in mind that if you want to cook items that are thin or skinny, you want to look for something to hold the food that will allow you to grill the food but at the same time not allow the food to fall through into the fire.

Right now would be a good time to purchase a set of cast iron cookware. Cast iron cookware has numerous uses and many manufacturers now offer seasoned cookware that is ready for use. Cast iron pots can withstand intense heat and can be put right into your fire.

Wood-Fired Oven

You may already have this item on your property. A lot of people love to grill outdoors and have made areas that actually resemble a kitchen.

A wood-fired oven is made out of bricks (mortar free) and cement. The oven will allow you to provide crusty, chewy and richly flavored bread and other baked goods in no time.

If you don't have this type of oven, prepare a base for the oven. Make a form by shaping a pile of moist sand. Then lay a brick foundation.

Building soil usually is found below the topsoil level in your yard. It contains clay which, like cement, holds things together. Use it straight out of the ground or mix it with sand. Make a sand dome form and be sure to leave an opening for the door.

I have provided the basics. With a little research and ingenuity you will be able to build a durable brick oven for cooking after the lights go out.

Solar Cooker/Oven

To build a solar cooker or oven, gather up some old mirrors and either a wood or cardboard box. The end goal here is create a reflective surface to gather the sun's light. You want to make sure that the light is focused onto one point to generate the heat.

The inside of your "oven" must be lined with highly-reflective material such as aluminum foil or mirrors on three sides and the sides must be angled. Make sure you provide a sturdy base and allow one side to catch the light plus enough space for your cooking pot(s).

Rocket Stove

A rocket stove is a cooking stove using small diameter wood fuel which is burned in a simple high-temperature combustion chamber. The rocket stove usually has a vertical chimney and a secondary air supply.

A Rocket stove's main components are as follows:

- Fuel magazine - a short length of steel or ceramic pipe fitted horizontally into the base of the chimney

- Fuel shelf - holds the fuel clear of the bottom of the magazine to allow air to flow underneath
- Chimney - a metal box (such as a 5-gallon tin can) or pipe standing vertically and supporting the cooking vessel
- Heat exchanger - a tubular metal shield that forces hot gases from the chimney to pass over the sides of the cooking vessel

Dutch Oven

A Dutch oven is a thick-walled (usually cast iron) cooking pot with a tight-fitting lid.

A Dutch oven can come with three legs, a wire bail handle, and a slightly concave, rimmed lid so that coals from the cooking fire can be placed on top as well as below. This provides more uniform internal heat and lets the inside act as an oven.

These ovens are typically made of bare cast iron although some are aluminum. Dutch ovens are well suited for long, slow cooking, such as in making roasts, stews, and casseroles.

When cooking over a campfire, it is possible to use old-style lipped cast iron Dutch ovens as true baking ovens, to prepare biscuits, cakes, breads, pizzas and even pies. A smaller baking pan can be placed inside the ovens, used and replaced with another as the first batch is completed.

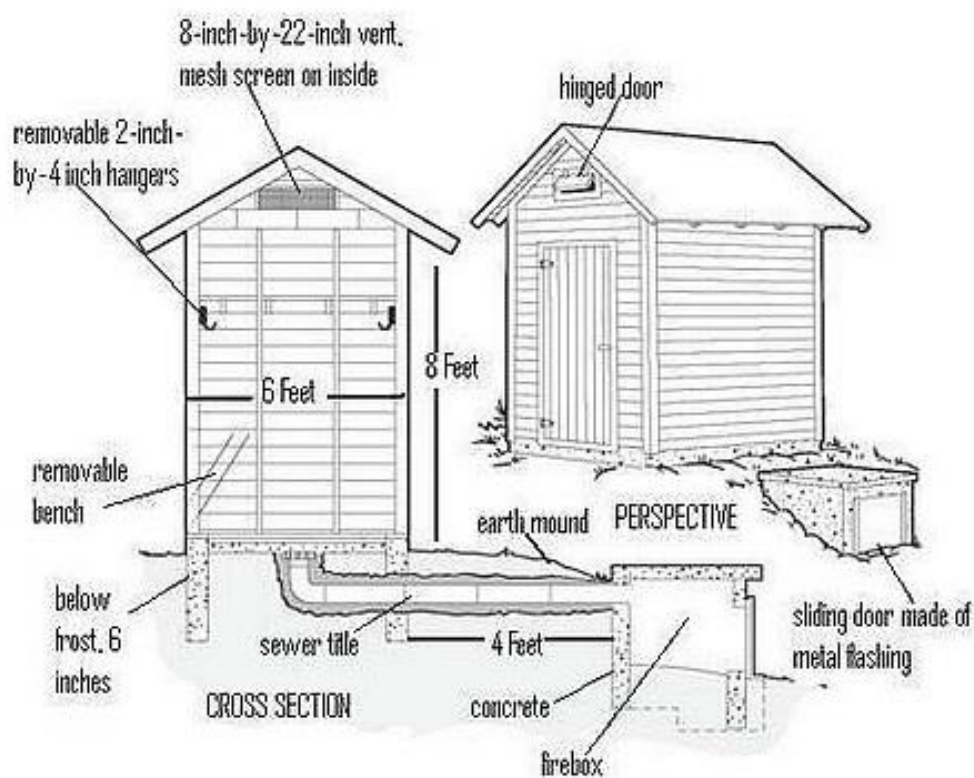
Anyone who has enjoyed a good peach cobbler on a camping trip knows the value of Dutch ovens for cooking with hot coals from a camp fire.

Smoker

Using an unpainted metal trash can as the base of your smoker. You can attach L-brackets to the sides to hold a couple of grill plates. Be sure to put a pan at the bottom to hold the wood or charcoal. Use high-temperature paint to cover the entire can.

You can modify the top of the can to accommodate a thermometer and airflow adjuster.

A BASIC PLAN FOR A SMOKESHED



Source: www.countryfarm-lifestyles.com



7 . YOUR HOUSE IS YOUR SHELTER

Your home literally becomes your castle in the event of an EMP. If you are going to be relying on your home as your main shelter because it is impossible to go anywhere, you need to make sure that you can become self-sufficient and safe.

There are several things you need to provide for in addition to your food and water requirements.

The Perfect Shelter

Scouting about before the EMP hits and finding a good water supply source would be a smart move on your part. Fresh water will be a lot less work than salt water (we have already talked about how to purify and desalinate water).

Now that your place of residence is where you will be spending the majority of your time, make sure that you have plenty of room for gardening and grazing animals (if you are lucky enough to acquire these).

You need to figure out what kind of crops and animals you plan to raise, since some will require more space than others. Chickens, rabbits and micro-breeds are more manageable and will generally produce more food per acre than large and full size livestock breeds.

If you live in an area where you will experience mild temperatures or extreme cold weather, you can survive more efficiently in your home if you close off one room, creating a micro climate rather than trying to heat your whole home with a single wood burning stove, oil lamps and body heat.

Confine everyone to a single room instead of having to use precious fuel and calories heating your whole house. Choose a room that is well-insulated preferably on the interior of your home. A room with several windows will allow cold air to seep in through cracks even though they may be double-paned.

Purchase several rolls of plastic sheeting, staples and rolls of duct tape. Cover the open entrances or doorways to your chosen room with plastic sheets. Use the duct tape to tape up most of the edges leaving one edge partially open for entrance and exit to the room. Choose a room with a fireplace or wood burning stove for your heat source.

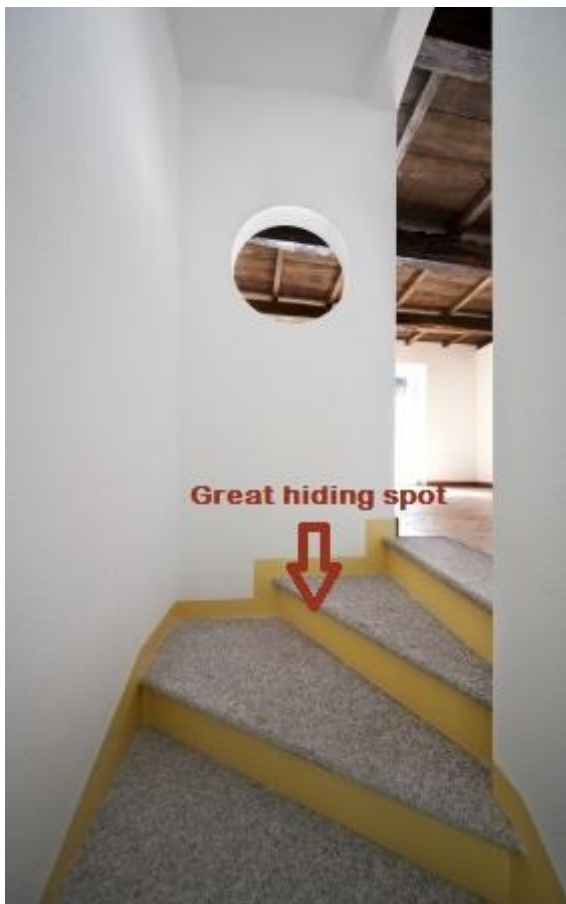


Make sure there is sufficient ventilation for the fireplace or stove. Use a battery powered smoke detector and carbon monoxide detector.

A home made of **fireproof** or **fire-resistant construction** is desirable since you will probably be using many more sources of open flame and fuel during an emergency and desperate looters may try to smoke or burn you out if they suspect that you may be hiding a large amount of supplies.

And here is another extremely important piece of advice: **do NOT bring a generator into the room to run anything like an electric stove or other small appliances.** Generators can emit carbon monoxide into your living space and the results can be deadly.

Leave all generators outside in an open air area. If need be, run a long extension cord into the house but never, ever bring the generator inside. Use a heavy duty cord that is long enough, but no longer than necessary to avoid unnecessary impedance which will use more fuel.



Building supplies should be brought onto the property. Concrete is a good building supply for protection from the elements and creating ballistic cover.

If it is within your budget, a hidden safe room built into the property is wise for all kinds of events. You want it to withstand extreme weather events, prevent easy entry by unwanted guests and have a second, concealed exit if at all possible.

Ample cool, dry, **storage facilities** are necessary. You need storage for items that can't tolerate temperature swings, like your food stores, batteries and water supplies.

But keep in mind that it is a safer practice to store your food and emergency supply storage spread out across multiple well-hidden caches than all lumped in a single, easily found and quickly looted “Armageddon Room.”



EASY DIY PROJECTS TO HIDE YOUR GOODS...

... in the back of the linen closet

- *Remove the sheet rock at the back of the closet.*
- *Build storage shelves between the wall studs.*
- *Replace the sheet rock and mount it to the studs with screws instead of nails.*
- *Replace the shelves and replace the linen on the shelves to hide the back of the closet.*

... in the crawl spaces of a finished off attic

- *Build cubby hole storage areas 6' x 3' tall.*
- *Frame both ends of the cubby hole.*
- *Install sheet rock with screws to secure it to the frames.*
- *Hang a door across the opening that opens outward. Trim this doorway for a final touch.*

Secure outdoor storage for tools, equipment, and other items are also needed.

Think in terms of hiding valuables from looters, slowing down and causing looters to make more noise and expend more energy to get at your supplies.

Protection from harm needs to be on your mind. Gates built around the property will help somewhat. Locks that come with doors and fences are often flimsy, so you may want to shore those up with something stronger.

Install double-lock, solid core, steel doors with extra-long lag screws on your home. Take a look around and come up with a defensive measure plan. At night, make sure you have a way to close off light, sound sources and even smells from the outside world. This is called enforcing light and sound discipline. You don't want people to have any idea as to what is inside your home.

Firearms and a security system with rechargeable backup batteries can help protect you. Fire resistant roofing material and spark arrestors on wood stove and fireplace chimneys will help prevent your home from burning down if you're in a wildfire situation or are forced to use wood for heating and cooking fuel.

If you have an in-home generator, take the time now to **build a sound insulated, concrete block structure** around the device.

Why? If you have never been around a fossil fuel generator, they make a LOT of noise. You don't want to make it obvious that you are living a life with added amenities while others are living without.

Water

Water is a necessity of life. Your body needs water to survive and your organs won't function without it. This is one of the areas where you want to make sure that you take the time to get it right and have access to clean water for drinking.

Even before an EMP, 30,000 to 70,000 people die each and every day from water-borne illnesses.

You also need water for cooking, hygiene, cleaning and many other tasks that you will perform. In order to provide your family with plenty of drinking water you could go to the store and buy a lot of bottled water but there are alternatives.

You have to be prepared with an ample water supply that will keep you and your family alive for days, weeks and months.

Finding Water

In **urban settings**, water catchment systems can be used to collect runoff rainwater from roofs. If you use this method, it is better if you can find a metal roof that will contain fewer pollutants and chemicals (some of which are extremely difficult to filter out) than an asphalt shingle type roof. Try to select roofs that have a minimum of contamination by bird feces, adhesive chemicals and other contaminants commonly encountered in roof construction.

When you do catch rainwater, let the rain fall for a while and establish a good flow before catching rainwater so that unwanted contaminants can be washed from the roof surface onto the ground instead of water used to water your plants or for drinking.

This can be accomplished through methods as simple as waiting for the water to run for a while before positioning a barrel or other catch container under a downspout or more complex methods such as the installation of pipes and valves to divert the flow for a type before routing it into storage tanks. Use opaque 50 gallon or larger, food-grade plastic containers which can be filled by attaching a small piece of pipe with a pre-filter to your rain gutter.

Other urban water sources include bottled water, water bottling companies and their delivery trucks, water coolers, swimming pools, rooftop water tanks used to develop water pressure for tall buildings, the tank portion of toilets (if no cleaning agent is used in the tank), water heaters, canals, rivers, ponds, lakes or melting ice or snow. Melting ice will yield more water with the same amount of fuel than snow.

If you do have to melt snow, use a large stock pot and just melt a little bit at first. As the snow melts into water, add more snow to the warm water to use the water's greater density and specific heat melt to melt small amounts of snow at a time. This method will conserve valuable fuel and take less time.

Always try to locate the least contaminated water source available and do what you can to keep it from becoming further contamination. Water sources will likely be depleted first in inhabited areas, followed by commercial areas and then harder to get to or less obvious sources like toilet tanks and water heaters.

In more **rural areas**, natural water sources will like be less contaminated, but test suspect sources if you have stored drinking water test kits ahead of time.

Watch out for fecal contamination, industrial contamination or contamination by pesticides. Look upstream for possible sources of pollution. Discourage others from using water sources for waste disposal, washing laundry, washing dishes or bathing. Carry the water away from the water source to use it to keep soaps (even biodegradable soaps) and other contaminants out of your water sources.

Better quality water is usually found in sources such as flowing springs, dripping springs, wells, artesian wells and fast moving streams. If none of those are available. If you have a deep well, be sure to store hand pump well heads, manual well buckets, line and other manual equipment necessary to draw water without electricity.

Also store alternative energy equipment, electric pumps and anything else you will need to keep your well working. In some areas, you may be able to develop a spring with improvements or dig well by hand.

To do this you will need hand tools, buckets, pipe and any construction materials to develop your spring, dam a creek or dig a well.

Just keep in mind any affect that doing so might have on others who use the same water source on down the line. You don't want to unwittingly start a war over water rights.

Storing Water

After passing through the pre-filter to remove large contaminants, water should be allowed to settle. This means letting the water sit undisturbed so heavier particles are allowed to settle to the bottom of the container, further reducing contamination level and further prolonging filter or purifier life span.

You might want to invest in a siphon pump for easier retrieval of the water to other containers. After settling, water is then ready to be filtered, disinfected or purified.

Untreated tap water needs to be rotated out just like food – it contains small amounts of bacteria and algae that can grow into larger colonies of time under the right circumstances. Make sure you label the dates on your water containers. Tap water will keep for about half a year. Always check the water first no matter what to ensure it looks clean. Rotate properly stored water once a year.

Tap water that has been properly disinfected and stored in disinfected, opaque, sealed, air tight water barrels without opening will last much longer ... up to 30 years or more.

Use new, clean, quality water containers. Use a contaminant free filling process (use a drinking water quality hose like you would use to fill the water tank on an RV. Do not use a regular garden hose to fill the containers.)

Use a high quality water storage treatment additive such as chlorine dioxide or copper/silver ion compound. Only use chlorine bleach in an emergency.



Do not use containers that are not air tight, lack an air-tight seal, or second hand containers for water storage.

Label the containers as drinking water and include the storage date.

Keep stored at a constant, cool temperature.

Do not store in areas where toxic substances such as fuel or pesticides are present.

Do not store in direct sunlight.

Do not store water containers directly on concrete to avoid radon contamination.

Disinfecting and Purifying

There are problems you will need to take care of as you will with any other water you gather.

Non-UV treated water barrels can be broken down by UV light sources so this is something you will have to monitor. Water can become contaminated by bacteria, algae and other contaminants. Water filtration, purification and distillation processes can make contaminated water drinkable.

As defined by the EPA, a water filter must be capable of 4 log contamination reduction (99.99% of contaminants must be removed.) A water purifier must be capable of 6 log contamination reduction, (99,9999% of all contaminants must be removed) leaving no more than 1 part per 10 million of the contaminants. For suspect water, you should use a water filter. For highly dangerous contamination, you should use a water purifier.

Pre-filtering water is the first step in the water filtration process. Pre-filtering water will extend the life of ceramic filters. One cost-effective pre-filter is the coffee filters you buy at the store for electric coffee pots. You can put a filter over a container and

pour the water in allowing the filter to strain out large particulates from your drinking water.

There are water filter straws which you can purchase that allow you to drink water straight out of a stream, spring or other suspect, water sources. Water is filtered as it passes through the layers of the straw. The filtered water is as clean as the water from your house tap. Straw filters are lightweight and portable. Some straws can be set up as gravity filters allowing you to filter a lot of water at a time and keep it stored for future use.

Many people invest in water test kits to make sure that their purifying system has made the water safe to drink by measuring harmful levels of bacteria, lead, pesticides and other dissolved solids. For the safety of all of your family and to keep anyone from becoming sick by drinking unsafe water, a test kit is something you'll definitely want to buy beforehand.

Since the free chlorine in unscented chlorine bleach loses its potency over time (6 months to a year), you may want to consider putting together an emergency bleach making kit. You can research instructions to put together an emergency bleach making kit online.

Use food grade calcium or sodium hypochlorite with 60-70% free chlorine if available, it will store as long as 10 years before diminishing in potency. A single \$15-\$40 bleach making kit could provide enough bleach to disinfect drinking water for you entire neighborhood for years.

You will also need water for your crops and animals as well as for cleaning and maintaining proper hygiene. Do you have a swimming pool? A pool usually contains thousands of gallons of water, and you can purchase a filtration or purification system to purify pool, river and creek water.

There are also various types of chemical disinfectant tablets, drops and powders marketed to **disinfect water**.

The most common are chlorine dioxide and iodine. Follow the directions that come with the tablets drops or powder according to water turbidity level and temperature. The colder and less clear the water is, the more chemical will likely be needed and the longer it will need to sit with the disinfectant in it.



2% tincture of iodine can be used to kill harmful micro-organisms found in contaminated water sources in addition to being used for first aid.

For clear, temperate water, use 5 drops per quart of water and allow it to sit for half an hour. For water with greater turbidity (cloudiness) and lower temperature, you will need to use more drops of iodine (up to a maximum of 10) and allow it to sit for longer (two to three hours or more if available.) You can decrease the turbidity by pre-filtering it and allowing the water to settle.

You can increase the temperature by letting it sit in direct sunlight in a dark colored container or heating it. This will preserve your iodine supply and improve the taste of the water.

Do not add powdered drink mixes to the water until it has completed the disinfection process, but they can mask chemical flavors (especially for children) and replace electrolytes and salts if you are dehydrated.

6% unscented chlorine bleach can also be used to disinfect water in the same manner as 2% iodine tincture. Just use 3-5 drops per quart.

Boiling is a safe method to disinfect water before drinking, it is just time consuming and uses a lot of fuel which will eventually become problematic for most people. You don't need to boil the water for a particular amount of time. As long as it reaches a rolling boil, it will kill any harmful micro-organisms in the water including *Cryptosporidium Parvum* and *Giardia*. Just remember, it's not what you can see in water that will kill you or make you sick. It's the harmful micro-organisms that you can't see.

In an emergency, you can improvise your own **layered filter system using charcoal**, activated carbon, baked sand, sheets, kerchiefs, coffee filters or other filtration materials available to you. If you have the fuel available, water should then be boiled to kill anything that your improvised filter missed.



EASY CHARCOAL WATER FILTER

Needed for the project:

- *Plastic bottle*
- *Charcoal*
- *Sand*
- *A piece of cloth*
- *Sharp knife or scissors for cutting the bottle*

Cut off the end of a 2 liter soda bottle. Fill the smaller opening with a piece of fabric to prevent the charcoal from falling out. Place the crushed charcoal into the container, to create a matrix for the water. You may add another piece of cloth, sand or grass on the top of the charcoal. Place your DIY filter atop of a container, and pour in slowly the untreated water. The clean water will drip slowly out the bottom of the filter.

You can even **turn saltwater into fresh water**. Not possible you say?

Get a pot and put an empty glass (pyrex glass or metal is safer) cup inside it in the center. Slowly pour some salt water into the pot.

Do not over fill. Stop well before the water level has reached the mouth of the glass. Place the pot cover upside down so the highest point or handle is facing down directly above the glass. Bring the water to a slow boil.

As the water boils it becomes vapor, which will condense on the surface of the upside down lid, run down its surface to the lowest point (the handle) and drip into the glass. This will probably take 20 minutes or more and quite a bit of fuel, but it could save your life.

Wait a little while before drinking the water from inside the glass, since both the water and the glass will be very hot.



EASY DIY WATER FILTERS USING...

... Apple and Tomatoes Peels

Peel the apples and tomatoes and place them in a rubbing alcohol solution.

Let them soak for 20 minutes, then remove the peels and let them dry out.

Place them in a container with the water that you need to purify, and wait for a few hours before drinking the water.

... Sunlight

Fill your plastic bottles with water and place them in the sunlight for a period of 6 hours. The sun's ultraviolet rays will kill the parasites in the water. This method of

water purification will work as long as the water reaches 30 degrees Celsius for a minimum of 5 hours.

... Citrus Juice

Put a squeeze of citrus in the water to clean it for drinking purposes. Speed up the process using sunlight, and lime for the best result.

Sanitation and Waste Disposal

Disposing of garbage and sewage in a changed world is something that we don't give much thought to today. We put food down the garbage disposal, take our trash out to the curb and flush the facilities after completing our business. But what happens when the services shut down due to the lack of electricity? How will we dispose of our solid waste products after an EMP?



EASY DIY COMPOST BIN

Use a large plastic container (a barrel, a plastic trash can or a box) which has a tight lid, and make 6-8 holes with the help of a drilling machine, so that compost get enough air when kept inside.

Put some bedding inside – paper bags or newspapers – before gather any waste in you DIY compost bin. Add compost and secure the bin with the lid.

Everything from vegetable waste and fruit rinds to shredded newspaper and pet hair can be added to your compost pile. Avoid adding meat or bones to your compost pile, as they decompose in a different way and may attract unwelcome pests.

A sewage/sanitation waste plan is an absolute must. Not only will you have human waste that needs to be disposed, you will still have other items that will need to be tossed. The objective here is to keep the waste as far away as possible from your drinking water source, where you live, sleep and eat (more than fifty feet away from any well or stream).

Paper products or certain garbage can be burned. Burning might be a good solution. When non-compostable solid household garbage needs to be disposed, burning in a pit is a good way to do it. The fire kills all pathogens that might infect humans and also produces ash that can be leached for lye and soap products.

Plant and vegetable waste can be disposed of by using compost piles: a compost pile will provide needed fertilizer for your garden. You should not mix plant and vegetable waste with animal manure.

To build a compost pile for plant waste:

- Put plant and vegetable waste in a pile and add earthworms if you can find them.
- Turn over the pile 2 or 3 times a week. If you have successive compost piles going, this is a perfect place to keep earthworms for fishing.
- It is natural for the compost pile to get warm to the touch.
- When the plant material is reduced to a fine dark looking soil it is time to mix it into the garden.

Outside of attempting to build a complete sewage removal system or utilizing leach lines and tanks, here are some fast ways to dispose of human waste that can be used for months and years if needed.

Cesspools: A cesspool is a pit, storage tank, or a covered dry well that is used to dispose of human waste. Cesspools rely on sewage water being absorbed by the land

around it. Since a cesspool is not a closed system it can be over loaded by rain run off or floods. They can also be damaged by tree roots growing into them. Deep cesspools are dangerous because raw sewage can infect ground water before bio cleaning eliminates pathogens. If you are going to use cesspools, make sure water wells are uphill and as far away as possible from a cesspool. You should allow at least 100 feet between the well and the cesspool.

Latrine: A latrine is an outdoor toilet. It may only have one hole in the ground or it might be a large trench. Some latrines have floors to stand on, seats to sit on, or footrests to balance on. Latrines may also have walls and a roof to keep out flies and bad weather. As with cesspools, latrines should be built away from rivers, streams, and other water supplies, and downhill (yet above the flood plain) in relation to water sources.

When using an outhouse or latrine, you should never:

- Do not drop lit matches or cigarette butts down into the pit because methane gas from waste breakdown may be in the pit. Methane, in turn can cause a fire or explosion which could be hazardous to your health.
- Do not pour bleach or other chlorine products down into the pit. Chlorine gas will react to the ammonia in urine and produce a gas that can kill if inhaled.
- Do not let small children use the latrine or outhouse by themselves because they might fall in and get hurt.
- If you lose a cellphone or something of value down the latrine or outhouse do not try to recover it. It could cost you your life if the pit is deeper than you thought. Death by suffocation or drowning is a horrible way to go.

Outhouse or Privy: Is a small outdoor pit toilet having 1 or 2 seats inside a small shed like structure with a door, a roof, and a simple vent system over a simple pit. The human waste drops below the outhouse into the pit where the waste is stored and

broken down.

5 DISEASES CAUSED BY EXPOSURE TO WASTE

Disease Name	Pathogen or Transport Vector	How Contacted	Symptoms	Outcome
Cholera (vaccine is available)	Vibrio cholerae bacteria	Water or soil contaminated by infected feces or urine	Severe diarrhea, fever, nausea, and discolored skin patches.	Leads to dehydration which can cause death. Treatment usually requires IV fluids. In Haiti there are strains of Cholera that can kill within just a few hours of exposure.
Typhoid Fever (vaccine is available)	Salmonella enterica enterica	Food and water contaminated by infected feces or urine from an infected person	Headache, high fever, nausea, dehydration, loss of appetite, pinkish dots on the chest	Can kill if left untreated.
Intestinal Worms	Many different species	Contaminated soil, water, and food	Both weight loss or gain, bloating, mental problems, hallucinations, diarrhea, headaches, vision changes	Malnutrition, anemia, mental instability, death. Can take months to show up or diagnose. By then significant damage has been done to the body, especially if worms traveled to the brain.
Schistosomiasis	Schistoma or blood flukes	Contaminated water and freshwater snails	Lesions on skin where worms entered the body, diarrhea, blood in urine/stool, stomach pain	Can lead to kidney failure, bladder cancer, liver damage, infertility and death.
Malaria	Plasmodium Protozoans	Infected mosquitoes and water they lay eggs in	Fever, enlarged spleen. Diagnosed by low platelet levels combined with presence of bacteria in blood.	Infection occurs when a person is bitten by infected mosquito.

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In Vietnam, instead of using a pit, the human waste dropped into a metal pan which was removed daily, and the contents burned. When the burning pan cooled down it was returned to the outhouse or privy. This can be used in areas with high ground water level and other places where pits are not practical.

Medicine

Gather supplies as you wander into your pharmacy every week. Grocery stores carry medical supplies. Gather needles, suture kits, aspirin, over-the-counter medications, ointments, etc.

Any item which you feel you would use in your everyday life now, will probably be used after an EMP as well.

Take a first aid training class with the Red Cross. They sometimes offer these at your local YMCA. You can be taught things such as CPR, first aid, disease management, etc. Learn how to identify and treat the three killers: obstructed airway, excessive blood loss and shock.

Look into alternative medicines. As mentioned above, there are medicinal seeds for growing plants to take care of your family if such an occasion should arise. Gather books now to have on hand when you are not sure what to do and need a reference book.

Here are a few alternative medicines that you might want to have on hand: garlic tea, cinnamon, eucalyptus, iodine meat tenderizer, cayenne pepper, cranberry juice, and cloves just to name a few.

Storage of Heat Sensitive Medicines

I would recommend a [Pot-in-a-Pot Refrigerator](#) as mentioned above under Preservation methods. These types of pots are great for storing medicines that need to be kept at a certain temperature.

Antibiotics

Learn how to store antibiotics now for the post-EMP world. There are a handful of antibiotics you want to make sure you have on hand. These are some of the more important antibiotics you will want to store and have readily available: Amoxicillin, Flagyl, Cipro, Ampicillin, Keflex and Doxycycline.

How do you get these antibiotics when they are prescribed by your doctor and are usually “finish all of this medication” instructions?

You want to store as much of these as you can for upcoming disasters. There are doctors who advertise on-line that they write extra prescriptions for non-controlled medications for the purpose of emergency preparedness.

In a post-EMP world, you will thank yourself for having participated in this exercise. You can do what some other people are doing and buy the equivalent of human antibiotics right off the shelf in your local veterinarian’s office. You don’t need a prescription to get these medications.

Unbelievably, **some medications that are prescribed to animals are the same ones that are given to humans.** They come off the exact same production lines. Doxycycline can be found as “bird biotic.” Amoxicillin can be found under the name “fish-mox forte.” The bottle even clearly labels itself as Amoxicillin. You can do a search for the description of the medication on a pill identification search engine and make sure that they are also used for human consumption.

I have always been under the impression that you need to throw out unused antibiotics. Every prescription has a “good through” or “use by” date but that doesn’t mean it’s past its effective use time. All manufacturers of medicine are required to put a date on their medications. Take the time to research all of your medications carefully since a few of them, like the wide-spectrum antibiotic tetracycline become toxic after expiration.

The US military has done studies on expired medication and found that with very few exceptions, **the vast majority of medications are retain their therapeutic value decades after the printed expiration dates**, but please be diligent in your research to make sure.

But, the key to sustaining a longer life for these types of medications is to keep them stored in the proper place at the proper temperature—usually a cool environment, out of direct sunlight. In other words, don't leave the meds in a room where it is constantly 100 degrees. Heat can render an antibiotic useless.

A good way to store and preserve antibiotics is to keep them in your freezer (for now). Vacuum seal them first before just tossing them in the freezer. The lower temperatures keep the medicine from breaking down the way they would if stored at room temperature or warmer.

First Aid Kit

The best way to prepare a first aid kit for an EMP or any other disaster is to make your own first aid kit.

Why you ask? Because pre-packaged first aid kits that you pick up at the store most likely do not have the items you will need to survive long term. And even if they do, until you carefully review the list of contents, you won't know what they do and do not have and in what part of the kit it is stored.

You don't want to be trying to familiarize yourself with you first aid kit during a medical emergency. Pre-packaged store bought kits are based on the fact that you will be living under normal conditions. If you do purchase a store bought kit make sure that it says "survival first aid kit" on the outside.

You're going to want to make sure you have what you need so if you can't find a kit made specifically for long-term survival, then put together the supplies you need yourself. Buy a sturdy "bag" for storing the supplies.

A fishing tackle box will work just fine. Be sure to mark it "First Aid Kit" because when you are in survival mode after the EMP you don't want to take the wrong tackle box fishing. Keep in mind that you will need to store larger quantities of most medical supplies that come in first aid kits.

First aid kits are just for first aid, not for long-term treatment. A single serious injury of any type may deplete most kits of many of their supplies. Try to get in the frame of mind of dealing with weeks of bandages changes and ointment applications etc.

Take the time to gather first aid manuals now. There are also one-page laminated sheets with all types of injuries listed. Even if you have all the knowledge of a brain surgeon, it doesn't matter. If you are the one who needs the first aid you want someone to have a chance to be able to render assistance to you as well.

Some supplies you will want to put in your first aid kit are:

- Bandages-all shapes and sizes
- Gauze Pads—all sizes, absorbent and non-stick, sterile
- Gauze, Sterile, Z-fold or S-fold for wound packing
- Gauze, Sterile, Roller
- Butterfly trips, Steri-strips
- Medical Tape, Self-adhesive Tape
- Burn Dressings, Burn Gel
- Ace Bandages & SAM Splints for sprains, splints or slings
- Triangle Bandages, Safety Pins
- Sterile Surgical Gloves, Nitrile Gloves
- Cotton Swabs, Cotton Balls

- Scissors – Bandage, Surgical and Trauma
- Tweezers, Hemostat, Scalpels
- Needles, Syringes
- Flashlight
- Thermometers, for Hyper and Hypothermia
- Antibiotic Ointments, 2% Iodine Tincture
- Allergic Reaction Tablets (both liquid and pills), Benadryl
- Suture Kit, Suture Removal Kit, Staples, Stapler and Staple Remover, Superglue to close wounds
- Handheld Blood Pressure Cuff, Oximeter
- Snakebite Kit, Sawyer Extractor Type
- Waterproof bandages, including wound dressings
- Alcohol wipes, Benzalkonium Chloride Wipes
- Calamine lotion, Rubbing Alcohol, Hydrogen Peroxide
- Pack insect repellent, ibuprofen, aspirin and burn cream. Add to the kit scissors, a surgical field pack, safety pins, and a magnifying glass. Analgesics
- Witch Hazel, Glycerin, Potassium Permanganate
- Duct Tape
- Dental Kit

Do a little investigating to see what dangers you might encounter in your specific area.

Tools

Power tools will not be an option in a post-EMP world unless they are battery operated and you have rechargeable batteries that can be charged with a solar charger or a generator and fuel.

Hand tools never require electricity but are harder to use. There are various tool kits that you can buy which contain a variety of different tools. The important thing is to have these types of tools when the power goes out. Anything that uses electricity will run out of power quickly.

Basic tools you will want to have on hand are hammers, screwdrivers—flat head and Philips head, wrenches, pliers, vice grips, tape measure, saws, levels and utility knives and a supply of hardware & fasteners.

Any hand held tools that you normally use around your home are going to be helpful in a post-EMP world. A Swiss Army knife or multi-tool is several tools in one and is



compact and portable enough to carry in your pocket or on your belt. These knives are handy because of the variety of gadgets all compacted into one tool.

Remember to think about what types of tools people used in the times before all of the electric tools were available.

As I have mentioned several times, you are going to be living in a world without electricity for an unspecified amount of time.

Do you need to fix an electronic device but your soldering Iron was damaged in the EMP? Use a cordless soldering iron. They make something called butane torches. They usually come in a plastic case kit and it includes a butane torch, solder dispenser, cap, clean sponge, 8mm wrench, 7mm wrench, reflector, hot blower, hot knife, chisel tip and diagonal tip. The butane fuel is refillable and the soldering iron will usually work for approximately 60 minutes.

Don't forget about gardening tools to maintain your garden you will now be forced to grow. You will want smaller hand tools but also larger items such as shovels, rakes or hoes and a wheelbarrow.

Clothing

I don't think there needs to be a whole of information on this subject. Most people that I know have more than enough clothes to survive any type of situation for quite a long time.

People in a pre-EMP world seem to have over-indulged in this thing called "compulsive shopping" and if you were to take a look at most closets, they are bulging at the seams.

Not that this category is not important for your survival, but I am sure you have the appropriate clothing for the area in which you live.

Just realize that you will be participating in a lot of different types of outside activities such as working in a garden, gathering wood or gathering water so become mindful of what is going to be required of you in a post- EMP world.

The one thing that you do want to remember, though, is that without central heat and air, your home (shelter) will stay cooler or hotter depending in which area you are located. Keep this in mind with not only yourself but children and babies as well. You will need clothing for both extremes of temperature. Older people also seem to stay cooler so don't forget their needs for extra warmth.

Make sure you have plenty of blankets or sleeping bags because after the sun goes down it does tend to get cool no matter where you live. And if you live in an area where the winter is harsh, this is doubly important for your survival.

Be sure you have plenty of extreme cold weather clothing and dress in loose fitting layers.



8 . SAFETY AND DEFENSE

Safety is an ongoing issue whether you are living in today's world or a post-EMP world. Knowing what to do is never something you learn and then set aside. Continual and constant learning about safety is something that needs to stay at the forefront of your mind. Always stay vigilant.

By staying prepared, you will be ready to keep yourself and your family safe. Knowing how to survive in any situation should become as natural to you as breathing.

Studies have shown that people who are unprepared in survival situations often give in to shock or panic.

Unfortunately, they freeze and forget what to do. If you continually train and hone your survival skills, it becomes second nature. You will be able to react in a calm manner no matter what type of situation arises.

Before impending doom strikes, go through drills with your family. Everyone should know where to go and what to do. This is as important as the fire drills you have with your family right now.

Write down your plan. Print a summary of you disaster plan on credit card sized tri-folds, laminate them and put one in each person's wallet.

Include contact information, rendezvous points, radio frequencies and contact times, such as on the hour or the half hour so you don't waste battery life and effort listening 24/7.

You need to know how to make a safe water supply available to you and your family. You need to know how to be safe from natural threats as well as threats from people who would jeopardize you or your family's safety. You can learn survival skills on your own or you can invest in training from a survival instructor.

Whichever one you choose to do, disaster preparedness skills are skills that should be continually honed so that when the time comes, you'll know exactly what to do.

Self Defense

Self-defense or personal defense is a system of countermeasures that involves defending oneself, loved ones, one's property, or well-being from harm. The exercise of the right of self-defense in a post-EMP world is going to be essential. You want to be able to defend yourself or your family by use of force in times of danger.

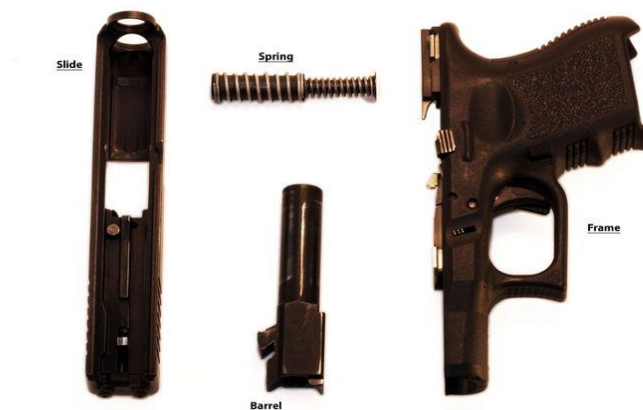
Physical self-defense is the use of physical force to counter an immediate threat of violence. Such force can be either armed or unarmed.

In either case, the chances of success depend on a large number of parameters, related to the severity of the threat at hand, and the mental and physical preparedness of the defender.

There is a lot of self-defense information which you can read but the best action to take is to find an instructor in your area and at least take basic and intermediate classes.

You don't have to be a black belt, but knowing what to do in a second survival situation could mean the difference between life and death.

Weapons Training



By taking weapons training classes and purchasing a firearm, you will be better prepared to protect your family and your property. Even in ordinary circumstances, half of all people have to defend themselves from violent assault at some point in their lives.

In a post-EMP world, unfortunately it will almost certainly turn into "every man for himself" at some point.

When your life is on the line, you want a weapon that will stop an intruder or an attacker. The most effective weapons commonly available to most people are

firearms. When faced with the threat of being shot with a firearm or running, most people will run.

Revolvers are reliable, but they take longer for most people to reload and have limited ammunition capacities. When seconds count, that might not be the most effective choice for most people. Semi-automatic pistols are popular for protection because they are concealable, they have large magazine capacities and can be reloaded quickly.

Shotguns are very adaptable depending upon the type of ammunition chosen. In addition to being versatile for hunting purposes, shotguns have excellent characteristics for self-defense at the close ranges encountered indoors when using high powered 00 buck or slugs.

6 Popular Survival Rifles

- ⊗ AR-15
- ⊗ AK-47
- ⊗ M1 Carabine
- ⊗ Ruger 10/22
- ⊗ Marlin 1985 GS
- ⊗ Henry Arms AR-7

A **rifle** is a must-have for your family's safety. In determining which rifle to buy, take into consideration the distances you will be shooting at.

Rifles are accurate out to much greater ranges than handguns. AKs and ARs are popular defensive carbines to consider.

It is best to have a variety of firearms. You want to have guns that will stop

www.survivopedia.com intruders at a distance but you also want guns that will handle close encounters as well. It's nice to have a .22 or two for hunting small game, target practice and for young people.

If you have limitations in mobility or hand strength, this will factor into your firearm choice. A variety of accessories are available to help compensate these conditions.

There are many, **many variables to consider** when choosing which firearms would be best for you and your family.

Consider budgetary constraints, ammunition price and availability in your area, animals that you may want to hunt or need to defend against, recoil, performance characteristics, availability of holsters, accessories and repair parts, and portability to name a few.

Weapon Cost and Maintenance Chart Comparison

Name	Weapon Cost	Ammo / Round Cost* (Average)	Maintenance Cost Per Year	Required Accessory Cost	Configuration Cost Range	Parts Kit Cost
Alpha/Echo	780.00	.75 cents per round	20.00	15.00 magazines	200.00 first time	Upper receiver: 75 Lower Receiver: 75
SGL-21	800.00 - 900.00	.50 cents per round	10.00	10.00 magazines	150.00 - 200.00	80.00
Stoeger 3000	529.00 - 699.00	.20 cents per round	10.00	n/a	n/a	50.00
Remington 870	410.00 - 928.00	.20 cents per round	10.00	n/a	75.00 - 150.00	50.00
Ruger American Rifle	449.00	up to 1.00 per round	10.00	30.00 per extra magazine 219.95 for Nikon Scope (see text)	n/a	50.00
Ruger 10 - 22	229.00 - 389.00	Normally 8.00 per 50 rounds. Current highly variable.	5.00	15.00 for extra 10 round magazine	100.00 for new stocks and high capacity magazine	30.00
Glock 19	599.00 - 696.00	20.00 per 50 rounds (FMJ)	5.00	15.00 per magazine	n/a	30.00

* Ammo prices are changing rapidly, usually best to buy in bulk.

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When choosing defensive firearms, keep in mind that the 80% of gunfights last 3-5 seconds, take place at a distance of 12 feet or less and take place at night. So if you have to run get your firearm out of storage, the fight will probably be over before you do and whatever firearms you choose for self-defense should have tritium night sights. Guns aren't just used for protection, either.

Make sure you consider having hunting rifles on hand if you and your family end up having to live off the land and need to hunt for meat.

Firearms, Tactical Equipment

This section is definitely a personal choice and no one can tell you that you have to go out and buy firearms and ammunition, but you should think about how you are going to protect yourself, your family and your supplies.

In a post-EMP world, though, even if you don't want to own firearms, you will most likely be at the mercy of others without one. Stockpiling ammo and firearms now will give you peace of mind later.

Guns & Ammo Storage

If you do decide to purchase these items, it is vitally important that the storage of ammo and guns be considered an important point on your checklist. Not only is it just safe practice to store these items away from prying eyes, moisture can be very destructive. Moisture causes firearms to rust. Ammo that has gone bad is not going to do you any good when you are trying to protect yourself and your family.

Store your ammo in a dry location. Ammo cans are excellent for storage and can usually be purchased at a military supply store. Just check them to make sure they seal tightly and uniformly and they have good gaskets. If you don't have military ammo cans, find other airtight containers to store your ammo in and store them with desiccant packets if you live in a humid region.

A gun safe is probably the best place to store your firearms and ammo but they can also be the most costly. A gun safe will also require desiccants to keep the guns from rusting.

Desiccants, like the silica gel packs protect firearms and ammo from moisture when stored in an airtight container. Many desiccants can be recharged in an oven. If kept from the heat and moisture, you can expect your ammo to last 30-50 years or longer. Don't store bullets long term in leather shell loops or the casings will oxidize. Light is also something that can cause damage to plastic-hulled shotgun shells. Keep your plastic-hulled shotgun ammo stored in a dark place away from UV light.

Although it is recommended that you gather guns and ammo ahead of time, be sure to check your local laws about stockpiling and other aspects of firearms ownership. Firearms law is constantly changing.

Tips for Hiding Your Guns

There is one way to hide your firearms but this involves a little bit more work.

Some people make underground caches in airtight and waterproof containers such as large diameter PVC pipes with one end cap glued permanently in place and the other removable with rubber gaskets.

The container is sealed after desiccants are added, the contents are coated with rust protectant, wrapped in protective padding and wrapped again in a waterproof layer to ensure the effective function of the cached firearms and ammunition for years to come.

Don't forget to include a cleaning kit to clean up your weapons for use after you retrieve the cache.

Knives

A good knife is a must have in a survival situation. A knife can serve several purposes such as protection, field dressing game, preparing or carving wood, cutting cordage or clearing brush.

As a little background and to give you a little knowledge on the different types of knives, there are three main types: fixed blades, folders (including pocket knives) and multi-tools such as Leatherman tools and Swiss Army knives.

- **Fixed blade knives** are sturdier than the other two but are not as easy to carry or conceal. You will probably want to purchase a sheath to carry the knife if it didn't come with one.
- **Folders** have blades are capable of being folded and stored within the handle. While they are easier to carry and conceal, they lack the durability and chopping ability of fixed blades.
- **Multi-tool knives** are favored for their many uses. These types of knives usually have scissors, a can opener, a bottle opener, pliers, a saw, a file, a screwdriver and a wire-stripper in addition to a knife blade.

Another thing to look for when purchasing a knife is to see what material the blade is made out of.

Some common blades are made with stainless steel, ceramic and carbon steel.

Do some research to discover the advantage and disadvantage of each of the different materials.

KNIVES AND BLADES FOR SURVIVAL

Name	Durability	Handling	Maintenance	Materials	Age Group	Price (\$)
Kershaw Folding Knife	good	Well Balanced	usual knife care	stainless steel with aluminum grip	youth through seniors	40.00 - 50.00
Ka-Bar Fixed Blade Knife	excellent	well balanced	usual knife cleaning	stainless steel blade with wrapped leather handle	adult	70.00
Custom Bowie Knife	very good	custom fit will be perfect for your hand	usual knife cleaning	stainless steel with antler or bone grip	adult	175.00
SOG Spirit	Good	good	usual knife cleaning	steel blade with polymer handle	adult	30.00
Cold Steel Machete	good	fair blade, but too thin and light for heavy vegetation	usual knife care	steel blade with hard rubber grip	adult	30.00
SOG Tomahawk	good	very good to excellent	same as for ax/tomahawk	steel ax head with polymer handle	adult	65.00
Custom Sickle	very good	custom fit recommended	clean and lubricate	steel blade with elk grip	youth through adult	85.00
Ruko Folding Saw	good	n/a	clean and lubricate as needed	steel blade with polymer handle	children through adult	20.00
Leatherman Compact Folding Tool Set	good	n/a	general tool cleaning	tool steel	youth through adults	44.00
Ruko Game Dressing Set	good	n/a	clean well and keep oiled	steel with polymer handles	Adults	40.00

www.survivopedia.com**Night Vision**

Night vision goggles, although expensive, would be a desirable force multiplier in a post-EMP world.

They could be used to protect your family from human intruders and protect your property.

Night vision goggles allow you to see in the dark so that you see them before they see you.

They need to be stored in a Faraday cage and use batteries.

Don't think that you will only need night goggles to spot human predators. Animals come out at night foraging for food as well. You might have to kill or just scare away an animal predator.

Not all of your hunting will be able to be accomplished during the day. Hunting for deer or other animals at night will give you a great advantage, especially with thermal imaging night vision devices. Animals are not used to being hunted when it is dark. You can surprise them by having night vision goggles!

There are a couple of different types you can purchase. There is **thermal vision** and then of course night vision. Thermal vision, as the name infers, will show you a heat source. Since humans and animals are warm-blooded, they will project a heat source. Night vision goggles can see invisible light projected by an infrared illuminator or amplify the existing moonlight and starlight by up to 60 thousand times.

You can purchase a monocular, binoculars, goggles which allow you to look around hands-free or you can invest in a night vision scope which you can attach to your rifle. Any of these will let you see what is lurking out there in the dark.

I am going to tell you up front that night vision equipment is not cheap. It is very expensive. This is an item that you can add to your wish list of preparation items. If you are close to a neighbor or are in the middle of setting up an EMP community, several people might want to pitch in money and purchase the equipment. The night vision equipment would not only be used to protect your property but their property as well.

It is advisable to invest in at least a cheaper version of night vision equipment if your budget is limited. Even if it's not a top of the line piece of equipment, having night vision can give you an edge over others who are without it.

Night vision goggles will need to be recharged just as anything else. Make sure you have extra batteries and/or a solar charger. And if I can't stress anything else, do NOT tell anyone that you have the equipment.

The last thing you want is for the word to get out and then guess what? Your night vision goggles become a hot commodity.



9 . COMMUNICATION

Communication will be essential after an EMP. Gone will be the days of coming home and turning on the 6pm or 10pm news and sitting back to catch up on what has happened locally or globally. With the power gone from the EMP, you still need to know what is going on in what will now be considered the "outside world."

AM/FM, TV or Radio

Battery or quality hand crank types like Baygen are preferable. Be sure to read plenty of reviews before you select a radio with the features that you are looking for since they vary greatly in quality and in what power sources can be used to power them.

Be sure to get high-gain external antennas since the radio stations that are still in operation may be few and far between.

Some of these hand held radios come with NOAA weather band frequencies (if there happen to be any radio stations on air after the EMP) and a light. By cranking, you can provide yourself with flashlight power or radio play.

Shortwave Radio

Shortwave radios are used for long distance communication by means of radio waves which are reflected back to Earth from the ionosphere (world news). This allows communication around the curve of the Earth.

Be sure to get an external shortwave antenna so you can pick up the weak long-distance signals.

Signal strength will vary according to various factors and will be strongest during the nighttime hours.

You may be able to receive a channel one day and not another depending on ionosphere's conditions and space weather, so don't give up when you lose a particular channel for a time.

SHORTWAVE BROADCAST BANDS

3900 - 4000	75 Meters
4750 - 5060	60 Meters
5850 - 6200	49 Meters
7100 - 7350	41 Meters
9400 - 9900	31 Meters
11600 - 12050	25 Meters
13570 - 13800	22 Meters
15100 - 15800	19 Meters
17480 - 17900	16 Meters
18900 - 19020	15 Meters
21450 - 21850	13 Meters
25600 - 26100	11 Meters

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Make a note of channels you are able to receive and keep scanning.

Short wave radio will be the best bet for most people to be able to receive news from outside the area affected by the EMP. As time passes radio technicians will eventually get more and more stations on the air provided there are not follow up EMP attacks.

Shortwave radios are used for broadcasting of voice and music as well as long-distance communication to remote areas out-of-reach of wired communication or other radio services.

CB Radio

Citizens band radio (also known as CB radio) is, in many countries, a system of short-distance radio communications between individuals on a selection of 40 channels.

You have most likely heard of this term as this is what a lot of truckers use to communicate with each other while they are driving long distances.

External high-gain, magnetic mount antennas can greatly improve the performance characteristics of CB radios.

Police Scanner

A police scanner is a radio receiver that can automatically tune, or scan, two or more discrete frequencies, stopping when it

CB RADIO CHANNELS

Channel	Frequency	Channel	Frequency
1	26.965	21	27.215
2	26.975	22	27.225
3	26.985	23	27.255
4	27.005	24	27.235
5	27.015	25	27.245
6	27.025	26	27.265
7	27.035	27	27.275
8	27.055	28	27.285
9	27.065	29	27.295
10	27.075	30	27.305
11	27.085	31	27.315
12	27.105	32	27.325
13	27.115	33	27.335
14	27.125	34	27.345
15	27.135	35	27.355
16	27.155	36	27.365
17	27.165	37	27.375
18	27.175	38	27.385
19	27.185	39	27.395
20	27.205	40	27.405

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finds a signal on one of them and then continuing to scan other frequencies when the initial transmission ceases.

The terms "radio scanner" or "police scanner" generally refers to a communications receiver that is primarily intended for monitoring VHF and UHF land-mobile radio systems.

More often than not, these scanners can also tune in to different types of modulation as well (AM, FM, WFM, etc.).

Ham Radio

Amateur radio (also called ham radio) is the use of designated radio frequency for purposes of private recreation, non-commercial exchange of messages, wireless experimentation, self-training, and emergency communication.

A lot of great information can be exchanged over a ham radio by individuals you may already know (you may even have this type of system in place).

Amateur radio will be the first two-way communications to be re-established after an EMP and will be a valuable source of information for everyone. You may eventually even be able to do welfare checks on family members' once emergency and higher priority communications have ceased.

Messages will necessarily be transmitted according to urgency so, the amateur radio station will probably ask you to fill out a short form and leave your message in a long queue to be transmitted at a later time.

Additionally, it is used for two-way international communication by amateur radio enthusiasts for hobby, educational and emergency purposes. This will be a great

source of information in a post-EMP world to keep up-to-date and in touch with the outside world. Many amateur radios have extended receive capabilities and other features (like scanners.)

Using solar panels, charge controllers, 12v DC batteries, powerful amplifiers, antennas and radios stored in Faraday cages, hams will soon have the airwaves humming with transmissions again.

Hand held GMRS/FRS (Walkie Talkies)

I know this sounds more like a kid's item but these will really come in handy if you need to send someone out to hunt or forage for food. It is always a good idea to stay in touch with everyone in your group. Communicating with someone just a mile away can be a tiring and time consuming task without these little wonders.

You are supposed to apply for a \$90 FCC license to use the more powerful GMRS channels on these radios and enables you to use much more powerful GMRS repeaters and mobile radios up to 50Watts in power in addition to detachable higher gain antennas.

Learning how they work, which channels are designated for which uses in your area (known as a band plan) and acquiring the right equipment beforehand can put you in touch with others in your area or within line of sight quite a ways a way.

These radios are very much line -of-sight so if you are having trouble getting through, hike up to a hilltop, mountaintop or rooftop and you'll have much better reception and propagation.

Alternative Means of Communications

Especially in the immediate aftermath of a nuclear HEMP, we will likely see a resurgence of old communications technologies.

We would also see it to a slightly lower degree in the event of a geomagnetic EMP since it would not affect any radios that were not plugged in at the time.

In either situation, it is likely that many radios will survive because there are just so many of them, some will likely be shielded just by virtue of where they have been stored or their distance from the event.

Some are also likely to survive because they have pretty robust circuitry, otherwise they would be fried as soon as the radio transmitted.

Old forms of communications that may see a revival until radio repeaters are replaced may be:

- Messengers on foot, bicycle, motorcycle, ATV, horseback or driving surviving vehicles if they can find fuel.
- Military field phones operated by simple hand power or batteries.
- Simple spark gap transmitters will likely be built by amateur radio enthusiasts and electrical engineers who will use them to communicate with Morse code since they are not capable of carrying a voice signal.

They will be operated somewhat like old telegraphs you have seen in old movies only they transmit radio frequency electromagnetic waves using a spark gap instead of across telegraph wires. Spark gap generators spelled the doom of the telegraph.

- Hand written messages of all types will be posted in conspicuous places, requesting information, items for barter, news, letters and information of all sorts.

You would do well to include water resistant paper, page protectors, pens, pencils, markers, spray paint, boards and a staple gun with staples in your emergency supply stocks as bulletin boards will surely pop up everywhere ... especially in areas that retain any degree of community cohesiveness.

- Warning sirens, alarms, megaphones, bells and dinner triangles may see use in everything from emergency response to calling in family from the fields for dinner.
 - Trail markers, cairns and blazes will once again mark wilderness trails.
 - Survival groups will use drop boxes at rendezvous points and supply caches to communicate messages to family or group members who didn't show up or they couldn't communicate with for one reason or another.
 - Who knows, in some instances, obscure communications methods may even pop up such as: signal flags, heliographs, signal lights, homing pigeons, fire torches or smoke signals.
-



Morse code is a method of transmitting text information as a series of on-off tones, lights, or clicks.

It can be directly understood by a skilled listener or observer without having any special equipment.

Each character is represented by a unique sequence of dots and dashes. The duration of a dash is three times the duration of a dot.

Each dot or dash is followed by a short silence, equal to the dot duration.

The letters of a word are separated by a space equal to three dots, and the words are separated by a space equal to seven dots.

MORSE CODE ALPHABET

A	· —	N	— ·	0	— — — —
B	— · · ·	O	— — —	1	· — — — —
C	— · — — ·	P	· — — — ·	2	· · — — —
D	— · ·	Q	— — — · —	3	· · · — —
E	·	R	· — — ·	4	· · · · —
F	· · — — ·	S	· · ·	5	· · · · ·
G	— — — ·	T	—	6	— · · · ·
H	· · · ·	U	· — —	7	— — — · ·
I	· ·	V	· · — —	8	— — — — ·
J	· — — — —	W	· — — —	9	— — — — ·
K	— · — —	X	— · · — —		
L	· — — · ·	Y	— — · — —		
M	— —	Z	— — — ·		

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One thing is for sure, family will desperately want to contact each other to know if they still live and how they are doing if they have. Everyone will want news.

They will want to know what the affected area is, and what are the prospects of getting out of it to an area that still has functioning infrastructure. People will want to know the scope of the affected area and whether it was a geomagnetic event or nuclear HEMP and if we are at war.

Having read this book, you will know how to determine if it was geomagnetic or nuclear because you will be able to survey the damage and read the indicators.

If only grid connected electronics were affected and there was no flash in the sky with a lingering glow at night, then it was geomagnetic in nature. In a geomagnetic event you may be able to see auroral activity far from the poles.

In a nuclear HEMP event, you may or may not be able to see a small flash in the distance and a little lingering glow. But in sensitive electronics that were not connected to the grid are burnt out, only a nuclear weapon would cause those effects and we are likely at war.



10 . EMP SURVIVAL COMMUNITY

Have you ever heard the old saying, “There is safety in numbers?” There could not be a truer statement in the aftermath of an EMP attack. Creating an EMP-survival community BEFORE the EMP is essential along with you thinking about different roles you could fill in your survival community to be valuable.

Finding People Who Think Alike

An EMP survival community can give you that camaraderie that you seek as you make preparations to survive through a disaster such as living without mainstream

services such as electricity. When assembling a survival group, make sure there is a good mix of essential skills. What do I mean by this and why would I want to do this?

Living in your neighborhood or community as you are now, do you know how to do everything it takes to keep your house maintained? What about your car? You most likely do not have the medical know-how to administer advice on injuries or what type of prescription or medicine to recommend in a given emergency.

This is where a variety of people with a variety of backgrounds can come in handy when you are assembling a group of people to survive the aftermath. I can't do it all and I know I would appreciate those with skills which are beyond my scope and abilities.



HOW TO FIND FELLOW PREPPERS WITHOUT FEAR OF BEING REJECTED

1. Look around the neighborhood

Start by approaching the subject carefully, while shooting the breeze at the mailbox or chatting it up at a ballgame. Start by saying something along the lines of, "Boy, times sure are tough, aren't they?" or "Wow, we really are dependent upon technology, aren't we?" You're sure to get a nod of approval at this point. If so, be encouraged, and follow up with something along the lines of, "Have you ever thought about what would happen if something catastrophic really did happen?" Their answer at this point will give you a general idea of what they think. If they seem to be concerned, then you've found an opening. If not, then you haven't revealed anything about yourself and you know that they aren't of the same mindset that we are.

2. Start an online community prior to EMP

*Prior to EMP, start a local blog about it or join one if one is already in existence. It's not hard to do and doesn't even cost anything other than some time. If you're not savvy about how to do this, look for local blogs that people have already created. An online forum is a great way to gather people together. A quick search with the terms, "**ways to find local preppers**" will bring up a list of sites that organize things by location and you can either find your area or start a new group within the site.*

3. Join a local group

Finding local groups with these interests is a great way to get your foot in the door and meet people who may also be into prepping for when SHTF. You'll be surprised how many of us are out there if you just start scanning community clubs. Your local extension office, gun clubs, and military surplus stores are all great places to find these groups.

The first thing you might want to look at is a coordinator or coordinators. These are not the dictators of the community but people who know a particular area or areas and the needs of these categories.

Instead of everyone in the group trying to be the go-to person, let one person who is the most knowledgeable in each category to be that person.

Here are a few categories that come to mind:

- Energy – Fire Builder, Light Provider, Fuel Storage Supervisor
- Experts -- Fireman, Doctor, Nurse, Dentist
- Military -- Active and Retired in all Disciplines
- Food – Farmer, Chef, Cook, Hunter, Water Gatherers, Distillers
- Security (Active and passive) – Police (firearms), Security Guard
- Mechanical – Small engine repairs, car repairs, electrical repair

- Communications – Scouts, Communicators, Safety Issues
- Transportation – People who will move things around inside the community
- Laborers -- those who know crafts, etc. to make things to barter

This type of community creates services within the new community which are essential to everyone's survival. While not an exhaustive list, you see where I am going with this. It is essential to find individuals with certain skills and put them into condensed categories for maximum impact and usage within the community as a whole.

The idea here is to provide a quality of life that, even though quite dysfunctional from our daily routines, it will provide a sense of stability in this time of desperation. Nothing will be normal after an EMP. That being said, you will want to maintain some sort of stability for your newly-formed community which came about as a result of the circumstances in which you have been thrown.

An extremely important reason to keep this continuity going is for the strength everyone will need to keep all of the members safe. There is strength and safety in numbers. Consider doubling or tripling up. Fuel will be limited. May could be warmed and fed by the same fire.

Rest assured that if it doesn't happen right away, it will happen that other communities will start roaming about to find food and supplies for their community. Being prepared and staying alert are skills needed for survival.

Necessary Infrastructure Elements

Within a community, there are two essential parts to keep resilience going: food production and industry. You also need an information network going as mentioned above to keep everyone informed.

Food & Water Production

This is the most important aspect of staying alive so the tasks of growing, preserving, and storing food along with food preparation and water filtration is essentially at the top of the list for survival.

No one is immune from these tasks and everyone in the community should be assigned some form of food production task.

When everyone participates and contributes in some form or another, there are no hard feelings and some do not feel like they are doing all the work while others do nothing. If this scenario plays out it can wreak havoc on what should be a peaceful community.

Included in the farming are things such as plowing, planting, watering and harvesting. Each person in the neighborhood or community most likely has a plot of land on their property.

Allow members of the community from each household or family to grow a few particular vegetables or fruits (if they have fruit trees). Mini-farming on small plots spreads the risks. By that I mean that if a couple of households or families choose a particular crop and it doesn't make it for whatever reason, someone else's most likely will. This system will assure all types of foods which are needed by the community.

There will also be those who need to haul the food to a central storage area where the food can then be washed, preserved, inventoried, stored and guarded until ready for cooking.

Most likely this area will need a guard or guards to assure that the food remains put and no one, either internally or externally, can steal the food. You may want to store it in a series of hidden caches that are all within sight of the guard station. It will happen. Someone or a group of people will try to steal food. This is called survival.

These methods will work whether in a city or in the suburbs. A lot of people, but not all of those who live in the city, grow their own vegetables or spices. Sometimes a person will have a nice terrace area or grow items in pots. Once an EMP strikes, these pots will no longer be needed for flowers. Vegetables and other food items will be needed for everyone to survive.

In suburban areas, people who own yards can put together unused spaces for viable acreage for farming. This will generate high yields of crops due to the increased amount of space available for the farming.

Optimization of the plots to generate the highest possible yield, though, depends on the climate, sun, and rainfall in your local area.

Industry

Industries are created within your community by those individuals who can create products out of materials that are lying within the community as a whole.

There are those who are going to be able to take small pieces of junk, scraps or any other thing lying around and make useful tools or things needed for trade or barter.

Just because you have these types of industrious people in your community does not mean that the next community over has them as well. People who know the old hand-made methods of fixing or making things are going to be invaluable to your community.

So what does this mean?

You can trade or barter for items that your community may need. If your people can make one or more of an item, all the better. The more you have to barter or trade, the better chance your community has for survival.

If you have an industry, or industries, set up in your community it will give you an advantage over other communities. Communities that shift to self-production early on will benefit from an ability to not only deal with shocks or disruptions better, they will be able to generate wealth for the community faster through their innovations.

Bartering

In a disaster situation, money could easily end up being worth more as a fire starter than as a form of currency. Dollars won't fill your belly, but that bag of beans will. You'll probably have a few odd food items that are incredibly valuable to someone else but not much interest to you. Let those trades happen naturally.

You don't want to waste a tremendous amount of energy on finding the best high value trades while your stomach is rumbling from hunger. Instead, you're better off trading services for food.

If you have a reliable way to cook without power, you have a reliable way to fill your belly. This allows you to trade cooking services for a portion of the finished food.

If you've built a brick oven, you can bake someone's bread in exchange for one breaking off enough to leave yourself one roll for every loaf.

On a simpler level, if you have enough raw materials for a collection of solar cookers, you can feed yourself all day. One meal for you is a good exchange for cooking one pot of someone else's food. Three of these equal a solid day of hot meals. Six is enough for you and a spouse.

Even if all you have is simple wood fire, you put the effort into gathering and building it. Sharing it in exchange for a small, reasonable portion of food helps preserve your valuable stockpile longer while allowing someone else to have a hot meal, and possibly helping you nurture an ally.

If you're stationery, you risk people taking what they want. Never enter into a service-based barter agreement unless you are well armed and prepared to do whatever it takes to defend your resources.

It is better to **barter away from where you live**. Only bring as much product as is needed for the trade. Make sure no one follows you home or knows how much of anything that you have.

Never let the people you're bartering with think they can simply take what they want. A well-armed, polite, competent person will be well-equipped to survive and thrive.

Bartering items commonly left behind that will increase in value are:

Food

In a protracted grid down scenario, food will become the new gold standard. History tells us that food will be bartered in meal-sized or can-sized portions.

Medicine

Especially antibiotics, pain killers, refrigerated insulin, heart medications and other life-saving medications will be needed. Demand for medical and first aid supplies of all kinds will increase and supplies will diminish so the important ones will be sought after.

Fuel

Fuel is needed to prepare food and keep warm. In Northern latitudes, if you don't have enough dry, seasoned firewood or other fuel to get you through the winter, you are going to be in bad shape.

All forms of fuel will be desirable for barter. The better types for long-term storage are firewood, charcoal, coal and compressed gas fuels in storage cylinders. Fossil fuel derivatives of all types will be valuable for trade and in high demand, but are more

difficult to store. Implementing a fuel rotation schedule which allows you to rotate through them will be well worth the extra work. Less refined fossil fuels will store longer so diesel will store longer than unleaded and Kerosene longer than diesel.

Check the fuel section of the book for pointers on storing liquid petroleum fuels. People will also be boiling a lot of water, which takes a lot of fuel. If you live in a forested area and have a strong back and the necessary tools, there will be a steady demand for seasoned firewood, wood splitting and charcoal.

Firearms and ammunition

If someone doesn't have a firearm and ammunition before the grid goes down, they will want to acquire one for self-defense. Law enforcement officers will have to take care of their own families, they won't be paid anymore and you won't be able to dial 911.

Fire starters:

People will be more dependent on fire an open flame than they are now so lighters, matches, ferrocerium rods and other fire starters will see constant use and no replacement.

Potable water

Water disinfection chemicals, water filters and materials to improvise water filters will be needed as they will prevent water-borne illnesses. As mentioned earlier in the section on water, a bleach making kit would be good to have around. A little bleach goes a long way, but with the passage of time, bleach will become less and less effective because of its limited storage life.

Sugars/Sweets

Corn starch

Corn starch can last indefinitely as long as it is kept dry. Corn starch is not only used for cooking but it can be used for medicinal purposes as well. Did you know that you can use it to soothe sunburns and diaper rash?

Corn syrup

This is the most common substitute for sugar. Corn syrup can be used in place of sugar in just about any recipe. Just be sure to reseal it after each use and keep it in a cool, dry area.

Honey

Honey has an unlimited shelf life and is edible forever. Even if it crystallizes over time do not throw it away. Warm it up and stir to get it back to the right consistency.

Sugar

Brown, white and powdered sugar all last indefinitely. While sugar may harden in moist climates you can break up the chunks by warming it. Keeping sugar in a metal tin will help keep the bugs away.

Vanilla extract

Not only does it last forever, but pure vanilla extract is a form of liquor so it actually improves with time. Pure vanilla is more expensive than imitation vanilla.

Salts

Salt

Sea salt and ordinary table salt do not go bad. Salt is a good staple to have on hand as it will have several uses.

Soy sauce

Soy sauce lasts indefinitely due to the high salt content.

Other

Hard liquor

Distilled liquor never goes bad, even after it's been opened. This is another item that has multiple uses. You can not only barter with it, it can also be used as an antiseptic for disinfecting wounds. Remember that for wounds you want to make sure that it is a low-sugar liquor such as vodka. Another use for liquor is that it can be used to start a fire—be sure to stand back!

Hard Red Winter Wheat can be sprouted, ground into flour, served as cracked wheat or squeaky wheat. Properly stored, it will last longer than you will.

White Rice

Every type of rice except for brown rice will keep forever if you store it properly. Brown rice is not as durable because of the amount of oil contained in it so it becomes unusable sooner than white rice.

White vinegar

Distilled white vinegar, as in liquor, can be used for purposes other than cooking. White vinegar can be used for cleaning, polishing, and deodorizing and pest control.



11 . BUG OUT BAG (JUST IN CASE)

In the event of a severe emergency, if your home becomes unfit for habitation and you need to leave in a hurry, all you have to do is grab your backpack “Bug Out Bag” and go.

A bug out bag is gear that you can grab and go on your way out the door in the event you need to leave quickly. To make a bug out bag you can use a backpack or other sturdy nylon bag.

Every member of the family should have a backpack of their own with his or her name clearly labeled on the outside because you can’t carry everything for every member of your family. You should even have a bag for babies and toddlers in the

family. While they can't carry the bag themselves, it's wise to have all their items together so you can get to their needs quickly.

Children and teenagers, however, can carry their own backpack and it will make them feel safer knowing that they have their own provisions. The sizes and weights of these backpacks vary.

You will want all of the backpacks to be waterproof. Some packs come with pockets that you can access without having to stop and take the bag off.

Survival Food for Your Backpack

Survival doesn't mean you have to eat cardboard-tasting food. You can even have gourmet meals as your survival foods. You can purchase these foods to last for a few days, a week or even for months at a time.

Freeze dried foods are great for this purpose and lock in the nutrients and taste. When you're ready to use them, all you have to do is re-hydrate the food (that usually means adding hot water).

You can also buy MREs (Meals Ready to Eat). These are the same rations that the military uses to feed soldiers when they're out in the field and can't get back to the mess hall. They are heavier than freeze dried food because they only need to be warmed. When soldiers go on long range foot patrols, they eat LRPs (pronounced "lurps") or Long Range Patrol rations, which are cube shaped freeze dried meals that are vacuum packed so they pack very easily. They weigh only 5oz each on average before they are rehydrated. Once reconstituted they are a hearty 21oz hot meat with 1/3 more meat on average than normal freeze dried meals.

What Goes Into a Bug Out Bag?

You should have a preplanned bug out route and destination. You are going to have to pack enough food and other essentials to last the length of your trip. Estimate how many miles the slowest member of your group will be able to travel in a day. Use this to calculate how many days you plan to be on the road or trail so you can intelligently plan how much food and other provisions you will need.

For an adult, plan to **carry no more than 20-25% of your body weight** if you are in shape, much less for children the elderly and overweight individuals. You probably are not going to be able to carry everything that you need with you if you are traveling on foot. Caching provisions along your route will help keep the weight each person has to carry to a minimum.

Make sure that everyone in your group has **a comfortable pack and sturdy**, well broken in footwear to avoid injury, chafing or blisters. Make sure that everyone knows that the group will need to stop if anyone starts getting a hot spot inside their boot. Treating blisters before they become severe is very important.

Also make sure that everyone's toe nails are trimmed, especially if you route will entail rough terrain or long downhill stretches. A pair of trekking poles can help prevent falls, make backpacking easier and can double as adjustable poles when pitching a shelter.

You should plan a route that has **water sources** along the way so you don't need to carry all of your water. If you don't you'll need to carry enough water for everyone. Bring along a canteen (many canteens nest with a cup and stove to heat or boil water to make hot drinks in cold weather or rehydrate dehydrated foods and have small pockets on the side of their cover for a lighter, fuel tablet and water disinfection tablets or packets) and water bladders, a water filter and water disinfection chemicals to collect water in for the days ahead.

In addition to water, you will need a way to cook food and boil water. Cooking can be accomplished with a basic all-in-one cooking kit and lightweight pots that can be used over campfires.

You'll want to pack at least one or two extra sets of **clothes** in case your clothing gets wet. You are wearing one set of clothes so that makes a total of two or three. Choose clothing that is quick drying.

Although it's great to wear in a desert environment, do not wear a cotton layer next to your skin in cold weather since it will absorb and hold sweat next to your skin and can cause hypothermia. In cold weather, a polypropylene base layer and a wool outer layer would be a better choice. Synthetic high tech fabrics are lightweight, but generally don't last as long, especially around campfires and other open flames. You will have to strike a balance between synthetic and natural fibers. You will most likely be wearing a pair of hiking boots so you could also pack a light pair of tennis shoes.

Make sure you pack long pants, long sleeved shirts and other clothing that will keep you warm on a chilly night or keep the sun off of your skin on a hot day. Don't think that just because it is summer time it won't get cool in the evening.

Also, long pants and long sleeved shirts will protect you from pests such as mosquitoes and will keep you warm if the temperature does dip at night. You'll also want to pack extra socks and underwear. It is best to change your socks frequently when traveling on foot. Changing from sweaty or damp clothing into dry clothing will help keep you warm, prevent blisters, trench foot, athlete's foot and other fungal infections.

Take a poncho in case it rains. A poncho can double as a make-shift tent or overhead shelter, ground cloth or improvised bivouac sack to protect your blanket or sleeping bag from ground moisture or dew. You should go backpacking and camping to practice your survival skills and test your gear. In doing so, you will quickly learn that

it is best to choose items for your pack that have multiple uses. Put on a hat before you leave the house to keep the sun off your head and the rain out of your face.

By wearing a pair of sunglasses you will protect your eyes in case you are in the sun for long periods of time. This is of special importance in the snow to prevent snow blindness and on the water to protect your eyes from reflected light.

Also, tie a 100% cotton bandana around your neck. Bandannas have a multitude of uses, from first aid applications to making char cloth. Make sure everyone understands the route and destination. Bring a map and compass and know how to use them.

Pack a lightweight tent or tarp along with cordage for **shelter**. Purchase a lightweight but warm sleeping bag and a sleeping pad to go under your sleeping bag. Down is lighter but loses much of its insulating properties when wet. A sleeping pad will insulate your body from conductive heat loss in addition to helping you sleep more comfortably. Make sure to pack enough emergency blankets for everyone.

A **first aid kit** is essential as are personal hygiene items for each person and any medications that they need. Don't forget to bring fire starters as well as waterproof matches. Each person should carry basic survival gear in the pockets of their clothing so that it never gets set down or separated from them. Take a flashlight or headlamp, rechargeable batteries and a portable solar battery charger.

Bring along a small **fishing kit** to catch fish for lunches or dinners. You will also want to carry a knife and/or a multi-tool knife such as a Swiss Army knife as mentioned above.

A small emergency battery-powered radio won't take up much room and will keep you informed. If you have them, each person in your party should carry a hand held two-way radio so you can stay in contact with each other.

Pack sturdy gloves and a machete, small axe, hatchet or tomahawk that can be used to make a clearing or to get debris out of your way depending on the type of foliage in your area. Also along these lines, bring a small folding shovel, entrenching tool or at least a trowel and some TP to dig cat holes for waste disposal.

Pack **your important papers** and data and make sure that you bring a weapon, such as a firearm, in order to protect yourself and your family. Don't forget to pack ammo, identification and your concealed carry weapon permit if you have one.

Some people leave their homes in emergencies and then have trouble getting back to their homes if they can't prove that they live there if the area has been declared a disaster area, people are afraid of looters or potentially disease-carrying outsiders. Bringing a pepper spray as well for situations that do not require the use of deadly force or for any unfriendly dogs you might encounter along your route.

Fire

I know it sounds odd and you probably think that starting a fire is so easy that why would I even include this in the book? Matches are plentiful, right?

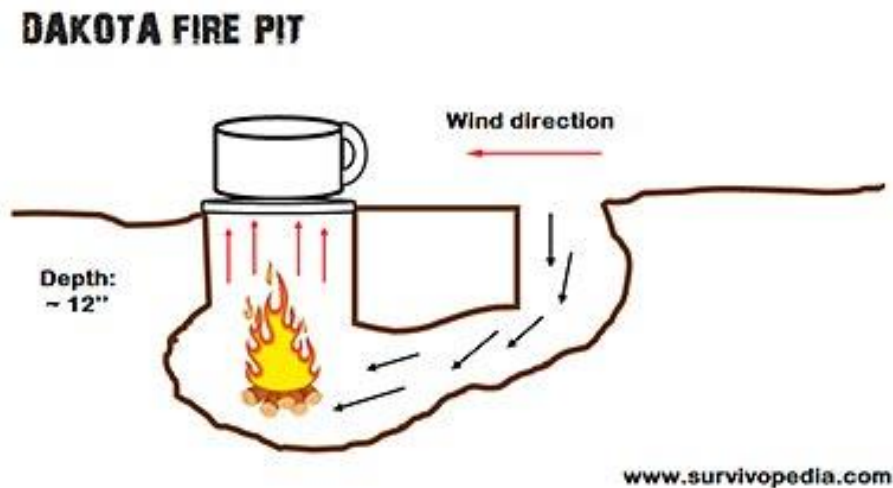
Knowing how to start a fire is a skill that you need to learn in order to survive. Your supply of matches will eventually run out and then how are you going to cook or keep warm?

Primitive fire starting methods are not as easy as they look and you want anyone in your family to be able to start a fire. Building a campfire is all about the preparation. Gather plenty of wood before you start. Clear the area of flammable materials so

your fire doesn't start unwanted fires. Have a bucket of water, pile of dirt or fire extinguisher nearby in case you need to put it out in a hurry.

Start with a "bird's nest" of tinder, then enough pencil to finger-sized kindling to fill both of your hands placed together in a circle and three big bundles of firewood, the size of a circle you can make with your arms if you were to hug a tree if you want it to last through the night. When you leave the area, make sure your fire is dead out and cool to the touch so its embers won't be stoked back to life by the wind, potentially starting a wildfire.

Familiarize yourself with common types of fire pits and fire lays. Different types of fires can help keep you warm all night, are more effective producers of light, reflecting warmth or better for cooking. Specialized fire pits and lays, like the Dakota Fire Pit can cook and warm you very efficiently while keeping the fire unobservable and producing very little smoke and are easily extinguished.



Having a stash of cotton balls and petroleum jelly to coat them with will be a great help to starting fires in less than ideal conditions. The cotton ball will burn for several minutes allowing your tinder and kindling to catch fire.

If you have the forethought to pick up not only charcoal, but charcoal lighter fluid as well, you can pre-soak twigs in the fluid. Store the twigs away from heat.

Again, waterproof matches, regular matches or a cigarette lighter are great but they have a tendency to run out and your supply is only as good as what you purchased beforehand and have on hand. Be sure to store your matches in waterproof match containers. Remember that disposable lighters are prone to break, leak or fail to light in extreme cold, so bring a backup.

Chemical tinder tablets or gel fuels are small and lightweight and are perfect as fire starters and will burn even if they get wet. Some popular types are Trioxane, Hexamine, Esbit Tablets, Tinder Tablets and Wet Fire Tablets.

A metal match or ferrocerium rod is made out of metals and rare earth minerals and, unlike matches, will survive everything from damp air to a dunk in the creek. Ferro rods and magnesium blocks or rods to shave into small piles of tinder won't ever go bad, but you can wear them out. They work most effectively when struck with a high carbon steel or carbide striker. Low carbon stainless steel won't throw enough of a spark to start fires effectively. Purchase several of these as you do not ever want to be in a situation where you can't start a fire.

Transportation

Bug-out Vehicle

Walking to a bug-out location should be a last resort. If you have a vehicle that will still run, the roads aren't blocked and you leave soon enough (before others realize that this is not a regular power outage and decide to flee urban areas en mass or

when supplies run out) you may be able to travel back roads or 4x4 trails that will not be blocked by accidents and out of fuel or disabled vehicles.

You can travel distances that would take weeks on foot in hours in a truck or car.

Ideally, the vehicle or vehicles that you choose should be large enough to carry your family or group, their bug-out bags and plenty of supplies.

Being drivable after a nuclear HEMP and having enough fuel to make the trip are obviously primary considerations. We covered fuel storage earlier. A high-capacity fuel tank or extra tanks will greatly increase the range of your vehicle and eliminate the need for carrying a large amount of fuel in gas cans since stopping to refuel or someone spotting your Jerry cans may attract unwanted attention.

Alternatively, you may decide to carry Jerry cans or fuel dollies in a hitch mounted cargo carrier, keeping dangerous and smelly fuel outside cargo or passenger areas of your vehicle.

In **choosing a bug-out vehicle, reliability after a nuclear HEMP is a primary consideration**. Well-maintained, older vehicles will be more likely to work and much more easily repaired if they do suffer damage. If your bug-out vehicle has any key systems that may be damaged by HEMP you should identify them, learn to replace them, purchase replacements and keep spares stored in a Faraday cage.

Very few unclassified EMP tests have been performed on automobiles and the tests that have been done stopped increasing the field strength as soon as the vehicle manifested any sort of problem. Testing assumed a maximum field strength of 50 kV/m but was stopped on vehicles that manifested problems at much lower field strengths and the damage data recorded.

Classified super-EMP weapons may yield field strengths in excess of 50 KV/m. It's also important to note that the newest model vehicle tested was of the 2003 model year. Newer vehicles will have more problems because they contain more microelectronics.

We really don't know how much damage the vehicles on the road today would take, especially at higher field strengths.

It should also be noted that unclassified EMP automobile testing to date has not been done with actual nuclear weapons detonated at high altitudes.

In actual real world tests, we now know that during the Russian testing in Kazakhstan in 1962 burned out diesel generators which had no solid state electronic components whatsoever, not even spark plugs!

Many smaller factors will also figure into the equation such as whether or not your vehicle is running, what it your garage made of, how much of the body is conductive and even the orientation of you vehicle relative to the EMP.

Your vehicle may survive an EMP and work just fine, but it would be better to do everything you can to tilt the odds in your favor.



The vulnerable systems of a car that may be damaged by EMP:

- *Electronic fuel injection*
- *Anti-lock braking system*
- *Electronic ignition*
- *Starting Motor*
- *Ignition Coil*
- *Mechanical Distributor (can be replaced with points)*
- *Alternator or generator*

- *All computers needed to make the vehicle run (in newer vehicles)*

If your vehicle has any of the previously listed components, you should store shielded extras just to be safe. If it is within your means, you should consider requirements for a bug out vehicle and purchase a vehicle that you can fix up the way you want or when you make your next vehicle purchase.

You may also want to consider a trailer so you can carry more supplies with you to your bug-out location. Just make sure that your vehicle/trailer combination can safely travel the back roads route to your bug-out location or retreat.

Listed below are some attributes that would be desirable in a bug-out vehicle:

- Older model year (roughly 1986 or older) with as few EMP-sensitive parts as possible and it is more easily repaired
- Long-range fuel tanks, extra fuel tanks
- High clearance 4x4
- Tow package and a trailer or hitch mounted cargo carrier
- Bull bar type bumper
- Off road lighting
- Plenty of cargo space
- Communications gear
- Full-size spare tire
- Off road or all-terrain tires (with run-flat doughnuts installed in them if you can afford them)
- Winch/air compressor combo with QD air hose & adapters
- Second battery
- Extrication gear/Tow straps/Chains/Shovel/Axe/Saw
- Non-electric fuel pump and hoses to pump gas (B&D Jack Rabbit or similar)

- Rooftop Cargo Rack, tie-down straps, cargo pod, mounting brackets for tools and steps, grab handles or ladders to reach it
- Rear bumper with swing out for Jerry cans, water cans, spare tire, hi-lift jack
- Repair kit: tools, spare parts, tire patch kit, jumper cables, fluids, belts, etc.

Horse

Horses have numerous uses for our purposes. In a post-EMP world that is largely without electricity or gasoline horses may be versatile transportation and tools.

Horses travel much faster than walking and can travel off road where vehicles just can't go.

Wagons or buggies would also be supremely useful. Horses leading a train of pack horses, mules or donkeys can take quite a bit of gear to inaccessible locations and can survive largely off of forage and water.

Bicycle

Buy a bike and learn to ride it if you don't already know how. Transportation means will be a major concern after an EMP. Vehicle and trailers can also carry bicycles or folding bicycles in racks. You won't want to end up stranded and forced to walk on foot.

Purchase spare parts, tubes, patch kits and tires to keep your bicycles in working order. If a bicycle will be a backup mode of transportation for you, consider also buying or building a trailer for you bicycle so it can carry a greater load without throwing you bicycle off balance.

Personal Security

Stay off the Major Roads

Roads will be overcrowded, possibly causing major gridlock. Instead, use smaller, unknown routes only used by farmers or cattle.

Stay Hidden

Don't make yourself, your family or community stand out in a crowd. Everyone must know that everyone's survival depends on the smart moves they make at the beginning of the disaster.

Keep a cool head. If you are staying in your house (bugging in) close the curtains after sunset and avoid making noise. This is called practicing noise and light discipline. Check your shelter from the outside with the lights on to make sure that there aren't any light leaks. You should also practice scent discipline. Make as little movement as possible. You want to draw as little attention to yourself as possible.

Guarding Your Home

Be vigilant. You might be in an "every man for himself" type situation. If this is the case, you do not want to let your guard down or someone will take advantage of your vulnerability.

Eliminate Possible Threats

Don't forget that in these times of desperation, ANYONE can be your enemy when it comes to survival. Even that once-friendly neighbor could now need your food or medicine to keep their loved ones alive but especially watch out for strangers wandering around in your neighborhood.

If you think that someone is going to try something, most likely they will. As I have stated before, desperate times call for desperate measures.

12 . SUMMARY

Now that you have fully prepared and taken care of purchasing, gathering and researching all the items you will need for your survival, it is time to take things to the next level.

Gathering, reading and researching are the easy part. Actually surviving in the event of an EMP is an entirely different animal.

Even though you have prepared physically, you must also be prepared mentally. This is not going to be an exercise; this is going to be your life. And the scariest part of all is that you don't know for how long.

Being self-sufficient is the key to survival. But, if you have taken the time to put together an EMP survival community your chances of survival will improve greatly.

How will you know if an EMP has occurred or if it's just a natural everyday power outage? If most (or all) of the radio stations are down and no one is transmitting that is a clear sign. If all of the unshielded non-grid connected microelectronics in your house have stopped working it almost certainly due to an EMP. Nothing else would cause that, not even a coronal mass ejection from the sun.

Are there cars all over the road that have just stopped and are now stranded?

The first thing to do is to gather your family and put your plan of action in place and meet at the agreed upon place. This will assure that everyone is OK and give you peace of mind.

Did you buy those solar panels? What about a solar generator? A solar energy generator produces energy created at no charge to you and is self-renewing.

One thing you might want to do after the EMP is to dig a well that uses a hand-crank to draw up the water. If the water table is near the surface in part of your property.

Rainwater harvesting is going to be essential. Since water is one of the three must-haves along with food and shelter, make sure your water needs are one of the first things that you shore up after an EMP.

Don't forget that in order to survive, you must have your basic needs met. You want to make sure that the preparation you do assures your survival for longer than a few days.

The aftermath of an EMP will be devastating. Life as you we all know it will, for the most part, not be the same for quite a long time. It could possibly take months or years to get back to the point in time where we are now. Most people may not be aware of this fact for quite some time. This could possibly work to your advantage, but be careful, you definitely don't need any new enemies.

The truth of the situation is that there will most likely be sparse communities who are prepared for the EMP. These will be the people who survive.

Many people will have to learn how to live in a world so different from what they are used to now that it will most likely cause their system to go into shock. Many others will likely go into denial.

Today, we enjoy so many comforts and take so much for granted that a lot of people don't take the time to learn about a world without electricity. We have been living on borrowed time for the last decade or two.

Times will definitely be different in the sense that we will probably go back to the days where we spent time with our family and communities. Religion and relying on one's self and family will be brought to the forefront of the way we live our lives.

I can't reiterate it enough: take the time to prepare today so that you can live another tomorrow.

The choice is really up to you.