THE ULTIMATE PREPAREDNESS MANUAL

A COMPLETE GUIDE TO EMERGENCY PREPAREDNESS

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THE ULTIMATE SURVIVAL PROJECT LLC
PREPARE ★ SURVIVE ★ THRIVE

The Ultimate Preparedness Manual

Some People Will Do Everything to Survive...
But Everybody Can do Something.

First Edition – December 2012

A Presentation of The Ultimate Survival Project

This Book Is Loving Dedicated to the Memory Sharin Klisser, who was the Inspiration for The Ultimate Survival Project and remains our Light in a darkening world.

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Foreword

It took well over a year for the editorial team of The Ultimate Survival Project, LLC (TUSP) to gather, organize and distill the invaluable information you now have instantly available in this manual. During this prolonged effort, we learned one extraordinary fact that helped shape our mission: no matter how challenging a task might appear, someone, somewhere in the world already knows how to do it.

And even more impressive to us was their generous willingness to freely share their knowledge. They, as seasoned campers, hunters, survivalists and experts in the field of emergency preparedness were well aware how poorly the general public was prepared for unplanned disasters and were eager to help in any way they could.

The primary purpose of this manual is to motivate you to create and implement an Emergency Preparedness Plan. It is provided in digital form for two very important reasons:

1. Circumstances can change materially from day to day. New information is continually being made available from a host of governmental agencies and dedicated NGO's (non-governmental organizations) around the world. That's why we plan to issue monthly updates to the manual, (or more frequently if they are of particular importance), so its readers might be kept as current and knowledgeable as possible. The inescapable reality is that you are only as prepared for a disaster or emergency situation as you were ***three seconds*** before it happened. Once you are engulfed in the rapid and generally unpredictable business of surviving you can no longer reach back in time and acquire the emergency preparations you did not complete.

2. Please keep a copy of this manual in your computer, or keep several copies on media sticks in your "go-bags," so they will be instantly available – and quickly searchable – in times of need. You will even be taught how to keep your computer and mobile telephone fully charged and operational, even if the entire power grid around you goes down. Traveling with a knapsack full of books and reams of paper in large 3 ring binders during tumultuous

times is totally impractical. Having the information you need in a highly portable, digital format can be a lifesaver.

There are three stages you need to complete to prepare yourself for a potential emergency:

1. Pull together all of the information you will need. You've already taken a giant step in that direction by downloading this Manual.

2. Read, understand and absorb the information you've acquired. Set a certain time aside on a predetermined schedule to go through this Manual. You can skim the parts that don't necessarily apply to your circumstances. For example if you live near a fault line, give the section on earthquakes special attention; if you live near a river, focus more on what you need to know about the dangers of flooding.

3. Take action. All the knowledge in the world is useless unless you do something concrete about it. Develop a crystal clear, "EPP" Emergency Preparedness Plan and put it into motion.

We are talking here about something relatively simple but vitally important: the significant difference between involvement and commitment. In relationships, it's the difference between casual dating and marriage. The poker term for this level of commitment is "all in."

Before diving into the deep pool of information provided in this Manual, take a moment to define your motive for reading it. Unless you are guided by a clear sense of purpose you will have little motivation to make the transition from involvement to commitment. If you're assuming the role of team leader in the welfare of your family then, by keeping this one fact in the forefront of your mind as you progress through this Manual, you will purposefully move forward, step by step until you have completed each of the tasks of your personal, "EPP" Emergency Preparedness Plan.

The journey through these pages will lead you through Five Sections and more than 30 chapters. There's little question that, no matter how much you may have already known before receiving this Manual, you will emerge at the end with a more focused view of what needs to be done … for yourself, your family, your friends, and your community. Think of it as climbing a

ladder; each rung takes you higher and gives you a broader perspective of the landscape around you.

The overriding mandate of The Ultimate Survival Project, LLC, the publisher of this Manual, is to help the world prepare. Our job is to stand at your side and provide the assistance needed to transform theoretical knowledge into powerful action.

That's why we've included a comprehensive Six Level Quick Start system, a step by step action plan – also provided free of charge – as a vital part of our entire educational program. You will find the "Quick Start Check sheet" link on your personal profile Page on the web site: www.theultimatesurvivalproject.com Each Level of the Quick Start programs will be made available to you upon successful completion of the previous Level.

In addition, we will be posting an untold number of "how to" videos on our web site that that can be downloaded and added to your survival information file. For example, you'll see firsthand how to construct an emergency shelter, how to build a fire, (even when you have no matches), how to purify water for safer drinking and much, much more.

Virtually all the information you need to prepare and survive is now in your possession. This Manual hands you the knowledge you need to be prepared on a digital platter. Only one question remains:

Are you ready to convert that knowledge into a powerful emergency preparedness plan that can easily determine how well your family fares in any disaster?

Jean-Claude Koven
Chief Executive Officer
The Ultimate Survival Project, LLC

Preface

Why create an “Ultimate Preparedness Manual” when much of the information contained within is already readily available? The answer is in the question. *Because* there is already so much information from so many different sources, the Ultimate Survival Project was created to serve as a single reliable source, an aggregator of the best content available to help you and your loved ones survive, before, during, and after a natural disaster or emergency.

The information in this Manual does not come from any single source but represents the accumulated global body-of-knowledge from Disaster Preparedness Agencies, Non Governmental Agencies (NGO's), Thought Leaders, Military and Civilian Survival Training Manuals and the personal experiences of hundreds of survivors. The Manual is a "Living Document" that is constantly updated with the best information available, and it is designed to put that information at your fingertips, whenever and wherever you need it.

You only have to look at recent headlines to understand the need for this Manual. But the intention of this Manual is not to frighten but to enlighten and empower you. To open your eyes to the reality that we are living on a fragile planet that is showing signs of reaching a tipping point that cannot and should not be ignored.

This manual provides reliable, practical, and useful information, designed to inspire self-reliance. It provides basic information that will increase your odds during a disaster or emergency but above all else it provides guidance that replaces fear -- with confidence.

The manual also stands as a testament to the idea that our ancestors came into this world with all they needed to survive no matter what life could throw at them. This living, breathing body-of- knowledge serves as a reminder that power remains within *you*, and can be tapped into when the modern conveniences you take for granted - can no longer be counted on.

Dr. Jim deBoer
Chief Operations Officer
The Ultimate Survival Project, LLC

Introduction

Changing Your Mindset from Victim to Survivor

"Does anything in nature despair except man? An animal with a foot caught in a trap does not seem to despair. It is too busy trying to survive."
-- May Sarton, *Journal of a Solitude*

At 2:00AM on Aug. 12, 2000, then 83-year-old Tillie Tooter set out to pick up her relatives at the Fort Lauderdale /Hollywood International Airport. She never arrived. Eventually her Granddaughter, Lori Simms and her boyfriend took a cab to Tillie's apartment. When she was not there, fearing the worst, Simms reported her missing. Where she actually was, Simms could not have imagined in her wildest dreams. Tillie was hanging suspended, trapped in her car, in a clutch of trees above a mangrove swamp. Her car had caromed over a divider, when it was struck from behind by a hit and run. Bruised and broken, there Tillie stayed, for three days, surviving on rainwater she gathered with a steering wheel cover she poked through the shattered windshield, and a few pieces of candy. Tillie's story made headlines nationwide, and the feisty Florida Grandmother became a media darling appearing on "Today," "Good Morning America," and many other TV shows.

Inspiring tales of survival such as Tillie's are not uncommon, often they are featured in books or are turned into major motion pictures. Such as the harrowing events surrounding the plane crash in the Andes in October 1972 and what the surviving members of the Uruguayan rugby team on board where forced to do to survive, depicted in the Movie "Alive." Or more recently James Franco's' Oscar nominated portrayal of mountain climber Aron Ralston and his incredible ill-fated "127 hours" in the Blue John Canyon of Utah.

But just as it does not take a major disaster to find yourself in a desperate situation, not all survival stories make headlines. There are hundreds, thousands of equally amazing stories of survival that occur across the planet everyday.

Such as Vicki Rhodes, a nurse from Salem, Arkansas who awoke from a nap to find her apartment engulfed in flames. Despite the heat and smoke, she found her way to a window, and jumped the three stories, breaking both her legs and feet, but surviving.

Or another grandmother as strong and stubborn as Tillie Tooter, Teresa Bordais, a 62-year-old French woman, who survived 11 days lost in the Spanish Pyrenees living on nothing but rain water and nibbling on wild herbs.

Or Shayne Young who stumbled over 3 miles to safety, enduring the unbelievable pain of fractured vertebrae, to avoid freezing to death on top of a mountain, after his ATV had overturned, nearly crushing him to death.

Whether their particular stories became legendary or not, what all of these people had in common was the determination, the will -- not to be a victim. They said to themselves, and sometimes even shouted out-loud:

"I AM NOT GOING TO DIE TODAY"

Let's look at what it really means to "survive." Survival, in its most literal sense means to "stay alive." With the possible exception of complete and utter breakdown of global society -- although this Manual will help you through that as well – that usually means, merely remaining alive until help arrives and you can be rescued. And that has more to do with your attitude, than any training you have had, or equipment you have on hand.

Survival is a State of Mind – Your Brain is Your Most Powerful Survival Tool!

There is something that everyone who has taken any kind of survival training has had drummed into his or her head, it's called the Rule of Threes. A person can survive for:

- Three minutes without air
- Three hours without shelter
- Three days without water
- Three weeks without food

The idea behind the Rule of Threes is a simple one: so you know your priorities in any emergency situation. In the food obsessed modern society we live in, untrained people who find themselves for the first time in an emergency situation, often spend their time running around exhausting themselves finding sources of food, and suddenly its nightfall, cold, raining, or snowing, and they are dead by morning without shelter.

Survival, in most circumstances, starts with knowing and setting your priorities.

When you have finished this Manual you will know the Rule of Threes and how to apply each of them in just about any emergency situation you may ever find yourself or your family in. But you will also have the confidence that comes from a New Rule of Threes:

- Three minutes with this book and you will understand *why* you must prepare to Survive;
- Three hours with this book, you will start to understand *how* to survive;
- Three days with this book and you will start to *prepare* to Survive;
- Three weeks with this book and you *will* survive!

Steve Goodman
Author
The Ultimate Preparedness Manual

Section I

Survival Basics

**“If one reads enough books one has a fighting chance.
Or better, one's chances of survival increase
with each book one reads.”
— Sherman Alexie**

Chapter 1

Mental and Physical Preparedness

"Knowledge is power, community is strength
and positive attitude is everything"
— Lance Armstrong

One of the guiding principles of the Ultimate Survival Project is "Some people will do everything to survive, but everybody can do something." What that means is that there will always be those who have been specially trained in survival skills, whether that is from a military background, a chosen profession, or personal choice. But being prepared for an emergency or natural disaster doesn't mean you have to be a Navy SEAL, or have access to unlimited resources, or have a degree in emergency management. A little confidence, creativity, and the right knowledge can help you prepare and increase your odds in any disaster or emergency situation!

Attitude
Being mentally prepared to face a crisis is as important as any piece of equipment or technique that will be mentioned in this manual. A generation ago, being prepared was more than just the motto of the Boy Scouts; it was a way of life. Your grandparents knew it just made common sense to prepare for an unexpected emergency or disaster. Today, your friends and family may look at you like you're nuts… when you talk about the need for emergency supplies and a disaster plan.

That is because in recent generations we have become complacent. We have had ever increasing modern conveniences, making life easy, and have enjoyed long periods of relative financial ease. Rarely have any of us, or our friends or neighbors, had any problems with the availability of goods and essential services. You look at the headlines of terrible disasters in Japan, Haiti, even closer to home in New Orleans, but still take an attitude of "its sad, but something like that can't happen to me." But it can. And the sooner you prepare for it in your mind, the better you will be able to prepare all around.

Did you ever stop to wonder why in any given disaster, when people are facing the exact same set of circumstances, do some make it while others perish? Skills and their relative level of preparedness are factors of course, but so is their mental attitude! Having the "survivor mentality" can often mean the difference between life and death.

How you deal with stress has a lot to do with your ability to survive in any kind of crisis. It isn't always the person with the greatest physical strength that is better at handling an emergency and more likely to survive. Being able to think clearly is your most valuable asset in a survival situation.

It has been proven time and time again how mental and emotional states are more important than physical skills in survival situations – just take a look again at the story of Tillie Tooter mentioned in our Intro. You can have the strength of an Olympic athlete, and the best survival gear available, but they will be useless to you if you allow fear and stress to takeover – and you sink into despair and a negative attitude.

Facing a survival situation literally means your most crucial task will be solving the problems of staying alive. You must be able to recognize threats to your life, know their priority of significance, and the severity of the threat to your life. Then you must be able to take the necessary action that will keep you alive. It is physical fact, that when you are calm your brain can process information more efficiently, and problem solve more effectively – that is what it meant by "thinking clearly."

According to the U.S. Army Survival Manual, stress can inspire you to operate successfully and perform at your maximum efficiency in a survival

situation. But it warns that stress can also cause even the best soldier to panic and forget his training.

The key to your own survival is your ability to manage the inevitable stress you will encounter in an emergency. You are a survivor when you work with stress instead of letting your stress work on you. In any survival situation, your greatest enemies are fear and panic. If uncontrolled, they can destroy your ability to make an intelligent decision. They may cause you to react to your feelings and imagination rather than to your situation. They can drain your energy and cause you to sink further into negative emotions and despair.

And what does the Army Manual say can "vanquish fear and panic?" Training and self-confidence! And you don't need military level training to achieve that! What you do need is some basic training, but more importantly the self-confidence that comes from knowing that disasters can happen, and being properly prepared for them.

PREPARATION IS POWER OVER PANIC

When getting yourself mentally prepared for disaster, always keep in mind too, that it doesn't take a major catastrophe or earth-shattering event for you to find yourself in an emergency situation. As the saying goes "Sh*t Happens". Cars breakdown, power goes out, unexpected weather moves in... a simple wrong turn and you can be in dangerous and unfamiliar surroundings. The Central Indiana Wilderness Club (www.ciwclub.org) advises any would-be adventurers before venturing out on any trek to "Win the Mind Game" by "knowing what you know, and admitting what you don't." They also tell all backpackers to always STOP -

S=Stop, **T**=Think, **O**= Observe, **P**= Plan

That also applies to being prepared for any disaster, and not just ones that could occur on the trail.

Think of the hardest mental challenge you have ever had to face and overcome in your life. In any survival situation you will likely be confronted by problems far worse. Your mental attitude will be your greatest strength, but it could also be your downfall. You will have to defeat negative thoughts and emotions, and also conquer your greatest fears. You will never be further away from your “comfort zone.” Being prepared to deal emotionally with a disaster before it occurs will help you to shift your mental processes away from despair, and take on a "can do attitude" when a crisis arrives!

Modern society has conditioned your mind to expect instant relief from discomfort. If it’s dark you just flip on a light switch, if you are hungry, you just run to the fridge, when you are cold, you turn up the heat.

But your mental conditioning can also be unconditioned. Your mind has a remarkable ability to adapt. You can turn back to your instincts, and retrain your mind to always hope for the best, but prepare for the worst.

Fear is a very real human emotion. Fear is a natural reaction to a crisis. There is not a warfighter, a police officer, a first responder, or anyone else that you might consider “brave” that would tell you they are “fearless” in a combat or other life and death situation. The definition of courage is not the absence of fear but it’s acceptance and ability to use it positively when you can, and overcome it when you must.

Of greater concern then fear, is panic. Simply put, in a survival situation panic kills. Panic is your uncontrolled need to forget everything and just try to run from your situation. Panic is triggered by the stress caused by fear of the unknown, a lack of confidence, not knowing what to do next, and letting your imagination get the best of you.

The Army Manual describes several “stressors” in survival situations such as:

- Loneliness
- Fatigue
- Cold/Heat

- Hunger
- Thirst

But if you look closely at that list and the causes of panic in the paragraph above it – you will find that there is one common way to overcome each and every one of those stressors – PREPAREDNESS!

Ideally, by taking the steps to be as prepared as you possibly can to face a disaster, or crisis situation, you will have the knowledge, the equipment, and the skills needed to increase your confidence, manage your fears, and eliminate the need to panic.

What it really all boils down to is this: you may never be able to control the circumstances that have put you in a survival situation – but what you can ALWAYS control is your reactions to them. Being able to manage stress and avoid panic will significantly improve your ability to stay calm, remain focused and keep yourself and those around you alive during any crisis. Learning relaxation techniques, assertive skills, and keeping a positive attitude will all help. But your greatest power over panic is the confidence that comes from the level of preparedness you will have by following the advice you will find in this manual. Keep it safe; keep it close – and you will always know what to do.

Health

Next to being mentally prepared, one of the most important things you can do to increase your chances of surviving a disaster or crisis situation, is to keep yourself as physically fit as possible. The time to try to get in shape is not during a crisis!

Start with getting a complete physical by your doctor. Have your teeth thoroughly checked by your dentist. If you have any problems with your teeth, get them taken care of. Believe it or not a minor tooth problem can turn deadly in a survival situation.

The things you have heard about improving your diet for everyday health, are even more important if you want to increase your chances of survival during a crisis.

Getting yourself into “Survival Shape” is all about conditioning your mind and body for peak performance. And you can do that whether you are 25, 45, 55, or 75!

The benefits you will gain by beginning a proper fitness regimen will go well beyond increasing your odds of surviving a natural disaster – it will increase your odds of surviving the toxic soup you are swimming in everyday!

For athletes, “Peak Performance” means getting the most out of their bodies, and themselves. That means setting clear goals, having a winning attitude – and putting only the best “fuel” in the engine as possible. With those three basic thoughts in mind, anybody can achieve peak performance at any age.

Peak performance in your body is just like peak performance in your car’s engine. If you want to get the most out, what you put in matters. So put down the donut, and keep reading!

The best way to get healthy, and stay healthy is to start with as clean a slate as possible, and that means detoxification. Detoxification is the way to cleanse your body of accumulated substances from processed or junk foods and other toxins such as caffeine, nicotine and alcohol. Now, don’t worry, that does not mean you have to go spend two weeks drinking grass at a retreat somewhere. You just need to cut down on the coffee, booze, saturated fats, and sugar. A classic detoxification diet goes hand-in-hand with a diet that will improve your health overall.

In other words, the same recommendations that can detoxify your body can also help you lose weight and lower your cholesterol, blood sugar, and blood pressure. A two-week detoxification starts with drinking water, and lots of it, at least two to three liters a day. An easy way to accomplish this - try substituting a glass of water for at least two cups of coffee and/or soda per day.

Other ways to detox over the next two weeks include:

- **Cut Out the Booze.** It may be rough, but abstaining for two weeks will lower your triglycerides, and could help lead to weight loss. Also,

drinking usually goes along with eating junk food and salty snacks, cut out the drink and you cut down on the junk.

- **Say Goodbye to The Sweets**. Having a "sweet tooth" isn't just an expression – it's a genetic reality. Our brains are wired to crave sugar. It's been found that sugar stimulates the same "pleasure centers" in the brain as morphine. But the "high" comes with a "high" price, such as "high" cholesterol and "high" blood pressure, since most of the foods laden with sugar, are also loaded with fat and cholesterol. The key to cutting down on sugar intake is not so much in cutting out the obvious like cakes and Snickers bars that is not where most of us get "sugared up" anyway. You need to avoid the "sneaky" added sugars like high fructose corn syrup that manufacturers load into all sorts of prepared foods, including breads, pasta, ketchup, and salad dressing. Sugar is not always obvious. Look for things on the label like sucrose, or anything else ending in "-ose", dextrin, and malt, or corn syrup – these are all sugar. To wean your body off of sugar - try using spices such as cinnamon, or almond, or vanilla extract to sweeten foods and beverages. Feed your craving for sweets with fruits. The fiber and antioxidants will again have added benefits and help you achieve your goal of Survival Shape.

- **Boot the "Bad Fats."** You have heard the drill; there are "good fats" and "bad fats". The bad guys are the saturated fats, which are naturally found in beef and most animal products and full-fat dairy products, and the man-made bogeymen; trans-fats and hydrogenated fats. You know how some products seem like they can stay on the shelf forever? Usually that's because of trans-fats. The problem is once the stuff gets into our bodies, it's damn hard to get rid of too. As you have probably heard there are two kinds of cholesterol, one "good" one "bad". Saturated fats raise the "bad" kind (LDL). The nasty trans-fats, not only raise the "bad" cholesterol, they decrease the "good" (HDL). Switch from cream to low fat, or skim milk, stop the "add-ons" like mayo and butter. Of course the rich desserts have to go.

Boost Your Immune System

Maybe you instinctively know that there are some foods that are better for

you than others. But did you know that increasing the consumption of certain foods could boost your immune system, reduce stress, combat disease, and lengthen your life in and out of a crisis?

They are the group of foods collectively known as Superfoods. Some superfoods will come as no surprise. Remember how your mom always told you to eat your broccoli? Seems she knew what clinical studies have now proven. Broccoli is one of the most potent superfoods there is. Others may surprise you such as beans and certain nuts.

What makes them so super? Superfoods may not dress up in tights and capes, but many of them are rather colorful and easy to spot. That's because one of the things that all superfoods have in common are phytochemicals. Phytochemicals are the substances that give plants their color, their nutrition, and their disease resistance. Also it goes without saying that all superfoods are "all natural". You will not find anything processed or refined in a superfood. The other attributes that all superfoods have in common are antioxidants, high nutrition, and fiber. It's a triple punch that adds up to peak performance.

As a group, all of the superfoods contain key nutrients that have been found in study after study to maximize health. Yet these are the same nutrients that are lacking in the diets of most Americans. The superfoods are rich in Vitamins A, B, and C. Critical minerals such as folate, magnesium, and potassium are found in the superfoods as are the "good fats" such as Omega 3's and Gamma-Linolenic Acid.

Examples of superfoods include:

- Green Tea
- Tart Cherries
- Blueberries
- Wheat Germ
- Dark Chocolate – not milk chocolate – it must be dark chocolate to have any health benefits, with at least 80% Cocoa
- Broccoli
- Beans
- Pumpkin
- Spinach

Contrary to popular belief, vaccinations do not “boost your immune system,” and in fact do very little to improve your health. However, there may be certain very specific vaccines that could be useful in certain geographic areas and under some very specific survival situations.

Unless you are not in good health, especially a child or senior in poor health, seasonal flu vaccines are a generally not recommended, and are totally useless in the case of a pandemic, which always results from the introduction of an unknown strain. You are far better off keeping such vaccines out of your body, and instead following a fitness and diet program high in anti-oxidants that will naturally boost your immune system and strengthen your resistance to flu and all pathogens.

Staying healthy and fit and increasing your chances of surviving a disaster is an ongoing process. Learning how to cook healthy food, and how to cook food from scratch, are not only great life skills – they are survival skills.

Increase the amount of raw fruits and vegetables you eat on a daily basis, while trying to become less reliant on processed foods and modern preparation. Learn how to bake bread instead of buying it from the market – it's not that hard, it's healthier, and it may save your life in the field one-day!

Besides getting in “Survival Shape” another part of improving your physical preparedness to face a disaster is to gain some additional skills you do not have, but that could come in handy. If you do not know how to swim, learn. Take a course in Yoga, Tai-chi, or other stress reduction techniques. These can help you cope before, during and after a disaster. Get trained in basic self-defense. The more you can learn, and the more you can challenge yourself physically – the better you will be able to react in a emergency.

It is also a very good idea to learn CPR and basic first aid. Your local Red Cross Chapter (www.redcross.org) gives many such courses. They can help you be better prepared in emergency situations, build confidence, and also are great way to meet like-minded people and increase your network of friends -- which is a good thing to have, in or out of a crisis!

Chapter 2

Assessing Your Risks

"A prudent person foresees danger and takes precautions. The simpleton goes blindly on and suffers the consequences."
– Proverbs 27:12

One of the most important things you can do to prepare is to assess your risks of what you may need to be preparing for. There are general preparedness skills and techniques that will serve you well in any emergency situation. But if you live on the coast of South Florida for example, you probably do not have to spin your wheels too much preparing for earthquakes, or volcanic eruptions – but you really should have a great Hurricane Survival Plan in place.

Risk assessment basically boils down to thinking about "what is the worst that can happen, and how likely is it to happen to me." Governments, corporations, healthcare facilities and other entities vital to infrastructure, have a vested interest in understanding the risks to their operations. So the good news is that emergency preparedness organizations have invested a whole lot of time and research into compiling risk assessment data, and their are many reliable websites were you can access regional risk assessment maps, and find exactly what you could be facing where you live.

According to FEMA (www.ready.gov) there are actions that should be taken before, during and after an event that are unique to each hazard. Identify the hazards that have happened or could happen in your area and plan for the unique actions for each. Local Emergency management offices can help identify the hazards in your area and outline the local plans and

recommendations for each. By contacting the local emergency management office or local Red Cross office, you can find out what types of disasters are considered most likely to occur in a specific community. Once such risks have been determined it is important that you share the hazard-specific information with all of your family members and include pertinent materials in your family disaster plan. You will learn much more about developing a family disaster plan in the next chapter.

The Insurance Institute for Business and Home Safety, (IBHS) says that no matter where you live, natural hazards exist that could significantly damage or even destroy your home or business. However, the severity and specific types of risks vary considerably by geographic region. A complete evaluation of your specific property location may be the most effective way to determine the true exposure. You can obtain a list of the natural hazards that may affect your area, and the potential of various man-made risks by accessing IBHS' interactive map at www.DisasterSafety.org.

Such risk assessments involve:

- Determining when and where hazardous processes have occurred in the past;
- Determining the severity of the physical effects of past hazardous processes;
- Determining the frequency of occurrence of hazardous processes;
- Determining the likely effects of a process of a given magnitude if it were to occur now;
- Making all this information available in a form useful to planners and public officials responsible for making decisions in event of a disaster.

IBHS suggests that once you have determined the likelihood of a particular hazardous event occurring in your area, the next level of risk assessment is to figure out how vulnerable your home and property is to harm, and to prepare accordingly.

You can find these details by jumping forward to Section III of this manual wherein the following Chapters; you will find detailed information regarding preparing for, and surviving specific natural disasters.

Section III – Preparing For and Surviving Natural Disasters

Chapter 13 - Drought
Chapter 14 - Earthquake
Chapter 15 - Fires
Chapter 16 - Flood
Chapter 17 - Heat Waves and Heat Emergencies
Chapter 18 - Hurricane
Chapter 19 - Plague or Pandemic Outbreak
Chapter 20 - Tornado
Chapter 21 - Tsunami
Chapter 22 - Volcanoes
Chapter 23 - Winter Storms

Other Risks

An important part of assessing your risks and preparing for them comes with an understanding that not all the risks you and your family face are those involving physical damage or harm. Disaster planning also involves assessing your **financial risks,** and preparing accordingly.

You have no doubt heard the expression “save for a rainy day” – well what if that “rain” turns out to be a Hurricane, Tsunami, or major Blizzard? Are your personal finances set up to survive a natural disaster?

There are two aspects of financial preparedness. One is to simply make sure that you are prepared to get through a few days cut off from your normal financial infrastructure in the event of a natural disaster or crisis. The other involves more long-term risk planning in the event of a personal economic crisis, such as extended job loss, or a large-scale national or global economic meltdown.

Being prepared for the first part is easy. You need to make sure to have cash on hand and make sure it is part of your Disaster Go Bag. You will learn more about the specifics of the other contents of a Go Bag and Home Disaster Preparedness Kit in the next chapter. But as part of your financial

risk assessment, assume that in the aftermath of a disaster you will not have access to banks or ATMs. So you need to be sure to stash some cash, probably at least $500.00 in your Go Bag, and do not dip into it -- forget it is even there.

Also, as part of your short-term financial disaster preparedness plan, be sure to always have your picture ID, credit cards, and medical insurance cards with you in your wallet or purse, or are kept in a routine place where you can grab them quickly. If you have a passport, know where it is so you can grab that quickly as well, and it's a good idea to also keep a copy of your passport in your Go Bag.

Setting up your major monthly obligations; mortgage, rent, insurance, utilities, etc. for auto-payments is not only convenient it is a great way to insure that payments continue to be made in the event of an emergency. Some creditors will forgive debts in the time of a crisis, but you should not count on that to be the case.

The second phase of assessing and planning for a long-term personal or a wide-scale economic crisis is a bit more complex.

It does not take an Earthquake to wipe the place you work off of the map for you to suddenly find yourself out of a job. The best way you can prepare for a personnel and sudden financial crisis such as job loss is to avoid debt and build savings. Faith-based organization, The Church of Jesus Christ of Later Day Saints, (www.lds.org), recommends the following ways to have financial reserves in preparation of disaster. It is sound advice for people of all faiths and belief systems.

- **Avoid Debt -**Spending less money than you make is essential to your financial security. Avoid debt, with the exception of buying a modest home or paying for education or other vital needs. There is nothing that will cause greater tensions in life than grinding debt, which will make the debtor a slave to creditors. A specific goal, careful planning, and determined self-discipline are required to accomplish this. If you are in debt, pay it off as quickly as possible. Some useful tools in becoming debt free are a debt-elimination calendar and a family budget worksheet.

- **Distinguish Between Needs and Wants -**We must learn to distinguish between wants and needs. You should be modest in your wants. It takes self-discipline to avoid the “buy now, pay later” philosophy and to adopt the “save now and buy later” practice.

- **Use a Budget** - Keep a record of your expenditures. Record and review monthly income and expenses. Determine how to reduce what you spend for nonessentials. Use this information to establish a family budget. Plan how much you will save, and what you will spend for food, housing, utilities, transportation, clothing, insurance, and so on. Discipline yourself to stay within your budget plan. A budget worksheet is a useful tool to help you with your plan.

- **Build a Reserve** --Gradually build a financial reserve, and use it for emergencies only. If you save a little money regularly, you will be surprised how much accumulates over time.

- **Teach Your Family** - Teach family members the principles of financial management. Involve them in creating a budget and setting family financial goals. Teach the principles of hard work, frugality, and saving. Stress the importance of obtaining as much education as possible.

Part of your short-term financial risk assessment, needs to also include an evaluation of your insurance needs. Insurance can be the only way to rebuild or get yourself back on your feet after a hurricane, flood, earthquake or other serious natural or man-made disaster.

The results of your Regional Risk Assessment will help clue you in to what coverages you should have. Be sure to check your policies. Often standard homeowners insurance does not include coverage for the disasters most likely to occur where you live. For example, if your home is on the beach in a hurricane zone, flooding and storm damage may be excluded from the policy. It is vital to purchase all extra coverages that may be required to protect your assets from natural disasters.

If you are the owner of property, be it residential or commercial; always insure the building and its contents at replacement-cost, to ensure that everything will be restored at today’s prices. Insurance can also be

purchased for long-term disability should you be injured during a natural disaster.

All of the above will help you deal with a personal financial crisis whether it is the result of a natural disaster, or a poor economy; however that is with the assumption that things will eventually right themselves.

In today's unstable times there is a very real possibility that in your own lifetime you could face a global economic upheaval to rival or exceed that of the Great Depression. There are some very specific actions you can and should take to prepare for such an event.

These steps entail, but are not limited to:

- Stockpiling cash.
- Preparing for currency collapse with gold and silver bullion.
- Asset protection.

You will learn more details on how to prepare for and better deal with the effects of a Global Economic Crisis in Section V Chapter 28.

Final Thoughts on Risks

FEMA also advises that an integral part of knowing your risks is knowing how you will be notified in the event of an emergency. Find out from local government emergency management how you will be notified for each kind of disasters, both natural and man-made. You should also inquire about alert and warning systems for workplace, schools and other locations. Methods of getting your attention vary from community to community. One common method is to broadcast via emergency radio and TV broadcasts. You might hear a special siren, or get a telephone call, or in rare circumstances, volunteers and emergency workers may go door-to-door.

In some ways risk is also a matter of your perspective. Different people, different ideologies, even different governments perceive some risks differently. For example, some people think we are at great risk due to the effects of Global Warming, or we are on the brink of a world- wide energy crisis due to oil depletion, while others continue to doubt the veracity of such claims. For that matter, there are those that believe we are at risk of an alien invasion, or zombie apocalypse!

The point is, if you take the necessary and proper action to prepare for your actually assessed and identifiable risks, you will be better prepared for all risks... known and unknown!

Chapter 3

Emergency Preparedness in Your Home

"Hoping for the best, prepared for the worst and unsurprised by anything in between."
— Maya Angelou

So now that you know you need to strengthen yourself mentally and physically, and you are more aware of just what kind of emergencies you may have to contend with, its time to get serious about getting ready.

Like charity and so many other things, Emergency Preparedness starts in the home! FEMA, the American Red Cross, the National Oceanic and Atmospheric Administration (NOAA), and dozens of other Disaster Preparedness organizations worldwide agree that emergency preparedness at home basically boils down to three things:

- Make a Plan
- Build a Kit
- Get Involved/Be Informed

STEP 1 – MAKE A PLAN

The City of San Francisco's "Alert SF" program (www.72hours.org) reminds Bay Area residents that after any kind of major disaster, it is unlikely that emergency response services will be able to immediately respond to everyone's needs. So it's important to be prepared to take care of yourself and your family. You need to plan to be on your own for at least **the first 72 hours.**

The following steps will help you “Make a Plan” to be better prepared for any emergency:

- Designate an out-of-area contact person. Try to select someone that is far enough away to not be affected by the same emergency. Provide this person with the names and contact information of the people you want to keep informed of your situation. Instruct family members to call this person and tell them where they are. In many emergencies, long distance phone service is actually restored sooner than local service.
- Duplicate important documents and keep copies off-site, either in a safety deposit box, with someone you trust or in a secure document or fire safe in your home. Documents may include: passport, drivers license, social security card, wills, deeds, financial statements, insurance information, marriage license and prescriptions.
- Inventory valuables, in writing and with photographs or video. Keep copies of this information off-site with your other important documents.
- Make a household/family plan. Involve all key people in planning.
- Make your home safe.
- Put together a disaster supply kit. Plan to have supplies for yourself and your family for at least 3 days following a disaster.
- When planning, consider the special needs of children, seniors or people with disabilities, or family members that don’t speak English and your pets.

Your Family Plan

- Talk with your family about potential disasters and why it's necessary to prepare for them. Involve each member of your family in the planning process. By showing them simple steps that can increase their safety, you can help reduce their anxiety about emergencies.
- Make sure everyone knows where to find your disaster supply kit and their own Go-bags.

- Plan where to meet after a disaster if your home becomes unsafe. Choose two places, one just outside your home and one outside your neighborhood in case you are told to evacuate. Be sure your gas tank is always at least half full.
- Determine the best escape routes from your home. Try to identify two escape routes.
- Make sure each member knows who your family's out-of-state contact is and instruct your family members to call this person and tell him/her where they can be found.
- Locate the gas main and other utilities and make sure family members know when and how to turn them off.
- Practice your evacuation routes, Drop, Cover & Hold and Stop, Drop & Roll drills.
- Teach each member of your family how to use a fire extinguisher.

Making Your Home Safer

During a disaster, ordinary objects in your home can cause injury or damage. However, there are simple steps you can take to make your home safer. Start by viewing each room with a "disaster eye" and identify potential hazards – bookshelves that could tip over in an earthquake or other disaster, and block exits, or heavy objects that could fall and cause injury.

- Install smoke detectors on each level of your home and change batteries every 6 months;
- Move beds away from windows;
- If you are in an Earthquake prone area, move mirrors and heavy pictures away from couches or places where people sit;
- Clear hallways and exits for easy evacuation;
- Store heavy items on the lowest shelves;

- Keep an ABC type fire extinguisher on each level of your home, and make sure that all family members know how and when to use them;

- If you are in an Earthquake prone area, strap down your water heater and fit all gas appliances with a flexible gas supply line;

- If you are in an Earthquake prone area Secure pictures and wall hangings and use restraints to secure heavy items such as bookcases and file cabinets;

- Store flammable or highly reactive chemicals (such as bleach, ammonia and paint thinners) securely and separate from each other;

- Know how and when to switch off your utilities;

- If your home is equipped with window bars, or other such security features make sure that they all have functional emergency releases;

- Be sure your home number is visible from the street so emergency vehicles can find you.

Additional Considerations For Your Plan:

If you Have Children Living in Your Home
If you have children in your home you should:

- Be sure to include your children in family discussions and planning for emergency safety;

- Teach your children their basic personal information so they can identify themselves and get help if they become separated from a parent or guardian;

- Prepare an emergency card with information for each child, including his/her full name, address, phone number, parent's work number and out of state contact;

- Know the policies of the school or daycare center your children attend. Make plans to have someone pick them up if you are unable to get to them;

- Regularly update your child's school with current emergency contact information and persons authorized to pick up your child from school;

- Make sure each child knows the family's alternate meeting sites if you are separated in a disaster and cannot return to your home;

- Make sure each child knows how to reach your family's out-of-state contact person;

- Teach children to dial their home telephone number and Emergency 9-1-1;

- Teach children what gas smells like and advise them to tell an adult if they smell gas after an emergency;

- Warn children never to touch wires on poles or lying on the ground;

- Role-play with children to help them remain calm in emergencies and to practice basic emergency responses such as evacuation routes, Drop, Cover & Hold and Stop, Drop & Roll;

- Role-play with children as to what they should do if a parent is suddenly sick or injured;

- Role-play with children on what to say when calling Emergency 9-1-1.

If you are a <u>Senior</u> or a <u>Person</u> with Disabilities
If you are elderly or disabled:

- Designate someone to check on you in an emergency and to help with evacuation or sheltering-in-place;

- Prepare and carry with you an emergency health information card. This will help you to communicate if you are found unconscious or incoherent. Include information about your medications, adaptive equipment, blood type, allergies and sensitivities, insurance numbers, immunization dates, communication difficulties and preferred treatment, as well as contact information for your health providers, personal support network and emergency contacts;

- If you receive assistance from a home healthcare agency or in-home support provider, find out how the provider will respond in an emergency. Designate backup or alternative providers that you can contact in an emergency;

- If you are in need of a wheelchair: Plan for how you will evacuate in an emergency and discuss it with your care providers. If you use a motorized wheelchair, have a manual wheelchair as a backup;

- If you are blind or visually impaired: Keep an extra cane by your bed. Attach a whistle; in case you need to attract attention. Exercise caution when moving, paths may have become obstructed and unfamiliar;

- If you are hearing impaired: Keep extra batteries for your hearing aids with emergency supplies. Consider storing your hearing aids in a container attached to your nightstand or bedpost, so you can locate them quickly after a disaster;

- If you cannot speak or have communication disabilities: Store paper, writing materials, copies of a word or letter board and preprinted key phrases in your emergency kit, your wallet, purse, etc.

STEP 2 – BUILD A KIT

The second key step to at home emergency preparedness is to build a kit. Having a disaster kit for you home does not only mean a “Go Bag” you can take with you if you have to evacuate, although that is part of your total disaster preparedness kit. A “disaster kit” needs to contain everything you will need to survive for at least three days in an emergency, or in the

aftermath of a natural disaster, if the services you normally count on such as running water, refrigeration, and telephones, should no longer be available.

In fact, to be totally prepared for the kinds of disasters you may need to face based on your risk assessment, and the make up of your family -- you may need several different "kits" or "Go Bags." The last Chapter of Section I - *Building Your Ultimate Survival Kits -* will go into great detail describing the contents of specific kits, and suggested items for specific "Go Bags." But for now here is what you need to know about building a basic Household Emergency Preparedness Kit.

Your household kit should not be up in the attic, the basement, the garage, or some other inaccessible place. It will do you no good if you can't get to it! You should store your Household Kit where it is easy to get to. Put all of the contents in a large, watertight container (e.g. a large plastic garbage can with a lid and wheels) that you can move easily.

FEMA recommends that a basic Home Preparedness Kit should include:

- Water – one gallon per person per day
- Food – ready to eat or requiring minimal water
- Manual can-opener and other cooking supplies
- Plates, utensils and other feeding supplies
- First Aid kit & instructions
- A copy of important documents & phone numbers
- Warm clothes and rain gear for each family member.
- Heavy work gloves
- Disposable camera
- Unscented liquid household bleach and an eyedropper for water purification
- Personal hygiene items including toilet paper, feminine supplies, hand sanitizer and soap
- Plastic sheeting, duct tape and utility knife for covering broken windows
- Tools such as a crowbar, hammer & nails, staple gun, adjustable wrench and bungee cords.
- Blanket or sleeping bag

- Large heavy duty plastic bags and a plastic bucket for waste and sanitation
- Any special-needs items for children, seniors or people with disabilities. Don't forget water and supplies for your pets.

A critical component of your disaster kit is your **"Go-bag."** Put the following items together in a backpack or another easy to carry container in case you must evacuate quickly. You need to prepare a Go-bag for each family member and make sure each has an I.D. tag. You may not be at home when an emergency strikes so keep so you may also want to keep a Go Bag in your car and at work, considering what you would need for your immediate safety.

According to the American Red Cross the most basic Go Bag should include:

- Water—one gallon per person, per day (3-day supply)
- Food—non-perishable, easy to prepare items (3-day supply)
- Flashlight
- Battery powered or hand crank radio (NOAA Weather Radio, if possible)
- Extra batteries
- Pocketknife
- First aid kit
- Medications (7-day supply) and medical items
- Multi-purpose tool
- Sanitation and personal hygiene items
- Copies of personal documents (medication list and pertinent medical information, proof of address, deed/lease to home, passports, birth certificates, insurance policies)
- Cell phone with chargers
- Family and emergency contact information
- Extra cash
- Emergency blanket
- Map(s) of the area

But when it comes to "Ultimate Preparedness" it is never a good idea to stop at basic.

According to FEMA, other items to consider for your Go Bag are:

- Whistle
- Dust mask
- Sturdy shoes, a change of clothes, and a warm hat
- Permanent marker, paper and tape
- Photos of family members and pets for re-identification purposes
- List of emergency point-of -contact phone numbers
- List of allergies to any drug (especially antibiotics) or food
- Copy of health insurance and identification cards
- Extra prescription eye glasses, hearing aid or other vital personal items
- Extra keys to your house and vehicle
- Any special-needs items for children, seniors or people with disabilities.

If you have children, you need to prepare a special Go Bag for them that also include:

- A family picture and a favorite toy, game, or book.
- Your child's emergency card and include information on reunification locations and out-of-area contact.
- "Comfort food" items and their favorite treats.

Just as important as keeping your household kit easy to get to in an emergency, is keeping it well maintained. Here are FEMA's tips for keeping your supplies ready and in good condition:

- Keep canned food in a cool, dry place;

- Store boxed food in tightly closed plastic or metal containers to protect from pests and to extend its shelf life;

- Throw out any canned good that becomes swollen, dented or corroded;

- Use foods before they go bad and replace them with fresh supplies;

- Place new items at the back of the storage area and older ones in the front;

- Change stored food and water supplies every six months. Be sure to write the date you store it on all containers;

- Re-think your needs every year and update your kit as your family's needs change;

- Keep items in airtight plastic bags and put your entire disaster supplies kit in one or two easy-to-carry containers, such as an unused trashcan, camping backpack, or duffel bag.

More on Food and Water

WATER

According to FEMA as part of your Household Disaster Kit you should store at least one gallon of water per person per day. To determine your water needs, take the following into account:

- One gallon of water per person per day, for drinking and sanitation.
- Children, nursing mothers and sick people may need more water.
- A medical emergency might require additional water.
- If you live in a warm weather climate more water may be necessary. In very hot temperatures, water needs can double.
- Keep at least a three-day supply of water per person.

It is recommended you purchase commercially bottled water, in order to prepare the safest and most reliable emergency water supply. Keep bottled water in its original container and do not open until you need to use it. Observe the expiration or "use by" date - Store in cool dark place.

FOOD

FEMA makes the following suggestions when selecting emergency food supplies. You may already have many of these on hand.

- Ready-to-eat canned meats, fruits, vegetables and a can opener
- Protein or fruit bars

- Dry cereal or granola
- Peanut butter
- Dried fruit
- Nuts
- Crackers
- Canned juices
- Non-perishable pasteurized milk
- High energy foods
- Vitamins
- Food for infants
- Comfort/stress foods

STEP 3 – GET INVOLVED/BE INFORMED

Time and time again you have seen how in the face of disaster, Americans come together with courage, compassion and unity and ask, "What can I do to help?" This Third Step of household preparedness answers that question.

It comes with an important understanding that the chances of you, your home, and your family getting through the worst, increases tremendously if your community as a whole is better prepared to deal with a disaster. And that starts with community involvement.

FEMA encourages whole communities to participate in programs and activities that can make their families, homes and regions safer from risks and threats.

Community leaders agree the formula for ensuring a safer homeland consists of volunteers, a trained and informed public and increased support of emergency response agencies during disasters. Major disasters can overwhelm first responder agencies, empowering individuals to lend support.

So Get Involved before disaster strikes! Here are a few ways you can help:

- Volunteer to support disaster efforts in your community;

- Get trained and volunteer with a Community Emergency Response

Team, Medical Reserve Corps unit and/or other Citizen Corps Partner Program or Affiliate organization;

- Many local faith-based and community organizations have programs active in supporting disasters too;

- Be part of the community planning process. Connect and collaborate with your local emergency planning group, Citizen Corps Council or local emergency management agency;

- Join or start a preparedness project;

- Support major disasters by donating cash or goods, which may help, meet the needs of your community in times of disaster.

BE INFORMED

The American Red Cross as part of their "Be Red Cross Ready" campaign ads "Be Informed" to the Third Step of Home Preparedness. For ARC, being informed means not only knowing what disasters or emergencies may occur in your area, but also making sure you know how you will be alerted and how you will stay informed should they occur.

You should:

- Identify how local authorities will notify you during a disaster and how you will get information, whether through local radio, TV or NOAA Weather Radio stations or channels.

- Know the difference between different weather alerts such as watches and warnings and what actions to take in each.

- Know what actions to take to protect yourself during disasters that may occur in areas where you travel or have moved recently. For example, if you travel to a place where earthquakes are common and you are not familiar with them, make sure you know what to do to protect yourself should one occur.

Though not part of the “Three Steps” part of making sure that you have taken all of the steps you could to protect your home and family in the event of a disaster or emergency is to carry **Insurance.**

In light of discussions of preparedness, survival gear, Go-Bags and the like, a discussion of insurance may seem a little out of place. Far from it! Part of being fully prepared to survive the aftermath of a serious natural disaster is to be able to rebuild and move forward, and that could be impossible without adequate insurance. FEMA has the following to say regarding insurance. As a protection against financial loss, homeowners should purchase insurance on their home and its contents. At a minimum, coverage should provide full replacement or replacement cost coverage. Homeowners should also investigate buying a guaranteed replacement cost policy, where available; such policies pay to rebuild a home at today’s prices.

Homes should be appraised periodically so that the policy reflects the real replacement cost.

Coverage should include special hazard-specific insurance (such as flood or earthquake insurance) appropriate for the area. Unfortunately, many homeowners learn too late that flood and earthquake loss are not covered under normal homeowners’ insurance policies.

Flood insurance is available in communities participating in the National Flood Insurance Program (NFIP). Those who live in flood-prone areas in a community that is not an NFIP participant may wish to contact local officials and encourage the community to adopt the program.

Renters should purchase renters and/or flood insurance to protect against loss for damaged or destroyed property. Be aware that the landlord’s insurance will not cover damage to, or loss of, tenant’s possessions.

Those concerned about their level of protection should make an appointment with their insurance agent to review current insurance coverage. It is important to get coverage early since there is usually a 30-day waiting period before it takes effect.

Any insurance claim filed will be expedited if the applicant has made an inventory of household furnishings and other possessions, supplemented with photographs or videotape. The documentation should be stored in a safe deposit box or some other safe place away from the premises.

A Final Note

Does it sound to you like the last few pages were overwhelming – that there is just too much to do? Like anything else – all it takes is a commitment to get started now – today, not tomorrow.

If you went out and got a large garbage can as FEMA recommends to use for your home preparedness kit, and took only a few minutes everyday just to throw one or two of the recommended items into it once a day, over the next ten to twenty days or so, that's it -- you'd have a basic kit. Isn't your family worth that? And it's probably a lot easier than you think.

Take a look around your house, if you are like most people, you probably have a lot of the stuff you need to put in your kit already on hand. The ones you don't -- every week that you make up your shopping list, put a few extra preparedness items on it, canned goods, batteries etc.

And if even that seems like a daunting task, there are excellent already prepared Disaster Kits to be had, such as the expertly researched and put together one available exclusively through the Ultimate Survival Project.

The choice is yours, you can go on the way you have been, or you can start to make some simple changes to be better prepared the next time the power goes out --- or worse!

Chapter 4

Emergency Preparedness in Your Car

"Let's think the unthinkable, let's do the undoable. Let us prepare to grapple with the ineffable itself, and see if we may not eff-it after all."
— Douglas Adams, Author "The Hitchhikers Guide to the Galaxy"

A lot can go wrong on the road beyond flat tires and accidents. Disaster preparedness takes on whole new dimension in your car. Auto emergencies can happen any day, or any time, so you need to have yourself and your vehicle prepared to survive everyday road hazards, and not just those that are made even worse during a natural disaster or national crisis.

You can find yourself in trouble in your car for any number of reasons, from a mechanical problem to running out of gas. In the best case scenario, getting stuck on the side of the road in your car is an annoyance, worse case; it can compromise your safety and put your life and the lives of your passengers in danger.

Being prepared with a well-equipped basic roadside emergency kit can reduce your stress, increase you safety, and get you back on the road faster and more easily.

Do not think that you are covered by having roadside-assistance coverage on your vehicle, an auto club membership, or the latest in interactive subscription emergency communications services such as an OnStar System. With roadside assistance, whether you contact them by the push of a button or a cell phone -- if you have one and it is working during your

emergency -- you usually have to wait on the side of the road for an hour or more before help arrives. And of course such assistance services may be totally out of commission, or overwhelmed during a natural disaster or other large-scale crisis.

That's why consumer watchdog organizations such as Consumer Reports (www.consumerreports.org) and major Insurance Companies such as The Hartford (hartfordauto.thehartford.com) recommend that drivers carry certain survival items in their vehicle, even if you only use your car for commuting or local driving. They also recommend that your basic kit can be supplemented with additional items for long-distance travel, for winter weather conditions, and possible evacuations during natural disasters.

As you have already learned with any such Go-Bag or emergency preparedness kit, it's also important to make periodic checks on the equipment in your roadside emergency kit. You need to make sure everything is in working order, batteries in flashlights or other emergency equipment are not discharged, first-aid supplies are current, water is fresh, and food is dry.

Your Basic Road Emergency Kit
The purpose of a basic roadside emergency kit is to aid you in getting help, to see that you are equipped to make your vehicle more visible to other motorists, and to help you handle simple challenges.

Consumer Reports suggests your basic kit contain:

- **Cell Phone** - Besides the one you normally carry with you, it is a good idea to get a “disposable” cell phone, the kind that comes pre-loaded with a certain amount of minutes, and keep it fully charged and in your car kit, along with a cigarette lighter charger. This way you are never stuck in your vehicle without a cell phone.

- **First-aid Kit -** Choose one that allows you to treat a range of problems, from small cuts or burns, to ones that require major bandaging. Get familiar with all the items in any first aid kit you buy, and know how to use them – *before you need to!*

- **Fire Extinguisher -** A car fire can start from something as simple as a wiring short circuit or leaking oil. You should get away from a vehicle that's on fire as quickly as possible. Still, for extra security it's good to keep a fire extinguisher in the car that can be used in any emergency or to quickly put out a small flame that's just begun. The quicker a fire can be put out, the less damage it will cause. Multipurpose dry-chemical fire extinguishers are available in a variety of sizes. Look for a compact unit that's made for cars; it should be labeled 1A10BC or 2A10BC.

- **Warning Light, Reflective Hazard Triangle, or Road Flares -** If your vehicle is stuck on the side of the road, it's vital that you give other motorists as much warning of its presence as possible, especially at night. Look for a battery-powered warning light that can be placed far from the vehicle. Reflective hazard triangles and flares are also effective and don't need batteries.

- **Tire Gauge** -This should be used on a monthly basis to check the inflation pressure in all four tires and the spare tire. Because the ambient temperature affects tire pressure, it's also advisable that you check your tire pressure after a significant change in temperature.

- **Jack and Lug Wrench** - Almost all vehicles come with these items for changing a tire. Refer to your owner's manual on where they're located in the vehicle and how to use them. A note about lugs -- if the last time you had a tire taken on and off was at a tire shop, or garage using a pneumatic lug wrench – they may be too tight for you to release with a hand wrench – especially for women – no offense! Check if you can loosen your lugs by hand – if you cannot, have your mechanic loosen them to the point where they are safe, but loose enough for an average person to remove by hand. You may want to have an impact lug wrench that is powered by the cigarette lighter available for this purpose as part of your kit.

- **Foam Tire Sealant or a Portable Compressor and Plug Kit** - For minor punctures, a foam tire sealant can get your vehicle back on the road quickly. Only use it in an emergency, however, as many tire shops will refuse to repair the tire because of the sticky residue these sealants

leave inside it. Be sure to choose a sealant that's labeled as non-flammable, and don't consider this a permanent fix. A portable DC-powered air compressor can also be used to inflate a tire--and is especially handy for one that suffers from a slow leak. To fix a puncture, however, you need to have it professionally repaired.

- **Spare Fuses** - If you experience an electrical problem, your first check should be for a burned-out fuse. These are easy to check and replace by referring to your owner's manual. Keep an assortment on hand of the proper type for your vehicle. And on that note – make sure you have your vehicle's owners manual in the glove compartment. If you bought your car used and it did not come with one, you can usually find the manual online.

- **Jumper cables or a Portable Battery Booster** - Jumper cables are easy to use as long as you have a second car available to provide a jump. Refer to your owner's manual for instructions. A Portable battery booster eliminates the need for a second car. There are portable battery boosters that also serve the dual purpose of AC power inverters and can be used to charge your cell phone, or power your laptop computer or other small appliances off of your car battery – something that could be very useful in a survival situation.

- **Flashlight** -This can be critical at night. Choose one that is bright and weatherproof. In addition, a flashlight with a magnet, flexible mounting system, or a stand will free up your hands for other tasks. Also, have extra batteries and an extra bulb available. In addition to a battery operated flashlight, it is a good idea to keep a second hand-crank light in the car, so you are sure to have a light source when you need it.

- **Rescue Tool –** This is a must tool for any car. It should be in a glove compartment, or somewhere it can be gotten too easily, and not packed away with the rest of the items in your roadside kit. The rescue tool is usually equipped with a knife, or some other blade, and a "punch" for breaking a window. Should your car become submerged, this little item could be the difference between life and death. You will read more about that in the section of this chapter

following setting up your kits - *How to Get Out of a Submerged Vehicle*

- **Multi Tool** – A folding multi-tool such as a "Leatherman" or "Swiss Army Knife" is an essential survival tool on and off the road. Be sure the one for your car has at least a, needle nose pliers, regular pliers, wire cutters, knife, wood/metal file, scissors, small flat screwdriver, medium flat screwdriver, Phillips screwdriver, and a can opener.

- **Gloves, hand cleaner, and clean rags** -Even the simplest of jobs can get your hands dirty. Having these on hand will help keep that dirt from getting on your clothes or your vehicle's interior, and protect your hands from damage.

- **Auto-club card or roadside-assistance number** - If you belong to an auto club or roadside-assistance program, be sure you have the necessary information in your vehicle.

- **Disposable Flash Camera** -Following an accident, this lets you record the condition of your vehicle and other vehicles for insurance purposes.

- **Cash** – At least $20 in small bills and change, keep this available for miscellaneous use. And resist dipping into it for a spontaneous ice cream cone on a hot day.

- **Pen and Pad of Paper** -This can come in handy for a range of uses, from leaving a note on the windshield should you have to leave your car, to jotting down information after an accident.

Additional Items for Your Long Distance Kit

If you are planing a long trip, especially those through remote areas, or your risk assessment has told you that you might have to evacuate quickly to get ahead of, or away from a natural disaster area, you should add these items to your basic emergency car kit.

- **Basic tools -**This includes a set of socket and open-end wrenches, a multi-tip screwdriver, and pliers. This should be enough to perform

simple jobs such as changing a light bulb, tightening battery cables, and so on. Even if you don't know what to do, if someone stops to help you he or she will still need something to work with.

- **Coolant hose repair kit and tape** - A leaking coolant hose can sideline your vehicle quickly and possibly cause engine damage from overheating. Often, a leaking hose is a simple fix if you have the right items. They can be bought at any major auto-parts store.

- **Extra clothes, small tarpaulin, emergency blanket** - Even if all you do is change a tire, these items can help keep your regular clothes clean, and more importantly -- you warm, if you become stuck in your vehicle for an extended period of time.

- **Water and Nonperishable Emergency Food** - Bring enough food and water to sustain you and any passengers for at least a meal, longer for remote areas or in extreme hot/cold regions.

- **CB Radio** – Before there were cell phones there were CBs, and today they still could save your life if your route will take you into an area where cellular service is spotty, or if cell phone service is out in the aftermath of a natural disaster.

- **GPS Navigation System** – Always a good idea for any extended road trip

Additional Items for Your Winter Conditions

For the cold, wet conditions of winter, you may need additional items in your emergency kit, especially if you travel in or through remote areas or those that are subject to severe conditions.

- **Windshield Scraper** - Good visibility is your most important safety item, but persistent snow and ice can build up quickly and make it hard to see. A long-handled, soft-bristled brush can also come in handy.

- **Tire Chains and Tow Strap** –As with any safety or survival gear, familiarize yourself with how to put the chains on your vehicle's tires,

or attach a tow strap before you need to do it in cold and possibly dark conditions.

- **Blanket, Warm Winter Hat and Gloves** - If you run out of fuel, or if your battery dies, the vehicle won't be able to provide heat. A blanket, hat and gloves can help keep you warm if you have to wait for a long time in cold conditions.

- **Chemical Hand Warmers** - These small, inexpensive packets are available at ski shops and sporting-goods stores, larger packs are also available.

- **Small Folding Shovel** - If you get stuck in snow, this can be a vital tool. A folding camping-style shovel will require more digging effort than a longer-handled shovel, but is more convenient to store in the vehicle.

- **Bag of Cat Litter** -This can help provide some traction on an especially slick road surface.

You will read more about winter driving safety and specific snow emergencies in Section IV, Chapter 25 *How to survive being snowbound in your car.*

How to Get Out of a Submerged Vehicle

In America every year there are at least 1,500 incidents reported of vehicles that have gone off the road and plunged into a body of water, of those about 600 results in death by drowning. In addition, it does not take such an accident to find yourself in a sinking vehicle. Hundreds of people also get in severe trouble and sometimes lose their lives trying to drive through flooded roads and highways, or over frozen lakes or ponds.

Did you know that?

- It only takes 6" to 2 feet of water to float a vehicle off its wheels;

- 8" to 12" of new, clear, hard ice is required to safely drive a small vehicle onto the ice of a frozen body of water. 12" to 15" of new, clear, hard ice is required to safely drive a medium-sized truck onto the ice.

It is a crucial survival skill for anyone to know what to do in the event of a vehicle hitting the water. If you live and drive in an area that is surrounded by canals, lakes, rivers and other bodies of water, or that is prone to flooding, it is even more important for you and your family, that you know how to get out of a submerged vehicle.

If a vehicle leaves the road and lands in deep water, the vehicle's float time at the surface of the water may be as little as 30 seconds or as long as four minutes. Because of the location of the motor in the front of the vehicle, the vehicle will immediately assume an angled nose-down position in the water.

Gerald Dworkin is a professional aquatics safety and water rescue consultant for Lifesaving Resources Inc. (www. lifesaving.com) and a Firefighter/EMT with the Harrisville, NH Fire and Rescue Department. According to Dworkin, “Because of the relatively limited time frame for self-rescue”, the decision to escape the vehicle must be made immediately.

However, because of the angled nose-down position in the water and the pressure exerted by the water against the doors, as well as structural damage to the vehicle as a result the crash, it may be extremely difficult or impossible to open the driver's side and passenger doors of the vehicle in order to affect an escape. Therefore, the only avenue of escape may be through the car door windows.”

That is why it is highly recommended that the very first thing you do as your car hits the water is to open the drivers’ side window. You may still have power to do so, or the window switches may short right away, and you will need to smash the window. That is why you need to have the rescue tool mentioned above in your car.

You might read some reports that say the first thing to do is to get out of your seatbelt – but experience shows this is not the case. Because the doors of the car are probably useless, the window is your most viable means of escape; you must get it open right away! And studies have shown that remaining in your seatbelt could actually keep you from floating, and becoming disoriented should the car suddenly turn over or otherwise shift position in the water.

Mr. Dworkin says the decision to escape the vehicle must be made as soon as your car enters the water. If you delay your escape from the vehicle and the vehicle begins to sink, it may not be possible to get out until the water pressure has equalized inside the vehicle.

Archie Allan's first hand experience echoes Mr. Dworkin's advice. This is Archie's story in his own words.

I can tell you first hand that when your vehicle enters the water it is usually a smooth entry. The water cushions the blow. My air bags did not deploy. In fact it was very similar to entering the water in a log plume at an amusement park. Most people survive the initial impact with minimal or no injury at all. What you do during the next minute will determine whether or not you will survive.

Once your car has entered water it usually takes between two and ten minutes for it to sink. If you remain relatively calm there should be enough time for you to take action to save your life and the lives of your passengers.

My personal experience took me approximately 15 seconds to exit the car. I would have been fine, but I made a serious mistake. I re-entered the vehicle to retrieve my shoes, wallet and briefcase. It almost cost me my life.

Unless there is another person in the car that you are trying to save, you should never go back into a sinking or submerged vehicle. There is nothing, short of saving another person that is worth that risk.

You and your passengers need to focus on one goal only and that is "to exit the car as quickly as possible".

There are five basic steps you should take to escape from a sinking vehicle:

1. Stay calm
2. Open the window(s)
3. Unfasten your seatbelt
4. Exit through the window
5. Swim to safety

Remember, your primary goal is to exit the car through the window as quickly as possible, Archie learned the hard way that even all of the brute strength his adrenaline charged 6-foot 180 lb frame could muster could not break the tempered glass of the window by kicking at it. Only by some miracle did the rear window suddenly drop on its own by a few inches, he was able then able to force it down the rest of the way and swim to safety. Today Archie is a major public advocate of all drivers keeping a rescue tool in their cars!

Dworkin agrees, he says that the side and rear windows (not the windshield) will easily shatter using an appropriate rescue/escape tool, such as a life hammer device or a spring-loaded window punch. Many of the commercially available rescue/escape tools, such as those approved by The Ultimate Survival Project also have an integrated seat-belt cutter/blade that provides the ability to slice away a seat belt should its release mechanism fail or jam.

A Final Note about Vehicles and Disaster Planning

If, after your risk assessment conducted in Chapter 2 you know you live in an area that is prone to floods, winter storms, or hurricanes, it is probably a very good idea that you own at least one 4-wheel drive vehicle, and have it always fueled and ready with you car Go Bag/Roadside kit on board.

Today many people with families own SUVs as their primary vehicles because of the extra seating and cargo capacity. If you cannot afford to, or choose not to have a 4-wheel drive SUV as your main mode of transportation, but you live in an area where such a vehicle may potentially be your only way out in an emergency, it makes very good sense to pick up a good used one, even if it sits in front of your house and is only used for that purpose.

Chapter 5

Emergency Preparedness in Your Place of Business

"By failing to prepare, you are preparing to fail."
— Benjamin Franklin

There is a lot more to being prepared for a disaster that can strike your business, or the place where you work, than at home, in your car or any were else. That is because your business is not only subject to the same kinds of physical or natural disasters that you can face in other places, but also unique disasters that can cause the business to fail, and lead business owners and their employees down a path of financial ruin.

Whether you are a business owner, or work for someone, being prepared "at work" is an integral part of your overall disaster preparedness strategy.

Did you know that according to the American Red Cross:

- 15 to as many as 40% of businesses fail following a natural or manmade disaster.
- 94% of small business owners believe a disaster could seriously disrupt their business within the next two years.

In a recent Issue of *Business Matters*, a leading B2B publication in Australia, Steve Goodman, an internationally recognized correspondent on survival protocols and preparedness wrote, "As the recent floods in the Lockyer Valley, Brisbane and Ipswich have shown, natural disasters can strike almost anywhere, anytime. According to the Queensland Urban Utilities (QUU), early estimates showed the floods caused $55 million worth of damage in the Brisbane, Ipswich, Lockyer Valley and Somerset regions.

The Maryborough Chamber of Commerce estimates it could take a year or more for many of the businesses on the Fraser Coast to recover from flood damage, some may never recover at all. President of the Chamber, Lance Stone said it will be hard to return to normality for the businesses inundated. Similar thoughts were expressed by The Bundaberg Chamber of Commerce's president Dion Taylor, "morale in the business sector took a hit from the two rounds of flooding and some business owners were left wondering if it was worth picking up the pieces. It's quite overwhelming and it's very emotional. There are a lot of businesses out there that are wondering what to do with themselves."

FEMA says that it is imperative that businesses prepare for the impact of the many hazards they face in today's volatile world -- natural hazards like floods, hurricanes, tornadoes, earthquakes, and for the likelihood of widespread serious illnesses or pandemics. Businesses must also prepare for the very real possibilities of human-hazards such as accidents caused by operator error, or intentional acts of violence, acts of terrorism, as well as technology-related disasters such as major accidental or purposeful malfunction of critical systems, equipment, or software.

Goodman reminds his readers, "As a business owner, you must also always keep in mind that it does not take a major disaster, to seriously impact your business. Even a loss of power that shuts down your phone systems or order processing for a day or so could lead to incalculable lost revenue. That is unless you have prepared for it!"

Have a Business Preparedness Program

Of course keeping your business afloat during a flood or other natural disaster, takes a back seat to keeping your home and family safe, but the fact of the matter is, worldwide, natural disasters seem to be on the rise. Taking the time now, to have a proper risk management plan can make all the difference in minimizing negative financial impacts on your business.

FEMA suggests that your operations preparedness policy be consistent with the mission and vision of your business. It should be an officially written policy, and it should be accessible to all employees through management or team leaders. Your businesses preparedness policy should define the roles and responsibilities of everyone in the firm, from key personal down to

basic support staff. It should identify and authorize selected employees to develop the program and keep it current.

It is a good idea to get to know your employees. You may be surprised to find out that some of them may have had military or other relevant disaster preparedness training, and these should be designated as key personal in your “at work” disaster preparedness plan.

Your Preparedness Policy should also clearly define the goals and objectives of your program. Typical goals of your business preparedness program should include:

- Protection and safety of your employees, visitors, contractors and others on the premises who could be at risk due to the particular hazards that could be present at your facility. Be sure that you plan for persons with disabilities and special needs;

- A way to maintain customer service by minimizing interruptions or disruptions of business operations, phone lines, IT infrastructure etc.;

- Protection of your operation’s physical assets and electronic information;

- Prevention or minimization of environmental contamination due to chemicals or other processes conducted at your facility;

- Protection of your company’s brand, image and reputation.

FEMA’s “Ready Business” (www.ready.gov/business) breaks a business preparedness program down into Five Basic Steps:

STEP 1 - Program Management

- Organize, develop, and administer your preparedness program.
- Identify any county, state, or federal regulations that establish minimum requirements for your program.

Step 2 - Planning

- Gather information about hazards and assess risks
- Conduct a business impact analysis (BIA)
- Examine ways to prevent hazards and reduce risks

Step 3 – Implementation/Write a preparedness plan addressing:

- Resource management
- Emergency response
- Crisis communications
- Business continuity
- Information technology
- Employee assistance
- Incident management

Step 4 - Testing and Exercises

- Test and evaluate your plan
- Define different types of exercises
- Learn how to conduct exercises
- Use exercise results to evaluate the effectiveness of the plan

Step 5 - Program Improvement

- Identify when the preparedness program needs to be reviewed
- Discover methods to evaluate the preparedness program
- Utilize the review to make necessary changes and plan improvements
- Conduct ongoing disaster preparedness training

Safety First

The potential economic damage a disaster or national emergency can have on your business must be factored into your Workplace Preparedness Plan. However, the safety of yourself and your staff is of primary importance should an emergency occur during business hours.

Every business location should have an evacuation plan for personnel and customers. This means more than knowing where the emergency exits are located. You need to designate someone to be in charge of communicating with employees and customers, and implementing your evacuation plan in a calm and orderly fashion. Many businesses find it helpful to bring in an expert for some additional training, or workshops to discuss what to do in

case of an emergency. This can cover everything from crowd control techniques, to basic first aid, to how to work with emergency response teams.

As in any crisis situation what you and your employees do in the first minutes of a workplace emergency is critical. A prompt warning to employees to evacuate, take shelter in place, or lockdown can save lives. A call for help to public emergency services that provides full and accurate information will help the dispatcher send the right responders and equipment. An employee trained to administer first aid or perform CPR can be lifesaving.

If your place of business works with potentially hazardous materials, action by an internal Emergency Response Team, or employees with specialized knowledge of building and containment processes can help minimize exposure to personal, and damage to the facility and the environment.

Remember: When a Workplace emergency occurs, your first priority is always the safety of yourself and your people.

IT and Communication

Once you know you have a plan for your people, the next most important thing is your communications and records. Make sure all employees keep their cell phones charged. This may seem like a "no-brainer," but most people do not charge their phones until the battery is almost dead. Often cell phones may be the only line of communication in a disaster. Keeping cell phones charged, and even having an extra battery or two, is a great way to make sure phone communication stays open. Have a phone chain for employees to pass along vital information to one another.

Another recommendation is to have a backup, cloud-based or virtual PBX system that can be used to route calls to different phones and store voicemail messages. Are you servers backed up? Off premises or cloud computer servers are the best way to make sure that vital records and emails are maintained in the event of fire or other disaster that results in the destruction of your building, and to ensure that you will still have internet access.

You also need to implement an IT Recovery Plan. It begins by compiling an inventory of hardware (e.g. servers, desktops, laptops and wireless devices), software applications and data. Identify critical software applications and data and the hardware required to run them. Using standardized hardware will help to replicate and restore systems onto new hardware. Ensure that copies of all vital software programs are available to enable re-installation on new equipment. Prioritize hardware and software restoration. You need to document your IT disaster recovery plan as part of your business continuity plan. Test your plan periodically to make sure that it works.

Everything Else

If you do not have a version of your emergency Go-Bag as discussed in Chapter 3, in the car you take to work, or if you do not drive to work, you should have a small Go Bag with you in an easily accessible place at work, in case you need to evacuate. You will learn more on the specific contents of Go-bags and Emergency Preparedness Kits in Chapter 9, *Building Your Ultimate Survival Kits.*

Keep in mind that particularly when faced with impending weather emergencies, such as hurricanes or severe winter storms, these events can be forecast many hours, even days before they arrive, providing valuable time to protect your facility, and then to allow employees to return home to protect their own families and property.

A plan should be established and resources should be on hand, or quickly, available to prepare your business premises. The plan should also include a process for damage assessment, salvage, protection of undamaged property, and cleanup following an incident. Taking preemptive actions to minimize damage and business disruption after a disaster could make all the difference between your business surviving after a disaster, or going under.

Be sure to stock up on supplies. Think of what you'll need to stay functional for at least a week or two. In the days or weeks following a flood, hurricane or other natural disaster, you may not be able to get to retail stores or receive any deliveries. Do you have the supplies you need to keep it business as usual? Now is the time to make sure an adequate supply of

everything from bottled water, to office supplies, and postage stamps are in your stockpile.

Financial Preparedness

Ask yourself how financially secure is your business to deal with a natural or man-made disaster? Particularly small businesses have to be prepared to literally weather the storm economically. According to the Small Business Association, (SBA) most small businesses without a Disaster Recovery Plan that experienced a catastrophe never reopened at all, or closed within two years.

The best way to plan for maintaining your operation after a disaster is to have saved enough capital to restart your business, and/or to go for a time with limited cash flow. That is a lot easier said than done for many small businesses and independent entrepreneurs. So the next best thing is to make sure you have adequate insurance. According to Inc. Magazine, "Bracing your business for the financial worst starts with selecting the right insurance plan; which unfortunately, many small business owners fail to do because of sticker shock." As with your personal or homeowners insurance you need to know what your business policy does and does not cover. Most "standard" business insurance policies will not cover damage from flood, earthquakes, hurricanes, or other natural disasters. Even if you have purchased specific riders for these events, you may not be 100% covered.

Inc. also recommends that small businesses have business interruption insurance. Let's say you run a restaurant or a hotel in an area that is under the threat of a hurricane during the July 4th weekend. Even if the storm never hits, or your place of business does not take any serious damage, what about all the lost revenue for what should have been your busiest weekend of the season? If you have business interruption insurance based on what is called actual sustained loss, or ALS, most insurance carriers will pay for the amount of business income actually lost, during the interruption, whether that interruption was due to actual physical damage or not. Inc. says such coverage, "Typically will give you 12 months of actual losses sustained and so that gives you ample time to get back on your feet in the event of a disaster."

When it comes to rebuilding and limited resources after a disaster the SBA also urges small businesses to look into small business loans, and disaster recovery set-asides for small business through government programs.

After a disaster such programs are often available through local and state administrations, on up to Federal Disaster Recovery Assistance.

Inc. also says to remember in the wake of a disaster the main goal should be to restore customer confidence by getting the doors back open as soon as possible... which means even a partial reopening, may be better then remaining closed. A partial return to normalcy is always better than none. For example, if you own a coffee shop, and you haven't been able to receive your shipment of beans due to a storm, or other disaster -- open your business and sell what you do have in stock, like pastries or tea, it will prove your resilience and help with customer retention.

As we discussed in the chapter on personal finance survival, all of these actions and preparations, assume that even in the wake of a devastating disaster, recovery and return to normal business operations, will eventually be possible. In Chapter 28, you will learn how to prepare your business and protect your business assets in the event of a large-scale economic meltdown.

Communications

Another vital component of any businesses Emergency Preparedness Plan is Communications. Your business must be able to respond promptly, accurately and confidently during an emergency in the hours and days that follow an emergency situation. When your operations are disrupted, customers will want to know how they will be impacted. Employees and their families will be concerned and want information. Regulators may need to be notified and local government officials will want to know what is going on in their community. Neighbors living near the facility may need information—especially if they are threatened by the incident. Many different audiences must be reached with information specific to their interests and needs. The image of your business will be positively or negatively impacted by the public's perceptions of the way your business handled itself, during and after a disaster.

Understand that each of these “audiences” will be clamoring for information about how the disaster particularly impacts them. You can best be prepared by anticipating their needs and questions, and knowing your Official responses to them, in advance, whenever possible.

Any particular disaster or emergency will of course generate its own specific concerns, but in general, you can expect the following groups to demand the following answers:

- **Employees** - “When should I report to work?” “Will I have a job?” “Will I get paid during the shutdown or can I collect unemployment?” “What are you going to do to address my safety?” “Is it safe to go back to work?”

- **Customers** - “When will I receive my order?” “What will you give me to compensate for the delay?”

- **Government Regulators** - “When did it happen?” “What happened (details about the incident)?” “What are the impacts (injuries, deaths, environmental contamination, safety of consumers, etc.)?”

- **Elected Officials** - “What is the impact on the community (hazards and economy)?” “How many employees will be affected?” “When will you be back up and running?”

- **Suppliers** - “When should we resume deliveries and where should we ship to?”

- **Neighbors in the Community** - “How can I be sure it’s safe to go outside?” “What are you going to do to prevent this from happening again?” “How do I get paid for the loss I incurred?”

- **News Media** - “What happened?” “Who was injured?” “What is the estimated loss?” “What caused the incident?” “What are you going to do to prevent it from happening again?” “Who is responsible?”

If you do not have a Public Relations, or communications department and a “company spokesperson” for day-to-day operations, it is best to decide

before an emergency, who will be your disaster communications point of contact.

An emergency disaster preparedness plan for your business is one of those things that you have but hope you never need, rather then need and wish you had. Proper disaster planning can go a long way to giving you the peace of mind that comes with knowing that your business is ready, willing, and able to shift into disaster response mode, whenever it may be necessary.

Chapter 6

Basic First Aid

"A scar does not form on the dying - A scar means, I survived."
— Chris Cleave, Novelist

Everyone should know CPR and basic First Aid techniques, these skills can help save the lives of a loved one, or even a complete stranger, any day, any time -- but they are especially critical in the face of a disaster or national emergency.

It is a critical part of your overall Disaster Preparedness plan that you or someone in your family is trained in CPR and Basic First Aid. The American Red Cross (www.redcross.org) and the American Heart Association (www.heart.org) are excellent sources of such classes.

First Aid Kit
Your home, your car, your place of business, and your Go-Bag needs to have at least a basic First Aid Kit. A well-stocked first-aid kit can help you respond effectively to common injuries and emergencies. You may need more specific First Aid items if you are planning an extended trek in the wilderness, or know you are in an area where you may be exposed to particular hazards. You can purchase various professionally prepared First Aid Kits though respected sources online or you can assemble your own. A basic Kit should include at least the following:

Basic Supplies

- Adhesive tape
- Antibiotic ointment

- Antiseptic solution or towelettes
- Bandages, including a roll of elastic wrap (Ace Bandages) and bandage strips (Band-Aids) in assorted sizes
- Instant cold packs
- Cotton balls and cotton-tipped swabs
- Disposable latex or synthetic gloves, at least two pairs
- Duct tape
- Gauze pads and roller gauze in assorted sizes
- Eye goggles
- First-aid manual
- Petroleum jelly or other lubricant
- Plastic bags for the disposal of contaminated materials
- Safety pins in assorted sizes
- Tooth preservation kit consisting of salt solution and a sealable travel case
- Scissors, tweezers and a needle
- Soap or instant hand sanitizer
- Sterile eyewash, such as a saline solution
- Thermometer
- Triangular bandage
- Turkey-baster or other bulb suction device for flushing out wounds

Medications

- Activated charcoal (use only if instructed by your poison control center)
- Aloe Vera gel
- Over-the-counter oral antihistamine (Benadryl, or generic Diphenhydramine)
- Aspirin
- Calamine lotion
- Over-the-counter hydrocortisone cream
- Personal medications that don't need refrigeration
- If prescribed by your doctor, drugs to treat an allergic attack, such as an auto-injector of epinephrine (EpiPen)
- Syringe, medicine cup or spoon

Other Emergency Items

- Cell phone and recharger that uses the accessory plug in your car dash
- Emergency phone numbers, including contact information for your family doctor and pediatrician, local emergency services, emergency road service providers and the regional poison control center
- Medical consent forms for each family member
- Medical history forms for each family member
- Small, waterproof flashlight and extra batteries
- Sunscreen
- Mylar emergency blanket

As with your home and office Emergency Preparedness Kits, keep your First Aid Kits easily accessible in an emergency. Make sure everyone in your family, or place of business, knows where the Kit is located. Make sure you are familiar with, and know how to use all of the items in your First Aid kit before you need them. Check on the items periodically, and make sure they are fresh, and usable – replace old, dried out or expired items as needed.

Except where otherwise indicted, the following information comes from the Mayo Clinic, (www.mayoclinic.com). It is an A - Z "what to do guide" for the most common medical emergencies you are likely to encounter during a disaster, or even in everyday life. The life saving techniques presented could help when the chips are down, but should not be taken as a substitute for formal First Aid training.

Anaphylaxis – Is a life-threatening allergic reaction. It can cause shock, a sudden drop in blood pressure and trouble breathing. In people who have an allergy, anaphylaxis can occur in minutes after exposure to a specific allergy-causing substance. In some cases, there may be a delayed reaction or anaphylaxis may occur without an apparent trigger.

If you're with someone having signs of anaphylaxis, don't wait to see whether symptoms get better. Seek emergency treatment right away. In severe cases, untreated anaphylaxis can lead to death within half an hour.

Signs and symptoms of anaphylaxis include:

- Skin reactions including hives, itching and flushed or pale skin;
- Swelling of the face, eyes, lips or throat;
- Constriction of the airways, leading to wheezing and trouble breathing;
- A weak and rapid pulse;
- Nausea, vomiting or diarrhea;
- Dizziness, fainting or unconsciousness.

What to do:

- Immediately, call 911 or your local medical emergency number;

- Ask the person if he or she is carrying an epinephrine auto-injector to treat an allergic attack (for example, EpiPen, Twinject);

- If the person says he or she needs to use an auto-injector, ask whether you should help inject the medication. This is usually done by pressing the auto-injector against the person's thigh;

- If the person does not have, or does not use an auto-injector, administer Benadryl to lessen the histamine reaction;

- Have the person lie still on his or her back;

- Loosen tight clothing and cover the person with a blanket. Don't give the person anything to drink;

- If there's vomiting or bleeding from the mouth, turn the person on his or her side to prevent choking;

- If there are no signs of breathing, coughing or movement, begin CPR. Do uninterrupted chest presses — about 100 every minute — until paramedics arrive.

Some common anaphylaxis triggers include:

- Medications;
- Foods such as peanuts, tree nuts, fish and shellfish;
- Insect stings from bees, yellow jackets, wasps, hornets and fire ants.

If you've had any kind of severe allergic reaction in the past, ask your doctor if you should be prescribed an epinephrine auto-injector to carry with you.

Animal Bites
If an animal bites you, your child, or someone you are with, follow these guidelines:

- **For minor wounds** - If the bite barely breaks the skin and there's no danger of rabies, treat it as a minor wound. Wash the wound thoroughly with soap and water. Apply an antibiotic cream to prevent infection and cover the bite with a clean bandage.

- **For deep wounds** - If the animal bite creates a deep puncture of the skin or the skin is badly torn and bleeding, apply pressure with a clean, dry cloth to stop the bleeding and see your doctor.

- **For infection** - If you notice signs of infection, such as swelling, redness, increased pain or oozing, see your doctor immediately.

- **For suspected rabies** - If you suspect the bite was caused by an animal that might carry rabies — including any wild or domestic animal of unknown immunization status, particularly bats — see your doctor immediately.

If your have not had a tetanus shot in more than five years and your wound is deep or dirty, your doctor may recommend a booster. Get the booster as soon as possible after the injury.

Domestic pets cause most animal bites. Dogs are more likely to bite than cats. Cat bites, however, are more likely to cause infection because they are usually puncture wounds and can't be thoroughly cleaned. Bites from non-immunized domestic animals and wild animals carry the risk of rabies. Rabies is more common in bats, raccoons, skunks and foxes than in cats and dogs. Rabbits, squirrels and other rodents rarely carry rabies.

The Centers for Disease Control and Prevention recommends that children or adults exposed to bats, or who are sleeping and discover bats present,

seek medical advice, even if they don't think they've been bitten. This is because bat bite marks can be hard to see.

Blisters - If a blister isn't too painful, try to keep it intact. Unbroken skin over a blister provides a natural barrier to bacteria and decreases the risk of infection. Cover a small blister with an adhesive bandage, and cover a large one with a porous, plastic-coated gauze pad that absorbs moisture and allows the wound to breathe. If you're allergic to the adhesive used in some tape, use paper tape.

Don't puncture a blister unless it's painful or prevents you from walking or using one of your hands. If you have diabetes or poor circulation, call your doctor before considering the self-care measures below.

How to drain a blister

To relieve blister-related pain, drain the fluid while leaving the overlying skin intact. Here's how:

- Wash your hands and the blister with soap and warm water;
- Swab the blister with iodine or rubbing alcohol;
- Sterilize a clean, sharp needle by wiping it with rubbing alcohol;
- Use the needle to puncture the blister. Aim for several spots near the blister's edge. Let the fluid drain, but leave the overlying skin in place;
- Apply an antibiotic ointment to the blister and cover with a bandage or gauze pad;
- Cut away all the dead skin after several days, using tweezers and scissors sterilized with rubbing alcohol. Apply more ointment and a bandage.

Blister prevention

As with many common injuries or problems that require First Aid in an emergency situation, preventing blisters is better then trying to treat them.

To prevent a blister, use gloves, socks, a bandage or similar protective covering over the area being rubbed. Special athletic socks are available that have extra padding in critical areas. You might also try attaching moleskin to the inside of your shoe where it might rub, such as at the heel.

Broken Bones – Can be very common injures in the aftermath of a natural disaster or other emergency situations. Broken bones are more accurately referred to as “fractures.” There are basically two types of fractures: open and closed. With an open, or compound fracture, the bone protrudes through the skin and complicates the actual fracture with an open wound.

The signs and symptoms of a fracture are pain, tenderness, discoloration, swelling deformity, loss of function and grating sound or feeling that occurs when broken bone ends rub together.

All fractures require medical attention.
If you cannot get the person immediate medical help, try not to move the person except if necessary to avoid further injury.

Take these actions immediately while waiting for professional medical help:

- If the broken bone is accompanied by a bleeding wound, stop any bleeding. Apply pressure to the wound with a sterile bandage, a clean cloth or a clean piece of clothing.

- Immobilize the injured area. Don't try to realign the bone or push a bone that's sticking out back in. If you've been trained in how to splint and professional help isn't readily available, apply a splint to the area above and below the fracture sites. Padding the splints can help reduce discomfort.

- Apply ice packs to limit swelling and help relieve pain until emergency personnel arrive. Don't apply ice directly to the skin — wrap the ice in a towel, piece of cloth or some other material.

- Treat for shock. If the person feels faint or is breathing in short, rapid breaths; lay the person down with the head slightly lower than the trunk and if possible, elevate the legs.

Image: Courtesy US Army

The Army Survival Manual adds the following information about treating broken bone in the field if you are far from medical help, or First Responders are overwhelmed in the wake of an emergency.

There is the danger of the severing or the compression of a nerve or blood vessel at the site of fracture. For this reason minimum manipulation should be done, and only very cautiously. If you notice the area below the break becoming numb, swollen, cool to the touch, or turning pale, and the victim showing signs of shock, a major vessel may have been severed. You must control this internal bleeding. Reset the fracture and treat the victim for shock and replace lost fluids.

Often you must maintain traction during the splinting and healing process. You can effectively pull smaller bones such as the arm or lower leg by hand. You can create traction by wedging a hand or foot in the V-notch of a tree and pushing against the tree with the other extremity. You can then splint the break.

Very strong muscles hold a broken thighbone (femur) in place, making it difficult to maintain traction during healing. You can use natural materials to make an improvised traction splint as follows:

- Get two forked branches or saplings at least 5 centimeters (2 inches) in diameter. Measure one from the patient's armpit to 20 to 30 centimeters (8 to 12 inches) past his unbroken leg. Measure the other from the groin to 20 to 30 centimeters (8 to 12 inches) past the unbroken leg. Ensure that both extend an equal distance beyond the end of the leg;

- Pad the two splints. Notch the ends without forks and lash a 20- to 30-centimeter (8- to 12-inch) cross member made from a 5-centimeter (2-inch) diameter branch between them;

- Using available material (vines, cloth, rawhide), tie the splint around the upper portion of the body and down the length of the broken leg. Follow the splinting guidelines;

- With available material; fashion a wrap that will extend around the ankle - with the two free ends tied to the cross member;

- Place a 10- by 2.5-centimeter (4- by 1-inch) stick in the middle of the free ends of the ankle wrap between the cross member and the foot. Using the stick… twist the material to make the traction easier;

- Continue twisting until the broken leg is as long or slightly longer than the unbroken leg;

- Lash the stick to maintain traction.

NOTE: Over time, you may lose traction because the material weakened. Check the traction periodically. If you must change or repair the splint, maintain the traction manually for a short time.

(See illustration on next page)

Image: Courtesy US Army

Burns – Burns occur in a range from minor to major, and also are often encountered in disaster or emergency situations. To distinguish a minor burn from a serious burn, the first step is to determine the extent of damage to body tissues. The three burn classifications of first-degree burn, second-degree burn and third-degree burn will help you determine emergency care.

1st-degree burn

Image: Courtesy The National Institutes of Health

First-degree burns are the least serious burns. A first degree burn is one in which only the outer layer of skin is burned, but not all the way through.

- The skin is usually red
- Often there is swelling
- Pain sometimes is present

Treat a first-degree burn as a minor burn unless it involves substantial portions of the hands, feet, face, groin or buttocks, or a major joint, which requires emergency medical attention.

2nd-degree burn

Image: Courtesy The National Institutes of Health

When the first layer of skin has been burned through and the second layer of skin (dermis) also is burned, the injury is called a second-degree burn.

- Blisters develop.
- Skin takes on an intensely reddened, splotchy appearance.
- There is severe pain and swelling.

If the second-degree burn is no larger than 3 inches (7.6 centimeters) in diameter, treat it as a minor burn. If the burned area is larger or if the burn is on the hands, feet, face, groin or buttocks, or over a major joint, treat it as a major burn and try to get medical help immediately.

For minor burns, including first-degree burns and second-degree burns limited to an area no larger than 3 inches (7.6 centimeters) in diameter, take the following action:

- **Cool the burn**. Hold the burned area under cool (not cold) running water for 10 or 15 minutes or until the pain subsides. If this is impractical, immerse the burn in cool water or cool it with cold compresses. Cooling the burn reduces swelling by conducting heat away from the skin. **Don't put ice on the burn.**

- **Cover the burn with a sterile gauze bandage.** Don't use fluffy cotton, or other material that may get lint in the wound. Wrap the gauze

loosely to avoid putting pressure on burned skin. Bandaging keeps air off the burn, reduces pain and protects blistered skin.

Minor burns usually heal without further treatment. They may heal with pigment changes, meaning the healed area may be a different color from the surrounding skin. Watch for signs of infection, such as increased pain, redness, fever, swelling or oozing. If infection develops, seek medical help.

Burn Myths

- **Don't use ice.** Putting ice directly on a burn can cause a person's body to become too cold and cause further damage to the wound.

- **Don't apply egg whites, butter or ointments to the burn.** This could cause infection.

- **Don't break blisters.** Broken blisters are more vulnerable to infection.

3rd-degree burn

Image: Courtesy The National Institutes of Health

The most serious burns involve all layers of the skin and cause permanent tissue damage. Fat, muscle and even bone may be affected. Areas may be charred black or appear dry and white. Difficulty inhaling and exhaling, carbon monoxide poisoning, or other toxic effects may occur if smoke inhalation accompanies the burn.

For major burns - call 911 or emergency medical help. Until an emergency unit arrives, follow these steps:

- Don't remove burned clothing. However, do make sure the victim is no longer in contact with smoldering materials or exposed to smoke or heat;

- Don't immerse large severe burns in cold water. Doing so could cause a drop in body temperature (hypothermia) and deterioration of blood pressure and circulation (shock);

- Check for signs of circulation (breathing, coughing or movement). If there is no breathing or other sign of circulation, begin CPR;

- Elevate the burned body part or parts and raise above heart level, when possible;

- Cover the area of the burn. Use a cool, moist, sterile bandage; clean, moist cloth; or moist cloth towels.

In a survival situation where emergency help is not available, the US Army Survival Manual offers the following field treatment of burns, which may help to speed healing, reduce the chance of infection, and ease pain.

- Soak dressings or clean rags for 10 minutes in a boiling tannic acid solution (obtained from tea, inner bark of hardwood trees, or acorns boiled in water).

Chemical Burns
Are different then burns caused by heat or fire, and require specific First Aid. If a caustic chemical burns the skin, follow these steps:

- Remove the cause of the burn by first brushing any remaining dry chemical and then rinsing the chemical off the skin surface with cool, gently running water for 10 to 20 minutes or more;

- Remove clothing or jewelry that has been contaminated by the chemical;

- Wrap the burned area loosely with a dry, sterile dressing (if available) or a clean cloth;

- Rewash the burned area for several more minutes if the person experiences increased burning after the initial washing.

Electrical Burns

Electrical burns also present unique First Aid challenges. Electrical Burns may appear minor or not show on the skin at all, but the damage can extend deep into the tissues beneath your skin. If a strong electrical current passes through your body, internal damage, such as a heart rhythm disturbance or cardiac arrest, can occur. Sometimes the jolt associated with the electrical burn can cause you to be thrown or to fall, resulting in fractures or other associated injuries.

Call 911 or your local emergency number for assistance if the person who has been burned is in pain, is confused, or is experiencing changes in his or her breathing, heartbeat or consciousness.

While helping someone with an electrical burn and waiting for medical help, follow these steps:

- Look first. Don't touch. The person may still be in contact with the electrical source. Touching the person may pass the current through you;

- Turn off the source of electricity if possible. If not, move the source away from both you and the injured person using a dry, non-conducting object made of cardboard, plastic or wood;

- Check for signs of circulation (breathing, coughing or movement). If absent, begin cardiopulmonary resuscitation (CPR) immediately;

- Prevent shock. Lay the person down with the head slightly lower than the trunk, if possible, and the legs elevated;

- Cover the affected areas. If the person is breathing, cover any burned areas with a sterile gauze bandage, if available, or a clean cloth. Don't use a blanket or towel, because loose fibers can stick to the burns.

Electric Shock could occur with or without the signs of an external Electric Burn. Symptoms of Electric Shock Include:

- Cardiac arrest
- Heart rhythm problems (arrhythmias)
- Respiratory failure
- Muscle pain and contractions
- Burns
- Seizures
- Numbness and tingling
- Unconsciousness

Follow these steps if you suspect someone has been the victim of an electric shock.

- Look first. Don't touch. The person may still be in contact with the electrical source. Touching the person may pass the current through you;

- Turn off the source of electricity, if possible. If not, move the source away from you and the person, using a non-conducting object made of cardboard, plastic or wood;

- Check for signs of circulation (breathing, coughing or movement). If absent, begin cardiopulmonary resuscitation (CPR) immediately;

- Prevent shock - lay the person down and if possible, position the head slightly lower than the trunk, with the legs elevated.

URGENT: In the aftermath of a natural disaster such as storm or earthquake, it is imperative that you avoid all downed power lines, and treat any downed powerline as if it is live. Also avoid walking through standing water, as this could have become electrified by downed lines you cannot see.

Cuts, Scrapes, and More Serious Wounds

Minor cuts and scrapes are usually not life threatening; yet proper care is

essential to avoid infection or other complications. These guidelines can help you care for simple wounds:

- **Stop the bleeding**. Minor cuts and scrapes usually stop bleeding on their own. If they don't, apply gentle pressure with a clean cloth or bandage. Hold the pressure continuously for 20 to 30 minutes and if possible elevate the wound. Don't keep checking to see if the bleeding has stopped because this may damage or dislodge the clot that's forming and cause bleeding to resume. If blood spurts or continues flowing after continuous pressure, seek medical assistance.

Apply direct pressure on external wounds with sterile cloth or your hand, maintaining pressure until bleeding stops

ADAM.

Image: Courtesy The U.S. National Library of Medicine

- **Clean the wound.** Rinse out the wound with clear water. Soap can irritate the wound, so try to keep it out of the actual wound. If dirt or debris remains in the wound after washing, use tweezers cleaned with alcohol to remove the particles. If debris still remains, see your doctor. Thorough cleaning reduces the risk of infection and tetanus. To clean the area around the wound, use soap and a washcloth. There's no need to use hydrogen peroxide, iodine or an iodine-containing cleanser.

- **Apply an antibiotic.** After you clean the wound, apply a thin layer of an antibiotic cream or ointment such as Neosporin or Polysporin to help keep the surface moist. The products don't make the wound heal faster, but they can discourage infection and help your body's natural healing process. Certain ingredients in some ointments can cause a mild rash in some people. If a rash appears, stop using the ointment.

- **Cover the wound.** Bandages can help keep the wound clean and keep harmful bacteria out. After the wound has healed enough to make infection unlikely, exposure to the air will speed wound healing.

- **Change the dressing.** Change the dressing at least daily or whenever it becomes wet or dirty. If you're allergic to the adhesive used in most bandages, switch to adhesive-free dressings or sterile gauze held in place with paper tape, gauze roll or a loosely applied elastic bandage. These supplies generally are available at pharmacies.

- **Get stitches for deep wounds.** A wound that is more than 1⁄4-inch (6 millimeters) deep or is gaping or jagged edged and has fat or muscle protruding usually requires stitches. Adhesive strips or butterfly tape may hold a minor cut together, but if you can't easily close the wound, see your doctor as soon as possible. Proper closure within a few hours reduces the risk of infection.

- **Watch for signs of infection**. See your doctor if the wound isn't healing or you notice any redness, increasing pain, drainage, warmth or swelling.

For More Severe Wounds and Bleeding

If possible, before you try to stop severe bleeding, wash your hands to avoid infection and put on gloves. If the wound is abdominal and organs have been displaced, don't try to push them back into place — cover the wound with a dressing.

For other cases of severe bleeding:

- Have the injured person lie down and cover the person to prevent loss of body heat. If possible, position the person's head slightly lower than the trunk or elevate the legs and elevate the site of bleeding.

- While wearing gloves, remove any obvious dirt or debris from the wound. Don't remove any large or more deeply embedded objects. Your principal concern is to stop the bleeding.

- Apply pressure directly on the wound until the bleeding stops. Use a sterile bandage or clean cloth and hold continuous pressure for at least 20 minutes without looking to see if the bleeding has stopped. Maintain pressure by binding the wound tightly with a bandage or clean cloth and adhesive tape. Use your hands if nothing else is available. If possible, wear rubber or latex gloves or use a clean plastic bag for protection.

- Don't remove the gauze or bandage. If the bleeding continues and seeps through the gauze or other material you are holding on the wound, don't remove it. Instead, add more absorbent material on top of it.

- Squeeze a main artery if necessary. If the bleeding doesn't stop with direct pressure, apply pressure to the artery delivering blood to the area. Pressure points of the arm are on the inside of the arm just above the elbow and just below the armpit. Pressure points of the leg are just behind the knee and in the groin. Squeeze the main artery in these areas against the bone. Keep your fingers flat. With your other hand, continue to exert pressure on the wound itself.

- Immobilize the injured body part once the bleeding has stopped. Leave the bandages in place and get the injured person to the emergency room as soon as possible.

Image: Courtesy The U.S. National Library of Medicine

It is not recommended that a tourniquet be used by untrained personal to control bleeding, however, when there is severe bleeding where a major artery has been severed, pressure may be insufficient and a tourniquet may be necessary.

Tourniquets are an effective way of stopping bleeding from an extremity. They do, however, stop circulation to the affected extremity and should ONLY be used when other methods, such as pressure dressings, have failed (or are likely to fail). Pressure from tourniquets must be relieved periodically to prevent damage to the tissue from lack of oxygen.

Image: Courtesy The U.S. National Library of Medicine

Signs and symptoms of INTERNAL BLEEDING are:

- Bruised, swollen, tender or rigid abdomen
- Bruises on chest or signs of fractured ribs
- Blood in vomit
- Wounds that have penetrated the chest or abdomen
- Bleeding from the rectum or vagina
- Abnormal pulse and difficulty breathing
- Cool, moist skin

First aid in the field for internal bleeding is limited. If the injury appears to be a simple bruise, apply cold packs to slow bleeding, relieve pain and reduce swelling. If you suspect more severe internal bleeding, carefully monitor the patient and be prepared to administer CPR if required (and you are trained to do so). You should also reassure the victim, control external bleeding, treat for shock, loosen tight-fitting clothing and place victim on side so fluids can drain from the mouth.

In a survival situation, where you are cut off from civilization and or medical personal for an extended period of time, even minor wounds can become more life threatening. According to the US Army Survival Manual:

Open wounds are serious in a survival situation, not only because of tissue damage and blood loss, but also because they may become infected. Bacteria on the object that made the wound, on the individual's skin and clothing, or on other foreign material or dirt that touches the wound may cause infection. By taking proper care of the wound you can reduce further contamination and promote healing.

- Clean the wound as soon as possible after it occurs by removing or cutting clothing away from the wound;

- Always look for an exit wound if a sharp object, gunshot, or projectile caused a wound;

- Thoroughly clean the skin around the wound;

- Rinse; do not scrub the wound with large amounts of water under pressure. Though not recommended, you can use fresh urine if water is not available.

Forget what you have seen in the movies! The "open treatment" method is the safest way to manage wounds in survival situations. Do not try to close any wound by suturing or similar procedures. Leave the wound open to allow the drainage of any pus resulting from infection. As long as the wound can drain, it generally will not become life-threatening, regardless of how unpleasant it looks or smells.

In a survival situation, some degree of wound infection is almost inevitable. Pain, swelling, and redness around the wound, increased temperature, and pus in the wound or on the dressing will let you know if it has become infected. In the absence of antibiotics, in a survival situation, if your wound becomes infected, you should treat as follows:

- Place a warm, moist compress directly on the infected wound. Change the compress when it cools, keeping a warm compress on the wound for a total of 30 minutes. Apply the compresses three or four times daily;

- Drain the wound. Open and gently probe the infected wound with a sterile instrument;

- Dress and bandage the wound;

- Drink a lot of water.

In the event of gunshot or other serious wounds, it may be better to rinse the wound out vigorously every day with the cleanest water available. If drinking water or methods to purify drinking water are limited, do not use your drinking water. Flush the wound forcefully daily until the wound is healed over. Your scar may be larger but your chances of infection are greatly reduced.

Continue this treatment daily until all signs of infection have disappeared.

Maggot Therapy

If you do not have antibiotics and the wound has become severely infected, and show no signs of healing -- consider maggot therapy as stated below, despite its hazards and generally unappealing nature:

- Expose the wound to flies for one day and then cover it;

- Check daily for maggots;

- Once maggots develop, keep wound covered but check daily;

- Remove all maggots when they have cleaned out all dead tissue and before they start on healthy tissue. Increased pain and bright red blood in the wound indicate that the maggots have reached healthy tissue;

- Flush the wound repeatedly with sterile water or fresh urine to remove the maggots;

- Check the wound every 4 hours for several days to ensure all maggots have been removed;

- Bandage the wound and treat it as any other wound. It should heal normally.

Frostbite

During winter storms, or any cold-weather survival situation, Frostbite is concern. When exposed to very cold temperatures, skin and underlying tissues may freeze, resulting in frostbite. The areas most likely to be affected by frostbite are your hands, feet, nose and ears.

ADAM.

Image: Courtesy The U.S. National Library of Medicine

Signs of Frostbite

If your skin looks white or grayish-yellow, is very cold and has a hard or waxy feel, you may have frostbite. Your skin may also itch, burn or feel

numb. Severe or deep frostbite can cause blistering and hardening. As the area thaws, the flesh becomes red and painful.

Gradually warming the affected skin is key to treating frostbite. To do so:

- Protect your skin from further exposure. If you're outside, warm frostbitten hands by tucking them into your armpits. Protect your face, nose or ears by covering the area with dry, gloved hands. Don't rub the affected area and never rub snow on frostbitten skin;

- Get out of the cold. Once you're indoors, remove wet clothes;

- Gradually warm frostbitten areas. Put frostbitten hands or feet in warm water — 104 to 107.6 F (40 to 42 C). Wrap or cover other areas in a warm blanket. Don't use direct heat; such as a stove, heat lamp, fireplace or heating pad, because these can cause burns before you feel them on your numb skin;

- Don't walk on frostbitten feet or toes if possible. This further damages the tissue;

- If there's any chance the affected areas will freeze again, don't thaw them. If they're already thawed, wrap them up so that they don't become frozen again.

Heart Attack

Someone having a heart attack may experience any or all of the following:

- Uncomfortable pressure, fullness or squeezing pain in the center of the chest;
- Prolonged pain in the upper abdomen;
- Discomfort or pain spreading beyond the chest to the shoulders, neck, jaw, teeth, or one or both arms;
- Shortness of breath, Lightheadedness;
- Dizziness, fainting, sweating or nausea.

A heart attack generally causes chest pain for more than 15 minutes, but it can also have no symptoms at all. Many people who experience a heart attack have warning signs hours, days or weeks in advance.

If you or someone else may be having a heart attack:

- Call 911 or your local emergency medical assistance number. Don't tough out the symptoms of a heart attack for more than five minutes. If you don't have access to emergency medical services, have a neighbor or a friend drive you to the nearest hospital. Drive yourself only as a last resort, if there are absolutely no other options, and realize that it places you and others at risk when you drive under these circumstances;

- Chew and swallow an aspirin, unless you're allergic to aspirin or have been told by your doctor never to take aspirin. But seek emergency help first, such as calling 911;

- Take nitroglycerin, if prescribed. If you think you're having a heart attack and your doctor has previously prescribed nitroglycerin for you, take it as directed. Do not take anyone else's nitroglycerin, because that could put you in more danger;

- Begin CPR if the person is unconscious. If you're with a person who might be having a heart attack and he or she is unconscious, tell the 911 dispatcher or another emergency medical specialist. You may be advised to begin cardiopulmonary resuscitation (CPR). If you haven't received CPR training, doctors recommend skipping mouth-to-mouth rescue breathing and performing only chest compressions (about 100 per minute). The dispatcher can instruct you in the proper procedures until help arrives.

On CPR

It is highly recommended that you take a CPR course if you are serious about preparedness.

In the absence of proper training, here's advice from the American Heart Association:

- Untrained. If you're not trained in CPR, then provide hands-only CPR. That means uninterrupted chest compressions of about 100 a minute until paramedics arrive (described in more detail below). You don't need to try rescue breathing;

- Trained, and ready to go. If you're well trained and confident in your ability, begin with chest compressions instead of first checking the airway and doing rescue breathing. Start CPR with 30 chest compressions before checking the airway and giving rescue breaths;
- Trained, but rusty. If you've previously received CPR training but you're not confident in your abilities, then just do chest compressions at a rate of about 100 a minute.

The above advice applies to adults, children and infants needing CPR, but not newborns.

CPR can keep oxygenated blood flowing to the brain and other vital organs until more definitive medical treatment can restore a normal heart rhythm.

When the heart stops, the lack of oxygenated blood can cause brain damage in only a few minutes. A person may die within eight to 10 minutes.

Chest Compressions for the Untrained

Put the person on his or her back on a firm surface. Kneel next to the person's neck and shoulders.

Place the heel of one hand over the center of the person's chest, between the nipples. Place your other hand on top of the first hand. Keep your elbows straight and position your shoulders directly above your hands.

Use your upper body weight (not just your arms) as you push straight down on (compress) the chest at least 2 inches (approximately 5 centimeters). Push hard at a rate of about 100 compressions a minute. Count by fives in this rhythm, 1 and 2, and 3 and 4 and 5...and...

If you haven't been trained in CPR, continue chest compressions until there are signs of movement or until emergency medical personnel take over. If you have been trained in CPR, go on to checking the airway and rescue breathing.

It is important to distinguish between a “heart attack” and “sudden cardiac arrest” (SCA). A heart attack is a slow restriction of oxygen to the heart usually from a blocked artery, it is accompanied by the symptoms described above... chest pain, sweating, difficulty breathing, etc, and it can take time for the victim to lose consciousness and require CPR if at all.

SCA on the other hand happens in an instant. It is caused by an irregular or "electrical problem" to the heart. In an SCA the victim will lose consciousness almost immediately, and CPR needs to started right away to keep the brain oxygenated until the person can be "shocked back" to a normal rhythm with a defibrillator. If you live with someone who you know is at risk for SCA, you may want to include an Automatic External Defibrillator, or AED as part of your Home Emergency Preparedness Kit.

Heatstroke

Just as Frostbite can be a serious threat in certain survival situations, so can Heatstroke. There are several heat related conditions that could require first aid Heatstroke is the most serious.

What makes heatstroke severe and potentially life-threatening is that the body's normal mechanisms for dealing with heat stress, such as sweating and temperature control, are inadequate in extreme conditions. The main sign of heatstroke is a markedly elevated body temperature — generally greater than 104 F (40 C) — with changes in mental status ranging from personality changes to confusion and coma. Skin may be hot and dry — although if heatstroke is caused by exertion, the skin may be moist.

Other signs and symptoms of Heatstroke may include:

- Rapid heartbeat
- Rapid and shallow breathing
- Elevated or lowered blood pressure
- Cessation of sweating
- Irritability, confusion or unconsciousness
- Feeling dizzy or lightheaded
- Headache
- Nausea
- Fainting, which may be the first sign in older adults

If you suspect heatstroke:

Move the person out of the sun and into a shady or air-conditioned space.

- Cool the person by covering him or her with damp sheets or by spraying with cool water. Direct air onto the person with a fan or newspaper;

- Have the person drink cool water or other nonalcoholic beverage without caffeine, if he or she is able.

Insect Bites and Stings:
Generally most insect bites or stings are not life-threatening in persons without allergies to common insect venom. Most reactions to insect bites are mild, causing little more than an annoying itching or stinging sensation and mild swelling that disappear within a day or so. A delayed reaction may cause fever, hives, painful joints and swollen glands. You might experience both the immediate and the delayed reactions from the same insect bite or sting. Only a small percentage of people develop severe reactions or, anaphylaxis (see) to insect venom.

Signs and symptoms of a severe reaction include:

- Nausea
- Facial swelling
- Difficulty breathing
- Abdominal pain
- Deterioration of blood pressure and circulation (shock)

Bites from bees, wasps, hornets, yellow jackets and fire ants are typically the most troublesome. Bites from mosquitoes, ticks, biting flies and some spiders also can cause reactions, but these are generally milder. Although rare, some insects also carry disease such as West Nile virus or Lyme disease.

For mild reactions:

- Move to a safe area to avoid more stings;

- Remove the stinger, especially if it's stuck in your skin. This will prevent the release of more venom. Wash area with soap and water;

- Apply a cold pack or cloth filled with ice to reduce pain and swelling;

- Apply hydrocortisone cream (0.5 percent or 1 percent) - calamine lotion or a baking soda paste — with a ratio of 3 teaspoons (15

milliliters) baking soda to 1 teaspoon (5 milliliters) water; to the bite or sting several times a day until symptoms subside.

For More Severe Reactions

Severe reactions may progress rapidly. Severe reactions could be allergic, or can be a sign that the victim was bitten or stung by a particularly venomous species such as a Brown Recluse or Black Widow Spider.

In Section IV, Chapter 24 – Wilderness Survival – you will learn more about the identification of the most dangerous species, and emergency treatment for their bites and stings.

Severe reactions to insect bites or stings can include:

- Difficulty breathing
- Swelling of the lips or throat
- Faintness, dizziness, confusion
- Rapid heartbeat
- Hives, nausea, cramps and vomiting

If the person is having difficulty breathing, ask if they are known to be allergic and if they carry an Epi-pen or other emergency auto-inhaler, or injector. If the person does not have, or does not use an auto-injector, administer Benadryl to lessen the histamine reaction.

In addition take the following Actions:

- Have the person lie still on his or her back with feet higher than the head;

- Loosen tight clothing and cover the person with a blanket. Don't give anything to drink;

- Turn the person on his or her side to prevent choking if there's vomiting or bleeding from the mouth;

- Begin CPR if there are no signs of circulation, such as breathing, coughing or movement.

Shock

Shock can be the result of any number of injures, or conditions that can require First Aid, recognizing the signs of shock, and knowing how to treat it, are critical skills for any First-Aider.

Various signs and symptoms appear in a person experiencing shock:

- The skin is cool and clammy. It may appear pale or gray;
- The pulse is weak and rapid. Breathing may be slow and shallow, or
- Hyperventilation (rapid or deep breathing) may occur. Blood pressure is below normal;
- The person may be nauseated. He or she may vomit;
- The eyes lack luster and may seem to stare. Sometimes the pupils are dilated;
- The person may be conscious or unconscious. If conscious, the person may feel faint or be very weak or confused. Shock sometimes causes a person to become overly excited and anxious.

If you suspect shock, even if the person seems normal after an injury:

- Have the person lie down on his or her back with feet about a foot higher than the head. If raising the legs will cause pain or further injury, keep him or her flat. Keep the person still;
- Check for signs of circulation (breathing, coughing or movement). If absent, begin CPR;
- Keep the person warm and comfortable. Loosen belt and tight clothing and cover the person with a blanket. Even if the person complains of thirst, give nothing by mouth;
- Turn the person on his or her side to prevent choking if the person vomits or bleeds from the mouth;

- Conduct appropriate First Aid treatment for injuries, such as bleeding or broken bones.

Shock Position
Image: Courtesy US Army

Snake Bites
Your risk of snakebite depends on where you live or where you hike or travel. Even in most survival situations, the chance of a dangerous snakebite is rather small, if you are familiar with the various types of snakes and their habitats. However, it could happen and you should know how to treat snakebites. Most North American snakes aren't poisonous. Some exceptions include the rattlesnake, coral snake, water moccasin and copperhead. Their bite can be life-threatening.

Of the poisonous snakes found in North America, all but the coral snake have slit-like eyes. Their heads are triangular, with a depression, or pit, midway between the eyes and nostrils.

Other characteristics are unique to certain poisonous snakes:

- Rattlesnakes rattle by shaking the rings at the end of their tails.
- Water moccasins' mouths have a white, cottony lining.
- Coral snakes have red, yellow and black rings along the length of their bodies.

Image: Courtesy The U.S. National Library of Medicine

To reduce your risk of snakebite, avoid touching any snake. Instead, back away slowly. Most snakes avoid people if possible and bite only when threatened or surprised.

If you are bitten:

- Remain calm.
- Immobilize the bitten arm or leg and stay as quiet as possible to keep the poison from spreading through your body.
- Remove jewelry before you start to swell.
- Position yourself, if possible, so that the bite is at or below the level of your heart.
- Cleanse the wound, but don't flush it with water, and cover it with a clean, dry dressing.

- Apply a splint to reduce movement of the affected area, but keep it loose enough so as not to restrict blood flow.
- Don’t use a tourniquet or apply ice.
- Don't cut the wound or attempt to remove the venom.
- Don't drink caffeine or alcohol.
- Don't try to capture the snake, but try to remember its color and shape so you can describe it, which will help in your treatment.

That stuff you see in the movies about cutting the wound and sucking out the poison makes for great drama, but never should be attempted unless you know that professional medical help is more than an hour away. In this instance the US Army Survival Manual describes the correct procedure:

- Make an incision (no longer than 6 millimeters [1⁄4 inch] and no deeper than 3 millimeters [1⁄8 inch]) over each puncture, cutting just deep enough to enlarge the fang opening, but only through the first or second layer of skin;

- Place a suction cup over the bite so that you have a good vacuum seal. Suction the bite site 3 to 4 times. Suction for a MINIMUM of 30 MINUTES. **Use mouth suction only as a last resort and only if you do not have open sores in your mouth**. Spit the envenomed blood out and rinse your mouth with water. This method will draw out 25 to 30 percent of the venom;

- DO NOT put your hands on your face or rub your eyes, as venom may be on your hands. Venom may cause blindness.

After caring for the victim as described above, take the following actions to minimize local effects:

- If infection appears, keep the wound open and clean.
- Use heat after 24 to 48 hours to help prevent the spread of local infection. Heat also helps to draw out an infection.
- Keep the wound covered with a dry, sterile dressing.
- Have the victim drink large amounts of fluids until the infection is gone.

Stroke

A stroke occurs when there's bleeding into your brain or when normal blood flow to your brain is blocked. Within minutes of being deprived of essential nutrients, brain cells start dying — a process that may continue over the next several hours.

Seek immediate medical assistance. A stroke is a true emergency. The sooner treatment is given, the more likely it is that damage can be minimized. Every moment counts.

In the event of a possible stroke, use FAST to help remember warning signs.

- Face. Does the face droop on one side trying to smile?
- Arms. Is one arm lower when trying to raise both arms?
- Speech. Can a simple sentence be repeated? Is speech slurred or strange?
- Time. During a stroke every minute counts. If you observe any of these signs, call 911 or your local emergency number immediately

Other signs and symptoms of a stroke include:

- Weakness or numbness on one side of your body including either leg
- Dimness, blurring or loss of vision, particularly in one eye
- Severe headache — a bolt out of the blue — with no apparent cause
- Unexplained dizziness, unsteadiness or a sudden fall, especially if accompanied by any of the other signs or symptoms

Until you can get the victim to skilled emergency personal, take the following actions:

- Reassure the patient.

- Lay the patient down with head and shoulders slightly elevated.
- If patient stops breathing, or loses consciousness start CPR.
- Place the patient on the left side if breathing/not responsive.
- Keep the chin slightly extended.

Natural First Aid

You live in a world where so-called modern wonder drugs, laboratories, and equipment have obscured more "primitive" yet highly effective types of medicine involving determination, common sense, and a few simple treatments – this is something that needs to always be kept in mind when thinking about First Aid in survival situations. A well-stocked First Aid kit can only take you so far, and only last you so long.

When lost in the wilderness, or in the aftermath of a natural disaster, where you could be cut off for days, months, years -- or forever, for that matter -- from the corner drugstore, the US Army Survival Guide reminds us that, in many areas of the world people still depend on local Shamans or healers to cure their ailments. Many of the herbal and botanical based treatments they use are as effective as the most "modern" drugs available. In fact, many modern pharmaceuticals you take for granted, owe their origins to the herbs and plants found in the rainforests. Here are several "natural" first aid treatments you need to get to know.

Antihemorrhagics, for bleeding. You can make medications to stop bleeding from plantain leaves, or, most effectively, from the leaves of the common yarrow or woundwort (Achillea millefolium). These mostly give a physical barrier to the bleeding. Prickly pear (the raw, peeled part) or witch hazel can be applied to wounds. Both are good for their astringent properties (they shrink blood vessels). For bleeding gums or mouth sores, sweet gum can be chewed or used as a toothpick. This provides some chemical and antiseptic properties as well.

Antiseptics to clean infections. Use antiseptics to cleanse wounds, snake bites, sores, or rashes. You can make antiseptics from the expressed juice of wild onion or garlic, the expressed juice from chickweed leaves, or the crushed leaves of dock. You can also make antiseptics from by boiling burdock root, mallow leaves or roots, or white oak bark (tannic acid). Prickly pear, slippery elm, yarrow, and sweet gum are all good antiseptics as well.

All these medications are for external use only. Two of the best antiseptics are sugar and honey. Sugar should be applied to the wound until it becomes syrupy, then washed off and reapplied. Honey should be applied three times daily Honey is by far the best of the antiseptics for open wounds and burns, with sugar being second.

Analgesics for aches, pains, and sprains. Treat these conditions with externally applied poultices of dock, plantain, chickweed, willow bark, garlic, or sorrel. Sweet gum has some analgesic (pain relief) properties. Chewing the willow bark or making a tea from it is the best for pain relief as it contains the raw component of aspirin. You can also use salves made by mixing the expressed juices of these plants in animal fat or vegetable oils.

Insect Bites and Stings

You can relieve the itching and discomfort caused by insect bites in the field by applying:

- Cold compresses
- A cooling paste of mud and ashes
- Sap from dandelions
- Coconut meat
- Crushed cloves of garlic
- Onion

You will learn more on how to find, identify use these herbs and plants in Chapter 12 on Edible Plants, and Chapter 24 on Wilderness Survival

Control What You Can – Be Prepared for What You Cannot

Getting yourself some basic First Aid training is easy, and can make all the difference between knowing what to do, and panicking if you, or someone you are with becomes injured during a disaster, or other emergency. The information in this guide should not be taken as a substitute for proper First Aid training, but in an emergency these techniques could save a life.

Of course you cannot predict nor control a sudden injury that could require First Aid treatment due to a fall, or debris, or other hazards that are common during a natural disaster, so being trained is your best way to be prepared to deal with such emergencies.

However, in addition to getting basic First Aid training, as you learned in Chapter 1 on getting into “Survival Shape” – the risk of many of the conditions that could occur due to the stress of a survival situation, and require First Aid, such as stroke or heart attack, could be lessened by improving your basic health and boosting your immune system.

Chapter 7

Evacuate or Stay Put?

"Tomorrow belongs to the people who prepare for it today."
— Malcolm X

Often when facing an impending disaster the question becomes whether to evacuate or "Shelter-in-Place." There is no real definitive answer, because it really all depends on the nature of the emergency, where you live, what your preparedness level is, and the make up of your family.

We have all seen the images on the news of the stalwart New Englanders, or laissez faire "Conchs" in Key West, who refuse to leave in the face of a Hurricane, even if they are in a mandatory evacuation zone. Sometimes they did they right thing, and other times – there were tragic results.

Before ultimately making the decision to stay or "Bug Out", you must be thoroughly prepared to do either. That means making sure your In Home Preparedness Kit is ready, functional and accessible, and that your Go Bag is ready to "GO!"

Being prepared for a potential evacuation should be part of your risk assessment conducted in Chapter 2. You may immediately know that you live in a "Hurricane Evacuation Zone" or "Flood Zone" due to your proximity to the coastline or other bodies of water. If so, your local Emergency Preparedness Agencies will have most likely already created and clearly marked designated evacuation routes. Be sure you are familiar with them. Also be sure you have alternatives to the official routes, if they became too jammed up and impassible.

You may recall that in our discussion of Home Preparedness it was recommended that if you know you live in such a zone, you have a designated Emergency 4WD Vehicle. Be sure it is gassed up, in good repair, and ready to go at all times. If you live on a Barrier Island, or some other coastal area, with a single road access in and out, such as a bridge or causeway – when a storm is impending, you may want to consider parking your vehicle on the other side of the roadway in walking distance, where you can get to it to Bug Out, before the whether gets too bad, or the traffic too jammed up.

Remember if you're going to leave there is a chance that traveling by roads under normal conditions may not be possible, especially the later you decide to evacuate. Communications, public transportation, streetlights, traffic signals, and other infrastructure that normally make traveling by road easy, may not be functioning.

As part of your evacuation plan you must be prepared to travel by foot if necessary. You should know your evacuation route before an emergency occurs. Drive it several times; looking for spots along the route for shelter or other facilities in the event that you may be forced to leave your vehicle and make your escape by foot.

If you do need to evacuate on foot, that means you will have to carry your Go Bag with you slung on your back. Traveling for miles in uncertain conditions carrying a rucksack is not easy for someone untrained. Part of getting in "Survival Shape" should be to throw on your Go Bag, and go hiking with it a few times a week. This is not only great all around exercise, but it will help you to build up the strength and stamina to carry your pack when you must. This kind of training can be especially useful for younger family members. Practicing evacuations can be made into fun family adventures.

Stay or Bug Out?

In the absence of official evacuation orders from federal, state or local authorities, according to FEMA you should evacuate when there is an immediate risk such as:

- If you smell gas, smoke or see fire or otherwise fear for your safety,

evacuate household occupants immediately. From a safe location, call 911 and report the incident.

If local officials issue general evacuation orders, use the evacuation routes and methods specified; carpool whenever possible - If time allows:

- Wear sturdy shoes, long-sleeve shirts and pants,
- Bring car keys, credit cards, road maps, cell phone, charger and important phone numbers;
- Bring your Go-bag;
- If you have a pet, make sure it is wearing a collar, bring it in a pet carrier labeled with your name and the pet's name. Bring your pet's Go-bag;
- Lock your home and shut off the water and electricity, but leave gas on unless instructed otherwise;
- Leave a note or tell a neighbor where you are going;
- If you are separated from other family members go to your prearranged meeting point;
- Once you arrive at a safe location, call your out-of-area emergency contact.

If you do choose to evacuate, it is best that you go to a prearranged friend or relative's location out of the evacuation zone. However, if such a place is not available or inaccessible due to the circumstance of the emergency you may need to go to an Emergency Shelter.

Disaster Shelters

Immediately following a large disaster, suitable shelter sites will be selected from a pre-designated list based on areas of need and estimated numbers of displaced persons. Each site must be inspected for safety prior to being opened to the public. Therefore, it is not possible to say with advance

certainty which sites will actually operate as disaster shelters. As soon as disaster sites have been formally designated, this list will be announced through local media to the public. If it is unsafe to shelter-in-place, and you do not have an alternative, evacuate to a designated emergency shelter.

If you do go to a Shelter:

- Tell your out-of area-contact where you are going;
- Take your Go-bag with you to the shelter;
- Initially, emergency shelters may not be able to provide basic supplies and materials. Consider bringing extra items (e.g. blanket, pillow, air mattress, towel, washcloth, diapers, food and supplies for infants.) Shelters can be very frightening to children, be sure to take along some favorite games, toys or books, and some favorite "comfort foods" or snacks;
- Provide for your pet: only service animals are allowed in most "human" shelters. If you cannot make other plans for your pets, Animal Care and Control staff will be available at "human" shelters to help with pet sheltering needs.

Sheltering In Place

There are times when rather than giving a mandatory evacuation order, Civil Preparedness Agencies may in fact advise that you stay-put and "Shelter-in-Place." This is usually when the disaster involves potential exposure to toxic materials.

According to the American Red Cross's "Fact Sheet" on Sheltering in Place: One of the instructions you may be given in an emergency where hazardous materials may have been released into the atmosphere is to shelter-in-place. This is a precaution aimed to keep you safe while remaining indoors.

Shelter-in-place means selecting a small, interior room, with few if any windows and taking refuge there. It does not mean sealing off your entire home or office building.

Why You Might Need to Shelter-in-Place:
Chemical, biological, or radiological contaminants may be released accidentally or intentionally into the environment. Should this occur, information will be provided by local authorities on television and radio stations on how to protect you and your family. Because information will most likely be provided on television and radio, it is important to keep a TV or radio on, even during the workday. The important thing is for you to follow instructions of local authorities and know what to do if they advise you to shelter-in-place.

How to Shelter-in-Place

At Home:

- Close and lock all windows and exterior doors;
- If you are told there is danger of explosion, close the window shades, blinds, or curtains;
- Turn off all fans, heating and air conditioning systems. Close the fireplace damper;
- Get your Home Disaster Preparedness Kit and make sure all battery operated lights and radios are charged and working;
- Go to an interior room without windows that's above ground level. In the case of a chemical threat, an above-ground location is preferable because some chemicals are heavier than air, and may seep into basements even if the windows are closed;
- Bring your pets with you, and be sure to bring additional food and water supplies for them;
- It is ideal to have a hard-wired telephone in the room you select. Call your emergency contact and have the phone available if you need to report a life-threatening condition. Cellular telephone equipment may be overwhelmed or damaged during an emergency;

- Use duct tape and plastic sheeting (heavier than food wrap) to seal all cracks around the door and any vents into the room;

- Keep listening to your radio or television until you are told all is safe or you are told to evacuate. Local officials may call for evacuation in specific areas at greatest risk in your community, so be sure to have your Go Bag with you in your sealed room.

At Work:

- Close the business. Bring everyone into the room(s). Shut and lock the door(s);

- If there are customers, clients, or visitors in the building, provide for their safety by asking them to stay – not leave. When authorities provide directions to shelter-in-place, they want everyone to take those steps now, where they are, and not drive or walk outdoors;

- Unless there is an imminent threat, ask employees, customers, clients, and visitors to call their emergency contact to let them know where they are and that they are safe;

- Turn on call-forwarding or alternative telephone answering systems or services. If the business has voice mail or an automated attendant, change the recording to indicate that the business is closed, and that staff and visitors are remaining in the building until authorities advise that it is safe to leave;

- Close and lock all windows, exterior doors, and any other openings to the outside;

- If you are told there is danger of explosion, close the window shades, blinds, or curtains;

- Have employees familiar with your building's mechanical systems turn off all fans, heating and air conditioning systems;

- Some systems automatically provide for exchange of inside air with

- outside air – these systems, in particular, need to be turned off, sealed, or disabled;

- Gather essential disaster supplies, such as nonperishable food, bottled water, battery-powered radios, first aid supplies, flashlights, batteries, duct tape, plastic sheeting, and plastic garbage bags;

- Select interior room(s) above the ground floor, with the fewest windows or vents. The room(s) should have adequate space for everyone to be able to sit in. Avoid overcrowding by selecting several rooms if necessary. Large storage closets, utility rooms, pantries, copy and conference rooms without exterior windows will work well. Avoid selecting a room with mechanical equipment like ventilation blowers or pipes, because this equipment may not be able to be sealed from the outdoors;

- It is ideal to have a hard-wired telephone in the room(s) you select. Call emergency contacts and have the phone available if you need to report a life-threatening condition. Cellular telephone equipment may be overwhelmed or damaged during an emergency;

- Use duct tape and plastic sheeting (heavier than food wrap) to seal all cracks around the door(s) and any vents into the room;

- Write down the names of everyone in the room, and call your business' designated emergency contact to report who is in the room with you, and their affiliation with your business (employee, visitor, client, customer);

- Keep listening to the radio or television until you are told all is safe or you are told to evacuate. Local officials may call for evacuation in specific areas at greatest risk in your community – so have your "At Work" Go Bag at the ready.

At School:

- Close the school. Activate the school's emergency plan. Follow reverse evacuation procedures to bring students, faculty, and staff indoors;

- If there are visitors in the building, provide for their safety by asking them to stay – not leave. When authorities provide directions to shelter-in-place, they want everyone to take those steps now, where they are, and not drive or walk outdoors;

- Provide for answering telephone inquiries from concerned parents by having at least one telephone with the school's listed telephone number available in the room selected to provide shelter for the school secretary, or person designated to answer these calls. This room should also be sealed. There should be a way to communicate among all rooms where people are sheltering-in-place in the school;

- Ideally, provide for a way to make announcements over the school-wide public address system from the room where the top school official takes shelter;

- If children have cell phones, allow them to use them to call a parent or guardian to let them know that they have been asked to remain in school until further notice, and that they are safe;

- If the school has voice mail or an automated attendant, change the recording to indicate that the school is closed, students and staff are remaining in the building until authorities advise that it is safe to leave;

- Provide directions to close and lock all windows, exterior doors, and any other openings to the outside;

- If you are told there is danger of explosion, direct that window shades, blinds, or curtains be closed;

- Have employees familiar with your building's mechanical systems turn off all fans, heating and air conditioning systems. Some systems automatically provide for exchange of inside air with outside air – these systems, in particular, need to be turned off, sealed, or disabled;

- Gather essential disaster supplies, such as nonperishable food, bottled water, battery-powered radios, first aid supplies, flashlights, batteries, duct tape, plastic sheeting, and plastic garbage bags;

- Select interior room(s) above the ground floor, with the fewest windows or vents. The room(s) should have adequate space for everyone to be able to sit in. Avoid overcrowding by selecting several rooms if necessary. Classrooms may be used if there are no windows or the windows are sealed and can not be opened. Large storage closets, utility rooms, meeting rooms, and even a gymnasium without exterior windows will also work well;

- It is ideal to have a hard-wired telephone in the room(s) you select. Call emergency contacts and have the phone available if you need to report a life-threatening condition. Cellular telephone equipment may be overwhelmed or damaged during an emergency;

- Bring everyone into the room. Shut and lock the door;

- Use duct tape and plastic sheeting (heavier than food wrap) to seal all cracks around the door(s) and any vents into the room;

- Write down the names of everyone in the room, and call your schools' designated emergency contact to report who is in the room with you;

- Listen for an official announcement from school officials via the public address system, and stay where you are until you are told all is safe, or you are told to evacuate. Local officials may call for evacuation in specific areas at greatest risk in your community.

In Your Vehicle:

If you are driving a vehicle and hear advice to "shelter-in-place" on the radio, take these steps immediately:

- If you are very close to home, your office, or a public building, go there immediately and go inside. Follow the shelter-in-place recommendations for the place you pick described above;

- If you are unable to get to a home or building quickly and safely, then pull over to the side of the road. Stop your vehicle in the safest place possible. If it is sunny outside, it is preferable to stop under a bridge or in a shady spot, to avoid being overheated;

- Turn off the engine. Close windows and vents;

- If possible, seal the heating/air conditioning vents with duct tape;

- Listen to the radio regularly for updated advice and instructions;

- Stay where you are until you are told it is safe to get back on the road. Be aware that some roads may be closed or traffic detoured. Follow the directions of law enforcement officials.

During any Shelter-in-Place directive, your local officials on the scene are the best source of information for your particular situation. Following their instructions during and after emergencies regarding sheltering, food, water, and clean up methods is your best choice.

In addition to the advice outlined above by the American Red Cross, the CDC adds the following about Sheltering in Place:

If the order is due to a chemical spill or other hazardous material emergency, most likely you will only need to shelter for a few hours. You will know if you have to shelter-in-place if there is a “code red” or “severe” terror alert. You should pay attention to radio and television broadcasts to know right away whether a shelter-in-place alert is announced for your area. You will hear from the local police, emergency coordinators, or government on the radio and on television emergency broadcast system if you need to shelter in place.

Act quickly and follow the instructions of your local emergency coordinators such as law enforcement personnel, fire departments, or local elected leaders. Every situation can be different, so local emergency coordinators might have special instructions for you to follow.

In general, do the following:

- Go inside as quickly as possible. Bring any outdoor pets indoors;

- If there is time, shut and lock all outside doors and windows. Locking them may pull the door or window tighter and make a better seal against the chemical. Turn off the air conditioner or heater. Turn off all fans, too. Close the fireplace damper and any other place that air can come in from outside;

- Go in the shelter-in-place room and shut the door;

- Turn on the radio. Keep a telephone close at hand, but don't use it unless there is a serious emergency;

- Sink and toilet drain traps should have water in them (you can use the sink and toilet as you normally would). If it is necessary to drink water, drink stored water, not water from the tap;

- Tape plastic over any windows in the room. Use duct tape around the windows and doors and make an unbroken seal. Use the tape over any vents into the room and seal any electrical outlets or other openings;

- If you are away from your shelter-in-place location when a chemical event occurs, follow the instructions of emergency coordinators to find the nearest shelter. If your children are at school, they will be sheltered there. Unless you are instructed to do so, do not try to get to the school to bring your children home. Transporting them from the school will put them, and you, at increased risk;

- Listen to the radio for an announcement indicating that it is safe to leave the shelter;

- When you leave the shelter, follow instructions from local emergency coordinators to avoid any contaminants outside. After you come out of the shelter, emergency coordinators may have additional instructions on how to make the rest of the building safe again.

With the exception of the aforementioned municipal orders to shelter- in-place due to an environmental hazard, you may choose to shelter-in-place to “ride out a storm” or other impending disaster. This is not advisable to do, if an official order to evacuate is given – **however that decision is always your own.**

But before you decide, read the following real-world experiences from two people who lived through Hurricane Katrina in 2005.

Like many of her friends and neighbors, Samantha Rumby, a resident of Metaire, a suburb of New Orleans, chose not to evacuate when the early orders to do so went up in the days before Hurricane Katrina made landfall. After three days without running water, flush toilets, hot food or electricity, and having not made proper preparations to shelter-in- place, she finally decided to leave. She described her experiences to a local New Orleans Newspaper.

"When we left, there was a line of ambulances on the side of Interstate 10," said the 32-year-old employee of a medical supply company. "The helicopters were bringing out the flood victims and you could see children through the opened doors. There were helicopters everywhere. It was like the evacuation of Vietnam."

As Rumby drove west on the interstate to escape the stricken city, she was stunned by another sight.

"There were hitch-hikers" she said, "People with backpacks, whole families carrying little babies - trying to get rides. I would've stopped, but I had two cats and a dog in my car. I even saw a monk in his monk outfit walking down the interstate. It was like those Mel Gibson movies, the 'Road Warrior.'"

A lifelong New Orleans area resident, Rumby says she was "stupid" not to have evacuated before Katrina, but "I've never left for one before, and I thought I could make it. We survived the storm, but we were there for three days with no power, or water, or toilets," she said. "We had canned food, but forgot to buy a can opener, so we borrowed one from a neighbor. We listened to the radio and heard these people calling in, saying they were

trapped in their attics and dying. It got so gloomy we finally turned it off. It was rough."

In contrast, “Shane” a self-admitted survivalist who considers himself a “Prepper” for The End of The World As We Know It, (TEOTWAWKI) related a different story on his blog. “When Katrina showed up in the Gulf, my brother Brian said, "This one is just going to drift up to Florida. No problems." And I said, "You fool! This is the one that will kill us all!" Of course, I always say that, figuring that one day I'd be right... My wife Andrea and I had been revising our hurricane plan, but even so, we didn't do anything with it for awhile, and things were not as organized as they could have been. But still, we did manage to pack up and were ready to go within 12 hours, but by that time it was 9:00 at night, and we decided to bug out the next morning at 4:00AM.”

Shane and his family left at 6:46 AM on Sunday morning August 28th, still a full day ahead of the storm. “I wanted to leave earlier, but we also needed the rest for the long trip on the road. As it turns out, we left in the nick of time. As we drove out, the traffic was heavy, but moving. We continually heard reports of gridlock just behind us. It seemed like we were riding a wave that was slowly freezing behind us. It took us 15 1⁄2 hours to drive to Houston - a trip that normally takes just six hours.”

He concludes: “I have been through hurricanes and storms before; widespread destruction isn't anything new to me but this had never actually happened to me before. As I drove along, getting past Baton Rouge in bumper-to-bumper traffic, it was apparent to me that a hurricane is a special kind of tragic play. Terrorist attacks, earthquakes, and other kinds of natural disasters happen fairly quickly. **BOOM** and it's done. A hurricane, though, is like a nuclear bomb that explodes very slowly over the span of a whole day. You can watch it all unfold very neatly into chaos, and there really isn't anything to do about it but to try to exit the stage, the theatre, and get as far away as you can before you become a participant in the play rather than a spectator.”

If you are planning to Shelter-in-Place before, during, or after a given Disaster, you can find specific details on how to most safely do so by jumping forward to Section III of this manual per the following Chapters.

Section III – Preparing For and Surviving Natural Disasters

- Chapter 13 - Drought
- Chapter 14 - Earthquake
- Chapter 15 - Fires
- Chapter 16 - Flood
- Chapter 17 - Heat Waves and Heat Emergencies
- Chapter 18 - Hurricane
- Chapter 19 - Plague or Pandemic Outbreak
- Chapter 20 - Tornado
- Chapter 21 - Tsunami
- Chapter 22 - Volcanoes
- Chapter 23 - Winter Storms

Saying Goodbye

It is never easy to leave a home behind, but remember whatever you have there can ultimately be replaced; especially if you have taken the steps outlined in Chapter 2 on Home Preparedness.

Whether to stay or go during an emergency is your decision. If you are able to, and you have an evacuation plan, following the advice of Emergency Preparedness Agencies when they recommend evacuation is always a smart thing to do. The earlier the better, before roads get tied up and impassible. The earliest evacuees during Hurricane Katrina faired the best. By listening to evacuation advice, the worst that can happen is – that nothing happened, and you return home safely, slightly inconvenienced for a few days. But in the best case, getting out, in time, fully prepared with your Go Bag may very well mean the difference between life and death.

Also always keep in mind, no matter how much gear and supplies your Go Bag contains it will never contain everything that you may need to cover all scenarios, especially if you need to evacuate, or even Shelter-in-Place for an extended period of time.

You will always have to be prepared to improvise and make do with what's available. Learning how to build fires, create shelters, preparing food, use natural healing techniques, and the other survival skills you will learn, or can quickly reference througout the next Sections of this Manual are just as crucial as any equipment you choose to carry with you.

Chapter 8

Don't Forget the Four-Legged Friends

"The greatness of a nation and its moral progress can be judged by the way its animals are treated."
— Mahatma Gandhi

Animals have amazing survival instincts. In fact much of what you have been learning in this Manual is how to reconnect with your own more primitive survival skills. However, the truth is that our domesticated pets are almost as far removed from their wild cousins, as we are from our ancestors. Just as we have become complacent, and overly reliant on the trappings of modern society, so too have our pets become overly reliant on US! So, when preparing for natural disasters or man-made emergencies, it is important that we not forget about our four-legged friends.

The ASPCA (www.aspca.org) says, emergencies come in many forms, and they may require anything from a brief absence from your home to permanent evacuation. Each type of disaster requires different measures to keep your pets safe. The best thing you can do for yourself and your pets is to be prepared. The well-known animal care and rights organization outlines Six Steps to Pet Emergency Preparedness.

Step 1 - Get a Rescue Alert Sticker
This easy-to-use sticker will let people know that pets are inside your home. Make sure it is visible to rescue workers, and that it includes:

- The types and number of pets in your household.
- The name of your veterinarian and his or her phone number.

Image Courtesy: ASPCA

If you must evacuate with your pets, and if time allows, write, "EVACUATED" across the stickers. You can get these stickers on line from the ASPCA, or they are usually available at your local pet stores, or through your local rescue squad or fire department.

Step 2 - Arrange a Safe Haven
Arrange a safe haven for your pets in the event of evacuation. DO NOT LEAVE YOUR PETS BEHIND. Remember, if it isn't safe for you, it isn't safe for your pets. They may become trapped or escape and be exposed to numerous life-threatening hazards. Note that not all Red Cross, or other "human" disaster shelters accept pets, so it is imperative that you have determined where you will bring your pets ahead of time:

- Contact your veterinarian for a list of preferred boarding kennels and facilities;

- Ask your local animal shelter if they provide emergency shelter or foster care for pets;

- Identify hotels or motels outside of your immediate area that accept pets;

- Ask friends and relatives outside your immediate area if they would be willing to take in your pet.

Step 3 - Emergency Supplies and Traveling Kits
If you have pets, they need to have their own specific Go Bag as well. Make sure that everyone in the family knows where it is. This kit should be clearly labeled and easy to carry. Items to consider keeping in or near your Pet Go Bag include:

- Pet first-aid kit and guide book (ask your vet what to include, or visit the TUSP Member Store to buy one online);
- 3-7 days' worth of canned (pop-top) or dry food and pet feeding dishes;
- Disposable litter trays (aluminum roasting pans are perfect) and Litter or paper toweling;
- Liquid dish soap, disinfectant and Disposable garbage bags for clean-up;
- Extra collar or harness as well as an extra leash;
- Photocopies of medical records and a waterproof container with a two-week supply of any medicine your pet requires;
- Bottled water, at least 7 days' worth for each pet;
- A traveling bag, crate or sturdy carrier, ideally one for each pet;
- Blanket (for scooping up a fearful pet);
- Recent photos of your pets (in case you are separated and need to make "Lost" posters);
- Especially for cats: Pillowcase or EvackSack, toys, scoopable litter;
- Especially for dogs: Extra leash, toys and chew toys, a week's worth of cage liner.

Remember just like the items in your human Go Bags, perishable items and medications in your pet's Go Bag must be replaced periodically for freshness.

Step 4 - Choose "Designated Caregivers"
This step will take considerable time and thought. When choosing a temporary caregiver, consider someone who lives close to your residence. He or she should be someone who is generally home during the day while you are at work or has easy access to your home. A set of keys should be given to this trusted individual. This may work well with neighbors who have pets of their own—you may even swap responsibilities, depending upon who has accessibility.

When selecting a permanent caregiver, you'll need to consider other criteria. This is a person to whom you are entrusting the care of your pet in the event that something should happen to you. When selecting this "foster parent," consider people who have met your pet and have successfully cared for animals in the past. Be sure to discuss your expectations at length with a permanent caregiver, so he or she understands the responsibility of caring for your pet.

Step 5 - Evacuation Preparation
If you must evacuate your home in a crisis, plan for the worst-case scenario. If you think you may be gone for only a day, assume that you may not be allowed to return for several weeks. When recommendations for evacuation have been announced, follow the instructions of local and state officials. To minimize evacuation time with your pets, take these simple steps:

- Store an emergency kit and leashes as close to an exit as possible;

- Make sure all pets wear collars and tags with up-to-date identification. Your pet's ID tag should contain his name, telephone number, and any urgent medical needs. Be sure to write your pet's name, your name and contact information on your pet's carrier;

- The ASPCA recommends micro chipping your pet as a more permanent form of identification. A microchip is implanted in the

animal's shoulder area, and can be read by scanner at most animal shelters.

Always bring pets indoors at the first sign or warning of a storm or disaster. Pets can become disoriented and wander away from home during a crisis. Consider your evacuation route and call ahead to make arrangements for boarding your pet outside of the danger zone at the first sign of disaster.

Step 6 - Geographic and Climatic Considerations

- Do you live in an area that is prone to certain natural catastrophes, such as tornadoes, earthquakes or floods? If so, you should plan accordingly;

- Determine well in advance which rooms offer safe havens. These rooms should be clear of hazards such as windows, flying debris, etc.

- Choose easy-to-clean areas such as utility rooms, bathrooms, and basements as safe zones;

- Access to a supply of fresh water is particularly important. In areas that may lose electricity, fill up bathtubs and sinks ahead of time to ensure that you have access to water during a power outage or other crises;

- In the event of flooding, go to the highest location in your home, or a room that has access to counters or high shelves where your animals can take shelter.

If emergency officials recommend that you stay in your home, it's crucial that you keep your pets with you. Keep your Go Bag and supplies close at hand. Your pets may become stressed during the in-house confinement, so you may consider crating them for safety and comfort.

Different animals have different physical and emotional needs. The ASPCA recommends these specific additional preparedness concerns for the following animals.

Special Considerations for Birds

- Birds should be transported in a secure travel cage or carrier;
- In cold weather, make certain you have a blanket over your pet's cage. This may also help reduce the stress of traveling;
- In warm weather, carry a spray bottle to periodically moisten your bird's feathers;
- Have recent photos available and keep your bird's leg bands on for identification;
- If the carrier does not have a perch, line it with paper towels that you can change frequently;
- Keep the carrier in as quiet an area as possible;
- It is particularly imperative that birds eat on a daily basis, so purchase a timed feeder. If you need to leave your bird unexpectedly, the feeder will ensure his daily feeding schedule;
- Items to keep on hand: Catch net, heavy towel, blanket or sheet to cover cage, cage liner.

Special Considerations for Reptiles

- A snake may be transported in a pillowcase, but you should have permanent and secure housing for him when you reach a safe place;

- Take a sturdy bowl that is large for your pet to soak in. It’s also a good idea to bring along a heating pad or other warming device, such as a hot water bottle;

- Lizards can be transported like birds (see above).

Special Considerations for Small Animals

- Small animals, such as hamsters, gerbils, mice and guinea pigs, should be transported in secure carriers with bedding materials, food and food bowls;

- Items to keep on hand: Salt lick, extra water bottle, small hide box or tube, a week's worth of bedding.

FEMA reminds all pet owners, if you evacuate your home, try your utmost not to LEAVE YOUR PETS BEHIND! Pets most likely cannot survive on their own; and if by some remote chance they do, you may not be able to find them when you return.

If you have no alternative but to leave your pet at home, there are some precautions you must take, but remember that leaving your pet at home alone can place your animal in great danger! Confine your pet to a safe area inside -- NEVER leave your pet chained outside! Leave them loose inside your home with food and plenty of water. Remove the toilet tank lid, raise the seat and brace the bathroom door open so they can drink. Place a notice outside in a visible area advising what pets are in the house and where they are located. Provide a phone number where you or a contact can be reached as well as the name and number of your vet.

FEMA also offers the following advice for pet owners during and after a disaster.

During a Disaster

- Bring your pets inside immediately;

- Have newspapers on hand for sanitary purposes. Feed the animal's moist or canned food so they will need less water to drink;

- Animals have instincts about severe weather changes and will often isolate themselves if they are afraid. Bringing them inside early can stop them from running away. Never leave a pet outside or tied up during a storm;

- Separate dogs and cats - even if your dogs and cats normally get along, the anxiety of an emergency situation can cause pets to act irrationally. Keep small pets away from cats and dogs.

After a Disaster

- If after a disaster you have to leave town, take your pets with you. Pets are unlikely to survive on their own;

- In the first few days after the disaster, leash your pets when they go outside. Always maintain close contact. Familiar scents and landmarks may be altered and your pet may become confused and lost. Also, snakes and other dangerous animals may be brought into the area with floodwaters. Downed power lines are a hazard;

- The behavior of your pets may change after an emergency. Normally quiet and friendly pets may become aggressive or defensive. Watch animals closely. Leash dogs and place them in a fenced yard with access to shelter and water.

The Human Society of the United States (HSUS) wants pet owners to know that the federal government now officially supports including pets in disaster plans. In 2000 The HSUS and FEMA signed an historic partnership agreement to encourage and assist people who want to safeguard their pets in a natural disaster. FEMA designated May 8, 2010, National Animal Disaster Preparedness Day, at the time the FEMA Director said, "Animals are

important members of millions of families across this country—and as such they should also be included in our family emergency plans."

HSUS (www.humanesociety.org) realizes that disasters and animal preparedness is not restricted to pets – farm owners, horse owners, and other managers of livestock must take special considerations for their animals before, during, and after a disaster as well.

Why Livestock Owners Need to Be Prepared

Disaster preparedness is important for all animals, but it is especially important for livestock because of the size of the animals and their shelter and transportation needs. Disasters can happen anywhere and take many different forms—from hurricanes to barn fires, floods to hazardous materials spills—forcing possible evacuation. Whether you evacuate or shelter in place, it's important to be prepared to protect your livestock.

Take Precautions

One of the smartest things you can do to protect your family and livestock is to make sure you regularly review and update your disaster plan, supplies, and information regularly.

Sheltering in Place

If evacuation is not possible, a decision must be made whether to confine large animals to an available shelter on your farm or leave them out in pastures. Many factors need to be taken into consideration to figure out what's best in varying situations.

Barn Fires: The Most Common Disaster
Preventing barn fires and being prepared in the event of a fire can mean the difference between life and death for your livestock. Knowledge of the danger of fires and how to deal with them is essential and vigilance is key to prevention.

Evacuation Planning
A successful evacuation plan depends on many factors. We've compiled a detailed list of precautions and do's and don'ts to help you develop a foolproof strategy.

Farm Disaster Kit
Make a disaster kit so you have supplies on hand in the event of a disaster. Place the kit in a central location and let everyone know where it is. Check the contents regularly to ensure fresh and complete supplies. This should include the same basic items as the Home Preparedness Kits Described in Chapter 3, with any specific additions for the sustainability of your operation and safety of your property, crops, or livestock.

Your local humane organization, agricultural extension agent, or local emergency management agency may be able to provide you with information about your community's disaster response plans.

Returning to Routines for Pets and Animal Owners
Planning and preparation will help you survive and deal with the stress of a disaster, but your pets and animals do not posses your intelligence and reasoning capacity. Returning to normalcy can be much harder for them than you. Your home may be a very different place after a crisis, whether you have taken shelter at home or elsewhere.

- Don't allow your pets to roam loose. Familiar landmarks and smells might be gone, and your pet will probably be disoriented. Pets can easily get lost in such situations;

- While you assess the damage, keep dogs on leashes and keep cats in carriers inside the house. If your house is damaged, they could escape and become lost;

- Be patient with your pets after a disaster. Try to get them back into their normal routines as soon as possible and be ready for behavioral problems that may result from the stress of the situation. If behavioral problems persist or if your pet seems to be having any health problems, talk to your veterinarian.

Final Thoughts

Your pets are important to you, and even though they can feel like family members, understand that they are not. Yes, you should take every precaution to keep them safe, and to keep them with you in the event of a disaster or emergency as described above. However, in a true life or death survival situation never put your life, or the life of another human being at risk to return for, or rescue, a pet or other animal that may be in danger.

Chapter 9

Building Your Ultimate Survival Kit: The Go Bag

82% of Americans say "If someone could make it easy for me to be prepared - I'd do it."
-Recent American Red Cross Survey

In various previous Chapters in this Section of the Manual, you have learned of the importance of Preparedness Kits and Go Bags, and the basic equipment and supplies that should be in them. In this chapter you will be introduced to each of the recommended items in greater detail, what they are used for, how they should be used and cared for, and why they are essential to your survival.

The official US Army Survival Manual says even the smallest survival kit, if properly prepared, is invaluable when faced with a survival problem.

The Ultimate Go Bag
In earlier Chapters you learned of the items you should have on-hand in your home, secure and easily accessible as part of an over all Emergency Preparedness Kit. This included items such as:

- Water
- Ready to eat food
- A manual can-opener and other cooking supplies
- Plates, utensils and other feeding supplies
- First Aid kit

- Flashlights
- Battery or hand crank radios, etc.

But most importantly, you learned of one of the most essential items for Disaster Preparedness - your "Go Bag." A Go Bag contains the most basic, and proven essential equipment and material that you can carry, that will help you make it through even the harshest survival situations for at least **three days**.

Your Go Bag should be packed and ready, and easily accessible whenever you should need it. You may want to keep your Go Bag in your car, or your designated "Bug Out" vehicle. Each family member should have their own Go Bags stocked with the baseline essentials, and other more specific items based on their age, gender, and other personal needs.

You need to take your Go Bag with you when hiking, camping and traveling by boat, or other means of transportation where you may wind up in a survival situation.

In addition to packing extra clothes in your Go Bag, the clothes you wear while bugging out are also important. Of course time of year and the weather have a lot to do with what to wear. But in general get yourself a good sturdy pair of hiking boots, or military style combat boots. Unless you have reason to be hiding from someone while you are evacuating -- and that's your business - you don't have to wear cammies, but military, or law-enforcement style "cargo pants" with lots of pockets are a good idea. A hunters or camping style vest, again with many pockets, is also a valuable piece of clothing. Wear a belt, it is can be useful to hold items that you need to get to quickly, and it also can be used as an improvised rope or fastening device for a number of emergency situations.

The US Army Survival Manual says that the environment is the key to the types of items you will need to have in your survival kit. How much equipment you put in your kit depends on how you will carry the kit. A kit carried on your body will have to be smaller than one carried in a vehicle. Always layer your survival kit, keeping the most important items on your body. For example, your knife and compass should always be on your body – or in the most readily accessible pockets of your backpack.

Carabineers can be used to hook items that you need to get to easily on the outside of your pack.

In preparing your ultimate survival Go Bag, select items you can use for more than one purpose. If you have two items that will serve the same function, pick the one you can use for another function. Do not duplicate items, as this increases your kit's size and weight.

Remember your Rule of Threes? A person can survive for:

- Three minutes without air
- Three hours without shelter
- Three days without water
- Three weeks without food

That is why your basic Go Bag is based on surviving for at least three days or 72 hours. Here is the most comprehensive list of the baseline essential items that should be in any Three Day Survival Go Bag, based on the recommendations of FEMA, The American Red Cross and other Disaster Preparedness Agencies worldwide.

- Individually sized Backpack/Rucksack
- Drinking Water—(3-day supply, minimum 8 oz per person per day)
- Food—non-perishable, easy-to-prepare items (3-day supply, minimum 1200 calories per day)
- Flashlight
- Battery-powered or hand-crank/solar Multi-band/NOAA Weather Radio
- Pocketknife
- First aid kit
- Multi-purpose tool
- Pocket Compass (how to use)
- Utility Knife
- 8" x 10" Plastic Tarp
- Emergency blanket
- All Weather Pocket Size Sleeping Bag
- 36 Hour Emergency Candles
- Whistle
- Flint Fire Starter & Striker

- Storm proof/water proof matches
- Disposable Lighters
- Sun Screen – at least spf 30
- Dust/ Bio-hazard Mask
- Compact Folding Stove & Fuel Tablets
- Portable Water Filter
- Water Purification Tablets
- 2.5 Gal Collapsible Water Carrier
- Rechargeable batteries (AA/AAA) and Solar Battery Charger
- Heavy Duty Poncho
- Light Rain Poncho
- Change of clothes and a warm hat
- USB Cigarette Lighter Charger Adapter
- Sewing Kit
- Water Proof "Personal Communications Pouch" – including Permanent marker, paper, tape
- Mirror
- Duct Tape
- Compact Folding Shovel/Hatchet/Hammer 6-in-1 Survival Tool
- Pry Bar and Gas Shutoff Tool
- Leather Work Gloves
- 2- 4 Light Sticks
- Safety Goggles
- Sanitation and personal hygiene items
- ¼ inch x 50 ft Polypropylene Rope
- 50 ft Nylon Utility Cord
- Siphon Hand Pump
- Multi-head screw driver
- Map(s) of the area
- Flash Drive Containing This Manual

Essential but non-emergency/survival items

- Extra cash
- Deck of playing cards
- Photos of family members and pets for re-identification purposes
- List of emergency point-of -contact phone numbers
- List of allergies to any drug (especially antibiotics) or food
- Copy of health insurance and identification cards

- Extra prescription eye glasses, hearing aid or other vital personal items
- Sunglasses
- Extra keys to your house and vehicle

Why You Need Them – How to Use Them

Backpack/Rucksack – Of course you need a bag to create your Go-Bag. This needs to be sturdy, easily carried, with several external pockets to get to items of immediate need. Your bag also needs to be individually sized. In other words women, teens, and children need bags appropriate to their size and weight, and to the more specific personal items that may be carried within. There is some debate as to whether your Survival Go Bag should be in a camouflage design (camo) or bright orange to be used as a signal device. That all depends on personal choice, and the survival situation you feel you may find yourself in. Many prefer the camo, in case you do need to stash your gear from prying eyes, since you will have essential signal devices in any Go Bag.

Flashlight – A reliable light source is essential in any survival situation. A flashlight can help you to complete your shelter or other critical survival tasks into the night, and is a way to signal for help. LED flashlights are bright and lightweight, and use much less power then traditional incandescent bulbs. Your kit should have at least two sources of light, a battery LED flashlight, preferably powered by solar rechargeable batteries and hand a hand crank flashlight that requires no power at all.

Battery powered or hand crank/solar Multi-band/NOAA Weather Radio - A small, self-powered weather radio is a preparedness essential whether you shelter-in-place during a power outage, or are bugging out. The best such radios include NOAA weather alert broadcasts, are both hand cranked and solar powered, and the better ones can even be used to charge a cell phone or other USB device.

Pocketknife – A good knife is quite possibly the most important outdoor survival tool you can have in any Go Bag. A sturdy non-folding knife with a three inch blade is easy to carry and very versatile. Knives can be used for

anything from making fire, to helping you to gather shelter materials, cut rope and twine for building shelters, and harvest wild edibles.

Multi-purpose tool – The value of a multi-purpose tool is that they have more than one tool in a single pocket sized package. If you are bugging out by car, it can be especially important, but even on a bike, or on foot, you just never know when you will be in situation, cut off from home where you may need a pair of pliers, needle-nose pliers, wire cutter, scissors, etc. Most multi-tools come with a belt sheath, use it, and put it on your belt, and not in your pack. This way if you are forced to leave your vehicle, or lose your pack, at least you have this essential survival tool with you at all times. Be aware that there are many cheap "Knock-offs" of quality multi-tools out there, especially the ones that come in low priced pre-packaged kits. You should expect to pay at least 30.00 to 40.00 for a good quality multi, but it's worth paying a bit more to get a sturdy, reliable tool that will do the job when you need it most.

Pocket Compass – Wherever you happen to be, whether you are stranded in the ocean, caught in a blizzard, or lost in a deep, dark forest late at night, a simple compass in your hand will always point North. A compass needs no batteries or radio signal to point you on your way. A compass is an extremely valuable piece of survival gear, but only if you know how to use it!

There are complex, sighting or "map" compasses that are designed with clear base plates and protractors to be used along with maps in orienteering or more sophisticated navigation. However a good simple camping style pocket compass can be your best friend in a survival situation, and requires no special skills to use. Here's how to use a basic compass.

- Hold the compass flat in the palm of you hand at chest level;

- Move your body around until the **Red** end of the needle, usually marked with an "N" lines up with the "N" on the face of the compass, now you know which way is North.

So long as you keep the red magnetic needle lined up with the “N” on the compass – you will always be able to get your bearings and know how to travel in any direction you wish. Some simple compasses also have a rotating clear bevel on top with a clear Lucite arrow. These are good idea if you have never used a compass. With such a compass, once you have identified North as above, and you want to travel east for example, turn the Lucite arrow so it lines up over the “E”, and head in that direction. Leave the arrow there as a reminder of the direction you want to move in, and every 100 paces or so, realign the red compass needle to the North, to be sure you are moving in the desired direction.

Proper Position for Holding Your Compass

Utility Knife – No single knife is going to be useful for every cutting task in a survival situation. Beyond a pocketknife, or the knife blade that may be on your multi-tool, a utility knife with its thin and very sharp, razor-like blade, has many uses, from medical emergencies, cutting tarp material, skinning and gutting game, to fine whittling. It is one of those many duty kinds of items that make it a Go Bag essential.

8’ x 10’ Plastic Tarp – A tarp can be used for a variety of survival purposes. With a little cord you can use it to create a simple tarp shelter. It can be used to waterproof the top of a more extensive shelter. It can be laid out to collect rainwater, or used as a poncho.

Emergency blanket – This silver-metallic looking blanket reflects body heat back to you, so it is great for keeping you warm. It is also can be used for signaling, as it reflects sunlight. It can be used to waterproof the roof of your shelter, and serve the dual purpose of a large signaling mirror.

Heavy Duty/Light Duty Ponchos – Although seemingly a duplicate the reason you want to carry both a heavy duty and light duty poncho, is that your heavy duty poncho can be used for many purposes other than being worn to protect your body from cold and rain. It can be used to build a shelter and gather water, as you will learn in Section II. So you want to have your light duty on hand as well to wear, if you use the heavy poncho for some other purpose.

36 Hour Emergency Candles – Relatively small and lightweight, 36 hour emergency candles have multiple uses. They are a source of light, heat, can be used to start a larger fire, and can even be used as a small cook stove.

Whistle – Simple easy to pack, important signaling device. Stainless steel or plastic is better than low-grade metal to avoid rusting. Get one with a lanyard that can be tied to your belt or worn around your neck so you are never without it. FYI, three short blasts, followed by three long blasts, followed by three short blasts - (- - -) (— — —) (- - -) on your whistle is (S - O – S), the universal sign of distress.

Flint Fire Starter & Striker – With a little practice this simple device can be used to start fires many times. The device consists of a rod and a striker, and is about the size of a car key. The ones that use a magnesium rod are the simplest to use and most reliable. All you need to do is use the striker to shave off a bit of magnesium onto an easily combustible material such as paper or very dry leaves. Then use the striker to strike the magnesium rod to create sparks, let the sparks fall onto the magnesium shavings on your fuel, and you will have started a fire with the best of your Caveman ancestors!

Storm proof/water proof matches – As a fire can be your most important survival tool, having as many different ways to start one with you, could make all the difference.

Disposable lighters – See above.

Dust/Bio-hazard Mask – In the aftermath of many disasters, you may find yourself evacuating through areas of smoke, fire, or other toxic debris and dust in the air. If so you will be glad that you had the forethought to carry a

simple dust mask. This is also a crucial item to have during a disease pandemic, or intentional bio-terrorism attack.

Portable Water Filter – This simple straw-like device does not take up a lot of room, but could prove invaluable in emergency situations. It is not just a filter. It actually filters and treats the water with antibacterials. With this device you can simply bend down and even drink from a seemingly filthy puddle of water!

Water Purification Tablets – A good back-up to the filter above. Remember dehydration can happen quickly, especially during a survival situation when you probably are exerting yourself more than usual. Once you run out of your 3-day supply, in most survival situations, there are many sources of water you could find; collected rainwater, streams and rivers, ponds and lakes but none of those should be used without purifying the water before drinking.

USB Cigarette Lighter Charger Adapter – Can be used to charge cell phones and other mobile electronic devices. This small and easily portable device can come in very handy. The best kind consists of one end that plugs into your car's cigarette lighter, or any similar port on a 12V DC source, and an "octopus cable" that plugs into the USB side of the adapter, which then can be plugged into multiple devices regardless of their unique charging ports.

Water Proof "Personal Communications Pouch" – The pen and paper are useful to make notes to yourself, or to leave behind for those to help find you. The paper is also flammable to use as fire-starter if you must. In this pouch you will also want to include some cash, your ID, emergency contact info, medical Info, etc.

Mirror – Not to make sure you look good when you are rescued, but to be used as a signaling device, **(should be metal, not glass).**

Duct Tape – An entire book can be written on the value of duct tape, and what it can be used for, and in fact one has. It can be used for lashing, for medical emergencies, emergency repairs to shelters, tents, sleeping bags, shoes, rain gear; just about anything you can think of. But to do any of those things you must make sure you use quality tape. Avoid the kind that

you find in dollar or discount stores; these are virtually worthless for emergency purposes. To test for quality, try tearing the tape; if it splits easily in your hands, replace it with a better quality roll. Cheap tape will also break down and get all "gummy" when left in you pack for extended periods of time.

Compact Folding Shovel or Combo Survival Tool – Knives aren't the only cutting tools you might need. Something to chop wood is an important item, so a hatchet or tomahawk is also a good idea to have along. A shovel is also invaluable. Not only do you need it for easy construction of a fire pit, you also need it for burying human waste and anything else undesirable. A Combination 6–in-1 Survival Tool gives you a shovel, a hatchet, a hammer saw, and can opener, all in a simple package that can be hooked to your pack, or carried on a belt.

Pry Bar and Gas Shutoff Tool – A heavy-duty pry bar is a must have in every 72 hour disaster survival kit. A pry-bar is a bit of a heavy item, and not one most people would think of carrying with them. However, it takes the place of several tools. It can be used to pry, hammer, shut off gas, break glass, break down walls, and more. If you get stuck inside of a building as you grab your bag to bug out, and need to find a way out, or get cut-off from family members. A pry bar can be a real lifesaver.

¼ inch x 50 ft Polypropylene Rope – The uses for Poly rope in a survival situation are too many to mention. Suffice to say, it can be used for lashing, for building shelters, for making snares and animal traps, it can be used as fire-starter, and much, much more. Again, quality counts. With rope, as with most other items in your kit, you get what you pay for. Don't be surprised when a $1.00 coil of rope fails to hold together when you need it to build a tube tent or lash down important equipment in an emergency.

50 ft Nylon Utility Cord – See above, additional for lighter applications.

Siphon Hand Pump – Lightweight and simple to use, it can be invaluable for siphoning any necessary liquids out of found storage containers from water to gasoline.

Multi-head screwdriver – Every tool you carry in you kit should have multiple uses. A multi-head screw driver with 4 or 6 interchangeable heads takes up little additional room in your pack, and is a perfect adjunct to your multi-tool.

Additional Items

Even the best of kits should never be considered "complete." Whether it is a standard kit you might purchase, or one you are thinking of putting together on your own based on the above recommendations, it will surely need to be supplemented in some way or another, based on your unique needs, budget, and personality. Also remember as your life circumstances change, so will your kit. As a single person you will require different items in your Go Bag, then when you are married with kids.

Some additional items you may want to include are:

- Wind Proof Lighter
- Back Pack Signaling Flares
- Walkie-Talkies
- Chemical hand warmers

It is recommended that you only include weapons in your Go Bag, if the situation you are going into dictates it, and *only* if you have been properly trained in their use.

The above outline and details are intended to provide you with the "baseline essentials" of a Go-Bag. You will want to customize your Bag to your individual size and physical abilities. You also will want to personalize with individual toiletry or other personal 72-hour items for men, women, and children etc.

You may want a specific Vehicle Go-Bag or bags, and a specific one to keep at work. Based on the results of your "Risk Assessment" you may want to purchase or create a specific "Hurricane Essentials Go-Bag," "Earthquake Essentials Go-Bag," etc.

Buyer Beware

Now that you understand what items should be in your Go Bag, why you need them, and how to use them – you must also understand that not all

“survival” gear is alike. Remember these are items you may very well be staking your life on. In a survival situation you do no want to rely on gimmicks, gadgets, or cheap knock-offs of quality tested and proven items. Whether you are buying items individually, or in pre-packed kits, shop like your life depends on it – because it does!

When considering the purchase of any pre-assembled kit, you must make sure you know exactly what is in the kit, and the quality of those items. Many kits advertised online, or in catalogs, and sales brochures will have nothing but a generic list of the items included, and maybe even a stock photo, that often bears little resemblance to what you actually receive. Even if they are “honest” enough to show a picture of what you get, these slick ads may make the product look good, but hide the harsh reality that it may well break apart in your hands when put to heavy use. Either way, you’re often left holding pieces of useless junk!

Watch for phrases like “The items you receive will be equal to or better than pictured.” This is a red flag. Legitimate suppliers of worthwhile gear will be happy to level with you, and if you call, tell you exactly the name brand of the item, and why they chose to include it in their kit.

There are pre-packed Go Bags out there where a “Personal Shelter“ is a large garbage bag, and a “First Aid Kit” is nothing more then a few adhesive bandages, cotton swabs and alcohol pads!

Steer clear of kits that hawk the number of items included as their main selling point. You might see a kit that hypes "over 125 items,” and think “Wow, that must be an amazingly comprehensive kit!” Until you get it and find out that they count each individual match, each water purifying tablet, and each cotton ball in their mediocre first aid kit as a separate item!

And this is not even the worst of the worst. A basic survival lesson we have yet to cover is "Caveat Emptor" - Let the Buyer Beware. You need to make sure you know exactly what you are getting.

Furthermore, many products that are labeled “survival gear” are far from it. Knives are a favorite case in point. In the last section, you learned that a good knife could be one of the most essential tools in your Survival Go Bag.

Ever since the movie “Rambo” came out, everybody thinks a “Survival Knife” is this huge piece of badass steel, with a hollow handle to hold a survival kit. It looks cool in the movies, and you can find them all over the internet. But that is exactly where they should stay – in the movies and on your computer screens – not in your survival pack!

First of all, that hollow metal or plastic handle that you think is so spiffy is only held on with a simple nut or even a small dab of epoxy glue in the real cheap examples! They can easily break under the kind of abuse a real survival knife needs to be built to take. And about the stuff in that handle – yes it is good stuff to have, but what happens if you lose the knife? Now you are down both a knife, and a bunch of useful supplies! You would be better off carrying the water-proof matches, fishing line, etc. that is concealed in the handle, in your pocket, or a small personal kit, or other container.

Remember the purpose of a knife in your Survival Go Bag is not to be a weapon, but a tool, and you want a knife that was best designed for that purpose, and nothing else. You need to look for a knife that is a “full tang.” This is also sometimes called a "one piece" or "integrated design."

But no matter what you call it, it means the blade becomes the handle, usually with side pieces attached to both sides for improved grip. How the blade tapers into the handle (or pommel) can differ depending on the model, but the important thing to remember is that you want a single piece of steel. Full tangs are essential for maximum strength and utility.

Multi-tools are another piece of equipment that can all look alike but suffer great disparities in quality and reliability. There are excellent, well-respected brands like Leatherman or Gerber that have years of tested know how in making superior products. You'll pay a bit more for them, but you can be certain they'll function as promised when you really need them. A well-made multi-tool can last a lifetime. A poorly made imitation just looks fantastic in a photo. It's often included in prepackaged kits to give the illusion of value while keeping down the price. That said, there are definitely "off-brand" multi-tools on the market that compare favorably with the better-known marquee names. But you should only consider one of these if it has been recommended to you by a seasoned outdoorsman or survivalist who has actually had the opportunity to use it the field, and compare it to a name brand tool, or you thoroughly trust the source you're buying it from.

You should be just as prudent with any of the other tools and devices that will go into your kit, a weather radio is useless if it does not hold its charge or gets poor reception. Look for one, and any of the equipment you want in your pack that your life could depend on, that has been tested and rated for quality.

Removing the Guesswork

By now you are probably thinking – "wow, putting together a reliable kit with all the items I need is a lot harder then I thought." It does not have to be. The quote at the head of this Chapter said that according to the American Red Cross, 82% of Americans say "If someone could make it easy for me to be prepared, I'd do it."

There are some very good pre-assembled and custom kits available with tested, professionally evaluated and high quality contents, but they are not inexpensive. You can expect to pay around 400.00 or more for such a kit. As we indicated earlier, you ultimately get what you pay for.

As the suppliers who sell inexpensive kits like to say, "even a cheap kit, is better than no kit at all." That may be true, but if you take the time to do a little research, you will find that any low-cost prepackaged Go Bag or survival kit is seriously lacking in some way or another. Most of these

so-called survival kits have been designed to look good, and sell at an attractive price and will probably fail significantly when you need it most.

They may have a few worthwhile items, but in a way, contrary to what their manufactures say, rather than being "better than nothing" -- they can do more harm than good by providing you with a false sense of security.

If you are with us so far, and you now understand the need to be prepared, you need to ask yourself what is the value of my survival, and the value of the lives of my family? Is surviving the next possible natural disaster or man-made emergency worth the price of a cup of coffee?

The average price of a cup of coffee in America nationwide is $1.65. Now that is for just an ordinary cup of Joe; factoring in diners, Dunkin Donuts, convenience stores, gas stations etc. Of course if you frequent Starbucks, and other such places, you are probably spending more than that every day. But anyway, let's stick with $1.65.

If you only buy one cup of coffee, 5 days a week on your way to work (and not on weekends) -- that is $8.25 week – x 4 that's 33.00 a month - x 12 = 396.00!

Isn't saving the life of you and your family worth at least as much as one cup of coffee a day?

Anyone who purchases a survival kit primarily on the basis of a low price is really setting the value of their own life and that of their loved ones also pretty low. At best, buying a cheap kit lulls you into a false sense of security, at worst it is downright irresponsible! If you purchase a quality kit, and ever really have to use it, the contents will actually be worth more than their weight in gold.

As you sit in the wilderness with the snow, wind, or rain falling all around you, as you are trying to clear a path through the wreckage in the aftermath of hurricane, earthquake or tornado, as you see your wife, or child lying bleeding with the twisted wreckage of what was once the bone in his arm protruding through his or her flesh – it is way too late to wish you bought a better kit, or brought along more equipment.

Buy the best you can afford, carry as much as you comfortably can. You will never hear a survivor complaining about buying quality gear. You probably will never hear at all from someone who didn't!

With that thought in mind, now that you should have a very real sense of the growing need for establishing and implementing your family Emergency Preparedness Plan, and a good feel for survival basics, you will be looking for resources that you can count on and trust in order to successfully acquire all the right stuff you will need at a price that can fit into your budget. So now the question is...

What's the Next Step?

If you have downloaded this manual you fall into one of two categories:

1. You have already put together your family's Go Bag(s)

2. You haven't put your family's Go Bag(s) together yet.

In either case, the next step is the same: do your homework soon and thoroughly. If you already have a Go Bag, then set aside an hour or two to thoroughly go through all of its contents. Toss out the items that may be cheap, worthless junk and replace them with high quality items you can count on when you really need them in an emergency. Remember, you made a good move initially to purchase a kit, but ultimately, you got what you paid for. A supplier can't include a $60 multi-tool in a $79 kit. But if you bought a low-cost, low quality kit, now is not the time to kick yourself, but to get it up to par before you need it!

If you have yet to buy your first Go Bag, do some research on the Internet. Make a list of what you want in your kit; refer back to the list provided at the start of this chapter. Note the price ranges for the items you've selected. Remember, buying items one at a time will be considerably more expensive than purchasing a pre-bundled package from a reliable supplier, so the key is to know your source and make certain they have an iron-clad satisfaction policy that allows you to return your purchase if the quality of their items doesn't meet your standards. Remember you should expect to pay upwards of 400.00 for a quality kit that contains reliable versions of all

the items recommended in this chapter – but it could possibly be the best investment you ever make!

Another thing to consider is how many specific kits you should get. When it comes to having all the quality items you need to make it through a crisis, one size does NOT fit all! Consider that you are making a decision that will impact your family's ability to survive in times of chaos and disaster. Remember your Risk Assessment from Chapter 2, you may need specific items in your Go Bag that someone living in a different part of the country or world, would not. In addition the items in a women's kit are quite different from those required by a man. The same goes for specialty survival needs for children and pets.

A good supplier may have already done the work for you and will offer the backpacks in multiple sizes to fit small, average, and larger sizes, and specific Go Bags or add-ons for more specialized disaster situations.

Final Thoughts

You will notice that this Chapter came at the very end of the Section on Survival Basics, and you may be wondering, if a Go Bag is so essential to your survival, why wasn't it mentioned at the beginning of this Manual?

There is a very intentional reason for this. Your individually sized Go Bag, with its customized items for your specific needs, is vitally important… but without first assessing your risks and then building up your mental and physical preparedness skills, -- even the best Go Bag on the planet, will do you very little good!

Never forget that YOU are still your best and most ULTIMATE survival tool. It is your confidence, your skills, your knowledge, and your *will to survive* that will be the biggest determining factor of whether you will make it or not. The Go Bag is critically important, but only as a vital tool that will help you survive. It's still you that will have to use that tool to the best of your mental and physical abilities to get the job done.

- END OF SECTION I -

Section II

Shelter, Water, Food

“Survival is the celebration of choosing life over death. We know we're going to die. We all die. But survival is saying: perhaps not today. In that sense, survivors don’t defeat death, they come to terms with it.”
-Laurence Gonzales, Deep Survival:
Who Lives, Who Dies, and Why

Chapter 10

Give Me Shelter

"Let us not pray to be sheltered from dangers
but to be fearless when facing them."
— Rabindranath Tagore

Now that you have learned quite a bit about getting prepared physically and emotionally, and about Survival Basics, it is time to build some more raw skills.

But you may be wondering as we get down to some more nitty-gritty, why the order of Section II is Shelter, Water, Food. Remember your Rule of Threes!

A person can survive for:

- Three minutes without air
- Three hours without shelter
- Three days without water
- Three weeks without food

In any given survival situation, whether you are lost, stranded, or have had to evacuate, or your residence has become unlivable due to a natural disaster, SHELTER is your primary concern. Do not exhaust your energy, looking for food or sources of water, before you have found, or built, a way for you to survive the elements – or whatever else could be out there to cause you harm!

“Shelter” in terms of Emergency Management, Preparedness and Survival is a very broad term. As far as natural disasters go, shelter could mean merely,

grabbing your Go-Bag, and finding a safe haven outside of a disaster zone, with a friend, relative, or even within a designated Red Cross or other municipal group shelter.

According to FEMA, taking shelter is critical in times of disaster. Sheltering is appropriate when conditions require that you seek protection in your home, place of employment, or other location where you are when disaster strikes.

How and where you shelter, depends on the disaster involved. To effectively shelter, you must first consider the hazard and then choose a place in your home or other building that is safe for that hazard. For example, for a tornado, a room should be selected that is in a basement or an interior room on the lowest level away from corners, windows, doors and outside walls.

Because the safest locations to seek shelter vary by hazard, more disaster specific sheltering will be discussed in SECTION III.

Wherever you plan on sheltering, even if that means going to a mass care shelter, you should always plan on taking your Go Bag with you, so you are sure you have the supplies you need. Mass care sheltering can involve living with many people in a confined space, which can be difficult and unpleasant, you will want your stuff with you to make it more tolerable, and easier to Bug Out from there, if the situation warrants it.

The length of time you are required to shelter could be short, such as during a tornado warning, or long, such as during a winter storm. It is important that you stay in any kind of shelter until local authorities say it is safe to leave. Additionally, you should take turns listening to radio broadcasts and maintain a 24-hour safety watch. It is when you are forced to take shelter, that you will be very glad that you included a reliable Weather Radio as part of your Go Bag!

Beyond the context of a natural disaster, shelter can also mean the only thing that separates you from the elements in a survival situation, such as being lost or stranded as the result of an incident while traveling on land, sea or air. But, bear in mind that there could be a natural or man-made disaster, where the destruction is so devastating, and complete as to also require the need to find, or build a shelter to survive.

According to the US Army Survival Guide, when you are in a survival situation and realize that shelter is a high priority, start looking for shelter as soon as possible. As you do so, remember what you will need at the site. It must contain material to make the type of shelter you need, and it must be large enough and level enough for you to lie down comfortably.

A shelter can protect you from the sun, insects, wind, rain, snow, hot or cold temperatures and predators. It can give you a feeling of well-being. It can help you maintain your will to survive.

Natural Shelter

Before you expend a lot of time and energy scrounging up materials, and trying to build a shelter, do not overlook natural formations that can provide shelter. Examples are:

- Caves
- Rocky crevices
- Clumps of bushes
- Small depressions
- Large rocks on leeward sides of hills
- Large trees with low-hanging limbs
- Fallen trees with thick branches

However, when you are looking for a natural shelter, always keep in mind:

- Stay away from low ground such as ravines, narrow valleys, or creek beds. Low areas collect the heavy cold air at night and are therefore colder than the surrounding high ground. Thick, brushy, low ground also harbors more insects, and can collect rainwater and run-off;

- Check for poisonous snakes, ticks, mites, scorpions, and stinging ants;

- You also need to look for loose rocks, dead limbs, coconuts, or other natural growth that could fall on your shelter.

Whether you are looking for a ready-made natural shelter, or plan on building a shelter - - remember SIZE DOES MATTER. And in this case, you need to forget about spaciousness and the comforts of home. A very common mistake is to make your shelter too big. Any survival shelter needs to be large enough to protect you. But it also must be small enough to contain your body heat, especially in cold climates – and to be inconspicuous, if your shelter is intended to shield you from the elements, as well as curious and potentially dangerous creatures of both the four-legged, and two-legged variety.

Building Shelter

If you cannot find a natural shelter, then you will have to build one. The key to making a shelter is to build the kind of structure that will give you the most protection in the kind of environment you are in, while expending the least amount of energy to do so. Before attempting to build any kind of shelter, the US Army Survival Manual asks you to ask yourself:

- How much time and effort will you need to build the shelter?

- Will the shelter adequately protect you from the elements (sun, wind, rain, snow)?

- Do you have the tools to build it? If not, can you make improvised tools?

- Do you have the type and amount of materials needed to build it?

The answers to these questions will be driven by what you have with you. If you have put together the Go Bag you should have in Chapter 9 – then you will have no trouble building any of the following shelters, to keep yourself and your family safe.

Using your Poncho – With the heavy-duty poncho, and rope you should have as part of your Go Bag, there is a simple shelter you can make.

PONCHO LEAN-TO

It takes only a short time and minimal equipment to build a poncho lean-to. You need a poncho, 7 to 10 feet (2 to 3 meters) of rope, three stakes about 1 foot (30 centimeters) long, and two trees or two poles 7 to 10 feet apart. Before selecting the trees you will use or the location of your poles, check the wind direction. Ensure that the back of your lean-to will be into the wind.

- Tie off the hood of the poncho by pulling the drawstring tight and rolling the hood long ways, and folding it into thirds;

- Cut the rope in half. On one long side of the poncho, tie half of the rope to the corner grommet. Tie the other half to the other corner grommet;

- Attach about a 4-inch stick (10 cm) to each rope about 1 inch (2.5 cm) from the grommet. These drip sticks will keep rainwater from running down the ropes into the lean-to.;

- Tie the ropes about waist high on the trees;

- Spread the poncho and anchor it to the ground, putting sharpened sticks through the grommets and into the ground.

Poncho Lean-To – Image: Courtesy US Army

If you plan to use the lean-to for more than one night, or you expect rain, make a center support for the lean-to. Make this support with a line. Attach one end of the line to the poncho hood and the other end to an overhanging branch. Make sure there is no slack in the line.

Another method is to place a stick upright under the center of the lean-to. However, this method will restrict your space and movements in the shelter.

For additional protection from wind and rain, place some brush, your rucksack, or other equipment at the sides of the lean-to.

To reduce heat loss to the ground, place some type of insulating material, such as leaves or pine needles, inside your lean-to.

If you prefer to keep your poncho available to wear, or for other things it can be used for, a natural lean-to is one of the simplest, and yet sturdiest shelters you can build. All you need to build this shelter is the material you can find, and your knife.

Basic Lean-to

You will need two trees, or upright poles, just as in the poncho lean-to. They should be about 7 feet (2 meters) apart; one pole about 7 feet long and 1 inch (2.5 centimeters) in diameter; five to eight poles about 10 feet (3 meters) long and 1 inch in diameter for beams; cord or vines for securing the horizontal support to the trees; and other poles, saplings, or vines to crisscross the beams.

- Tie the 7-foot pole to the two trees at waist to chest height. This is the horizontal support;

- Take your 5- 8 beams and lean them at about a 45-degree angle from the horizontal pole to the ground. Lash them to the pole with cord or vines. The nylon utility cord that should be in your Go Bag is ideal for this purpose. As with all lean-to type shelters, be sure to place the lean-to's backside into the wind;

- Make a lattice by crisscrossing saplings or vines on and laced through the beams;

- Cover the framework with brush, leaves, pine needles, or grass, starting at the bottom and working your way up like shingling;

- Place straw, leaves, pine needles, or grass inside the shelter for bedding.

In colder environments, you can increase your lean-to's comfort and warmth by building a fire reflector wall. Drive four 5-foot (1.5-meter) long stakes into the ground in a rectangle pattern to support the wall. Your 6-in-one Survival tool will be helpful in making and driving these stakes.

Stack green logs on top of one another between the support stakes. Form two rows of stacked logs to create an inner space within the wall that you can fill with dirt. This action not only strengthens the wall but also makes it more heat reflective. Bind the top of the support stakes so that the green logs and dirt will stay in place.

Basic Lean-To with Fire Reflector - Image: Courtesy US Army

Debris Hut – Next to a Lean-to, probably the simplest shelter you can make from natural materials is a Debris Hut.
To make a debris hut:

- Make a tripod using two short stakes and a long pole - or by placing one end of a long pole on top of a sturdy base, like a boulder or tree

stump. The long pole will become the ridgepole running the length of the shelter;

- Secure the ridgepole by lashing with cord to the stakes, or by otherwise anchoring it to the base;

- Prop large sticks along both sides of the ridgepole to create a triangular-shaped ribbing effect. Ensure the ribbing is wide enough to accommodate your body and steep enough to shed moisture;

- Place finer sticks and brush crosswise on the ribbing. These form a latticework that will keep the insulating material (grass, pine needles, leaves) from falling through the ribbing into the sleeping area;

- Add light, dry, soft debris over the ribbing until the insulating material is at least 3 feet (1 meter) thick—the thicker the better;

- Place a 1-foot (30-centimeter) layer of insulating material inside the shelter;

- At the entrance, pile insulating material that you can drag to you once inside the shelter to close the entrance or build a door;

- As a final step in constructing this shelter, add shingling material or branches on top of the debris layer to prevent the insulating material from blowing away in a storm.

Debris Hut – Frame and Covered – Image Courtesy: US Army

A note about ropes and lashing

A very important survival skill to have is to learn knot tying. If you have done any serious camping, or boating, or rock climbing, you know your knots. If you have no experience whatsoever, the simplest and must basic knot you should know for building shelters such as the lean-to or debris hut is the Clove Hitch. Tying a Clove Hitch is easy:

- Step 1: Loop counterclockwise - Loop the end of the rope counterclockwise around the object you are hitching to, let's say a tree, or post and cross it over the remaining length of rope;

- Step 2: Make another loop - Make another counterclockwise loop around the pole, but this time pass the end of the rope through the loop you've just formed (between the now two strands of rope looping around the pole);

- Step 3: Tighten knot -Pull at both ends to tighten the knot.

If you think you can learn one more knot – it should be the Bowline.

To tie a Bowline:

- First make a small loop on the rope;

- Take the rope end through the loop, around the main line of the rope and back down into the loop. "Try to remember -the rabbit comes out of the hole, goes around the tree and then back down into the hole";

- To tighten, pull the main line of the rope away from the loop.

If this still seems too complicated for you, that's why you need to have a roll of duct tape in your Go Bag!

Simple Shelters for Other Environments
If you are in the woods, trees and other materials for building and making shelter are plentiful. That is why given the choice, and if you are Bugging Out with the intention of making shelter for a while, heading for a wooded area is a good idea. However, if you do not live near the woods, or you are stuck in some other environs with no choice in the matter, here are some other options.

Desert or Arid Area - Remember you should have your poncho, and you can make use of that here as well. Even without any trees in sight, you can use it along with such terrain features as rock outcroppings, mounds of sand or a depression between dunes or rocks to make your shelter.

Using rock outcroppings, anchor one end of your poncho on the edge of the outcrop using rocks or other weights. Extend and anchor the other end of the poncho so it provides the best possible shade.

In a sandy area, build a mound of sand or use the side of a sand dune for one side of the shelter. Anchor one end of the material on top of the mound using sand or other weights. Extend and anchor the other end of the material so it provides the best possible shade.

You can go beyond the basic poncho shade, and make a **Trench Shelter** (See Illustration below) But building a shelter in arid heat can sap a lot of energy. Remember to pace yourself and stay hydrated.

- To build a shelter, find a low spot or depression between dunes or rocks. If necessary, dig a trench 1- 2 feet long and wide enough for you to lie in comfortably;

- Pile the sand you take from the trench to form a mound around three sides;

- On the open end of the trench, dig out more sand so you can get in and out of your shelter easily;

- Next, cover the trench with your material and secure the material in place using sand, rocks or other weights;

- Check all sides and ends of the shelter to make sure it is secure.

If you have extra material, you can further decrease the midday temperature in the trench by securing the material another foot to a foot and half above the first cover. This layering of the material will reduce the inside temperature about 20 to 40 degrees F.

Beach Shelter -In a sandy area, or on a beach a simple beach shade shelter can protect you from the sun, wind, rain and heat. It is easy to make using natural materials. To make this shelter, find and collect driftwood or other natural material to use as support beams and as a digging tool. Be sure to select a site that is above the high water mark.

- Scrape or dig out a trench running north to south so that it receives the least amount of sunlight. Make the trench long and wide enough for you to lie down comfortably;

- Next, mound soil on three sides of the trench. The higher the mound, the more space inside the shelter;

- Lay support beams (driftwood or other natural material) that span the trench on top of the mound to form the framework for a roof;

- After you have the basic structure completed, enlarge the shelter's entrance by digging out more sand in front of it;

- Use natural materials such as grass or leaves to form a bed inside the shelter.

Simple Beach Shelter – Image: Courtesy US Army

Your Vehicle as Shelter

Your vehicle can provide some shelter from the elements, such as rain and wind. If you are on the road, you can probably spend a night or two in your car. However, generally speaking, for the long-term, a well-constructed shelter is better than sheltering in your car, especially in cold weather. If you ever had to wait for someone in your car on a cold winter's day without the engine running, then you know just how quickly it can get very cold alone in a car.

If you have ever sat in that same car, in that same parking lot, in the dead of August, then you realize that in the desert, or somewhere else hot – you are also better off in the shade cast by your car, or even lying underneath it – than being inside of it!

In a survival situation your vehicle should be thought of as your way to get from point A to point B first, and as potential shelter last.

Staying Warm

Whether you are in a natural shelter, or something you have built, depending on the time of the year, and geographic location where you have had to shelter– staying warm and maintaining your proper body temperature, could be a major survival issue. Later on in Chapters 23 and 26 you will learn some very specific cold weather survival techniques for winter storms and emergencies. However, you do not have to be caught in a blizzard for cold to be a problem.

If you have stocked you Go Bag the way you should have, you will have many ways in your pack to stave off the cold, such as your sleeping bag, extra clothes, and emergency blanket. However, you best bet to stay warm is being able to start and maintain a fire. A fire provides warmth, heat, light, can help you to be seen, (if that is one of your survival goals) and raises your spirits. That is why your Go Bag essentials include not one, but several ways to make a fire. If you do not have your matches, lighters, candles, or other fire starters with you – jump forward to Chapter 24 on Wilderness Survival.

Assuming you have your gear with you – as you should – here are some tips about building and maintaining a fire.

According to The US Army Survival Manual, the key to constructing and maintaining a fire is in understanding the concept of the “fire triangle.” The three sides of the triangle represent air, heat, and fuel. If you remove any of these, your fire will go out. The correct ratio of these components is very important for a fire to burn at its greatest capability. The only way to learn this ratio is to practice.

Where and how to build your fire

You will have to decide what site and configuration to use. Before building a fire you must consider:

- The area (terrain and climate) in which you are operating.
- The materials and tools available.
- Time; how much time do you have?
- Need; why do you need a fire?

Seek a dry spot that:

- Is protected from the wind.
- Is suitably placed in relation to your shelter (if any).
- Will concentrate the heat in the direction you desire.
- Has a supply of wood or other fuel available.

If you are in a wooded or brush-covered area, clear the brush and scrape the surface soil from the spot you have selected. Clear a circle at least 3 feet (1 meter) in diameter so there is little chance of the fire spreading.

If time allows, construct a firewall using logs or rocks. (You may have already done this when you built your Lean-to as described in the previous section). The wall will help to reflect or direct the heat where you want it. It will also reduce flying sparks and cut down on the amount of wind blowing into the fire. However, you will need enough wind to keep the fire burning.

Fire Materials

You actually need three different types of materials to build and maintain a fire, Tinder, Kindling, and Fuel.

- **Tinder -** Is dry material that ignites with little heat—a spark starts a fire. The tinder must be absolutely dry to be sure just a spark will ignite it. If you have a device that generates only sparks, charred cloth

will be almost essential. It holds a spark for long periods, allowing you to put tinder on the hot area to generate a small flame. You can make charred cloth by heating cotton cloth until it turns black, but does not burn. Once it is black, you must keep it in an airtight container to keep it dry. Prepare this cloth well in advance of any survival situation. Add it to your individual survival kit. Other impromptu items could be alcohol pads or petroleum jelly gauze;

- **Kindling -** Is readily combustible material that you add to the burning tinder. Again, this material should be absolutely dry to ensure rapid burning. Kindling increases the fire's temperature so that it will ignite less combustible material;

- **Fuel -** Is less combustible material that burns slowly and steadily once ignited.

This chart, reprinted from the US Army Survival Manual, shows some good examples of each:

Tinder	Kindling	Fuel
• Birch bark. • Shredded inner bark from cedar, chestnut, red elm trees. • Fine wood shavings. • Dead grass, ferns, moss, fungi. • Straw. • Sawdust. • Very fine pitchwood scrapings. • Dead evergreen needles.	• Small twigs. • Small strips of wood. • Lighter knot from pine tree stumps with a heavy concentration of resin. • Heavy cardboard. • Pieces of wood removed from the inside of larger pieces. • Wood that has been doused with highly flammable materials, such as gasoline, oil, or wax.	• Dry, standing wood and dry, dead branches. • Dry inside (heart) of fallen tree trunks and large branches. • Green wood that is finely split. • Dry grasses twisted into bunches.

Building Your Fire

There are several methods for laying a fire and each one has advantages. The situation you are in will determine which of the following fires to use.

- **TEPEE-** To make a tepee fire, arrange the tinder and a few sticks of kindling in the shape of a tepee or cone and light the center. As the

tepee burns, the outside logs will fall inward, feeding the fire. This type of fire burns well even with wet wood;

- **LEAN-TO -** To make a lean-to fire, push a green stick into the ground at a 30-degree angle. Point the end of the stick in the direction of the wind. Place some tinder deep under this lean-to stick. Lean pieces of kindling against the lean-to stick and light the tinder. As the kindling catches fire from the tinder, add more kindling;

- **CROSS-DITCH -** To use the cross-ditch method, scratch a cross about 12 inches (30 centimeters) in size in the ground and dig the cross about 3 inches (7.5 centimeters) deep. Put a large wad of tinder in the middle of the cross. Build a kindling pyramid above the tinder. The shallow ditch allows air to sweep under the tinder to provide a draft;

- **PYRAMID -** To lay the pyramid fire, place two small logs or branches parallel on the ground. Place a solid layer of small logs across the parallel logs. Add three or four more layers of logs, each layer smaller than and at a right angle to the layer below it. Make a starter fire on top of the pyramid. As the starter fire burns, it will ignite the logs below it. This gives you a fire that burns downward, requiring no attention during the night.

Types of Fire Lays – Image: Courtesy US Army

Lighting Your Fire
As stated earlier, for now we will assume you have your complete Go Bag with you, and several modern methods of starting a fire, including matches, lighters, or firestarters. More primitive methods will be discussed in Chapter 24 on Wilderness Survival.

Starting a fire, using a modern or primitive method is accomplished by applying an igniter to the tinder to start it burning. Modern igniters are matches, lighters, etc. Always light your fire from the upwind side. Make sure you lay the tinder, kindling, and fuel so that your fire will burn as long as you need it. Apply the Igniter to the tinder to start it burning.

Sources of Light
The are many crisis and emergency situations where sources of light can become important tools to your survival and emotional well-being. That is why your Go-Bag should be equipped with more than one source of light.

After a natural disaster or accident you will need light to perform the tasks that can help you survive, to search for others, and to signal for help and attract attention if you are in need of rescue.

LED flashlights provide a lot of light, and consume very little power, and you should have at least a battery operated one, and a hand cranked one as part of your Go Bag. A lamp that can be worn on your head can be useful to allow you to have your hands free when building shelters, fires, etc.

For the most part, light is a useful thing both to help you see and work through the night. Light provides comfort, and gives you the ability to signal for help. However, keep one thing in mind when using your lights in a survival situation. Light can also attract unwanted attention if you are forced to shelter in a high-risk area, or area of turmoil or conflict. You can use your light but minimize the risk of exposure by:

- Using your poncho, jacket, or tarp to cover the light, if you are using it to read a map or to provide light for other survival activities at night;

- Some flashlights have a red light, or a red filters to give the output a

softer light that does not attract as much attention, and also will help you to preserve your night vision.

Preparing and Stocking a Long Term Survival Shelter

As you read at the top of this Chapter, when it comes to preparedness and survival situations, “shelter” can have various meanings and contexts. There was a time not too long ago, when the idea of a “bomb shelter” was very common. Many decades have passed since the end of the Cold War. It remains debatable given the technology of the day, as to just how effective these homemade bomb shelters could have actually been in the event of a full scale Nuclear War between the U.S. and the USSR. However, that is not to say that having such a long-term “Survival Shelter”, or alternative living space other than your home, is necessarily a bad idea.

Not that everyone who reads this Manual will have the means, resources, or desire to build, or prepare their own long-term survival shelter, but perhaps you do want to create such a haven for your family. Maybe you already have a hunting cabin, vacation home, or some other property “off the beaten path” that may be ideal for such a shelter.

Here are some things to consider in creating and stocking a place that you may need to hunker down in for an extended period of time.

Everything that you have put in your Home Emergency Preparedness Kit, you should have duplicated in your remote shelter, multiplied by the time you expect you may need to hold up there in terms of days, weeks or months. That means:

- Water – one gallon per person per day;
- Food – ready to eat or requiring minimal water;
- Manual can-opener and other cooking supplies;
- Plates, utensils and other feeding supplies;
- First Aid kit & instructions;

- A copy of important documents & phone numbers;

- Warm clothes, rain gear for each family member and heavy work gloves;

- Unscented liquid household bleach and an eyedropper for water purification;

- Personal hygiene items including toilet paper, feminine supplies, hand sanitizer and soap;

- Plastic sheeting, duct tape and utility knife for covering broken windows;

- Tools such as a crowbar, hammer & nails, staple gun, adjustable wrench and bungee cords;

- Blanket or sleeping bag;

- Large heavy duty plastic bags and a plastic bucket for waste and sanitation;

- Any special-needs items for children, seniors or people with disabilities. Don't forget water and supplies for your pets.

Store the same types of food you would for at Home Disaster Preparedness, again thinking about the amount of time you may need to be in your Survival Shelter. Don't forget food for pets. Remember to rotate your stores for freshness. Ideal foods include:

- Ready-to-eat canned meats, fruits, vegetables
- Protein or fruit bars
- Dry cereal or granola
- Peanut butter
- Dried fruit
- Nuts
- Crackers
- Canned juices

- Rice
- Beans
- Non-perishable pasteurized milk
- High energy foods
- Vitamins
- Food for infants
- Comfort/stress foods

Assume you may not be able to get to the corner drugstore for awhile, so have everything that you have in your Go Bag first aid kit, also duplicated at your long term shelter. If you take prescription medication, have some extra, but you would be better off to start to improve you health and learn to live without them.

In addition to vitamins, have on hand, apple cider vinegar, honey, garlic, sage tea for colds, mint tea, golden seal, herbs for cooking, including dried garlic and onions, cayenne pepper, cumin, basil, and coriander and salt. These are can all be useful for their medicinal purposes and can enhance the taste of dried goods like beans and rice.

In addition, your long-term survival shelter should be equipped with:

- **Clothing** - Have clothing for all weather, and all year round. Include a good warm coat and sweaters, hats for rain or shine, rain gear, a good pair of hiking boots;

- **Hunting equipment -** Hunting might be necessary for survival in some situations. How to trap game will be discussed in later chapters, as will firearms;

- **Fishing equipment** - Get basic equipment. Include assorted sized hooks, fish lines, sinkers, etc. Remember the old adage: Give a man a fish, he eats for a day… teach a man to fish… he eats for a lifetime!

- **Wood stove** - Your cabin, shelter, or get-a-way house should be equipped with a wood-burning stove. Get the kind with a secondary burn chamber. It uses less wood and creates less smoke;

- **Tools** – An axe, or hatchet, hammer and assorted nails, a bow saw, a chain saw, along with extra gas and oil, spark plugs, and chain. Shovel, wrench set, pliers, wire cutters, screw drivers, pipe wrench, 200 feet of 1⁄4 inch nylon rope, and of course, duct tape!

- **Off-grid power** – Generators, preferably ones that can also be powered by solar, or wind;

- **Rat and mousetraps** – To keep vermin out of your stores.

When thinking long-term Survival Shelter, you must think not only about what is in it, but also where to locate it, and how to get there.
Make sure it is:

- Off the beaten track, ideally accessible only by a single dirt road, and by at least a 4WD vehicle;

- Plain, not fancy. On the outside it should look like a simple hunting cabin, or weekend shack, so as not draw a lot of attention from locals and/or become a target for vandals;

- Close to a spring, well, stream or other natural source of water;

- Within 10 to 20 miles of a village or small town where you can get to by foot, if necessary, for additional supplies, and news of the outside world, should you need it;

- Have enough land for growing your own vegetables and other crops;

- Close to a natural, easily harvestable food source, such as plentiful wildlife for hunting, or lakes, rivers streams for fishing;

- Stocked with enough weapons and ammunition to defend yourself from small groups of marauders or bandits, should you have too. More on Firearms and firearm training will be discussed in Chapter 31.

Final Thoughts

Taking shelter is critical in times of disaster. No matter if that is in a simple lean-to, or long-term survivalist compound, remember that the two most important things you need to bring with you are your Go Bag, and your wits!

Chapter 11

Water

"Water, water, every where, and all the boards did shrink;
Water, water, everywhere, nor any drop to drink.
- The Rime of the Ancient Mariner

Water Essentials

Once you have secured your shelter, without a doubt water is an essential element in any survival situation. Water is an item that any in-place or mobile emergency supplies kit should ever be without. In the modern world and especially in the US fresh flowing water is something you take way too much for granted. Just like a light switch –turn the tap, and *voila!* There it is.

But understand just as that light switch can be useless to you following a disaster; clean drinking water may not be available. Your regular water source could be cut-off, due to damage, lack of pumping power, or compromised through contamination.

According to FEMA, you need to prepare yourself by building a supply of water that will meet your family's needs during an emergency. You need to store at least one gallon of water per person per day. A normally active person needs at least one gallon of water daily just for drinking and basic sanitary needs, however individual needs vary, depending on age, physical condition, activity, diet and climate.

To determine your water needs, take the following into account:

- Each person in your household requires one gallon of water per day, for drinking and sanitation;

- Children, nursing mothers and sick people may need more water;

- A medical emergency might require additional water;

- If you live in a warm weather climate more water may be necessary. In very hot temperatures, water needs can double;

- Keep at least a three-day supply of water per person.

How To Store Water
FEMA and the American Red Cross recommend that you purchase commercially bottled water, in order to prepare the safest and most reliable emergency water supply. Keep bottled water in its original container and do not open until you need to use it. Observe the expiration or "use by" date and store in a cool, dark place.

Preparing Your Own Containers of Water
You should use food grade water storage containers such as the collapsible water containers you should have already purchased as part of your Ultimate Survival Kit in Chapter 9.

Before filling with water, thoroughly clean the containers with dishwashing soap and water and rinse completely so there is no residual soap.

If you choose to use your own storage containers, (Not Recommended) choose two-liter plastic soft drink bottles – not plastic jugs or cardboard containers that have had milk or fruit juice in them. Milk protein and fruit sugars cannot be adequately removed from these containers and provide an environment for bacterial growth when water is stored in them. Cardboard containers also leak easily and are not designed for long-term storage of liquids. Also, do not use glass containers, because the can break and are heavy.

Storing Water in Plastic Soda Bottles
Follow these steps for storing water in plastic soda bottles.

- Thoroughly clean the bottles with dishwashing soap and water, and rinse completely so there is no residual soap;

- Sanitize the bottles by adding a solution of 1 teaspoon of non-scented liquid household chlorine bleach to a quart of water. Mix the sanitizing solution in the bottle so that it touches all surfaces. After sanitizing the bottle, thoroughly rinse out the sanitizing solution with clean water;

- Fill the bottle to the top with regular tap water. If the tap water has been commercially treated from a water utility with chlorine, you do not need to add anything else to the water to keep it clean. If the water you are using comes from a well or water source that is not treated with chlorine, add two drops of non-scented liquid household chlorine bleach to the water. Let the water stand for 30 minutes before using;

- A slight chlorine odor should be noticeable in the water, if not, add another dose of bleach and allow the water to stand another 15 minutes;

- Tightly close the container using the original cap. Be careful not to contaminate the cap by touching the inside of it with your finger. Place a date on the outside of the container so you can know when you filled it. Store in a cool, dark place;

- Water can also be treated with water purification tablets that can be purchased at most sporting goods stores, or that you should already have as part of your Ultimate Go Bag;

- Water that has not been commercially bottled should be replaced every six months.

FEMA provides the following guidelines for managing water resources during a crisis or emergency situation.

- Allow people to drink according to their needs. Many people need even more than the average of one-half gallon, per day. The individual amount needed depends on age, physical activity, physical condition, and time of year;

- Never ration water unless ordered to do so by authorities. Drink the amount you need today and try to find more for tomorrow. Under no circumstances should a person drink less than one quart (four cups) of water each day. You can minimize the amount of water your body needs by reducing activity and staying cool;

- Drink water that you know is not contaminated first. If necessary, suspicious water, such as cloudy water from regular faucets or water from streams or ponds, can be used after it has been treated. If water treatment is not possible, put off drinking suspicious water as long as possible, but do not become dehydrated.

- DO NOT: Drink carbonated beverages instead of drinking water. Carbonated beverages do not meet drinking-water requirements;

- DO NOT: Drink Caffeinated drinks or alcohol, these dehydrate the body, which increases the need for drinking water;

- Turn off the main water valves. You will need to protect the water sources already in your home from contamination if you hear reports of broken water or sewage lines, or if local officials advise you of a problem. To close the incoming water source, locate the incoming valve and turn it to the closed position. Be sure you and other family members know how to perform this important procedure;

- To use the water in your pipes, let air into the plumbing by turning on the faucet in your home at the highest level. A small amount of water will trickle out. Then obtain water from the lowest faucet in the home;

- To use the water in your hot-water tank, be sure the electricity or gas is off, and open the drain at the bottom of the tank. Start the water flowing by turning off the water intake valve at the tank and turning on the hot water faucet. Refill the tank before turning the gas or electricity back on. If the gas is turned off, a professional will be needed to turn it back on.

Water Sources: Safe and Unsafe Water

If you are sheltering-in- place, there are several sources of potable or "safe" drinking water in and around you home, and water you should not drink.

Safe Water Sources

- Melted ice cubes
- Water drained from the water heater (if the water heater has not been damaged) DO NOT CONFUSE THE WATER HEATER, WITH YOUR FURNACE OR HOME HEATING SYSTEM
- Liquids from canned goods such as fruit or vegetable juices
- Water drained from pipes

Unsafe Water Sources

- Radiators
- Hot water boilers/furnace (home heating system)
- Water Beds (fungicides added to the water or chemicals in the vinyl may make water unsafe to use)
- Water from the toilet bowl or flush tank
- Swimming pools and spas (chemicals used to kill germs are too concentrated for safe drinking but can be used for personal hygiene, cleaning, and related uses)

Water Treatment

Even water from the safe sources as identified above should be treated before you use it. You should treat all water of uncertain quality before using it for drinking, food washing or preparation, washing dishes, brushing teeth, or making ice. In addition to having a bad odor and taste, contaminated water can contain germs that cause diseases such as dysentery, cholera, typhoid, and hepatitis.

There are many ways you can treat water. None is perfect. Often the best solution is a combination of methods. Before treating, let any suspended particles settle to the bottom or strain them through coffee filters or layers of clean cloth.

There are basically three water treatment methods, Boiling, Chlorination, and Distillation. You should have the necessary supplies to do at least one,

if not all of them as part of your Go Bag and Home Preparedness Emergency Supplies kit.

Boiling

Boiling is the safest and simplest method of treating water. In a large pot or kettle, bring water to a rolling boil for 1 full minute, keeping in mind that some water will evaporate. Let the water cool before drinking.

Boiled water will taste better if you put oxygen back into it by pouring the water back and forth between two clean containers. This also will improve the taste of stored water.

Chlorination

You can use household liquid bleach to kill microorganisms. Use only regular household liquid bleach that contains 5.25 to 6.0 percent sodium hypochlorite. Do not use scented bleaches, color safe bleaches, or bleaches with added cleaners. Because the potency of bleach diminishes with time, use bleach from a newly opened or unopened bottle.

Add 16 drops (1⁄8 teaspoon) of bleach per gallon of water, stir, and let stand for 30 minutes. The water should have a slight bleach odor. If it doesn't, then repeat the dosage and let stand another 15 minutes. If it still does not smell of chlorine, discard it and find another source of water.

Distillation

While the two methods described above will kill most microorganisms in water, distillation will remove germs that resist these methods, as well as heavy metals, salts and most other chemicals.

Distillation involves boiling water and then collecting only the vapor that condenses. The condensed vapor will not include salt or most other impurities.

To distill, fill a pot halfway with water. Turn the lid of the pot upside down. Tie a cup to the handle on the pot's lid so that the cup will hang right-side-up. (See figure below)

Make sure when you place the lid onto the pot, it dangles above, and not into the water. Boil the water for 20 minutes. The water that drips from the lid into the cup is distilled.

Other Sources of Water and Purification Methods

FEMA's recommendations are all well and good for keeping yourself hydrated if you are sheltering in place, or hunkering down in a relatively civilized area, but cut off from your regular supplies of water.

However, you may find yourself in a situation where you need to be able to find natural and other alternative sources of water to survive. Remember, most people on average need a gallon of water a day to replace the body fluids you lose through sweat, urination, digestion, even breathing! Just about every process in the body requires water.

Want to know just why water is so important? Consider these 10 things that you may not know about water and your body:

1. Your brain is 75% water
2. Your blood is 92% water
3. Your bones are 22% water
4. Your muscles are 75% water
5. Without water, your body could not absorb nutrients from food
6. Water regulates your body temperature
7. Water carries nutrients and oxygen to all of your cells
8. Without water, waste could not be removed from your body
9. Water helps your lungs absorb oxygen in the air you breathe
10. Water cushions and protects your vital organs

In a survival situation, if you are lost, or otherwise stranded, as time goes by and you fail to replace these lost body fluids as you normally would, everything starts to breakdown. Exhaustion, fatigue, hypothermia, brain lock, all can set in, leading to eventual total dehydration and most likely to death.

In Chapter 24 on Wilderness Survival you will learn some specific tips and techniques of finding and purifying water in specific locations, but here are some interesting and simple things you need to know about water, and where and how to find it.

- Water can be usually found in low laying vegetated areas;

- Water can be usually found at the base of mountains & cliffs trapped in between rocks;

- Water can be usually found in the deserts wherever you see anything green – that means there is a source of water below it.

Simple Techniques to Gather Water

One of easiest and simplest techniques to accumulate water is to gather rainwater, so do not forget to spread out your tarp, or poncho to do so. But even in the absence of any rain, here are three simple methods to obtain water, with just some plastic bags, used water bottles, and a couple of bandanas or handkerchiefs. So keep a few plastic bags in your Go Bag, and the handkerchiefs – the water bottles you will probably be able to find.

So if you are lost in the woods, you know the trees are getting water but how can you get them to share it with you? Like this: Tie a clear plastic bag over and around a very leafy green branch - make sure the bag is tightly sealed and you will be able to produce water through condensation.

Now here is where the empty plastic bottles come in. In the aftermath of a disaster, you will be able to find these littered about with no problem. Truth is even lost in the woods in many parts of the world you will likely find one or more of these lying around. Of course keep any that may have held water that you have with you. Now, take a green leafy branch and place it inside the bottle and seal it tightly. Place it in the sun if possible. By the end of a

hot sunny day it should yield about 1⁄3 cup of water through condensation. Of course, the more bags or bottles you use, the more water you'll be able to produce.

Last but not least, the hankies or bandanas. Just before dawn, or sometimes very late at night -if you tie a couple of bandanas around your ankles and shuffle around through some tall grass...you'll be able to soak up a lot of wetness. Then just wring them out into something, its pretty makeshift, but effective!

Everyday Water Needs

Water is not only essential in a survival situation, but in many ways it is a key to overall health. And again making sure you are prepared for anything means being in your best "Survival Shape."

Want to know if you are getting enough water everyday? Take your total body weight and divide by four. That is the bare minimum amount of water in ounces you require every day for proper body function. If you are active, or exercise often, double that amount.

Water is critical to survival and the normal functioning of so many body systems, and yet very few of us are drinking enough water. In reality, a lot of the "chronic syndromes" such as fatigue, headaches, joint pain, etc, that seem to have been plaguing modern society much more in recent years – are, in many cases, nothing more than dehydration! So the next time you are not quite feeling yourself – you probably aren't sick – you are just thirsty!

Chapter 12

Food

"A crust eaten in peace is better than a banquet partaken in anxiety."
- Aesop

In our food obsessed, obesity ridden, fast food nation, more often then not, you hear people using the phrase "I'm starving," to describe the time between their last coffee break, and lunch hour! Many find it difficult to go a few hours without food, let alone potentially a few days. That is why they often make the mistake of thinking of food first when faced with a survival situation.

Now, that is not to say that starvation is not a possibility in the wake of disasters. In undeveloped countries that have been hit by Earthquakes, Tsunamis or other natural disasters, starvation and famine can become a real issue for the survivors.

Even in wealthy First World countries, the truth is the bounty most folks enjoy is totally dependent on a complex infrastructure of industrial food producers, distributors, and storehouses that has multiple vulnerabilities. Any one of which can cause the system to breakdown in the wake of a natural, or man made disaster.

If the trucks that bring the Twinkies to your local 7-11 can't get through because of blocked roads, no fuel, or worse -- the shelves of most food stores would be empty in a matter of hours. Restaurants would probably all shut down within a few days.

However, the good news is that with proper preparation, and a little training, you can very easily learn how to eat to live, instead of living to eat!

Your Emergency Stockpile

How much food you should store depends on a lot of things. FEMA, The Red Cross and other Disaster Preparedness agencies all say at least three days. But that really is a bare minimum, and in fact, not something you need to really prepare. On any given day, you probably have enough food in your house to last 2 – 3 days. Storing food in terms of preparedness should start with at least a 1– 2 week supply, and gradually expand. The SAS Survival Handbook recommends you have a store of non-perishable food that could last for a year.

Last chapter you learned that when it comes to water, many of us do not know how much is really needed, so you don't drink nearly enough. With food the opposite is true. Most people do not have a clue how much is really required, so they eat way too much! How many calories you need to consume on a daily basis varies greatly, from person to person – but between 1500 – 2000 per day is a safe target for any one. And most people can, and many people do, live on far less then that everyday, either by choice or necessity.

You should consider the following things when putting together your emergency food supplies:

- Try to stick with the foods you are comfortable with, and that your family eats regularly. This will not only ensure that they are eaten, but will help maintain a sense of normalcy;

- Remember to be prepared for any special dietary needs;

- Try to avoid salty, spicy, and other foods that will make you thirsty;

- Choose salt-free crackers, whole grain cereals, and canned foods with high liquid content.

Following a disaster, there may be power outages that could last for several days. Stock canned foods, dry mixes and other staples that do not require

refrigeration, cooking, water or special preparation. Be sure to include a manual can opener and eating utensils.

FEMA recommends the following food, many of which you may already have on hand.

- Ready-to-eat canned meats, fruits, vegetables and a can opener
- Protein or fruit bars
- Dry cereal or granola
- Peanut butter
- Dried fruit
- Nuts
- Crackers
- Canned juices
- Non-perishable pasteurized milk
- High-energy foods

Building a store of foods doesn't have to be expensive, nor done all at once. Each week consider adding a few extra canned foods and other non-perishable food items to your grocery list.

Food Storage Tips

- Keep food in a dry, cool spot—a dark area if possible;

- Open food boxes and other re-sealable containers carefully so that you can close them tightly after each use;

- Wrap perishable foods, such as cookies and crackers, in plastic bags and keep them in sealed containers;

- Empty open packages of sugar, dried fruits, and nuts into screw-top jars or air-tight canisters for protection from pests;

- Inspect all food for signs of spoilage before use;

- Throw out canned goods that become swollen, dented, or corroded;

- Use foods before they go bad, and replace them with fresh supplies, dated with ink or marker. Place new items at the back of the storage area and older ones in front.

When preparing your emergency food supply, it is important you pay attention to shelf life.

FEMA/ARC presents the following Guidelines for Shelf Life

Use within six months:

- Powdered milk - ***boxed***
- Dried fruit
- Dry, crisp crackers
- Potatoes

Use within one year, or before the date indicated on the label:

- Canned condensed meat and vegetable soups
- Canned fruits, fruit juices, and vegetables
- Ready-to-eat cereals and uncooked instant cereals
- Peanut butter
- Jelly
- Hard candy and canned nuts
- Vitamins

May be stored indefinitely (in proper containers and conditions):

- Wheat
- Vegetable oils
- Dried corn
- Baking powder
- Soybeans
- Instant coffee, tea, and cocoa
- Salt
- Noncarbonated soft drinks
- White rice
- Bouillon products
- Dry pasta
- Powdered milk – ***in nitrogen-packed cans***

The Discovery Channel's "Survival Zone" recommends that for short-term situations, you could capitalize on the cheap bulk food prices at discount chains like Costco, BJs, or Wal-Mart. To get any significant shelf-life you'll have to get canned foods, although they may also have limited selections of packaged freeze-dried products.

There are many "emergency" foods such as Military MREs and other specially prepared or freeze- dried foods that have an extended shelf life well beyond that of the ordinary foods outlined above. It is highly recommend that you include some of these MREs as part of you survival food stores, not only because of the extend shelf life, but because they are easily portable if you should have to bug out.

These specially prepared MREs and backpacking meals can have a storage life of five to seven years, and today are actually quite palatable.

In a recent article in Special Operations Technology Magazine, entitled "Combat Cuisine" Steve Goodman writes, "the military's first foray into more palatable field rations was the MRE. No SPAM here! Combat troops opening the sleek brown packages that replaced those horrid old green tin cans were treated to crisp crackers, name brand candy bars, and a meal that could be warmed up in a heat pouch that gave off no smoke or light signature." Each MRE has about 1200 calories, with highly regulated percentages of fats, carbohydrates, and all the micro and macronutrients.

Today there a number of commercially available MREs, but most are still manufactured according to military specifications including the requirement that each meal supplies 1,200 calories.

MREs are lightweight, easy to pack and easy to eat — heating is recommended but not required. For times when you will have no alternative heat source, you should consider the MREs such as the troops actually use that come with portable chemical heaters.

Freeze-dried, nitrogen packed foods in #10 heavy-duty lined cans are food-engineered to last 25 to 30 years or more! If you have the space, you may want to include these #10 cans as part of your Survival Food stores. But keep in mind if you have to evacuate you cannot take them with you, and

they are not cheap. If you invest in such long-term freeze-dried foods, you may instead want to put them in your Survival Safe House or Long-Term Shelter if you have, or are designing such a place.

Preparing Meals Without Power

Power outages are very common with most natural disasters. In a power outage you need to know a few things about consuming your stored provisions, and what food that might be left in your freezer and refrigerator. You will also need to get used to preparing food without power. Believe it or not, there are plenty of ways to cook without a microwave!

When the electricity goes off:

- Use up the perishable food from your refrigerator, pantry, garden, etc. FIRST. The refrigerator will keep food cold for about 4 hours if it is unopened. Refrigerators should be kept at 40° F or below for proper food storage;

- THEN, use the foods from the freezer. To limit the number of times you need to open the freezer door, post a list of freezer contents on it. In a well-filled, well-insulated freezer, foods should remain safe to eat for at least two days. Check to make sure the seal on your freezer door is still in good condition;

- Only after you have exhausted the perishables in your fridge and freezer, then finally dip into your non-perishable foods you have on-hand, followed by those in your emergency supply.

During a power outage you must take care to preserve and keep safe the food you do have on hand, to reduce your risk of food-borne illness and minimize the amount of food that may be lost due to spoilage.

FEMA reminds homeowners that power outages can occur at any time of the year and it may take from a few hours to several days for electricity to be restored to residential areas. Without electricity or a cold source, food stored in refrigerators and freezers can become unsafe. Bacteria in food

grows rapidly at temperatures between 40 and 140 °F and if these foods are consumed, people can become very sick.

Do:

- Keep food in covered containers;
- Keep cooking and eating utensils clean;
- Keep garbage in closed containers and dispose outside, burying garbage if necessary;
- Keep your hands clean by washing them frequently with soap and water that has been boiled or disinfected;
- Discard any food that has come into contact with contaminated floodwater;
- Discard any food that has been at room temperature for two hours or more;
- Discard any food that has an unusual odor, color or texture;
- Use ready-to-feed formula, if possible, for formula-fed infants. If using ready-to-feed formula is not possible, it is best to use bottled water to prepare powdered or concentrated formula. If bottled water is not available, use boiled water. Use treated water to prepare formula only if you do not have bottled or boiled water. Breastfed infants should continue breastfeeding.

DON'T:

- Eat foods from cans that are swollen, dented or corroded, even though the product may look safe to eat;
- Eat any food that looks or smells abnormal, even if the can looks normal;
- Let garbage accumulate inside, both for fire and sanitation reasons.

Note: Thawed food usually can be eaten if it is still "refrigerator cold." It can be re-frozen if it still contains ice crystals. To be safe, remember, "When in doubt, throw it out."

Cooking Without Power

For emergency cooking indoors, you can use a fireplace. A charcoal grill or camp stove can be used outdoors. You can keep cooked food hot by using candle warmers, chafing dishes, and fondue pots. Use only approved devices for warming food. Canned food can be eaten right out of the can. If you heat it in the can, be sure to open the can and remove the label before heating. Always make sure to extinguish open flames before leaving the room.

NEVER COOK ON A CHARCOAL BBQ GRILL INDOORS BECAUSE OF THE RISK OF CARBON MONOXIDE POISONING

When the Lights Come Back On

- Check the temperature inside the refrigerator and freezer;
- If an appliance thermometer was kept in the freezer, check the temperature when the power comes back on. If the freezer thermometer reads 40° F or below, the food is safe and may be refrozen. If a thermometer has not been kept in the freezer, check each package of food to determine its safety. You can't rely on appearance or odor. If the food still contains ice crystals or is 40° F or below, it is safe to refreeze or cook;
- Refrigerated food should be safe as long as the power was out for no more than 4 hours. Keep the door closed as much as possible;
- Discard any perishable food (such as meat, poultry, fish, eggs or leftovers) that has been above 40° F for two hours or more.

You Can Take it With You

MREs can be a great idea to include in your in home emergency food supplies, and they are also very easy to grab and go. Similar to MREs, there are a variety of "backpacking meals" available for camping, hunting. etc.

There are hundreds of different dishes available, from main entrees, vegetable and starch sides to deserts and breakfasts. Unlike MREs that contain several types of food in each package, these backpacking meals have only one dish per pouch, and they need to be prepared with hot water.

Less well known than MREs, survival food bars are specially formulated short-bread blocks with the highest concentrations of nutritional ingredients, -- carbs, protein and fat -- found in any survival food. Since they are produced under U.S. Coast Guard guidelines — specifically for use as emergency life raft and ship rations — they are non-thirst provoking and highly stable in extreme temperatures. They come in 2400 or 3600 calorie sealed packages but each unit is sub-packaged for easier rationing. Most brands have a standard shelf life of five years.

For short-term emergencies you can keep a stock of other simple, common backpacking foods. Foods like snack bars don't have long shelf-lives, but if you switch them out on a regular basis (and seal them in zip-loc bags or airtight containers) they can serve as handy portable food sources. They're most useful when you're feeling hungry, but don't want to bother with preparing MRE's or food pouches. There are lots to choose from, such as the Navy Seal's HOOAH! Bar, which has been engineered to provide a steady energy boost during sustained field operations.

Beyond Stockpiling: Natural Food Sources

As discussed in the last Chapter on water, stored food and MREs can only last so long, and take you so far. And there is always the possibility that you can find yourself without them, or cut off from them. Knowing how to forage, trap and cultivate for food like our ancestors did, could mean the difference between life and death for you and your family in any long-term survival situation.

Edible Plants

If you are outside for any extended period of time, and cut off from your stored or portable food--- once you have found or created shelter—there is an abundance of plant life and vegetation that you can use for food. But there are also many plants that are not edible – you need to learn the

difference. For example, poison hemlock has killed people who mistook it for its relatives, wild carrots and wild parsnips.

The Army Survival manual suggests the following basic information for determining plants you can eat, and ones you should avoid.

- Plants growing near homes and occupied buildings or along roadsides may have been sprayed with pesticides. You should wash these plants thoroughly. In more highly developed countries with many automobiles, avoid roadside plants, if possible, due to contamination from exhaust emissions;

- Plants growing in contaminated water or in water containing Giardia lamblia and other parasites are contaminated themselves. Boil or disinfect them;

- Some plants develop extremely dangerous fungal toxins. To lessen the chance of accidental poisoning, do not eat any fruit that is starting to spoil or is showing signs of mildew or fungus;

- Plants of the same species may differ in their toxic or sub toxic compounds content because of genetic or environmental factors. One example of this is the foliage of the common chokecherry. Some chokecherry plants have high concentrations of deadly cyanide compounds but others have low concentrations or none. Horses have died from eating wilted wild cherry leaves;

- Avoid any weed, leaves, or seeds with an almond like scent, a characteristic of the cyanide compounds;

- Some people are more susceptible to gastric distress (from plants) than others. If you are sensitive in this way, avoid unknown wild plants. If you are extremely sensitive to poison ivy, avoid products from this family, including any parts from sumacs, mangoes, and cashews;

- Some edible wild plants, such as acorns and water lily rhizomes, are bitter. These bitter substances, usually tannin compounds, make them unpalatable. Though they taste bad, they are edible -- boiling

them in several changes of water will usually remove these bitter properties;

- Many valuable wild plants have high concentrations of oxalate compounds, also known as oxalic acid. Oxalates produce a sharp burning sensation in your mouth and throat and damage the kidneys. Baking, roasting, or drying usually destroys these oxalate crystals. The bulb of the jack-in-the-pulpit is known as the "Indian turnip" is a good example - you can eat it but only after removing these crystals by slow baking or by drying.

WARNING: Though it may be tempting because of they are recognizable, you should avoid eating mushrooms, or any fungus in a survival situation! The only way to tell if a mushroom is edible is by positive identification. There is no room for experimentation. Symptoms caused by the most dangerous and toxic mushrooms may not show up until several days after you have eaten them. By that time, it is too late to reverse their effects.

To avoid other potentially poisonous plants, stay away from any wild or unknown plants that have:

- **Milky or discolored sap.**
- **Beans, bulbs, or seeds inside pods.**
- **Bitter or soapy taste.**
- **Spines, fine hairs, or thorns.**
- **Foliage that resembles dill, carrot, parsnip, or parsley.**
- **An almond scent in woody parts and leaves.**
- **Grain heads with pink, purplish, or black spurs.**
- **A three-leafed growth pattern.**

Horticulture is a complex science. Some plants have both edible and poisonous parts. Many are edible only at certain times of the year. Others may have poisonous relatives that look very similar to the varieties you can eat or use for medicine. If you are truly interested in learning all there is to know about identifying what plants you can eat by living off the land, you may want to take a specific course in the subject.

For now, your best bet is to know the **UNIVERSAL EDIBILITY TEST.** Separate the plant into its basic components—leaves, stems, roots, buds, and flowers. You are going to test each part of the plant separately.

Once you have separated the plant into its separate parts, do the following for each part you wish to test for edibility.

- Smell the food for strong or acid odors. Remember, smell alone does not indicate a plant is edible or inedible;

- Do not eat for 8 hours before starting the test;

- During the 8 hours you abstain from eating, test for contact poisoning by placing a piece of the plant part you are testing on the inside of your elbow or wrist. Usually 15 minutes is enough time to allow for a reaction;

- During the test period, take nothing by mouth except purified water and the plant part you are testing;

- Select a small portion of a single part and prepare it the way you plan to eat it;

- Before placing the prepared plant part in your mouth, touch a small portion (a pinch) to the outer surface of your lip to test for burning or itching;

- If after 3 minutes there is no reaction on your lip, place the plant part on your tongue, holding it there for 15 minutes;

- If there is no reaction, thoroughly chew a pinch and hold it in your mouth for 15 minutes. Do not swallow;

- If no burning, itching, numbing, stinging, or other irritation occurs during the 15 minutes, swallow the food;

- Wait 8 hours. If any ill effects occur during this period, induce vomiting and drink a lot of water;

- If no ill effects occur, eat 0.25 cup of the same plant part prepared the same way. Wait another 8 hours. If no ill effects occur, the plant part as prepared is safe for eating.

CAUTION: Test all parts of the plant for edibility, as some plants have both edible and inedible parts. Do not assume that a part that proved edible when cooked is also edible when raw. Test the part raw to ensure edibility before eating raw. The same part or plant may produce varying reactions in different individuals.

Before testing a plant for edibility, make sure there are enough plants to make the testing worth your time and effort. Each part of a plant requires more than 24 hours to test. Do not waste time testing a plant that is not relatively abundant in the area.

Remember, eating large portions of plant food on an empty stomach may cause diarrhea, nausea, or cramps. Two good examples of this are such familiar foods as green apples and wild onions. Even after testing plant food and finding it safe, eat it in moderation.

One plant you should never overlook is **Seaweed.** It is a form of marine algae found on or near ocean shores. There are also some edible freshwater varieties. Seaweed is a valuable source of iodine, other minerals, and vitamin C. Be advised that large quantities of seaweed in an unaccustomed stomach can produce a severe laxative effect.

When gathering seaweed for food, find living plants attached to rocks or floating free. Seaweed washed onshore any length of time may be spoiled or decayed. You can dry freshly harvested seaweed for later use.

Different types of seaweed should be prepared in different ways. You can dry thin and tender varieties in the sun or over a fire until crisp. Crush and add these to soups or broths. Boil thick, leathery seaweeds for a short time to soften them. Eat them as a vegetable or with other foods. You can eat some varieties raw after testing for edibility.

How to Prepare and Eat Wild Plants

Methods used to improve the taste of plant food include soaking, boiling, cooking, or leaching. Leaching is done by crushing the food (for example, acorns), placing it in a strainer, and pouring boiling water through it or immersing it in running water.

- Boil leaves, stems, and buds until tender, changing the water, if necessary, to remove any bitterness;

- Boil, bake, or roast tubers and roots. Drying helps to remove caustic oxalates from some roots like those in the Arum family;

- Leach acorns in water, if necessary, to remove the bitterness. Some nuts, such as chestnuts, are good raw, but taste better roasted;

- You can eat many grains and seeds raw until they mature. When they are hard or dry, you may have to boil or grind them into meal or flour;

- The sap from many trees, such as maples, birches, walnuts, and sycamores, contains sugar. You may boil these saps down to a syrup for sweetening. It takes about 35 liters of maple sap to make 1 liter of maple syrup!

Hunting, Fishing, and Trapping

Unless you have the chance to take large game, concentrate your efforts on the smaller animals. They are more abundant and easier to prepare. Unlike plants, you do not have to get into a complex identification process to know what animals you can and can't eat. Relatively few are poisonous. Basically with relatively few exceptions, if it crawls, swims, walks, or flies – its lunch!

You must first overcome your natural aversion to a particular food source. Historically, people in starvation situations have resorted to eating everything imaginable for nourishment. A person who ignores an otherwise healthy food source due to a personal bias, or because he feels it is unappetizing, is risking his or her own survival. Although it may prove difficult at first, you must eat what is available to maintain your health. Some classes of animals and insects may be eaten raw if necessary, but you

should, if possible, thoroughly cook all food sources whenever possible to avoid illness.

It is important to learn the habits and behavioral patterns of classes of animals. For example, animals that are excellent choices for trapping, those that inhabit a particular range and occupy a den or nest, those that have somewhat fixed feeding areas, and those that have trails leading from one area to another. Larger, herding animals, such as elk or caribou, roam vast areas and are somewhat more difficult to trap. Also, you must understand the food choices of a particular species to select the proper bait.

If you are interested in learning some specific techniques for trapping game, jump ahead to Chapter 24 on *Wilderness Survival.*

For now, while it may seem like you are stuck on an episode of *Fear Factor* understand that you best and most abundant source of food in any survival situation – are bugs and insects.

Insects to avoid include all adults that sting or bite, hairy or brightly colored insects, and caterpillars and insects that have a pungent odor. Also avoid spiders and common disease carriers such as ticks, flies, and mosquitoes.

Rotting logs lying on the ground are excellent places to look for a variety of insects including ants, termites, beetles, and grubs, which are beetle larvae. Do not overlook insect nests on or in the ground. Grassy areas, such as fields, are good areas to search because the insects are easily seen. Stones, boards, or other materials lying on the ground provide the insects with good nesting sites. Check these sites. Insect larvae are also edible.

Insects that have a hard outer shell such as beetles and grasshoppers will have parasites. Cook them before eating. Remove any wings and barbed legs also.

You can eat most soft-shelled insects raw. The taste varies from one species to another. Wood grubs are bland, but some species of ants store honey in their bodies, giving them a sweet taste. You can grind a collection of insects into a paste. You can mix them with edible vegetation. You can cook them to improve their taste.

Grow Your Own

While stockpiling food is definitely important, not knowing how to grow or find your own food is a huge mistake for anyone interested in long-term "off-grid" survival.

Sooner or later even a stockpile designed for a year or more will run out. The only way you can truly ensure your future survival is to know how to grow, hunt, and preserve your own food.

There is another benefit to knowing how to grow your own food in an Ultimate Survival Situation. It can make you a very valuable commodity. Should things go really bad, knowing how to grow your own food means being able to basically grow your own currency. Others less prepared than yourself, will likely be willing to trade just about anything for your extra provisions.

In addition to helping through a Survival Situation, according to Brett Campbell's website on Survival Plants (www.survivalfoodplants.com) there are many other good reason to know how to "Grow Your Own."

To keep chemicals out of our diets - Modern agriculture uses an array of chemicals to produce our fruit and vegetables. Fertilizers, herbicides, pesticides, and fungicides can all be used in the growing of the plants. By growing your own food, you can be absolutely sure what is used to fertilize it, what is sprayed onto it, and how long it takes between harvesting & eating.

To eat a greater variety of foods - Supermarkets are geared to supply what modern agriculture produces. Fruit & vegetable varieties are chosen for their shelf life, appearance & ease of transport. Most conventional farms will grow exactly the same varieties to ensure their product is readily saleable to the big buyers. Often, seed will be genetically modified to ensure the product looks the same every time & can be mass harvested at the same time each year. In the home garden, you have a huge variety of seeds to choose from handed down through the generations. You can experiment with different varieties to find what you like and what grows well in your soil & climate. And most importantly, you can eat a huge variety of foods without paying a single cent extra for it.

To do your bit for the environment and sustainability - Humans have cut down a lot of our forests for modern agriculture – it took minutes to cut down what took thousands of years to create! Now, some of this land created for agriculture is so degraded we can't use it any more.

It is well known that the United States is the biggest consumer of oil in the world, and it is also well known that agriculture is the biggest user of that oil. Of course, oil is effectively a finite resource that took millions of years to create while the processing and burning of it creates pollution of our air and waterways. The food created with that oil is then shipped around the world – more oil & more pollution!

Peak oil, dwindling and low quality water supply, economic collapse, overpopulation, land degradation, wars, extreme weather events, and natural disasters all pose serious if not catastrophic threats to our way of life and the supply of fresh food.

One simple way of sidestepping this craziness is to buy as much of your food as you can from your local farmers but an even better way is to grow the food in your own backyard.

For self-healing - Our bodies have an innate ability to heal themselves. We see evidence of that regularly – like with minor cuts & bruising. The body just goes about the job of healing without any conscious effort or help. Hippocrates, the Father of medicine, once said "Let food be your medicine, and let medicine be your food". It's also been said that we can make the equivalent of any drug or medicine within our bodies. To do that though, surely we need quality raw materials to go in via our diet.

Plants picked fresh from the garden are packed full of chlorophyll, proteins, vitamins, minerals, herbal constituents, antioxidants, amino acids and goodness knows what else. Moreover, they are provided in a synchronistic way that we cannot hope to fully understand. Simply taking a vitamin pill or a medical drug cannot possibly replicate what Mother Nature has given us through plants.

By eating a large variety of different plants grown by natural means, you can provide everything your body needs to heal itself.

To save money - A disproportionate amount of our food these days is grown on large farms, run or controlled by large, often multinational companies. Ultimately these companies are concerned with one thing – making money. They need to answer to shareholders who demand the highest returns possible on their investments. Add to this the rising costs of fuel, water & environmental impacts and the most likely scenario is that food costs will keep rising and in some cases and for some foods the rises could be dramatic. Compare this to the costs of growing your own food. Maybe the costs of seed & fertilizer will increase, but apart from that growing your own food is free. You can protect yourself from spiraling costs by growing some of your food at least – in your own backyard.

To teach your kids - Many kids (and some adults) in our modern society have very little idea where their food comes from. Ask them and they might tell you it comes from a supermarket or factory! By growing and eating even some of your own food, you'll raise their awareness and change their whole perception about food. By actually teaching them how to grow food, you'll be imparting a valuable life skill to them and perhaps spawn a new generation of home gardeners who take care of themselves and their families!

For your overall wellbeing - Growing your own food is a terrific form of exercise. It is also a known form of stress reduction – your problems literally seem to melt away while when you are in the garden – even if it's only for a little while. You can also expect a feeling of closeness to nature while you're in the garden – the same feeling humans have had for many, many generations.

This is another way to literally reconnect to your more primitive ancestral "roots" – a core value of the Ultimate Survival Project.
Brett provides the following information about Survival Plants.
It's a little difficult to define "survival plant". In a survival situation, any plant that can be eaten would be considered a survival plant. That would include any vegetable or fruit you have in the garden right through to local weeds or plants that are edible.

A survival plant should be one that you put in the garden, that can continue to grow a minimum of care. A plant you can turn to in times of need.

A survival plant should meet the following criteria (in order of importance):-

- It should be edible (of course), tasty and nutrient rich
- It should perennial – or at least readily self-seeding
- It should need a minimum of care
- It should have a long or repeated harvest

There are not too many conventionally grown vegetables that will meet all of these criteria. Most require regular preparation of the soil, regular & seasonal planting, regular watering, regular fertilizing and once the plant has yielded it's crop, you have to pull it up & start all over again. Growing conventional crops is very rewarding but let's face it – it's a bit of work.

Survival plants on the other hand, take a little bit of work up front to get them settled in and then you can leave them to do their own thing. Some will die back in winter and re-sprout in spring, others will go all year round – the common thing with survival plants is that they are perennial and don't require replanting every year. If allowed to, most survival plants will never need replanting. Many don't need watering if you get a decent amount of rainfall, and fertilizer requirements are optional – just fertilize & mulch when you get around to it. The most work you'll do is harvesting.

To get most value out of survival plants, it is best to learn how to use them. Why wait for disaster to hit when you could be getting value out of them all year – every year? Many of them have far more nutrition than many conventional vegetables and they all taste great. The best way is to use them is in combination with the vegetables you eat now, but try using them on their own too.

Five Great Survival Plants Are:

- **Malabar Spinach** -For its hardiness and abundance of nutritious greens;

- **Kang Kong** - For its hardiness & abundant supply of leaves, stems and shoots;

- **Garlic chives** - For their hardiness, flavor, and nutrition;

- **Sweet potato** - For its nutrition, and supply of greens & tubers;
- **Taro** - For its hardiness & supply of leaves stems and tubers.

Food For Thought

In a survival situation, hunger can have serious psychological and emotional, as well as physical effects. Most people can easily go for a few days without food and not experience any serious impact on their physical and mental capabilities. After that things can get ugly. Long term lack of access to the normal food supply infrastructure, starts to move from a minor inconvenience to an obsession. For the unprepared and untrained, other considerations become secondary. Panic can set in, and food occupies every wakening moment. Food even becomes the subject of dreams.

When denied access to food for long periods of time, people can become very violent and be eager to take it from others who have it. In the worst case scenarios, people will be ready and wiling to kill in order to get to food, this has been known to take place even among friends and relatives during ill-fated expeditions.

As always - PREPARATION IS YOUR POWER OVER PANIC. Knowing how to store, maintain, and otherwise obtain food –can help you to survive in more ways than one.

Section III

Preparing For and Surviving Natural Disasters

"When the chips are down, denial and complacency prepare people for only two things: to be a victim or a corpse."
- Steve Goodman, Feature Writer
Special Operations Technology* and *Ground Combat Magazines

Chapter 13

Drought

"We do not live to think, but, on the contrary, we think in order that we may succeed in surviving."
- José Ortega y Gasset

Nearly every part of the planet experiences times of less rain than usual. According to the National Integrated Drought Information System, NIDIS, (www.drought.gov) if you don't plan for drought and assume that every year will bring adequate rainfall, you are likely to be an unpleasant surprise. But, NIDIS also says that you can take steps ahead of time to reduce the effects of drought, just as you could for other natural disasters.

Planning ahead for times of limited water just makes sense, in order to minimize suffering and financial losses. Reacting to drought in "crisis mode" is often expensive and not well-targeted. If you plan ahead for drought, then you can enjoy the benefits of normal or rainy years, and not get caught unprepared in dry years.

Because it is slow-moving and doesn't usually involve direct or dramatic property damage, you probably do not think of drought when you think of the impact of natural disasters that you should prepare for.

And yet, FEMA estimated in 1995 that drought costs the United States an average of $6 to 8 billion a year. The National Climatic Data Center has assembled a list of "Billion Dollar Weather Disasters" since 1980. Of the 90

events listed from 1980 to 2008, including hurricanes, floods, tornadoes, and wildfire, 14 were drought and wildfire. Widespread drought in 2008 was estimated to cost at least $2 billion and threatened metropolitan Atlanta. Drought in 1980 led to estimated losses of $55.4 billion and about 10,000 heat-related deaths, and in 1988, $71.2 billion, with about 7,500 heat-related deaths.

NIDIS says an effective drought plan requires:

- Monitoring drought, water supplies, and impacts;
- Understanding how to reduce vulnerability and impacts;
- Authority and resources to develop and implement a plan.

While that relates mainly to municipalities, individuals too, can and should have an effective drought emergency plan.

Farmers, ranchers, and others whose livelihoods depend on regular rain bear the most direct stress from drought. In rural settings, wells may run dry, crops may fail, and forage for livestock may be scarce. Drought is one of the stressors that is forcing many family farms to have to be aggregated and consolidated into larger agribusinesses.

But farmers and ranchers are not the only ones who feel the impact of drought. Ultimately, costs are spread more widely to taxpayers and consumers, who are also part of the food system.

Plus drought conditions can and do lead to, other Natural Disasters, such as wild fires and in developing countries drought have been known to cause widespread famine. Heat emergencies, heat related illnesses and death, are often the result of drought.

NIDIS and the American Red Cross have put together the following tips on how to conserve water under the threat of, and during drought conditions.

Indoor Water Use

General

- Never pour water down the drain when there may be another use for it. Use it to water your indoor plants or garden;

- Make sure your home is leak-free. When you are certain that no water is being used in your home, take a reading of the water meter. Wait 30 minutes and then take a second reading. If the meter reading changes, you have a leak!

- Repair dripping faucets by replacing washers. One drop per second wastes 2,700 gallons of water per year!

Bathroom

- Check for toilet leaks by adding food coloring to the tank. If you have a leak, the color will appear in the bowl within 30 minutes. (Flush immediately to avoid stains);

- If the toilet-handle frequently sticks in the flush position letting water run constantly, replace or adjust it;

- Leaky toilets usually can be fixed inexpensively by replacing the flapper;

- Install a toilet displacement device to cut down on the amount of water needed for each flush. (Contrary to popular opinion a brick should not be used because it can dissolve and the loose pieces can cause damage to the internal parts. Instead, place a one-gallon plastic jug of water into the tank to displace toilet flow or purchase a device available at most hardware and home centers designed for this purpose.) Be sure installation does not interfere with the operating parts;

- Consider purchasing a low-volume toilet that uses less than half the water of older models. NOTE: In many areas, low-volume units are required by law;

- Take shorter showers and replace your showerhead with an ultra-low-flow version;

- Place a bucket in the shower to catch excess water for watering plants;

- In the shower, turn the water on to get wet; turn off to lather up; then turn the water back on to rinse. Repeat when washing your hair;

- Don't let the water run while brushing your teeth, washing your face or shaving;

- Avoid flushing the toilet unnecessarily. Dispose of tissues, insects, and other similar waste in the trash rather than the toilet.

Kitchen

- Operate automatic dishwashers only when they are fully loaded. Use the "light wash" feature if available to use less water;

- When hand washing dishes, save water by filling two containers - one with soapy water and the other with rinse water containing a small amount of chlorine bleach;

- Most dishwashers can clean soiled dishes very well, so dishes do not have to be rinsed before washing. Just remove large particles of food, and put the soiled dishes in the dishwasher;

- Store drinking water in the refrigerator. Don't let the tap run while you are waiting for water to cool;

- Do not use running water to thaw meat or other frozen foods. Defrost food overnight in the refrigerator;

- Do not waste water waiting for it to get hot, heat it on the stove;

- Clean vegetables in a pan filled with water rather than running water from the tap. Re-use the water that vegetables are washed in for cleaning or watering plants;

- Kitchen sink disposals require lots of water to operate properly. Start a compost pile as an alternate method of disposing of food waste, (This will be great for you Survival garden!) or simply dispose of food in the garbage.

Laundry

- Operate automatic clothes washers only when they are fully loaded or set the water level for the size of your load.

Long Term Indoor Water Conservation

- Retrofit all household faucets by installing aerators with flow restrictors;

- Consider installing an instant hot water heater on your sink;

- Insulate your water pipes to reduce heat loss and prevent them from breaking if you have a sudden and unexpected spell of freezing weather;

- If you are considering installing a new heat pump or air-conditioning system, the new air-to-air models are just as efficient as the water-to-air type and do not waste water;

- Install a water-softening systems only when the minerals in the water would damage your pipes. Turn the softener off while on vacation;

- When purchasing a new appliance, choose one that is more energy and water efficient.

Outdoor Use

General

- If you have a well at home, check your pump periodically. If the pump turns on and off while water is not being used, you have a leak.

Car Washing

- Use a shut-off nozzle on your hose that can be adjusted down to a fine spray, so that water flows only as needed. When finished, turn it off at the faucet instead of at the nozzle to avoid leaks. Check hose connectors to make sure plastic or rubber washers are in place to prevent leaks;

- Consider using a commercial car wash that recycles water. If you wash your own car, park on the grass so that you will be watering it at the same time.

Lawn Care

- Don't overwater your lawn. Lawns only need to be watered every five to seven days in the summer, and every 10 to 14 days in the winter. A heavy rain eliminates the need for watering for up to two weeks. Most of the year, lawns only need one inch of water per week. Buy a rain gauge so that you can better determine when to water;

- Water in several short sessions rather than one long one in order for your lawn to better absorb moisture. For example, water in ten-minute sessions spaced 30 minutes apart, rather than one straight 30-minute session;

- Water lawns during the designated hours;

- Position sprinklers so water lands on the lawn and shrubs and not on paved areas;

- Avoid sprinklers that spray a fine mist; most of the mist evaporates before it reaches the lawn. Check sprinkler systems and timing devices regularly to be sure they operate properly;

- Raise the lawn mower blade to at least three inches, or to its highest level. A higher cut encourages grass roots to grow deeper, shades the root system, and holds soil moisture;

- Avoid over fertilizing your lawn. Applying fertilizer increases the need

  for water. Apply fertilizers that contain slow-release, water-insoluble forms of nitrogen;

- Use a broom or blower instead of a hose to clean leaves and other debris from your driveway or sidewalk;

- Do not leave sprinklers or hoses unattended. A garden hose can pour out 600 gallons or more in only a few hours. Use a bell timer to remind yourself to turn sprinklers off.

Swimming Pools

- If you have a pool, consider installing a new water-saving pool filter. A single back flushing with a traditional filter uses 180 to 250 gallons of water;

- Cover pools and spas to reduce evaporation of water.

Long Term Outdoor Water Conservation

- Plant it smart; plant native and/or drought-tolerant grasses, ground covers, shrubs and trees. Once established, they do not need water as frequently and usually will survive a dry period without watering. They also require less fertilizer or herbicides. Landscape with plants that are heat and drought tolerant and that do not require much water to live. Small plants require less water to become established. Group plants together based on similar water needs;

- Install irrigation devices that are the most water efficient for each use;

- Use mulch to retain moisture in the soil. Mulch also helps control weeds that compete with landscape plants for water;

- Avoid purchasing recreational water toys that require a constant stream of water;

- Avoid installing ornamental water features (such as fountains) unless they use recycled water.

Within Your Community

- Follow water conservation and water shortage rules in effect. You are included in the restrictions even if your water comes from a private well;

- Encourage your employer to promote water conservation in the workplace;

- Patronize businesses that practice water conservation, such as restaurants that only serve water upon request;

- Report water losses (broken pipes, open hydrants, errant sprinklers, abandoned free-flowing wells, etc.) to the property owner, local authorities or your water management district;

- Encourage your school system and local government to help develop and promote a water conservation ethic;

- Support projects that will lead to an increased use of reclaimed wastewater for irrigation and other uses;

- Promote water conservation in community newsletters, on bulletin boards, and by example. Encourage your friends, neighbors, and co-workers to "be water smart";

- Conserve water because it is the right thing to do - even when someone else is footing the bill, such as when you are staying at a hotel;

- Try to do one thing each day that will result in saving water. Every drop counts!

Final Thoughts

You know the expression “prepare for a rainy day?” The National Oceanographic and Atmospheric Association (NOAA) reminds us that sunny weather is not always necessarily the best weather. Lack of rainfall for an extended period of time can bring farmers and metropolitan areas to their knees. It does not take very long; in some locations of the country, a few rain-free weeks can spread panic.

Water is a precious and limited resource that is too often taken for granted. You need to take steps to conserve water as part of your own individual

emergency preparedness plans, and to help to ensure long-term sustainability for the entire planet.

Chapter 14

Earthquake

"A lot of pianos fall a minute after we've passed. Or a month, it makes no difference. So unless were going to get down on our knees and give thanks every time disaster misses, it makes no sense to moan when it strikes."
— Hugh Laurie, Actor

An earthquake is the sudden, rapid shaking of the earth, caused by the breaking and shifting of subterranean rock as it releases strain that has accumulated over a very long time. One of the most frightening and destructive phenomena of nature you can every experience is a severe earthquake and its terrible aftereffects.

Don't think for a minute that is only people in California have to worry about Earthquakes. True you should have found out during your Risk Assessment if you are in an area *likely* to experience a quake, and plan accordingly – but did you know that FEMA has actually identified 45 states and territories throughout the United States that are at moderate to high risk for earthquakes? The 2011 East Coast earthquake illustrated the fact that it is impossible to predict when or where an earthquake will occur, so it is important that you and your family are prepared ahead of time.

As with any potential Natural Disaster, you need to be prepared before, during, and after an Earthquake.

Before a Quake

Of course your preparations begin with your Home Emergency Preparedness Kit, Your Family Emergency Plan, and having your Go Bag Ready. Beyond that, specific to Earthquakes you need to:

- Fasten shelves securely to walls;
- Place large or heavy objects on lower shelves;
- Store breakable items such as bottled foods, glass, and china in low, closed cabinets with latches;
- Fasten heavy items such as pictures and mirrors securely to walls and away from beds, couches and anywhere people sit;
- Brace overhead light fixtures and top heavy objects;
- Repair defective electrical wiring and leaky gas connections. These are potential fire risks. Get appropriate professional help. Do not work with gas or electrical lines yourself;
- Install flexible pipe fittings to avoid gas or water leaks. Flexible fittings are more resistant to breakage;
- Secure your water heater, refrigerator, furnace, and gas appliances by strapping them to the wall studs and bolting to the floor. If recommended by your gas company, have an automatic gas shut-off valve installed that is triggered by strong vibrations;
- Repair any deep cracks in ceilings or foundations. Get expert advice if there are signs of structural defects;
- Be sure the residence is firmly anchored to its foundation;
- Store weed killers, pesticides, and flammable products securely in closed cabinets with latches and on bottom shelves;

- Locate safe spots in each room under a sturdy table or against an inside wall. Reinforce this information by moving to these places during family drills;

- Make sure televisions, computer monitors and other expensive electronics are restrained or anchored to the walls, shelves or desktops so that they will not fall over or fall off in an earthquake;

- Hold earthquake drills with your family members: Teach them the basics of Drop, Cover and Hold On.

NOTE: In the event of an earthquake, you may be instructed to shut off the utility services at your home. Teach responsible members of your family how to turn off the gas, electricity, and water at valves and main switches. You may need to consult your local utilities if you need more information.

Warning: Mobile homes and homes not attached to their foundations are at particular risk during an earthquake.
Buildings with foundations resting on landfill and other unstable soils are also at increased risk of damage.

DURING

If you are inside when the shaking starts …

- Drop, cover, and hold on. Stay in one place and move around as little as possible;

- If you are in bed, stay there, curl up and hold on. Protect your head with a pillow;

- Stay away from windows to avoid being injured by shattered glass;

- Stay indoors until the shaking stops and you are sure it is safe to exit. If you must leave the building after the shaking stops, use stairs rather than an elevator in case there are aftershocks, power outages or other damage;

- Be aware that fire alarms and sprinkler systems frequently go off in buildings during an earthquake, even if there is no fire, or other danger.

NOTE: There is a common misconception to take shelter beneath a doorway during an Earthquake. DO NOT DO SO UNLESS YOU KNOW FOR A FACT THAT THE PARTICULAR DOORWAY IS OF HEAVY CONSTRUCUTION. In Fact MOST doorways are weaker than the rest of the support structure of your home.

Triangle of Life – An Alternative, Beyond the Developed World

You may have seen an email that has been making the rounds on the internet the past few years describing an alternative to "Drop-Cover-and Hold-On" called the "Triangle of Life." The theory put forth by experienced rescue professional Doug Copp, suggests that when a building collapses, or "Pancakes" during an Earthquake, often ceilings and other debris are held up by bulky or heavy objects that do not compress (such as desks, beds, sofas, etc) forming a kind of lean-to or "survival void" under which a person can remain safe. Copp terms the void a "Triangle of Life", and indeed search and rescue professionals the world over have used that term to describe such triangles, where they have found victims alive during the worst of building collapses, from earthquakes, explosions and other disasters.

Copp himself has been on rescue missions and has seen such triangles form protecting people in Turkey and other foreign countries. That is why he suggests that rather then Drop and Cover, during a quake you should curl into a ball out in the open next to large objects, even next to a bed -- as they should in theory create a void, or such a Triangle of Life in the event of a collapse.

There has been some controversy surrounding Copp's idea. The problem is that, while such triangles can and do form during the kinds of total building collapses he has seen in developing nations, or areas without strict Earthquake resistant building codes, that is a rare occurrence in the Earthquake prone areas in the United States.

The Structural Engineers Association of California (SEAOC) while agreeing that the theory has validity in some parts of the world feels it is important to point out that it "does not appropriately address the typical earthquake hazard that exist in the United States. The duck and cover protection approach was developed to protect occupants from falling hazards. The greatest danger to the U.S. population in the event of an earthquake is injury from falling hazards such as bookshelves, filing cabinets, chimneys, portions of ceilings, exterior facades, and window glass; not overall building collapse."

FEMA, the American Red Cross and most other disaster preparedness or emergency management agencies – *in the United States* – still advocate Drop, Cover and Hold On – as your best course of action.

That is not to say that the Triangle of Life lacks merit. It is just that in California in particular, and most areas in the U.S. that are prone to Earthquakes, building codes are such that the "pancake" type of building collapse in which the Triangle would create a "survival void" is very unlikely.

However the same cannot be said in less developed parts of the world, in fact, in underdeveloped countries building collapse during an earthquake is very likely, as seen in the devastating aftermath of the 2010 Haiti quake. The American Red Cross itself in its response to Mr. Copp's email blast has said "What works here may not work elsewhere, so there is no dispute that the "void identification method" or the "Triangle of Life" may indeed be the best thing to teach in other countries where the risk of building collapse, even in moderate earthquakes, is great."

Engineering researchers have demonstrated that very few buildings collapse or "pancake" in the U.S. as they might very well do in other countries. During a quake in the U.S. evidence indicates that Drop, Cover and Hold-on - is your best protection. However, if you ever find yourself in an Earthquake in another part of the world, or anywhere/anytime you are in a building whose construction or structural integrity is questionable, The Triangle should be employed.

The Ultimate Survival Project being a global effort believes it is best to be aware of both techniques, and use your best judgment based on your

surroundings and circumstances at the time of the quake, to determine which to use.

If you are caught outside when the shaking starts …

- Find a clear spot away from buildings, power lines, trees, and streetlights, and drop to the ground. Stay there until the shaking stops;

- If you are in a vehicle, pull over to a clear location and stop. Avoid bridges, overpasses and power lines if possible. Stay inside with your seatbelt fastened until the shaking stops. Then, drive carefully, avoiding bridges and ramps that may have been damaged;

- If a power line falls on your vehicle, do not get out. Wait for assistance;

- If you are in a mountainous area or near unstable slopes or cliffs, be alert for falling rocks and other debris. Landslides are often triggered by earthquakes.

If You Find Yourself Trapped Under Debris:

- Do not light a match;

- Do not move about or kick up dust;

- Cover your mouth with a handkerchief or clothing;

- Tap on a pipe or wall so rescuers can locate you. Use a whistle if one is available. Shout only as a last resort. Shouting can cause you to inhale dangerous amounts of dust.

After an Earthquake

- When the shaking stops, look around to make sure it is safe to move. Then exit the building. Throw on your Go Bag, and be sure to have

your Pry Bar with you – it and items in your pack will be very helpful to you, and victims you may run across;

- Expect aftershocks. These secondary shockwaves are usually less violent than the main quake but can be strong enough to do additional damage to weakened structures and can occur in the first hours, days, weeks, or even months after the quake;

- Help injured or trapped persons. Remember to help your neighbors who may require special assistance such as infants, the elderly and people with access and functional needs. Give first aid where appropriate. Do not move seriously injured persons unless they are in immediate danger of further injury. Call for help;

- Look for and extinguish small fires. Fire is the most common hazard after an earthquake;

- Listen to a battery-operated radio or television for the latest emergency information;

- Be aware of possible tsunamis if you live in coastal areas. These are also known as seismic sea waves (mistakenly called "tidal waves"). When local authorities issue a tsunami warning, assume that a series of dangerous waves is on the way. Stay away from the beach;

- Use the telephone only for emergency calls;

- If your home is damaged and no longer safe, consider going to a designated public shelter. You can Text SHELTER + your ZIP code to 43362 (4FEMA) to find the nearest shelter in your area (example: shelter 12345). If you chose to leave the area in your Bug Out Vehicle to reach a friend or relative to stay with, or to get to your Safe House – be careful when driving after an earthquake, roads may be filled with debris, or otherwise unstable, and anticipate traffic light outages;

- Stay away from damaged areas. Stay away unless your assistance has been specifically requested by police, fire, or relief organizations. Return home only when authorities say it is safe;

- After it is determined that its' safe to return, your safety should be your primary priority as you begin clean up and recovery;

- Open cabinets cautiously. Beware of objects that can fall off shelves;

- If the power is out, follow what you have learned about using your Stored Food, and Food that may remain in your Fridge or Freezer;

- Put on long pants, a long-sleeved shirt, sturdy shoes and work gloves to protect against injury from broken objects;

- Clean up spilled medicines, bleaches, gasoline or other flammable liquids immediately. Leave the area if you smell gas or fumes from other chemicals;

- Inspect the entire length of chimneys for damage. Unnoticed damage could lead to a fire;

- Inspect utilities. Check for gas leaks. If you smell gas or hear blowing or hissing noise, open a window and quickly leave the building. Turn off the gas at the outside main valve if you can and call the gas company from a neighbor's home. If you turn off the gas for any reason, it must be turned back on by a professional;

- Look for electrical system damage. If you see sparks or broken or frayed wires, or if you smell hot insulation, turn off the electricity at the main fuse box or circuit breaker. If you have to step in water to get to the fuse box or circuit breaker, call an electrician first for advice;

- Check for sewage and water lines damage. If you suspect sewage lines are damaged, avoid using the toilets and call a plumber. If water pipes are damaged, contact the water company and avoid using water from the tap. You can obtain safe water by melting ice cubes.

Understand that in an Earthquake, it is not the actual shifting movements of the ground itself that is the cause of most injuries or deaths. Casualties usually result from partial building collapse and falling objects and debris, like toppling chimneys, falling bricks, ceiling plaster, and light fixtures. Since

Earthquakes are unpredictable, most of these kinds of causalities can be prevented – by making the proper preparations to PREVENT or AVOID THEM.

By planning and practicing what to do before an earthquake occurs, you can condition yourself and your family to react correctly and spontaneously when the first jolt or shaking is felt. An earthquake drill can teach your family what to do in an earthquake.

Your Family Earthquake Drill

- Each family member should know the safe spots in each room;
- The best places to be are under heavy pieces of furniture, such as a desk or sturdy table; under supported archways; and against inside walls;
- Make sure all family members are aware of the danger spots associated with breaking window glass, falling objects, falling mirrors, falling chimneys, and toppling of tall, unsecured pieces of furniture;
- Reinforce this knowledge by physically placing yourself in the safe locations. This is especially important for children;
- Be aware of a possible tsunami if you live in a coastal area. Some communities have local tsunami hazard maps;
- Be prepared to evacuate in a tsunami emergency. Some communities have high ground or safe areas identified as Tsunami Evacuation Sites;
- In the days or weeks after this exercise, hold surprise drills. Be prepared to deal with what you may experience after an earthquake — both physically and emotionally.

As with all of the Natural Disasters you will learn about in this Section of the Ultimate Preparedness Manual -- but especially with Earthquakes because they are so unpredictable – the more you do before the disaster, the better you will do after.

Chapter 15

Fires

"Luck is what happens when preparation meets opportunity."
— Lucius Annaeus Seneca

It is very interesting to discuss fire in a survival context, because fire and fire making skills are essential to many survival situations – and fire can also kill. Humankind's relationship with fire has always been a tenuous one – fire gives on the one hand and takes with the other. As an Ultimate Survivor you will need to master both how to use fire to your advantage and how to not let it master you, by knowing what to do to survive in the event of a common house fire, or the fury of a wild fire.

Fire Safety in the Home
As you have learned so far, preparation is your greatest survival tool in any crisis situation. A house fire is no exception. Did you know that there are more then 400,000 fires in the U.S. every year resulting in almost 15,000 deaths? In fact, more Americans die in house fires every year than in all natural disasters combined. The best way you can ensure your safety and the safety of your family in the event of fire is to be prepared in advance for it.

Fire Facts

- Death can occur when the temperature reaches over 212°F, it only takes 3 1⁄2 minutes for the heat from a house fire to reach over 1100°F!

- The heat from a fire can spread to every room in a home. During a house fire in mere minutes, the temperature can go over 300° even in rooms that are not yet engulfed in flames. That is hot enough to melt plastic and kill the people in those rooms;

- Fire seems bright --- but a house fire puts you in the dark! Even with all of the lights on in your home, the smoke from a house fire can be so thick that your home may be completely dark in less than 4 minutes;

- Fire produces fumes and gases. These fumes and gases can make you sleepy, confused and weak. You can't smell these fumes. So if you're asleep, the smell won't wake you, but a smoke alarm will.

Home Fire Preparation, Prevention and Survival

Before a Fire

According to the Oklahoma Department of Health (www.ok.gov/health) Smoke alarms are the most effective way to prevent death and injury from house fires. You should place your smoke alarm just outside sleeping areas, such as the hallway outside the bedrooms. The best place is on the ceiling, at least 6 inches from the wall and at least 2 feet from any corner. Your alarm can also be placed on the wall about 6 inches from the ceiling and at least 2 feet away from any corner. You should avoid placing your alarm near air vents, doorways, bathrooms, windows, cooking stoves, garages or any other drafty or moist place.

NOTE: In order to be effective you should test your smoke alarm monthly by following the directions provided with your smoke alarm. In the United States most fire departments recommend that you check and change the battery in your smoke detector every Spring and Fall when you adjust your clocks.

As with other potential disasters you need to have a plan in the event of a house fire, be sure that everyone in your household knows it and be sure to practice it with them. Your Fire Safety Plan should include:

- As always, have your Go-Bag where you can grab and run with it;

- Store vital documents in a Fire Safe;

- Everyone should know two ways out of every room. In the U.S. statistics show that more than 50 percent of fatal house fires occur between 11 pm and 7 am (peak hours for all fires are 5 pm to 8 pm), so practice two ways out of every room at night. And make sure at least one of them does not rely on a stairwell, which can easily become a deadly vortex of gas, smoke, heat and flame;

- If your home has two stories, find a safe way to climb out the window and get to the ground. “Roll-out” fire escape ladders are a great method. FEMA recommends that you only purchase collapsible ladders evaluated by a nationally recognized laboratory, such as Underwriters Laboratory (UL);

- Decide on a meeting place outside of your home where everyone can gather;

- Make sure that windows are not stuck, screens can be taken out quickly, and that security bars can be properly opened. Windows and doors with security bars must have quick release devices to allow them to be opened immediately in an emergency. Make sure everyone in the family understands and practices how to properly operate and open locked or barred doors and windows;

- If you have pets, place “Pet Finder” stickers on your windows to alert fire fighters and rescuers. You can get these from your Vet, or local humane society;

- If you have children teach them not to be afraid and hide from firefighters;

- Keep fire-prone places, such as dryers and fireplaces clear of clutter. If you have a fireplace, use a fireplace screen heavy enough to stop rolling logs and big enough to cover the entire opening of the fireplace to catch flying sparks. Inspect and clean woodstove pipes and chimneys annually and check monthly for damage or obstructions;

- You should sleep with your doors closed; this could give you a few extra minutes of valuable time in a fire;

- You may want to consider installing an automatic fire sprinkler system in your residence, or a monitored Fire Alarm system that is part of your home security system;

- You can ask your local fire department to inspect your residence for fire safety and provide more tips on prevention and escape.

Other Ways to Make You House More Fire Safe

Hazardous Materials Fire Safety
Practicing home hazardous materials safety is important in preventing home fires. When you think of "hazardous materials," you probably picture trucks full of chemicals, factories, or dumps oozing slime. However, your own home can be a warehouse of hazardous materials. These can be toxic to your health in a number of ways, not the least of which are they present fire hazard. Such items include:

- Automotive fluids
- Barbecue products
- Batteries
- Health and beauty products
- Home maintenance products
- Household cleaners
- Laundry products
- Lawn and garden products
- Medicines and medical supplies
- Paints and paint thinners

In addition, asbestos or lead paint present in older homes, and mercury in compact fluorescent light bulbs (CFLs), may become exposed during or after a home fire.

Safer Use and Storage of Hazardous Materials
For a number of health and environmental concerns the fewer amounts of chemicals you have in your home, the better off you and your family --

especially your children -- will be. There are a plethora of natural alternatives for many household chemicals, particularly cleaning products, laundry products, and pesticides. But if you must have chemicals in your home or garage:

- Buy only the amount of product that you immediately need for a specific purpose to reduce the quantity of hazardous materials in storage;
- Familiarize yourself with each product, its location, and purpose;
- Follow use and storage instructions on the product's label. Mixing some products can create deadly poisonous fumes or cause fires;
- Store hazardous materials in their original containers. Changing containers is not only dangerous - it is illegal;
- Use only portable storage containers listed by an independent testing laboratory for flammables and combustibles;
- Store flammable products - such as gasoline, kerosene, propane gas, and paint thinner - away from the home;
- Only fill portable gasoline containers outdoors in a well-ventilated area. Place the container on the ground to fill;
- Never store flammables in direct sunlight or near an open flame or heat source;
- Inspect storage areas regularly for leaky containers, poor ventilation, and the smell of fumes;
- Store hazardous materials out of the reach of children and pets;
- Use guardrails and safety locks on shelves and cabinets to prevent containers from tipping over or falling out, especially if you live in an earthquake-prone area.

Cooking and Fire Safety
Many families gather in the kitchen to spend time together, but it can be one of the most hazardous rooms in the house if you don't practice safe cooking behaviors. Cooking equipment, most often a range or stovetop is the leading cause of reported home fires and home fire injuries in the United States.

Safe Cooking Behaviors
Whether you are cooking the family holiday dinner or a snack for your kids, practicing safe cooking behaviors will help keep you and your family safe. It's a recipe for serious injury or even death to:

- Wear loose clothing (especially hanging sleeves);

- Walk away from a cooking pot on the stove, or leave flammable materials, such as potholders or paper towels, around the stove.

The leading cause of fires in the kitchen is unattended cooking.

- Stay in the kitchen when you are frying, grilling, or broiling food. If you leave the kitchen for even a short period of time, turn off the stove;

- If you are simmering, baking, roasting, or boiling food, check it regularly, remain in the home while food is cooking, and use a timer to remind you that you're cooking;

- Stay alert! To prevent cooking fires, you have to be alert. You won't be if you are sleepy, have been drinking alcohol, or have taken medicine that makes you drowsy.

Choose the Right Equipment and Use It Properly

- Always use cooking equipment tested and approved by a recognized testing facility;

- Follow manufacturers' instructions and code requirements when installing and operating cooking equipment;

- Plug all electrical cooking appliances directly into an outlet. Never use an extension cord for a cooking appliance, as it can overload the circuit and cause a fire.

Barbequing Safety

For Charcoal Grills

- Position your grill well away from siding, deck railings, and out from under eaves and overhanging branches;

- Place your grill a safe distance from lawn games, play areas, and foot traffic;

- Keep your children and pets away from the grill area by declaring a 3-foot "kid-free zone" around the grill;

- Put out several long-handled grilling tools to give the chef plenty of clearance from heat and flames when cooking food;

- Periodically remove grease or fat buildup in trays below grill so a hot grill cannot ignite it;

- Use only outdoors! If used indoors, or in any enclosed spaces, such as tents, barbecue grills pose both a fire hazard and the risk of exposing occupants to carbon monoxide;

- Purchase the proper starter fluid and store out of reach of children and away from heat sources;

- Never add charcoal starter fluid when coals or kindling have already been ignited, and never use any flammable or combustible liquid other than charcoal starter fluid to get the fire going.

For Propane Grills

Follow the above general safety tips, and in addition:

- Check the propane cylinder hose for leaks before using it for the first time each year. A light soap and water solution applied to the hose will reveal escaping propane quickly by releasing bubbles. If you

determined your grill has a gas leak by smell or the soapy bubble test and there is no flame, turn off the propane tank and grill. If the leak stops, get the grill serviced by a professional before using it again. If the leak does not stop, call the fire department;

- If you smell gas while cooking, immediately get away from the grill and call the fire department. Do not attempt to move the grill;
- Use only equipment bearing the mark of an independent testing laboratory. Follow the manufacturers' instructions on how to set up the grill and maintain it;
- Never store propane cylinders in buildings or garages. If you store a gas grill inside during the winter, disconnect the cylinder and leave it outside.

More House Fire Prevention Tips

- Avoid using lighted candles, even during a power outage if you can;
- If you smoke – QUIT! It will do more to help you survive into old age then any other tip in this manual! But if you must smoke - smoke outside and put your cigarettes out in a can filled with sand. Most home fires caused by smoking materials start inside the home;
- Never use your range or oven to heat your home;
- Keep combustible and flammable liquids away from heat sources;
- Always refuel portable generators outdoors;
- Frayed wires on electrical appliances can cause fires. Replace all worn, old or damaged appliance cords immediately and do not run cords under rugs or furniture. If an appliance has a three-prong plug, use it only in a three-slot outlet. Never force it to fit into a two-slot outlet or extension cord;
- If you have kids, take the mystery out of fire by teaching children that fire is a tool, not a toy. Store matches and lighters out of children's

reach and sight, preferably in a locked cabinet. Teach your kids not to pick up matches or lighters they may find. Instead, they should tell you or an adult immediately.

You can find out much more about home fire safety, including seasonal fire safety hazards by visiting www.usfa.fema.gov/citizens/home_fire_prev/

During a House Fire

When your smoke alarm goes off your goal should be to get yourself, your family and your pets if you have any, out of the building and to safety as quickly as possible. Fire safety officials rarely recommend that you should stay and attempt to battle the fire, or worry about your personal belongings. If your alarm goes off and keeps on sounding, or anytime you smell smoke or see flames you must exit your home quickly and call 911 or your local fire department from a neighbor's house or mobile phone.

- Crawl low under any smoke to your exit - heavy smoke and poisonous gases collect first along the ceiling. The air closest to the floor will be less filled with smoke and fumes. This makes breathing and seeing easier;

- If there is smoke blocking your door or first way out, use your second way out;

- Smoke is toxic. If you must escape through smoke, get low and go under the smoke to your way out;

- Before opening a door, feel the doorknob and door. If either is hot, leave the door closed and use your second way out;

- If there is smoke coming around the door, leave the door closed and use your second way out;

- If you open a door, open it slowly. Be ready to shut it quickly if heavy smoke or fire is present;

- If you can't get to someone needing assistance, leave the home and call 911 or the fire department. Tell the emergency operator where the person is located. **NEVER GO BACK INTO A BURNING HOME;**

- If pets are trapped inside your home, tell firefighters right away;
- If you can't get out, close the door and cover vents and cracks around doors with cloth or tape to keep smoke out. Call 9-1-1 or your fire department. Say where you are and signal for help at the window with a light-colored cloth or a flashlight.

Follow the above escape techniques if you are caught in a fire outside of your own home, in your workplace, someone else's home, or other public building.

NOTE: If your clothes catch fire, **Stop, Drop, and Roll** – stop immediately, drop to the ground, and cover your face with your hands. Roll over and over or back and forth until the fire is out. If you or someone else cannot stop, drop and roll, smother the flames with a blanket or towel. If the person is burned, use cool water to treat the burn immediately for 3 to 5 minutes. Cover with a clean, dry cloth; refer back to Chapter 6 for First Aid for Burns. Get medical help right away by calling 9-1-1 or the fire department. Make sure all family members and especially children know and practice STOP, DROP and ROLL.

What About Fire Extinguishers?
According to the US Fire Administration (www.usfa.fema.gov) The use of a fire extinguisher in the hands of a trained adult can be a life and property saving tool. However, a majority of adults have not had fire extinguisher training and may not know how and when to use them. Fire extinguisher use requires a sound decision making process and training on their proper use and maintenance.

USFA says you need to consider the following three questions before purchasing or using a fire extinguisher to control a fire:

1. What type of fire extinguisher is needed?
Different types of fires require different types of extinguishers. For example, a grease fire and an electrical fire require the use of different extinguishing agents to be effective and safely put the fire out.

Basically, there are five different types of extinguishing agents. Most fire extinguishers display symbols to show the kind of fire on which they are to be used.

Types of Fire Extinguishers

Class A extinguishers put out fires in ordinary combustible materials such as cloth, wood, rubber, paper, and many plastics.

Class B extinguishers are used on fires involving flammable liquids, such as grease, gasoline, oil, and oil-based paints.

Class C extinguishers are suitable for use on fires involving appliances, tools, or other equipment that is electrically energized or plugged in.

Class D extinguishers are designed for use on flammable metals and are often specific for the type of metal in question. These are typically found only in factories working with these metals.

Class K fire extinguishers are intended for use on fires that involve vegetable oils, animal oils, or fats in cooking appliances. These extinguishers are generally found in commercial kitchens, such as those found in restaurants, cafeterias, and caterers. Class K extinguishers are now finding their way into the residential market for use in kitchens.

There are also multi-purpose fire extinguishers - such as those labeled "B-C" or "A-B-C" - that can be used on two or more of the above type fires.

2. Is the fire at a point where it might still be controlled by a fire extinguisher?
Portable fire extinguishers are valuable for immediate use on small fires. They contain a limited amount of extinguishing material and need to be properly used so that this material is not wasted. For example, when a pan initially catches fire, it may be safe to turn off the burner, place a lid on the pan, and use an extinguisher. By the time the fire has spread, however, these actions will not be adequate. **Only trained firefighters can safely extinguish such fires.**

You Should Use a Fire Extinguisher Only If:

- You have alerted other occupants and someone has called the fire department;
- The fire is small and contained to a single object, such as a wastebasket;
- You are safe from the toxic smoke produced by the fire;
- You have a means of escape identified and the fire is not between you and the escape route;
- Your instincts tell you that it is safe to use an extinguisher.

If *all* of these conditions are not present, you should NOT try to use a fire extinguisher. Alert other occupants, leave the building following your home escape plan, go to the agreed upon meeting place, and call the fire department from a cell phone or a neighbor's home.

3. Am I physically capable of using the extinguisher?
Some people have physical limitations that might diminish or eliminate their ability to properly use a fire extinguisher. People with disabilities, older adults, or children may find that an extinguisher is too heavy to handle or it may be too difficult for them to exert the necessary pressure to operate the extinguisher.

Proper Extinguisher Maintenance
Fire extinguishers need to be regularly checked to ensure that:

- The extinguisher is not blocked by furniture, doorways, or any thing that might limit access in an emergency;

- The pressure is at the recommended level. Some extinguishers have gauges that indicate when the pressure is too high or too low;

- All parts are operable and not damaged or restricted in any way. Make sure hoses and nozzles are free of insects or debris. There should not be any signs of damage or abuse, such as dents or rust, on the extinguisher;

- The outside of the extinguisher is clean. Remove any oil or grease that might accumulate on the exterior;

- Shake dry chemical extinguishers once a month to prevent the powder from settling or packing. Check the manufacturer's recommendations;

- Pressure test the extinguisher, (a process called hydrostatic testing) after a number of years to ensure that the cylinder is safe to use. Find out from the owner's manual, the label, or the manufacturer when an extinguisher may need this type of testing;

- Immediately replace the extinguisher if it needs recharging or is damaged in any way.

Sound Decision Making – Training - Maintenance - All THREE are required to safely control a fire with an extinguisher. For this reason, USFA recommends that only those trained in the proper use and maintenance of fire extinguishers consider using them when appropriate. Contact your local fire department for information on Fire Extinguisher training in your area.

After the Fire

Recovering from a house fire will be a physically, mentally and emotionally draining process for you and your family. After a fire strikes, lives are

suddenly turned around. Often, the hardest part is knowing what to do next and who to contact.

The following checklist serves as a quick reference and guide for you to follow after a fire strikes.

- Contact your local disaster relief service, such as The Red Cross, if you need temporary housing, food and medicines;

- If you are insured, contact your insurance company for detailed instructions on protecting the property, conducting inventory and contacting fire damage restoration companies. If you are not insured, try contacting private organizations for aid and assistance;

- Before your re-enter your property check with the fire department to make sure your residence is safe to enter. Be watchful of any structural damage caused by the fire;

- The fire department should see that utilities are either safe to use or are disconnected before they leave the site. DO NOT attempt to reconnect utilities yourself;

- Conduct an inventory of damaged property and items. Do not throw away any damaged goods until after an inventory is made;

- Try to locate valuable documents and records. This will be easier if you had the foresight to use a Fire Safe. If you have a Fire Safe make sure it has been allowed to cool before you attempt to open it;

- If you leave your home, contact the local police department to let them know the site will be unoccupied;

- Begin saving receipts for any money you spend related to fire loss. The receipts may be needed later by your insurance company and for verifying losses claimed on your income taxes;

- Notify your mortgage company of the fire;

- Check with an accountant or the Internal Revenue Service about special benefits for people recovering from fire loss.

For more information on what you should do after a home fire, including valuing your property, replacing documents, and salvage hints, visit the U.S. Fire Administration's website (http://www.usfa.fema.gov/)

Dealing with Wild Fires

House fires are something that can happen to anyone, anywhere, accepting that possibility and being prepared is your best bet for getting out alive. Wild Fires are a specific Natural Disaster, and like other natural disasters, occur in specific areas of the world and times of the year. However, as we have increasingly encroached on the natural world, and especially in the United States, continue to build and develop residences closer and closer to wild areas, Wild Fires have posed increased threats to home owners and human life.

Like other natural disasters Wild Fires may not be totally predictable or entirely preventable. Every year some homes survive - while many others do not - after a major wildfire. Those that survive almost always do so because their owners had prepared for the eventuality of the fire, which is part of the natural order of things in fire-prone wildland areas. If as part of your Risk Assessment you know you are in an area prone to Wild Fires you can and should make preparations to protect yourself, your family, and minimize the potential damage to your home and property.

Before a Wildfire

As always to begin preparing for a Wild Fire, you should build an emergency kit, a Go Bag, and make a family communications plan. Beyond that:

- Design and landscape your home with wildfire safety in mind. Select materials and plants that can help contain fire rather than fuel it;

- Use fire-resistant or noncombustible materials on the roof and exterior structure of the dwelling, or treat wood or combustible material used in roofs, siding, decking or trim with fire-retardant chemicals evaluated by a nationally recognized laboratory, such as Underwriters Laboratories (UL);

- Plant fire-resistant shrubs and trees. For example, hardwood trees are less flammable than pine, evergreen, eucalyptus or fir trees;
- Regularly clean roof and gutters;
- Inspect chimneys at least twice a year. Clean them at least once a year. Keep the dampers in good working order;
- Use 1/8-inch mesh screen beneath porches, decks, floor areas, and the home itself. Also, screen openings to floors, roof and attic;
- Install a dual-sensor smoke alarm on each level of your home, especially near bedrooms; test monthly and change the batteries at least once each year;
- Keep handy household items that can be used as fire tools: a rake, axe, handsaw or chain saw, bucket and shovel;
- Keep a ladder that will reach the roof;
- Consider installing protective shutters or heavy fire-resistant drapes;
- Clear items that will burn from around the house, including wood piles, lawn furniture, barbecue grills, tarp coverings, etc. Move them outside of your defensible space.

It is recommended that you create a 30 to 100 foot safety zone around your home. Within this area, you can take steps to reduce potential exposure to flames and radiant heat. Homes built in pine forests should have a minimum safety zone of 100 feet. If your home sits on a steep slope, standard protective measures may not suffice. Contact your local fire department or forestry office for additional information.

- Rake leaves, dead limbs and twigs. Clear all flammable vegetation;
- Remove leaves and rubbish from under structures;
- Thin a 15-foot space between tree crowns, and remove limbs within 15 feet of the ground;

- Remove dead branches that extend over the roof;
- Prune tree branches and shrubs within 15 feet of a stovepipe or chimney outlet;
- Ask the power company to clear branches from power lines;
- Remove vines from the walls of the home and mow grass regularly;
- Clear a 10-foot area around propane tanks and the barbecue. Place a screen over the grill - use nonflammable material with mesh no coarser than one-quarter inch;
- Regularly dispose of newspapers and rubbish at an approved site. Follow local burning regulations;
- Place stove, fireplace and grill ashes in a metal bucket, soak in water for 2 days; then bury the cold ashes in mineral soil;
- Store gasoline, oily rags and other flammable materials in approved safety cans. Place cans in a safe location away from the base of buildings;
- Stack firewood at least 100 feet away and uphill from your home. Clear combustible material within 20 feet. Use only wood-burning devices evaluated by a nationally recognized laboratory, such as Underwriters Laboratories (UL);
- Review your homeowner's insurance policy and also prepare/update a list of your home's contents.

During a Wildfire

If you see a wildfire, call 9-1-1. Don't assume that someone else has already called. Describe the location of the fire, speak slowly and clearly, and answer any questions asked by the dispatcher.

- Arrange temporary housing at a friend or relative’s home outside the threatened area in case you need to evacuate;

- Wear protective clothing – sturdy shoes, cotton or woolen clothes, long pants, a long-sleeved shirt, gloves and a handkerchief to protect your face;
- Gather fire tools such as a rake, axe, handsaw or chainsaw, bucket and shovel;
- Close outside attic, eaves and basement vents, windows, doors, pet doors, etc. Remove flammable drapes and curtains. Close all shutters, blinds or heavy non-combustible window coverings to reduce radiant heat;
- Close all doors inside the house to prevent draft. Open the damper on your fireplace, but close the fireplace screen;
- Shut off any natural gas, propane or fuel oil supplies at the source;
- Connect garden hoses. Fill any pools, hot tubs, garbage cans, tubs or other large containers with water;
- Place lawn sprinklers on the roof and near above-ground fuel tanks. Wet down your roof;
- If you have gas-powered pumps for water, make sure they are fueled and ready;
- Place a ladder against the house in clear view;
- Back your car or designated Bug-Out Vehicle into the driveway ready for quick departure; shut the doors and roll up the windows. Leave the key in the ignition and the car doors unlocked. Place valuable papers, mementos and anything "you can't live without" inside the car. If you feel an evacuation is eminent, put any pets still with you in the car and ready to go;
- Disconnect any automatic garage door openers so that doors can still be opened by hand if the power goes out. Close all garage doors;
- Place valuables that will not be damaged by water in a pool or pond;

- Move flammable furniture into the center of the residence away from the windows and sliding-glass doors;

- Turn on outside lights and leave a light on in every room to make the house more visible in heavy smoke;

- Leave doors and windows closed but unlocked. It may be necessary for firefighters to gain quick entry into your home to fight fire. The entire area will be isolated and patrolled by sheriff's deputies or police;

- If advised to evacuate, do so immediately. Take your Go Bag(s) with, lock your home and choose a route away from the fire hazard. Watch for changes in the speed and direction of the fire and smoke. Tell someone when you left and where you are going.

Surviving the Firestorm

Despite your preparations and best intentions to evacuate – fire is an unpredictable and fast moving force – hence the name "WILD FIRE."
If you find yourself in the midst of a Fire Storm in your car stay in the vehicle, it is much less dangerous than trying to outrun a fire on foot.

- Roll up windows and close air vents. Drive slowly with headlights on. Watch for other vehicles and pedestrians. Do not drive through heavy smoke;

- If you have to stop, park away from the heaviest trees and brush. Turn headlights on and ignition off. Roll up windows and close air vents;

- Get on the floor and cover up with a blanket or coat;

- Stay in the vehicle until the main fire passes;

- Stay in the car. Do not run! Engine may stall and not restart. Air currents may rock the car. Some smoke and sparks may enter the vehicle. Temperature inside will increase – but metal gas tanks and containers rarely explode.

If You Become Trapped in Your Home
If you do find yourself trapped by wildfire inside your home, stay inside and away from outside walls. Close doors, but leave them unlocked. Keep your entire family together and remain calm.

If Caught Outdoors in the Open

- The best temporary shelter is in a place of sparse fuel (trees and foliage) on a steep mountainside, the backside is safer. Avoid canyons, natural "chimneys" and saddles;

- If a road is nearby, lie face down along the road cut or in the ditch on the uphill side. Cover yourself with anything that will shield you from the fire's heat;

- If hiking in the backcountry, seek a depression with sparse fuel. Clear fuel away from the area while the fire is approaching and then lie face down in the depression and cover yourself. Stay down until after the fire passes!

After A Wild Fire

- Go to a designated public shelter if you have been told to evacuate or you feel it is unsafe to remain in your home. In the US you can Text SHELTER + your ZIP code to 43362 (4FEMA) to find the nearest shelter in your area (example: shelter 12345);

- If you are with burn victims, or are a burn victim yourself, call 9-1-1 or seek help immediately; cool and cover burns to reduce chance of further injury or infection;

- If you remained at home, check the roof immediately after the fire danger has passed. Put out any roof fires, sparks or embers. Check the attic for hidden burning sparks.
- If the power is out, follow the protocols you have learned for using your stored food. Refer back to Chapter 12 if necessary. It is important that you discard any food that has been exposed to heat, smoke or soot;

- For several hours after the fire, maintain a "fire watch." Re-check for smoke and sparks throughout the house;
- If you have evacuated, do not enter your home until fire officials say it is safe;
- If a building inspector has placed a color-coded sign on the home, do not enter it until you get more information, advice and instructions about what the sign means and whether it is safe to enter your home;
- If you must leave your home because a building inspector says the building is unsafe, ask someone you trust to watch the property during your absence;
- Use caution when entering burned areas as hazards may still exist, including hot spots, which can flare up without warning;
- If you detect heat or smoke when entering a damaged building, evacuate immediately;
- If you have a safe or strong box, do not try to open it. It can hold intense heat for several hours. If the door is opened before the box has cooled, the contents could burst into flames;
- Avoid damaged or fallen power lines, poles and downed wires;
- Watch for ash pits and mark them for safety—warn family and neighbors to keep clear of the pits also;
- Watch animals closely and keep them under your direct control. Hidden embers and hot spots could burn your pets’ paws or hooves;
- Follow public health guidance on safe cleanup of fire ash and safe use of masks;
- Wet debris down to minimize breathing dust particles;
- Wear leather gloves and heavy soled shoes to protect hands and feet;

- Cleaning products, paint, batteries and damaged fuel containers need to be disposed of properly to avoid risk;

- Do NOT use water that you think may be contaminated to wash dishes, brush teeth, prepare food, wash hands, make ice or make baby formula.

As in any disaster recovery situation, remain calm. Pace yourself. You may find yourself in the position of taking charge of other people. Listen carefully to what people are telling you, and deal patiently with urgent situations first.

Wild Fires are considered “Natural Disasters” because they are often set off by lightening. In many ways forest fires are part of the natural order of things, and the way forests and woodlands have of sustaining themselves. But, humans have a way of disturbing the natural order of things, and it is humans who usually start most wild fires that pose a treat to people and their homes!

You can take steps to prevent wild fires and minimize their effects by becoming more aware of Wild Fire safety practices.

- Report hazardous conditions that could cause a wildfire;

- Teach children about fire safety. Keep matches out of their reach;

- Post fire emergency telephone numbers;

- Ensure adequate accessibility by large fire vehicles to your property;

- Plan several escape routes away from your home - by car and by foot;

- Talk to your neighbors about wildfire safety. Plan how the neighborhood could work together after a wildfire. Make a list of your neighbors' skills such as medical or technical. Consider how you could help neighbors who have special needs such as elderly or disabled persons. Make plans to take care of children who may be on their own if parents can't get home;

- Before burning debris in a wooded area, make sure you notify local authorities and obtain a burning permit. Have a fire extinguisher or garden hose on hand when burning debris.

Final Thoughts

Fire is a force of nature. For untold centuries humans have attempted to control fire in its many different forms to give us power and dominion over the planet – but every now and then, Mother Nature lets us know who still is the boss. It is only when we know and respect the true nature of fire can we properly prepare and protect our families and ourselves from its darker side.

Chapter 16

Floods

"You don't drown by falling in the water;
you drown by staying there."
— Edwin Louis Cole

Floods are one of the most common hazards or Natural Disasters the world over. Floods can occur as a disaster, all their own but Floods are often the result of other natural disasters or weather events, which is why they occur so often. Heavy Rains, Hurricanes, Snow Melt, Earthquakes, even Wild Fires, all can lead to flooding.

While floods can be a bit of an ever-present threat, not all floods are alike. Some floods develop slowly while others, such a flash floods, can develop in just a few minutes and with little or no warning; sometimes even without out any visible signs of rain. Floods can be very localized, impacting only your block, or neighborhood -- or very large, affecting entire river basins and multiple areas.

Flash floods often have a dangerous wall of roaring water carrying rocks, mud and other debris. Overland flooding, the most common type of flooding event typically occurs when waterways such as rivers or streams overflow their banks as a result of rainwater or a possible levee or dam breach and cause flooding to the surrounding areas. It can also occur when rainfall or snowmelt exceeds the capacity of underground pipes, or the capacity of streets and drains designed to carry flood water away from urban areas.

Even if you feel you live in a community with a low risk of flooding, remember that anywhere it rains, it can flood. You need to be aware of flood hazards no matter where you live or work, but especially if you are in low-lying areas, near water, behind a levee or downstream from a dam. Even very small streams, gullies, creeks, culverts, dry streambeds or low-lying ground that appear harmless in dry weather can flood.

As part of your Risk Assessment in Chapter 2 you should have looked at the maps available at www.floodsmart.gov or www.DisasterSafety.org, and you should be aware if you are in an area prone to flooding.

NOTE: Flood Insurance is usually not part of your standard homeowners or renter's insurance policy. You can also use your areas Flood Hazard Map to determine the type of flood insurance coverage you will need, if it's available and what it will cost. The lower the degree of risk - the lower the flood insurance premium.

Before a Flood

To Prepare Your Home for a Flood

Being prepared for a flood, as always, starts with having a plan and making sure your disaster preparedness kit and Go Bag are fresh, ready and accessible. Beyond that you need to:

- Avoid building in a floodplain unless you elevate and reinforce your home;
- Consider strengthening your walls to withstand flood water pressures and flood debris;
- Install a sump pump and foundation drain system;
- Elevate the furnace, water heater and electric panel in your home if you live in an area that has a high flood risk;
- Consider installing "check valves" to prevent floodwater from backing up into the drains of your home;

- If feasible, construct barriers to stop floodwater from entering the building and seal walls in basements with waterproofing compounds.

Flood Terms You Need to Know

- **Flood Watch** - Flooding is possible. Tune in to NOAA Weather Radio, commercial radio or television for information;

- **Flash Flood Watch** - Flash flooding is possible. Be prepared to move to higher ground; listen to NOAA Weather Radio, commercial radio or television for information;

- **Flood Warning** - Flooding is occurring or will occur soon; if advised to evacuate, do so immediately;

- **Flash Flood Warning** - A flash flood is occurring; seek higher ground on foot immediately.

When A Flood is threatening

- Listen to area radio and television stations and a have your NOAA Weather Radio handy for possible flood warnings and reports of flooding in progress or other critical information from the National Weather Service (NWS);

- Have you Go Bag and your Bug-Out Vehicle ready and be prepared to evacuate at a moment's notice;

- Clear drains, gutters and downspouts of debris;

- Roll up area rugs and carpeting, where possible, and store these on higher floors or elevations. This will reduce the chances of rugs getting wet and growing mold;

- Move furniture and electronics off the floor, particularly in basements and first floor levels;

- Anchor fuel tanks. An unanchored tank can be torn free by floodwaters, and the broken supply line can cause contamination or, if outdoors, can be swept downstream and damage other property;

- Inspect sump pumps and drains to ensure proper operation. If a sump pump has a battery backup, make sure the batteries are fresh or replace the batteries;

- Shut off electrical service at the main breaker if the electrical system and outlets will be under water;

- Place all appliances, including stove, washer and dryer on masonry blocks or concrete at least 12 inches above the projected flood elevation;

- When a flood or flash flood warning is issued for your area, head for higher ground and stay there;

- Stay away from floodwaters. If you come upon a flowing stream where water is above your ankles, stop, turn around and go another way. Six inches of swiftly moving water can sweep you off of your feet;

- Keep children out of the water. They are curious and often lack judgment about running water or contaminated water;

- Be especially cautious at night when it is harder to recognize flood danger.

During A Flood

If a flood is eminent or if flood hazard conditions have started in your area:

- Listen to the radio or television or especially your NOAA radio for updated information;

- Be aware that flash flooding can occur. If there is any possibility of a flash flood, move immediately to higher ground. Do not wait for instructions to move;

- Be aware of stream, drainage channels, canyons and other areas known to flood suddenly. Flash floods can occur in these areas with or without typical warnings such as rain clouds or heavy rain.

If you choose to or are instructed to evacuate: you should do the following:

- Know you Evacuation Route before you need to use it. Have at least one or two alternatives if road conditions become too hazardous to travel;

- Secure your home. If you have time, bring in outdoor furniture. Move essential items to an upper floor;

- Be sure you have your Go Bag(s) with you;

- Turn off utilities at the main switches or valves if instructed to do so. Disconnect electrical appliances. Do not touch electrical equipment if you are wet or standing in water;

- Do not walk through moving water. Six inches of moving water can make you fall. If you have to walk in water, walk where the water is not moving. Use a stick to check the firmness of the ground in front of you;

- Do not drive into flooded areas. If floodwaters rise around your car, abandon the car and move to higher ground if you can do so safely. You and the vehicle can be swept away quickly;

- Do not camp or park your vehicle along streams, rivers or creeks, particularly during threatening conditions;

- Decide in advance on a family meeting place, in case you are separated;

- Make arrangements for any pets or livestock.

A SPECIAL NOTE ABOUT DRIVING DURING FLOOD CONDITIONS

Many lives are lost during floods due to motorists and evacuees underestimating the capabilities of their vehicles and the extent of flooding to roadways. You should never attempt to drive through a flooded road. The depth of water is not always obvious. The roadbed may be washed out under the water, and you could be stranded or trapped.

You need to be aware that:

- It only takes six inches of water to reach the bottom of most passenger cars causing loss of control and possible stalling;
- A foot of water will float most vehicles;
- Two feet or more of rushing water can carry away most vehicles even sport utility vehicles (SUV's) and pick-ups.

When driving during flood conditions:

- Do not attempt to drive through a flooded road. The depth of water is not always obvious;
- Do not drive around a barricade. Barricades are there for your protection. Turn around and go the other way;
- Do not try to take short cuts. They may be blocked. Stick to designated evacuation routes.
- Be especially cautious driving at night when it is harder to recognize flood dangers.

After A Flood

In the aftermath of a flood, although floodwaters may be down in some areas, many dangers still exist. In fact as evidenced by the massive flooding that occurred when the levees gave way during Hurricane Katrina, it is after a major flood, when many of the problems first begin, or get much worse.

Here are some things to remember in the days following a flood:

- Use local alerts and warning systems to get information and expert advice as soon as available;
- Avoid moving water;
- Stay away from damaged areas unless police, fire, or a relief organization has specifically requested your assistance;
- Emergency workers will be assisting people in flooded areas. You can help them by staying off the roads and out of the way;
- Play it safe. Additional flooding or flash floods can occur. Listen for local warnings and information;
- If your car stalls in rapidly rising waters, get out immediately and climb to higher ground;
- Return home only when officials have declared the area safe;
- Before entering your home, look outside for loose power lines, damaged gas lines, foundation cracks or other damage;
- Parts of your home may be collapsed or damaged. Approach entrances carefully. See if porch roofs and overhangs have all their supports;
- Watch out for wild animals, especially poisonous snakes that may have come into your home with the floodwater;
- If you smell natural or propane gas or hear a hissing noise, leave immediately and call the fire department;
- Roads may still be closed because they have been damaged or are covered by water. Barricades have been placed for your protection. If you come upon a barricade or a flooded road, go another way;
- If you must walk or drive in areas that have been flooded, stay on firm ground. Remember it only takes 6 inches of moving water to

sweep you off your feet. Standing water may be electrically charged from underground or downed power lines;

- Flooding may have caused familiar places to change. Floodwaters often erode roads and walkways. Flood debris may hide animals and broken bottles, and it's also slippery. Avoid walking or driving through it;

- Be aware of areas where floodwaters have receded. Roads may have weakened and could collapse under the weight of a car;

- Stay out of any building if it is surrounded by floodwaters;

- Use extreme caution when entering buildings; there may be hidden damage, particularly in foundations;

- "When in doubt, throw it out": Dispose of food, beverages and medicine exposed to floodwaters and mud, including canned goods, capped bottles and sealed containers. Water may not be safe to drink, clean with, or bathe in after an emergency such as a flood. Use only bottled, boiled, or treated water until your water supply is tested and found safe;

- Get rid of mold: Mold can cause asthma attacks or irritate your eyes, nose and skin. Remove all items that have been wet for more than 48 hours. To clean hard surfaces, use commercial cleaning products or a bleach solution of 1 cup of bleach to 1 gallon of water.

Final Thoughts

Water, like fire is one of nature's fundamental forces. Like fire, water can give life; it also can take it away and be devastatingly destructive. It is only by respecting and anticipating the power and potential of floodwaters that you can adequately prepare for them.

Chapter 17

Heat Waves and Heat Emergencies

"Nothing is better for self-esteem than survival."
— Martha Gellhorn, Travels With Myself and Another

Heat kills by pushing the human body beyond its limits. In extreme heat and high humidity, evaporation is slowed and the body must work extra hard to maintain a normal temperature.

Most heat disorders occur when you have been overexposed to heat or you have over –exerted yourself relative to your age and physical condition. Older adults, young children and those who are sick or overweight are more likely to succumb to extreme heat – but anyone can fall victim to the heat when failing to prepare properly.

Conditions that can induce heat-related illnesses include stagnant atmospheric conditions and poor air quality. Consequently, people living in urban areas may be at greater risk from the effects of a prolonged heat wave than those living in rural areas. Also, asphalt and concrete store heat longer and gradually release heat at night, which can produce higher nighttime temperatures known as the "urban heat island effect."

A heat wave is an extended period of extreme heat, and is often accompanied by high humidity. These conditions can be dangerous and even life-threatening for humans who don't take the proper precautions.

As with many natural disasters a heat emergency can be the result of another disaster. For example, in the aftermath of a hurricane, or earthquake in tropical region or other areas of hot temperatures, power outages can put people used to the comforts of air-conditioning, in danger of heat emergencies.

Common heat related distress conditions include, Heat Cramps, Heat Exhaustion, and Heat Stroke.

Heat Cramps - Muscular pains and spasms due to heavy exertion. Although heat cramps are the least severe, they are often the first signal that the body is having trouble with the heat.

Heat Exhaustion - Typically occurs when people exercise heavily or work in a hot, humid place where body fluids are lost through heavy sweating. Blood flow to the skin increases, causing blood flow to decrease to the vital organs. This results in a form of mild shock. If not treated, the victim's condition will worsen. Body temperature will keep rising and the victim may suffer heat stroke.

Heat Stroke - A life-threatening condition. The victim's temperature control system, which produces sweating to cool the body, stops working. The body temperature can rise so high that brain damage and death may result if the body is not cooled quickly.

An extreme heat emergency is often referred to as a "Heat Wave." Some terms you need to be aware of as you prepare for a potential heat emergency are:

- **Heat Index** - A number in degrees Fahrenheit (F) that tells how hot it feels when relative humidity is added to the air temperature. Exposure to full sunshine can increase the heat index by 15 degrees;

- **Excessive Heat Watch** - Conditions are favorable for an excessive heat event to meet or exceed local Excessive Heat Warning criteria in the next 24 to 72 hours;

- **Excessive Heat Warning** - Heat Index values are forecast to meet or exceed locally defined warning criteria for at least 2 days (daytime highs=105-110° Fahrenheit);

- **Heat Advisory** - Heat Index values are forecast to meet locally defined advisory criteria for 1 to 2 days (daytime highs=100-105° Fahrenheit).

Before a Heat Disaster or Emergency

As always the first and foremost thing you need to do to prepare for a heat emergency is to have your Go Bag ready, and make sure all of the supplies of your Home Preparedness Kit are accessible, fresh and well-maintained.

Specific to preparing for a Heat Disaster:

- You should make sure all window air conditioners fit snugly and are properly sealed;

- You should check air-conditioning ducts for proper insulation;

- You should install temporary window reflectors (for use between windows and drapes), such as aluminum foil-covered cardboard, to reflect heat back outside;

- You should place weather-striping along doors and sills to keep cool air in;

- You should cover windows that receive morning or afternoon sun with drapes, shades, awnings, or louvers. (Outdoor awnings or louvers can reduce the heat that enters a home by up to 80 percent);

- If you use storm windows, keep them up all year;

- You need to listen to local weather forecasts and stay aware of upcoming temperature changes;

- Be aware of those in your neighborhood who are elderly, young, sick or overweight. They are more likely to become victims of excessive heat and may need your help;

- Be aware that people living in urban areas may be at greater risk from the effects of a prolonged heat wave than are people living in rural areas;

- You should bone up on first aid for heat-related emergencies.

What To Do When it Gets Too Hot

- Listen to your NOAA Weather Radio for critical updates from the National Weather Service (NWS);

- Never leave your children or pets alone in closed vehicles;

- Stay indoors as much as possible and limit your exposure to the sun;

- Stay on the lowest floor of your home -- out of the sunshine if air conditioning is not available;

- Postpone outdoor games and activities;

- If public places still have power, consider spending the warmest part of the day in public buildings such as libraries, schools, movie theaters, shopping malls, and other community facilities. Circulating air can cool the body by increasing the perspiration rate of evaporation;

- Eat well-balanced, light, and regular meals;

- Drink plenty of water; even if you do not feel thirsty. Avoid drinks with caffeine. Persons who have epilepsy or heart, kidney, or liver disease; are on fluid-restricted diets; or have a problem with fluid retention should consult a doctor before increasing liquid intake;

- Replace Salt and Minerals - Heavy sweating removes salt and minerals from the body. These are necessary for your body and must be replaced. If you must exercise, drink two to four glasses of cool, non-alcoholic fluids each hour. A sports beverage can replace the salt

and minerals you lose in sweat. However, if you are on a low-salt diet, talk with your doctor before drinking a sports beverage or taking salt tablets;

- Limit intake of alcoholic beverages;

- Dress in loose-fitting, lightweight, and light-colored clothes that cover as much skin as possible. Avoid dark colors because they absorb the sun's rays;

- Protect face and head by wearing a wide-brimmed hat;

- Avoid strenuous work during the warmest part of the day. Use a buddy system when working in extreme heat, and take frequent breaks;

- Check on family, friends, and neighbors who do not have air conditioning and who spend much of their time alone;

- Try to avoid extreme temperature changes;

- Check on your animals frequently to ensure that they are not suffering from the heat. Go to a designated public shelter if your home loses power during periods of extreme heat. Text SHELTER + your ZIP code to 43362 (4FEMA) to find the nearest shelter in your area (example: shelter 12345).

If you must be outdoors for extended periods of time during a heat emergency you must learn to pace yourself. You probably are not accustomed to working or exercising in a hot environment, so you need to start slowly and pick up the pace gradually. If exertion in the heat makes your heart pound and leaves you gasping for breath, STOP all activity. Get into a cool area or at least into the shade, and rest, especially if you become lightheaded, confused, weak, or faint.

Basic First Aid For Heat Emergencies

The elderly, the very young, and people with chronic diseases, and compromised immune systems are at the highest risk to succumb to a heat related illness or injury. However, even young and healthy individuals can fall prey to heat if they participate in strenuous physical activities during hot weather.

As in First Aid techniques during any crisis or emergency, you should get the victim to medical professionals as soon as possible.

These self-help measures are designed to help you recognize and respond promptly to warning signs of trouble. Your best defense against heat-related illness is prevention. Staying cool and making simple changes in your fluid intake, activities, and clothing during hot weather can help you remain safe and healthy for the most part.

The National Center for Environmental Health (NCEH) suggets that, during any heat emergency, you monitor those at highest risk to suffer heat related death or illness.

- Infants and young children;
- People 65 years of age or older;
- People who are overweight who may be prone to heat sickness because of their tendency to retain more body heat;
- People who are physically ill, especially with heart disease or high blood pressure.

The following chart illustrates the most common heat related conditions, presented in order from the least to the most severe.

Condition	Symptoms	First Aid
Sunburn	Skin redness and pain, possible swelling, blisters, fever, headaches	Take a shower using soap to remove oils that may block pores, preventing the body from cooling naturally. Apply dry, sterile dressings to any blisters, and get medical attention.

Heat Cramps	Painful spasms, usually in leg and abdominal muscles; heavy sweating	Get the victim to a cooler location. Lightly stretch and gently massage affected muscles to relieve spasms. Give sips of up to a half glass of cool water every 15 minutes. (Do not give liquids with caffeine or alcohol.) Discontinue liquids, if victim is nauseated.
Heat Exhaustion	Heavy sweating but skin may be cool, pale, or flushed. Weak pulse. Normal body temperature is possible, but temperature will likely rise. Fainting or dizziness, nausea, vomiting, exhaustion, and headaches are possible.	Get victim to lie down in a cool place. Loosen or remove clothing. Apply cool, wet clothes. Fan or move victim to air-conditioned place. Give sips of water if victim is conscious. Be sure water is consumed slowly. Give half glass of cool water every 15 minutes. Discontinue water if victim is nauseated. Seek immediate medical attention if vomiting occurs.
Heat Stroke	High body temperature (105+); hot, red, dry skin; rapid, weak pulse; and rapid shallow breathing. Victim will probably not sweat unless victim was sweating from recent strenuous activity. Possible unconsciousness.	Call 9-1-1 or emergency medical services, or get the victim to a hospital immediately. Delay can be fatal. Move victim to a cooler environment. Removing clothing Try a cool bath, sponging, or wet sheet to reduce body temperature. Watch for breathing problems. Use extreme caution. Use fans and air conditioners.

The NCEH says that you should check in on adult at risk individuals at least twice a day during a heat emergency, and closely watch them for signs of heat exhaustion or heat stroke. Infants and young children, of course, need much more frequent watching.

NOTE: If water becomes scarce as can happen in extended Heat Emergencies, refer to your alternative sources of water back in Chapter 11.

Final Thoughts

Do not overlook the severity of heat emergencies. Again, like drought, the aftermath of a Heat Wave may not make for dramatic news pictures –but did you know that from 1979-2003, more people in the U.S. died from extreme heat than from hurricanes, lightning, tornadoes, floods, and earthquakes combined?

But the good news is, with a little knowledge and preparation, and by keeping yourself in your best "Survival Shape", most heat related deaths and illnesses are preventable.

Chapter 18

Hurricanes

"There is a saying in Tibetan, 'Tragedy should be utilized as a source of strength.' No matter what sort of difficulties, or how painful the experience is, if we lose our hope, that's our real disaster."
— Dalai Lama XIV

It would be impossible to discuss hurricane preparedness and survival in any modern day Guide, without first talking a bit about the tragic events surrounding the impact of Hurricane Katrina to New Orleans, many of which are still being felt today years later.

In many ways the days leading up to and after Katrina made landfall, are a perfect example of the do's and don'ts for preparedness, survival, and government responses to a Natural Disaster.

David Paulison, FEMA Director, referring to "lessons learned" since Katrina has said, "Hurricane Katrina was the most catastrophic natural disaster in our nation's history and the lives lost will not be in vain as FEMA works to learn from the lessons of this unprecedented storm. This disaster has changed the face of the entire emergency management community, from the international and federal levels to state and local levels; we must all embrace the lessons from Katrina and improve our capabilities. We must remember the devastation wrought by Katrina and remove any

complacency with regard to preparing ourselves and our loved ones for disasters".

His words are all well and good, and it is encouraging that FEMA and the Federal government is willing to learn from its mistakes. But if you can take one lesson away from the events surrounding the responses or lack thereof; from Emergency Management Authorities in the days leading up to and after Katrina – it is that you should not, indeed cannot, count on the government or any Emergency Response Agency for your survival. Even with the lessons learned, and improvements made since Katrina, you must understand that even the best and most well-coordinated government Emergency Response Plan can be overwhelmed. You must take every precaution yourself to be prepared for a Hurricane (if you are in a risk area) or any natural disaster.

Katrina – What Went Wrong, What Went Right

Overall you can say that nobody was truly as prepared as they should have been for Katrina, from federal and local authorities, to individuals. However, despite the magnitude of the event, those that were better prepared fared much better than those who took little or no precautions, or who did not heed the warnings to evacuate when they could have more safely done so.

Here is a first hand account of Katrina Survivor, Margie Wilmoth, who was airlifted after remaining trapped by flood waters in her home, with her family for six-days.

“Phones were not working, landlines stayed up longest, cell phones were out with the storm but our home phone worked until the flood. So communication is not to be counted on. I know now that it is best to make plans with family before an event if you live in an area prone to possible disaster.”

Margie credits the preparations she had made for her family’s ability to make it through being virtually a captive in their own home for six-days.

“We managed to make quick calls when we saw the water coming up the street, we told our families [outside of New Orleans] that we were going to hunker down in our home and hold out, that we had plenty of water and

food, and with the chaos outside, felt safest at our house. We also told them that we would likely be removed at some point and would contact them and might need airplane tickets to their cities or other help, but to wait until we call them. We also reassured them that we were armed and that we knew of the anarchy and conditions that were deteriorating at the convention center and Superdome, and that we would refuse to leave until we knew someone could take us to a safe place out of New Orleans."

Being more prepared than some of her neighbors, Margie invited three of them to hunker down with her and her family. This is something you also always want to keep in mind when preparing your survival supplies and food and water stores. Would you turn a way a neighbor in distress if you were prepared and they were not? If you are smart enough to prepare, always prepare a bit extra, for those who did not share your foresight.

"We were careful with our water but had plenty even though we had three extra adults - having extra people is of course something that might very well occur in the event of a disaster. So hurricane season requires extra supplies on hand all season. We were fortunate in that the water stayed just low enough that it didn't come in our house."

Margie relates the items she did have that made her sheltering in place easier, and the ones she realized after the fact that she wished she did.

"Useful items we had included a crank radio and solar lights from the yard. We thought that we could go outside and sit in the running car to cool off with the air conditioning but we lost our vehicles too, and had to suffer with no relief from the sweltering heat. Even a little fold out hand fan would have helped so we used newspapers, magazines, etc. to fan ourselves . . . I did have a small tent available in case we needed it. If the roof didn't hold we could still stay in the house and have shelter. Fortunately our windows did not blow out because we have [hurricane] shutters. Tape and plastic are good to have on hand, tools like a battery operated screw gun, screws, hammer, nails, etc. We had a window that came loose and nearly broke out during the hurricane and we used a piece of wood, some screws and the screw gun to re-secure it."

“It would have helped to have sanitizing soap, the kind you can just put on your hands or body and rid the nasty water effect. Trash bags for discarding spoiled food and items that you need to put away from you. Wish we had cleaned out the refrigerator before it got nasty. We did use powdered Gatorade, we had to. It was soo-o-o hot day and night, so still and we sweated so much. Anyway dry Gatorade was a life saver for electrolytes. We didn't have instant coffee either, what a headache when we were used to grinding coffee fresh daily . . . so we chewed the coffee beans. Having the basics that you are accustomed to like coffee or tea… is a good idea”.

A report issued by the Whitehouse in 2006 entitled *The Federal Response to Hurricane Katrina: Lessons Learned* (http://georgewbush-whitehouse.archives.gov/reports/katrina-lessons-learned/) detailed 17 specific areas of failure and made 125 recommendations. “The seventeen specific lessons we have identified resulted in 125 recommendations, which have been reviewed by all relevant Federal departments and agencies,” said the reports conclusion. “These recommendations for corrective action are substantial, and the task to implement them will be a weighty one. Arriving at sound policy decisions is difficult enough, but the path to effectuating significant, transformational change within bureaucracies can be a lengthy process. But if the lessons of Katrina really are to be learned, this change is imperative.”

As we have not really experienced a disaster of the Katrina magnitude since the time of the report, whether that goal has been accomplished yet, still remains to be seen. But, if you read Margie’s account closely, then you can see that the things she had on hand that made the difference for her, and the things she wished she had, are all the things you should already know that you need to have in your Home Preparedness Kit, and your Go Bag.

The Ultimate Survival Project applauds FEMA and the Federal Government for their efforts to learn from mistakes of the past, but as always we encourage you to hope for the best in terms of a quick and effective government response, but prepare for the worst.

What to do Before a Hurricane

All Atlantic and Gulf of Mexico coastal areas are subject to hurricanes. Parts of the Southwest United States and the Pacific Coast also experience heavy

rains and floods each year from hurricanes spawned off Mexico. The Atlantic hurricane season lasts from June to November, with the peak season from mid-August to late October. The Eastern Pacific hurricane season begins May 15 and ends November 30.

Hurricanes can be so devastating because these powerful storms can spawn other damaging weather events. Hurricane can produce winds exceeding 155 miles per hour as well as tornadoes and microburst thunder storms. Additionally, hurricanes can create storm surges along the coast and cause extensive damage from heavy rainfall. Floods and flying debris from the excessive winds are often the most deadly and destructive results of these weather events. Slow moving hurricanes traveling into mountainous regions tend to produce especially heavy rain. Excessive rain can trigger landslides or mud slides. Flash flooding can occur due to intense rainfall.

When preparing for a hurricane as always, and as evidenced by Margie Wilmoth's story, the first thing you need to do is build an Emergency Preparedness Kit and your Go Bag. Check the items in your kit and bag – makes sure food and water are fresh and batteries all working. Make a family communications plan, and have your Bug-Out Vehicle prepared and your evacuation plan mapped out.

After that, in the next steps before an impending Hurricane you need to:

- Be sure you know the elevation level of your property and whether the land is flood-prone. This will help you know how your property will be affected when storm surge or tidal flooding are forecasted;

- Identify levees and dams in your area and determine whether they pose a hazard to you;

- Make plans to secure your property: Cover all of your home's windows. Permanent storm shutters offer the best protection for windows. A second option is to board up windows with 5/8" marine plywood, cut to fit and ready to install. Tape does not prevent windows from breaking;

- Install straps or additional clips to securely fasten your roof to the frame structure. This will reduce roof damage;

- Be sure trees and shrubs around your home are well trimmed so they are more wind resistant;

- Clear loose and clogged rain gutters and downspouts;

- Reinforce your garage doors; if wind enters a garage it can cause dangerous and expensive structural damage;

- Plan to bring all outdoor furniture, decorations, garbage cans and anything else that is not tied down inside;

- If you have a boat, determine how and where to secure it;

- Consider a generator for emergencies – but be aware of the proper ways to use it to avoid the risk of Carbon Monoxide poisoning;

- If you live in a high-rise building, be prepared to take shelter on or below the 10th floor;

- Turn your refrigerator and freezer to the coldest setting and keep them closed as much as possible so that food will last longer if the power goes out;

- Turn off propane tanks and unplug small appliances;

- Fill your car's gas tank;

- Talk with members of your household and create an evacuation plan, practice your shelter-in-place plan and evacuation plan with all family members to minimize confusion and fear during the event.

In addition to bringing in, or securing all outdoor furniture and other items that could become airborne projectiles in high winds, you need to evaluate the trees in and around your property. Do you have large trees near your

home or business? If so, keep the trees trimmed. Weak and low-hanging branches can easily be damaged in high winds and strike anything in the surrounding area. Heavy rains also can weaken tree roots, causing large trees to topple over onto your property. Consult an arborist, or your municipal authorities for detailed instruction on protecting your trees in hurricane-prone areas.

NOTE: Most standard homeowners insurance doesn't cover flooding, so it's important to have protection from the floods associated with hurricanes, tropical storms, heavy rains and other conditions that can impact you and your home. For more information on flood insurance, please visit the National Flood Insurance Program Website at www.FloodSmart.gov.

Stay tuned to TV or Radio for updates and reports. The good thing about Hurricanes is that with modern tracking techniques, you usually have a lot of time to prepare. Follow evacuation advice. You will usually be advised to evacuate if:

- You live in a mobile home or temporary structure – such shelters are particularly hazardous during hurricane no matter how well fastened to the ground;

- You live in a high-rise building – hurricane winds are stronger at higher elevations;

- You live on the coast, on a floodplain, near a river, or on an island waterway.

NOAA suggests that if you are in an area that is prone to Hurricanes, you may want to take specific steps to strengthen or "retrofit" you home to make it more likely to withstand a tropical cyclone. These include an assessment of the strength and construction of your roof, windows and doors. A complete list of NOAA's recommended improvements can be accessed at:

http://www.nhc.noaa.gov/HAW2/english/retrofit/secure_home.shtml

Warnings/Watches and the Terms You Need to Know

- **Tropical Depression** - An organized system of clouds and thunderstorms with a defined surface circulation and maximum sustained winds of 38 MPH (33 knots) or less. Sustained winds are defined as one-minute average wind measured at about 33 ft (10 meters) above the surface;

- **Tropical Storm** - An organized system of strong thunderstorms with a defined surface circulation and maximum sustained winds of 39–73 MPH (34–63 knots);

- **Hurricane** - An intense tropical weather system of strong thunderstorms with a well-defined surface circulation and maximum sustained winds of 74 MPH (64 knots) or higher. Hurricane are rated on a Category Scale from 1 to 5 based on speed of maximum sustained winds. But understand that even tropical storm force winds and Category 1 hurricanes can cause intensive damage – and should not be taken lightly;

- **Storm Surge** - A dome of water pushed onshore by hurricane and tropical storm winds. Storm surges can reach 25 feet high and be 50–1000 miles wide;

- **Storm Tide** - A combination of storm surge and the normal tide (i.e., a 15-foot storm surge combined with a 2-foot normal high tide over the mean sea level created a 17-foot storm tide);

- **Hurricane/Tropical Storm Watch** - Hurricane/tropical storm conditions are possible in the specified area, usually within 36 hours. Tune in to your NOAA Weather Radio, commercial radio, or television for information;

- **Hurricane/Tropical Storm Warning** - Hurricane/tropical storm conditions are expected in the specified area, usually within 24 hours;

- **Short Term Watches and Warnings** - These warnings provide detailed information about specific hurricane threats, such as flash floods and tornadoes.

What To Do When The Storm Hits

If you have chosen to shelter-in-place during a Hurricane, again, be sure you have your Emergency Preparedness Kit ready and easily accessible and your weather radio with you in whatever room you hunker down in.
If you have not prepared, or are unable to prepare a specific "wind safe" room, you need to:

- Stay indoors during the hurricane and away from windows and glass doors;

- Close all interior doors – secure and brace external doors;

- Keep curtains and blinds closed. Do not be fooled if there is a lull; it could be the eye of the storm – winds will pick up again;

- Take refuge in a small interior room, closet or hallway on the lowest level;

- Lie on the floor under a table or another sturdy object;

- Avoid elevators.

After the Hurricane Passes

In the aftermath of a hurricane there can be many hazards that can put you and your family at risk. You need to:

- Continue listening to a NOAA Weather Radio or the local news for the latest updates;

- Stay alert for extended rainfall and subsequent flooding even after the hurricane or tropical storm has ended;

- If you evacuated, return home only when officials say it is safe;

- Drive only if necessary and avoid flooded roads and washed-out bridges;

- Keep away from loose or dangling power lines and report them immediately to the power company;

- Stay out of any building that has water around it;

- Inspect your home for damage. Take pictures of damage, both of the building and its contents, for insurance purposes;

- Use flashlights in the dark. Try to avoid using candles, to minimize risk of fire;

- Avoid drinking or preparing food with tap water until you are sure it's not contaminated. Check refrigerated food for spoilage. If in doubt, throw it out. Refer back to Chapter 12 on using and maintaining your food stores in the absence of power;

- Wear protective clothing and be cautious when cleaning up to avoid injury;

- Watch animals closely and keep them under your direct control;

- If you have telephone service, use your phone only for emergency calls.

If you have become separated from your family, use your family communications plan or contact FEMA or the American Red Cross.

FEMA has established the National Emergency Family Registry and Locator System (NEFRLS) [https://egateway.fema.gov/inter/nefrls/home.htm] which has been developed to help reunite families who are separated during a disaster. The NEFRLS system will enable displaced individuals the ability to enter personal information into a website database so that they can be located by others during a disaster.

Flooding

During and after a hurricane coastal and inland areas as well, can be at great risk for flooding. When water finds its way inside your home or business during a hurricane, it can soak attic insulation and drywall, and cause extensive damage to other parts of the structure. This can lead to costly repairs, keep you out of your house for an extended period of time, or even lead to a total loss of your home or business building.

The Insurance Institute for Business & Home Safety (IBHS) has developed the following checklist to help identify areas of, and offer solutions for, the most common sources of water intrusion.

- Are there gaps around water faucet pipes where they enter the walls of the house?

- Are there gaps around gas pipes where they enter the house?

- Are there gaps around air conditioning pipes (white and foam covered) where they enter the house?

- Are there any gaps around electrical outlet boxes, junction boxes, circuit breaker boxes, disconnect switches, electric meters, etc.?

- Are there gaps between light fixtures and the face of the house?

- Are there gaps around dryer vents, gas water heater vents, range hood vents and the house?

- Are there cracks or voids in the mortar under the window sills?

- Is the finished floor of the house high (at least 6 inches) above soil and mulch?

- Are there parts of the house where water has gotten inside after heavy rains or where there has been standing water next to the house? Find a solution;

- Are there penetrations of the house within 6 inches of the ground?

Once you have made the above assessment, IBHS recommends that most if not all of the problems can be addressed with one of two solutions – sealing the gaps, and/or redirecting the water.

Sealing the Gaps

Over time, gaps can form in areas such as where water faucet pipes, gas pipes and air conditioning pipes enter the walls. Gaps also may exist behind electrical outlets, junction boxes, circuit breaker boxes and electric and water meters. Cracks or voids under window sills also can appear due to weather and aging. Water can enter through these openings and cause significant damage that you may not notice until it is too late and major repairs are needed.

To seal these gaps, apply caulk. The type of caulk you use will depend upon the location where it's needed. The following are basic categories of caulk: waterproof, waterproof and paintable and paintable with no water protection.

Redirecting Pooling Water

If the finished floor of a house is at least 6 inches above soil and mulch, wind-driven water can accumulate next to the house and blow up against the wall. This could lead to water getting inside and damaging the walls and other interior finishes.

Address this problem by looking at the grading of the property.

- The grading should direct water away from the house to avoid pooling water;

- If water has gotten inside a house after heavy rains or there is standing water next to the house, this puts the house at significant risk of damage;

- Evaluate the drainage of the property and consider adding a waterproof membrane to the wall where leaks have occurred;

- Adding ground or French drains can help move water away from the house;

- If there are penetrations of a house within 6 inches of the ground, the grading may not be sufficient to keep water from pooling next to the house. This could allow water to be blown up by high winds and get inside these penetrations;

- Caulk around the penetrations and use sandbags to create a barrier around the penetration;

- Sandbags should be placed directly against the house to avoid creating a dyke that can hold water behind it and against the house.

Refer back to Chapter 16 for more detailed information on Flood Preparation and Survival.

Final Thoughts

FEMA identified over 100 “lessons learned” in the aftermath of Hurricane Katrina. But you really only have to take away one lesson from Katrina, Andrew, or the dozens of other devastating storms throughout history, and that is: a lack of hurricane awareness and preparation are always the common threads among the worst victims of all major hurricane disasters.

By assessing your risks, knowing your vulnerability and understanding what actions you should take, before, during and after it hits, you can reduce the effects of a hurricane disaster to you, your home, and your family.

Chapter 19

Plague or Pandemic Outbreak

"Is it useful to feel fear, because it prepares you for nasty events
or is it useless, because nasty events will occur
whether you are frightened or not"?
— Lemony Snicket

The word pandemic comes from the Greek pan demos meaning "pertaining to all people". The Greek word pan means "all" and the Greek word demos means "people". A pandemic is a disease outbreak of global proportions. It happens when a novel virus emerges among humans that causes serious illness and is easily human transmissible from person-to-person.

In modern times when health and disaster preparedness organizations use the word "pandemic" they are usually referring to a potentially virulent influenza pandemic. But flu is not the only possible infectious disease pandemic. In fact, since the very nature of pandemics are that they are caused by unfamiliar or "rogue" pathogens, a pandemic can take on the form of an infectious disease like nothing we have ever seen before.

Therefore despite what you think you may know about vaccines, the best way to prepare for a flu or any kind of infectious disease pandemic is to maintain a healthy immune system and practice good germ control techniques and habits.

There have been many pandemics througout human history that have decimated world populations, plague, typhus, cholera – and yes influenza. However it is important to understand the difference between seasonal flu and pandemic flu. In the United States, for example, there is a flu season

that begins every fall and ends every spring. The type of flu people get during this season is called seasonal flu.

Sometimes, a new type of flu virus may emerge to which the general public has no resistance. The lack of immunity enables the virus to spread very quickly and easily from person to person impacting communities around the world in a very short time, causing serious illness and death. This kind of flu is called pandemic flu.
The exact symptoms of pandemic flu are unknown. However, the CDC notes that symptoms are expected to be similar to those of seasonal flu, which include:

- Fever
- Sore throat
- Cough
- Runny or stuffy nose
- Extreme fatigue
- Headache
- Muscle aches and pains
- Stomach problems, such as nausea, vomiting and diarrhea (more common in children)

Preparing for a Pandemic

Preparing for a flu or other contagion pandemic echoes your preparedness for other natural disasters. You need to have your Home Emergency Preparedness Kit Ready as well as your Go Bag. Unlike with some of the other disasters discussed so far, during a contagious disease outbreak, you may more likely want to hunker down and stay safe and secure in your own home, than consider evacuating and risking exposure. If you have prepared a “Survival Safe House” off the beaten path however – a Pandemic may be a very good time to Bug Out for it. Either way at home or in your Safe House, you need to be sure you have all of your food, water and other Shelter-in-Place supplies stocked, fresh, and ready – probably for at least 3 weeks or more.

In addition:

- Be sure to have extra supplies of any prescription drugs you require and the basic nonprescription drugs and other health supplies on hand, fluids with electrolytes, vitamins and immune boosting supplements, and first-aid items that might run short in a wave of pandemic flu;

- Talk with family members and loved ones about how they would be cared for if they got sick, or what will be needed to care for them in your home;

- Volunteer with local groups to prepare and assist with emergency response;

- If you have children, make sure you have arranged for their daycare if their school closes in response to a pandemic.

During A Pandemic

The best thing you can do to protect yourself and your family during a Pandemic is to minimize you exposure to the contagion by practicing good infectious disease control techniques and hygiene habits.

- Avoid close contact with people who are sick. When you are sick, keep your distance from others to protect them from getting sick too;

- If possible, stay home from work, school, and errands when you are sick. You will help prevent others from catching your illness;

- Cover your mouth and nose with a tissue when coughing or sneezing. It may prevent those around you from getting sick;

- Washing your hands often will help protect you from germs;

- Avoid touching your eyes, nose or mouth. Germs are often spread when a person touches something that is contaminated with germs and then touches his or her eyes, nose, or mouth;

- Practice other good health habits. Get plenty of sleep, be physically active, manage your stress, drink plenty of fluids, eat nutritious food, cut down or eliminate alcohol and tobacco use;

- Stockpile and take vitamins and supplements known to improve your immune system such as:
  *Vitamin C
  *Vitamin D
  *B-vitamins
  *Amino Acids such as Lysine and Glycine
  *Herbal and other Natural Supplements such as Echinacea, Turmeric Extract, Ginger, and Quercetin.

Holistic Nutritionist Cynthia-Lechan Goodman, Author of *The Everything Easy Cleanse Book* (available at: www.amazon.com/The-Everything-Easy-Cleanse-book) suggests the following natural and healthy ways to boost your immune system and prepare for flu season.

Flu Fighting Nutrients

- Citrus fruits have long been known for their help in the prevention of respiratory issues such as colds and flu, and it turns out that it is not only because they are high in vitamin C. These fruits also contain compounds known as limonoids. Extracts made from limonoids found in citrus fruits have been found to protect lung tissue and reduce mucus build-up typical of sufferers of colds, flu and other chronic respiratory or lung conditions;

- The antioxidants found in many fruits and vegetables such as vitamins C, A and E, can minimize the severity of flu symptoms, can improve breathing, and can also reduce asthma symptoms and reduce damage to bronchial tissues;

- Magnesium is an important nutrient that has been identified as calming the symptoms of asthma, respiratory infections, and improving lung function overall;

- Selenium, a mineral similar in its effects in the body to magnesium, also has been shown to have a positive effect on breathing, especially as related to the prevention of sinus and cold infections;

- Zinc has been shown to possibly shorten how long colds last and their severity;

- Vitamin B6 is essential to a healthy immune system. B6 helps the body fight off all sorts of infections, and therefore may be helpful in boosting the body's resistance to colds, flu, and other respiratory infections;

- Folic acid, another B vitamin (B9) also has been shown to help fight off respiratory infections. In fact many believe it is the folic acid, and not the vitamin C in orange juice that give it its cold fighting ability;

- Quercetin, a powerful antioxidant found in onions has been linked to the prevention of lung cancer. Fresh garlic as well, may prevent many respiratory ailments;

- Resveratrol and the other anti-inflammatory agents found in red wine that have been shown to lessen the risk of heart disease, may have a similar effect in preventing, or lowering the risk of Respiratory Infections;

- Carvacrol and Thymol two oils found in thyme and oregano have been found to loosen phlegm in the lungs and relieve mucus build-up typical of flu.

What to put in your shopping cart

- Vitamin A foods include: citrus fruit, tomatoes, carrots, mango, red bell pepper, spinach, collard greens, sweet potato, kale, turnip greens, collard greens, Swiss chard, milk, eggs;

- Vitamin B 6 foods include: tuna, cod, salmon, snapper, halibut, chicken, liver, turnkey, beef, banana, spinach, bell pepper turnip greens, garlic, cauliflower, mustard greens, crimini mushrooms,

Brussels sprouts, cabbage, asparagus, celery, kale chard, collard greens;

- Vitamin B9 (folic acid) foods include: liver, lentils, pinto beans, garbanzo beans, black beans, navy beans, asparagus, spinach, collard greens, broccoli, beets, romaine, parsley, papaya, string beans;

- Vitamin C foods include: bell peppers, parsley, broccoli, peppers, berries, citrus fruits, papaya, cauliflower, mustard greens, spinach, snow peas, cantaloupe, watermelon, tomato, zucchini, celery;

- Limonoid foods include: orange juice, grapefruit juice, oranges, and lemons including white part and rind;

- Vitamin E foods include: mustard greens, chard, turnip greens, almonds, spinach, sunflower seeds, olives, papaya, and blueberries;

- Whole Grain Foods include the following non-allergic grains: barley, buckwheat, millet, rice, amaranth, kasha, quinoa, lentils;

- Magnesium and folate foods include: beans, turmeric, spinach, squash, mustard greens, pumpkin, soybeans, sunflower seeds, flax seeds, sesame seeds, green beans, cucumbers, celery, kale, black and navy beans, peppermint molasses;

- Selenium foods include: liver, Brazil nuts, snapper, cod, halibut, tuna, salmon, sardines, shrimp, barley, oats, mushrooms, sunflower seeds, eggs, turkey, lamb, tofu;

- Omega 3 fatty acid foods include: salmon, flaxseed, walnuts, sardines, soybeans, halibut, tofu, snapper, scallops, shrimp, tofu;

- Quercetin foods include: black and green tea, capers, apples, onion, red grapes, citrus fruit, grapefruit, peas, buckwheat, tomato, broccoli, leafy greens, honey;

- Carvacrol and thymol foods include: oregano, thyme

What You Need to Know About Flu Shots and Pandemics

Have you ever had the flu? - Probably. Did you feel deathly ill? - Most likely. Did you survive? If you are reading this, the answer is yes, as it would be for most people. Seasonal Flu shots were originally created to help those most at risk to die from influenza, such as the elderly, very young children, or those with a compromised immune system. And for them, seasonal flu vaccines could still be a good idea if a particularly heavy flu season is anticipated. But the fact of the matter is most people -- especially if you take the steps to improve and maintain your immune system as learned in Chapter 1 and suggested in Lechan-Goodman's Book -- can very easily prevent and certainly survive, a bout with seasonal flu.

Huge global pharmaceutical companies realized that there was very little profit pandering there vaccines only to kids and seniors, so the started this propaganda campaign about seasonal flu shots to boost their bottom lines, and it has spread like the pandemics it purports to protect you from. So much so, that you even have teenage store clerks pushing Flu vaccines at you at your local supermarkets!

Don't swallow it! There is very little evidence that seasonal flu vaccines do anything to prevent the likelihood of flu in healthy adults. But there is a lot of research that shows how their risks outweigh any potential benefit in most people.

Even at their theoretical best— Seasonal Flu Vaccines can only protect you from the strains of flu that the Pharma companies and Heath Organizations believe will be most prevalent in a given flu season. It's a crapshoot with only a 30-40% success rate. But what is 100% true is that the ingredients that are in most flu vaccines are highly toxic and can do more to muck up your immune system than helpe you fight off a flu.

The National Health Federation posting on the Health Freedom Alliance blog says that a flu shot could contain anything from aluminum, formaldehyde, dangerous microorganisms, thimerosal (mercury), ethylene glycol, and any number of other toxic adjuvants. Consider this, the same doctors and medical professionals who have told you for years to warn your kids never to touch the mercury from a broken thermometer, want you to

then go ahead and inject it directly into their bloodstreams in the form of most vaccines!

And this is just the problems with the effectiveness, or lack thereof, of Seasonal Flu Vaccines. A flu shot cannot protect you from pandemic flu. Read that again – a Flu shot CANNOT prevent or protect you from exposure to a pandemic flu. A pandemic flu by definition occurs from an unknown strain new to the population, or a strain that has been dormant for many years, or a mutation to a known strain. Flu vaccines with their limited effectiveness, to be effective at all, need to have been created using the attenuated form of a known flu virus.

Right about now though you are probably saying "but what about the vaccine for the swine flu they came up with to prevent that pandemic a few years ago"? Glad you asked; that was probably one of the greatest medical myths of the past few decades.

What Big Pharma saw as a profit center with their Seasonal Flu Vaccine propaganda, they saw as a goldmine with the H1N1 Swine Flu panic. Did you know that in 2010 the federal government was forced to incinerate 70 million doses of the Swine Flu vaccine that where created and purchased at great expense to the tax-paying public? Not only was it a monumental waste of billions of dollars worldwide to create a vaccine for a predicted pandemic that never happened – there is evidence that suggests that the H1N1 vaccine that was rushed to market was never even scientifically tested in a legitimate clinical trial.

Yet that did not prevent doctors with the World Heath Organization - many of whom serve on the boards of pharmaceutical companies who profited from the vaccine – from declaring H1N1 swine flu a Level 6 Pandemic.

You need to understand that flu and other pandemics are possible. However your best defense against them is to stay strong and healthy and practice good germ and infectious disease control habits -- and not by pumping useless at best, and toxic at worst substances into your body.

Chapter 20

Tornado

"There is always a part of my mind that is preparing for the worst and another part of my mind that believes if I prepare enough for it, the worst won't happen."
— Kay Redfield Jamison

Tornadoes, sometimes also called Twisters, or less accurately Cyclones, are nature's most violent storms. Spawned from powerful thunderstorms, tornadoes can cause fatalities and devastate a neighborhood in seconds. A tornado appears as a rotating, funnel-shaped cloud that extends from a thunderstorm to the ground with whirling winds that can reach as high as 300 miles per hour. Damage paths can be in excess of one mile wide and 50 miles long. Every state is at some risk from this hazard. Some tornadoes are clearly visible, while rain or nearby low-hanging clouds obscure others.

Occasionally, tornadoes seem to come out of nowhere, developing so rapidly that little, if any, advance warning is possible. Before a tornado hits, the wind may die down and the air may become very still. A cloud of debris can mark the location of a tornado even if a funnel is not visible. Tornadoes generally occur near the trailing edge of a thunderstorm.

There are parts of the world that are more prone to Tornadoes than others. For example the United States has a so-called "Tornado Alley" stretching encompassing the Great Plains states between the Rocky and Appalachian Mountains. But as recent headlines have shown, given the worlds shifting weather patterns, devastating tornadoes can occur almost anywhere.

Some Things You Should Know About Tornadoes

- They can strike quickly, with little or no warning;
- In the U.S the average tornado moves Southwest to Northeast, but tornadoes have been known to move in any direction;
- Tornadoes often accompany tropical storms and hurricanes as they move onto land;
- Waterspouts are tornadoes that form over water.

Before a Tornado

To begin preparing, by now you should know your first act of preparation is to build an emergency kit, Go Bag, and make sure you have a family communications plan.

Listen to NOAA Weather Radio or to commercial radio or television newscasts for the latest information. In any emergency, always listen to the instructions given by local emergency management officials.
Be alert to changing weather conditions. Look for approaching storms.

- **A Tornado Watch Means:** Tornadoes are possible. Remain alert for approaching storms. Watch the sky and stay tuned to NOAA Weather Radio, commercial radio or television for information;
- **A Tornado Warning Means:** A tornado has been sighted or indicated by weather radar. Take shelter by going immediately underground to a basement, storm cellar or an interior room (closet, hallway or bathroom).

Be sure you know your community's warning system. Communities in high-risk areas of tornadic activity have different ways of warning residents about tornadoes, with many having sirens intended for outdoor warning purposes. Tornadoes can and do happen with little or no warning, but to prepare in advance you should:

- Already have picked and prepared a safe room in your home where household members and pets should escape to during a tornado. This should ideally be in a basement or storm cellar. Lacking that, use an interior room on the lowest floor of the house without any windows;

- Practice periodic tornado drills so that everyone in your family knows what to do if a tornado is approaching;

- Prepare for high winds by removing diseased and damaged limbs from trees;

- Move or secure lawn furniture, trashcans, hanging plants or anything else that can be picked up by the wind and become a projectile.

How To Prepare a Wind Safe Room

If you live in an area prone to high winds or tornadoes, even if your residence has been “built to code" that does not mean it can withstand winds from extreme events such as tornadoes and major hurricanes. The purpose of a safe room or a wind shelter is to provide a space where you and your family can seek refuge that provides a higher level of protection. You can build a safe room in one of several places in your home.

- Your basement (best choice if you have one)
- Atop a concrete slab-on-grade foundation or garage floor.
- An interior room on the first floor.

Safe rooms built below ground level provide the greatest protection, but a safe room built in a first-floor interior room also can provide the necessary protection. Below-ground safe rooms must be designed to avoid accumulating water during the heavy rains that often accompany severe windstorms.

To protect its occupants, a safe room must be built to withstand high winds and flying debris, even if the rest of the residence is severely damaged or destroyed. Consider the following when building a safe room:

- The safe room must be adequately anchored to resist overturning and uplift.

- The walls, ceiling and door of the shelter must withstand wind pressure and resist penetration by windborne objects and falling debris;

- The connections between all parts of the safe room must be strong enough to resist the wind;

- Sections of either interior or exterior residence walls that are used as walls of the safe room must be separated from the structure of the residence so that damage to the residence will not cause damage to the safe room.

Complete design and construction plans for building a safe room can be downloaded from FEMA at:
http://www.fema.gov/library/viewRecord.do?id=1536

You Can Further Protect Your Home From High Winds By:

- Protecting Windows and Doors with Covers
- Reinforcing or Replacing Garage Doors
- Removing Trees and Potential Windborne Missiles
- Securing Metal Siding and Metal Roofs
- Securing Built-Up and Single-Ply Roofs
- Securing Composition Shingle Roofs
- Bracing Gable End Roof Framing

If Tornadoes are in the Area Look for the Following Danger Signs:

- Dark, often greenish sky
- Large hail
- A large, dark, low-lying cloud (particularly if rotating)
- Loud roar, similar to a freight train.
- If you see approaching storms or any of the danger signs, be prepared to take shelter immediately.

During a Tornado

Tornado intensities are classified on the Fujita Scale with ratings between F-0 (weakest) to F-5 (strongest). Tornadoes are capable of completely destroying even well-made structures, uprooting trees, and hurling objects through the air like deadly missiles.

If you are under a tornado warning, seek shelter immediately! Most injuries associated with high winds are from flying debris, so remember to protect your head. If available, put on a bicycle or motorcycle helmet to protect yourself from head injuries.

Where you are during a tornado will define your best course of action. The safest place to be is an underground shelter, basement or safe room. If no underground shelter or safe room is available, a small, windowless interior room or hallway on the lowest level of a sturdy building is the safest alternative.

Mobile homes are not safe during tornadoes or other severe winds. Never seek shelter in a hallway or bathroom of a mobile home. If you live in a mobile home and Tornadoes are threatening, Do not wait until you see or hear the Tornado, if you have access to a sturdy shelter or a vehicle, abandon your mobile home immediately and get to the nearest sturdy building or shelter.

If you are in a more secure structure (residence other than a mobile home, small building, school, nursing home, hospital, factory, shopping center, high-rise building) then you should:

- Go to your pre-designated shelter area such as a safe room, basement, storm cellar, or the lowest building level. If there is no basement, go to the center of an interior room on the lowest level (closet, interior hallway) away from corners, windows, doors, and outside walls. Put as many walls as possible between you and the outside. Get under a sturdy table and use your arms to protect your head and neck;

- In a high-rise building, go to a small interior room or hallway on the lowest floor possible;

- If available, put on a bicycle or motorcycle helmet to protect yourself from head injuries;

- Put on sturdy shoes and do not open windows.

If you are caught outside and cannot get to any shelter:

- Immediately get into a vehicle, buckle your seat belt and try to drive to the closest sturdy shelter;

- If your vehicle is hit by flying debris while you are driving, pull over and park;

- Stay in the car with the seat belt on. Put your head down below the windows; cover your head with your hands and a blanket, coat or other cushion if possible;

- If you can safely get noticeably lower than the level of the roadway, leave your car and lie in that area, covering your head with your hands;

- **Do not get under an overpass or bridge.** You are safer in a low, flat location;

- Never try to outrun a tornado in urban or congested areas in a car or truck. Instead, leave the vehicle immediately for safe shelter;

- Watch out for flying debris. Flying debris from tornadoes causes most fatalities and injuries.

When the Storm Passes

Injury may result from the direct impact of a tornado, or it may occur afterward when people walk among debris and enter damaged buildings. A study of injuries after a tornado in Marion, Illinois, showed that 50 percent of the tornado-related injuries were suffered during rescue attempts, cleanup and other post-tornado activities. Nearly a third of the injuries resulted from stepping on nails. Because tornadoes often damage power lines, gas lines or electrical systems, there is a risk of fire, electrocution or an explosion. Protecting yourself and your family requires promptly treating any injuries suffered during the storm and using extreme care to avoid further hazards.

Injuries
Check for injuries. Do not attempt to move seriously injured people unless they are in immediate danger of further injury. Get medical assistance immediately. If someone has stopped breathing, begin CPR if you are trained to do so. Refer back to Chapter 6 for First Aid Treatment of specific injuries that could be common in the aftermath of a tornado.

General Safety Precautions
Here are some safety precautions that could help you avoid injury after a tornado:

- Continue to monitor your battery or solar -powered radio or television for emergency information;

- Be careful when entering any structure that has been damaged;

- Wear sturdy shoes or boots, long sleeves and gloves when handling or walking on or near debris;

- Be aware of hazards from exposed nails and broken glass;

- Do not touch downed power lines or objects in contact with downed lines. Report electrical hazards to the police and the utility company;

- Use battery-powered lanterns, if possible, rather than candles to light homes without electrical power. If you use candles, make sure they are in safe holders away from curtains, paper, wood or other flammable items. Never leave a candle burning when you are out of the room;

- Never use generators, pressure washers, grills, camp stoves or other gasoline, propane, natural gas or charcoal-burning devices inside your home, basement, garage or camper - or even outside near an open window, door or vent. Carbon monoxide (CO) - an odorless, colorless gas that can cause sudden illness and death if you breathe it - from these sources can build up in your home, garage or camper and poison the people and animals inside. Seek prompt medical attention

if you suspect CO poisoning and are feeling dizzy, light-headed or nauseated;

- Hang up displaced telephone receivers that may have been knocked off by the tornado, but stay off the telephone, except to report an emergency;

- Cooperate fully with public safety officials;

- Respond to requests for volunteer assistance by police, fire fighters, emergency management and relief organizations, but do not go into damaged areas unless assistance has been requested. Your presence could hamper relief efforts and you could endanger yourself.

Inspecting the Damage

- After a tornado, be aware of possible structural, electrical or gas-leak hazards in your home. Contact your local city or county building inspectors for information on structural safety codes and standards. They may also offer suggestions on finding a qualified contractor to do work for you;

- In general, if you suspect any damage to your home, shut off electrical power, natural gas and propane tanks to avoid fire, electrocution or explosions;

- If it is dark when you are inspecting your home, use a flashlight rather than a candle or torch to avoid the risk of fire or explosion in a damaged home;

- If you see frayed wiring or sparks, or if there is an odor of something burning, you should immediately shut off the electrical system at the main circuit breaker if you have not done so already;

- If you smell gas or suspect a leak, turn off the main gas valve, open all windows and leave the house immediately. Notify the gas company, the police or fire departments, or State Fire Marshal's office and do not turn on the lights, light matches, smoke or do anything that could

cause a spark. Do not return to your house until you are told it is safe to do so.

Safety During Clean Up

- Wear sturdy shoes or boots, long sleeves and gloves;

- Learn proper safety procedures and operating instructions before operating any gas-powered or electric-powered saws or tools;

- Clean up spilled medicines, drugs, flammable liquids and other potentially hazardous materials.

When Assessing Your Damage for Your Insurance Company

- Be prepared to give your agent or insurance company representative a detailed description of the damage to your property. Your agent will report the loss to your insurance company or to a qualified adjuster who will contact you as soon as possible in order to arrange an inspection of the site;

- If it is safe to access the area, take photographs of the damaged property. Visual documentation will help with the claims process and can assist the adjuster in the investigation;

- Prepare a detailed inventory of all damaged or destroyed personal property. Make two copies—one for yourself and one for the adjuster. Your list should be as complete as possible, including a description of the items, dates of purchase or approximate age, cost at time of purchase and estimated replacement cost. You can go to KnowYourStuff.org for free, Web-based software to help you prepare your inventory;

- Collect canceled checks, invoices, receipts or other papers that can assist the adjuster in obtaining the value of the destroyed property;

- Make whatever temporary repairs you can. Cover broken windows and damaged roofs and walls to prevent further destruction. Save the receipts for any supplies and materials you purchase, as your

insurance company will reimburse you for reasonable expenses incurred by making temporary repairs;

- Secure a detailed estimate for permanent repairs to your home or business from a licensed contractor and give it to the adjuster. The estimate should contain the proposed repairs, repair costs and replacement prices;

- If your home is severely damaged and you need to find other accommodations while repairs are being made, keep a record of all expenses, such as hotel and restaurant receipts.

Final Thoughts

Tornadoes can occur anywhere and anytime of year. In fact there seems to be a rise in tornadic activity over the past few years especially in the U.S., with areas that have traditionally been less likely to be hit, experiencing tornadoes at alarmingly increasing levels, even in winter months. In 2011, more than 1,600 tornadoes were recorded in the U.S., resulting in the deaths of 550 people. At least 39 people were killed and hundreds more injured and displaced by the tornado outbreak of March 2-3, which resulted in at least 117 tornadoes across 11 states, according to the National Weather Service (NWS).

Just prior to that 36 tornadoes were confirmed throughout the Midwest on February 28-29, resulting in widespread damage and 13 deaths, according to the NWS. The late-February storms included an EF-4 tornado with 170 mph winds in Harrisburg, Illinois. Meanwhile, an additional nine tornadoes struck three states, Georgia, South Carolina and Virginia, on February 24, reports the Storm Prediction Center in Norman, Oklahoma. Winter tornadoes were also seen throughout January with 79 tornadoes recorded.

All of this means that it may be becoming harder than ever to predict when and where tornadoes may strike, now more than ever being prepared is your best defense to protect your home and family.

Chapter 21

Tsunami

"Nothing is either as bad or good as it seems. When overwhelmed by disaster, check if it's really a disaster by doing the following: (a) think, "Oh, screw it," (b) look on the bright side and if that doesn't work, look on the funny side."
- Helen Fielding

A Tsunami (pronounced soo-ná-mee), also known as a seismic sea wave, and much less accurately as a "tidal wave", is a series of enormous waves created by an underwater disturbance such as an earthquake, landslide, volcanic eruption, or meteorite. A tsunami can move hundreds of miles per hour in the open ocean and smash into land with waves as high as 100 feet or more.

From the area where the tsunami originates, waves travel outward in all directions. Once the wave approaches the shore, it builds in height. The topography of the coastline and the ocean floor will influence the size of the wave. There may be more than one wave and the succeeding one may be larger than the one before it. That is why a small tsunami at one beach can be a giant wave just a few miles away.

Most of the world became aware of just how destructive Tsunamis can be in March of 2011 when Japan experienced a devastating Tsunami that was the result of 9.0 earthquake that occurred in Honshu. The Honshu quake generated a tsunami observed over the Pacific region that caused tremendous local devastation. The quake that spawned the Tsunami was the fourth largest earthquake in the world and the largest in Japan since

instrumental recordings began in 1900. This is the deadliest tsunami since the 2004 magnitude 9.1 Sumatra earthquake and tsunami which caused nearly 230,000 deaths and $10 billion in damage.

In the costal areas of Honshu there were over 15,000 deaths reported and close to 4000 persons missing as a result of the powerfully destructive wave. When all totaled estimates are damages could exceed 300 billion dollars. Many the world over watched in horror at scenes of cars, homes, and other structures being swept away like so much paper, playing out over the internet and TV networks.

All tsunamis are potentially dangerous, even though they may not damage every coastline they strike. A tsunami can strike anywhere along a countries coastline. In the U.S., the most destructive tsunamis have occurred along the coasts of California, Oregon, Washington, Alaska and Hawaii.

Earthquake-induced movement of the ocean floor most often generates tsunamis. If a major earthquake or landslide occurs close to shore, the first wave in a series could reach the beach in a few minutes, even before a warning is issued. Areas are at greater risk if they are less than 25 feet above sea level and within a mile of the shoreline. Drowning is the most common cause of death associated with a tsunami. Tsunami waves and the receding water are very destructive to structures in the run-up zone. Other hazards include flooding, contamination of drinking water, and fires from gas lines or ruptured tanks.

What to do Before a Tsunami

Whether or not you need to prepare for a Tsunami, of course depends on where you live. If you live in any costal area, a possible tsunami should be part of your risk assessment, especially if you live in an area such as the coastline of California that is also prone to earthquakes, or volcanic activity such as in Hawaii or other Pacific Island chains.

As with any potential natural disaster that can destroy your home, or cause you to evacuate, the first thing you need to do to prepare for a Tsunami is Have a Plan, Make a Kit -- including a Go Bag for every member of your family -- and Stay Informed. As always, you need to talk to everyone in your household about what to do if a tsunami occurs. Create and practice an

evacuation plan for your family. Familiarity may save your life. Be able to follow your escape route at night and during inclement weather. Practicing your plan makes the appropriate response more of a reaction, requiring less thinking during an actual emergency.

A Tsunami is almost always the result of an earthquake, they can happen from an offshore quake that you do not feel, or from a quake that is felt inland. If you feel the ground start to shake, first take the necessary steps to protect yourself from the quake as you learned in Chapter 14:

- Drop, Cover and Hold-On in the US and other Developed Areas;

- Triangle of Life in less Developed Nations.

Since Tsunamis can follow any earthquake event, even after a mild quake if you are in a coastal area, turn on your radio, or TV to learn if there is a tsunami warning. In addition:

- Have your Go Bag(s) and your Bug Out Vehicle gassed and prepped to go at a moment’s notice;

- You need to know if your children’s school evacuation plan requires you to pick them up from school or from another location. Be aware telephone lines during a tsunami watch or warning may be overloaded and routes to and from schools may be jammed;

- You need to know all of your community's warning systems and disaster plans, including Tsunami evacuation routes;

- You need to know the height of your street above sea level and the distance of your street from the coast or other high-risk waters. Evacuation orders may be based on these numbers;

- If you are a tourist visiting an area that could be threatened by Tsunamis, you must familiarize yourself with local tsunami evacuation protocols, and the plan for your specific hotel or vacation residence.

Tsunami Terms

- **Warning** - A tsunami warning is issued when a tsunami with the potential to generate widespread inundation is imminent or expected. Warnings alert the public that dangerous coastal flooding accompanied by powerful currents is possible and may continue for several hours after initial arrival. Warnings alert emergency management officials to take action for the entire tsunami hazard zone. Appropriate actions to be taken by local officials may include the evacuation of low-lying coastal areas, and the repositioning of ships to deep waters when there is time to safely do so. Warnings may be updated, adjusted geographically, downgraded, or canceled. To provide the earliest possible alert, initial warnings are normally based only on seismic information.

- **Advisory** - A tsunami advisory is issued when a tsunami with the potential to generate strong currents or waves dangerous to those in or very near the water is imminent or expected. The threat may continue for several hours after initial arrival, but significant inundation is not expected for areas under an advisory. Appropriate actions to be taken by local officials may include closing beaches, evacuating harbors and marinas, and the repositioning of ships to deeper waters when and if there is time to safely do so. Advisories are normally updated to continue the advisory, expand/contract affected areas, upgrade to a warning, or cancel the advisory – so keep your NOAA radios on and handy.

- **Watch -** A tsunami watch is issued to alert emergency management officials and the public of an event that may later impact the watch area. The watch area may be upgraded to a warning or advisory - or canceled - based on updated information and analysis. Therefore, emergency management officials and the public should prepare to take action. Watches are normally issued based on seismic information without confirmation that a destructive tsunami is underway.

If a Tsunami Watch Has Been Issued

- Use your NOAA Weather Radio or tune to a Coast Guard emergency frequency station or a local radio or television station for updated emergency information;

- Locate household members and review your evacuation plans. Be ready to move quickly if a tsunami warning is issued.

If a Tsunami Warning Has Been Issued

- Evacuate at once;

- Be sure to take your Go Bag(s) with you, having supplies will make you more comfortable during the evacuation;

- Get to higher ground as far inland as possible. Watching a tsunami could put you in grave danger. If you can see the wave, you are too close to escape it.

If you believe you live in an area that could be impacted by Tsunamis here are the best sources to monitor the threat level.

- **The International Tsunami Warning System --** Monitors ocean waves after any Pacific earthquake with a magnitude greater than 6.5. If waves are detected, warnings are issued to local authorities who can order the evacuation of low-lying areas if necessary;

- **The National Oceanic and Atmospheric Administration (NOAA)** – NOAA's National Weather Service (NWS) operates two tsunami-warning centers:

    1. West Coast/Alaska Tsunami Warning Center (WC/ATWC), Palmer, Alaska. Serves Alaska, Washington, Oregon, California, the U.S. Atlantic and Gulf of Mexico coasts, Puerto Rico, the U.S. Virgin Islands and Canada.

2. Pacific Tsunami Warning Center (PTWC), Ewa Beach, Hawaii. Serves Hawaii and the U.S. Pacific territories, and as an international warning center for the Pacific and Indian oceans and the Caribbean Sea.

During A Tsunami

If a tsunami warning has been issued your best chance of survival is to Bug Out for higher ground along your pre-determined evacuation route ASAP! Do not leave your pets behind; if it is unsafe for you, it is unsafe for them. Take only what you have prepared in your Go-Bag, the goal is to save yourself and your family, not your possessions.

- Move inland to higher ground immediately. Pick areas 100 feet (30 meters) above sea level or go as far as 2 miles (3 kilometers) inland, away from the coastline. If you cannot get this high or far, go as high or far as you can. Every foot inland or upward may make a difference;

- Stay away from the beach. Never go down to the beach to watch a tsunami come in. If you can see the wave you are too close to escape it. CAUTION - If there is noticeable recession in water away from the shoreline this is nature's tsunami warning and it should be heeded. You should move away immediately;

- As an Ultimate Survivor always remember; to help your neighbors who may require special assistance - infants, elderly people, and individuals with access or functional needs, and anyone who is less prepared than you are.

After the Wave Recedes

As in the wake of any Natural Disaster, only return home after local officials tell you it is safe. A tsunami is a series of waves that may continue for hours. Do not assume that after one wave, the danger is over. The next wave may be larger than the first one.

- Go to a designated public shelter if you have been told to evacuate or you feel it is unsafe to remain in your home. If you live in the US and have evacuated you can text SHELTER + your ZIP code to 43362 (4FEMA) to find the nearest shelter in your area;

- Unless local authorities have asked you to because of your particular skills, avoid disaster areas. Your presence might interfere with emergency response operations and put you at further risk from the residual effects of floods;

- Stay away from debris in the water; it may pose a safety hazard to people or pets;

- Check yourself for injuries and get first aid as needed before helping injured or trapped persons;

- If someone needs to be rescued, and is not in immediate danger, call professionals with the right equipment to help. Many unskilled and untrained people have been killed or injured trying to rescue others;

- Continue using a NOAA Weather Radio or tuning to a Coast Guard station or a local radio or television station for the latest updates;

- Stay out of any building that has water around it. Tsunami water can cause floors to crack or walls to collapse;

- Use caution when re-entering buildings or homes. Tsunami-driven floodwater may have damaged buildings where you least expect it. Carefully watch every step you take;

- To avoid injury, wear protective clothing and be cautious when cleaning up;

- If your house has been flooded, refer back to Chapter 16 on proper procedures for reentering a flooded home, and use and disposal of food and other flood damaged items;

- Be sure to watch your animals closely and keep them under your direct control, they can panic in areas that have become unfamiliar in the aftermath of a Tsunami Event.

Final Thoughts

If you live on any coast you must be aware that a potential Tsunami is one of the prices that are paid for the luxury of a coastal lifestyle. Nevertheless,

understanding how to prepare for and react to a Tsunami is important for everybody and not just people who live on the coast. The fact of the matter is many of us chose to vacation in coastal resort areas, and as recent headlines have shown, such resorts are not impervious to Tsunami events. And in fact many of these resort areas are made more vulnerable due to the fact that they are in countries, which may not have as well of a developed infrastructure, or emergency response, as you might find at home.

So the next time your are enjoying a vacation in a coastal paradise, it would be a good idea to familiarize yourself with this Chapter of the Ultimate Preparedness Manual before you go – or better yet, load it on your flash drive and pack it along with your sunscreen and bathing suits!

Chapter 22

Volcanoes

"Do not give way to useless alarm;
though it is right to be prepared for the worst,
there is no occasion to look on it as certain."
— Jane Austen, Pride and Prejudice

A volcano is a mountain that opens downward to a reservoir of molten rock below the surface of the earth. Unlike most mountains, which are pushed up from below, volcanoes are vents through which molten rock escapes to the earth's surface. When pressure from gases within the molten rock becomes too great, an eruption occurs. Eruptions can be quiet or explosive. There may be lava flows, flattened landscapes, poisonous gases, and flying rock and ash that can sometimes travel hundreds of miles downwind.

Because of their intense heat, lava flows are great fire hazards. Lava flows destroy everything in their path, but most move slowly enough that you can get out of the way.

Fresh volcanic ash, made of pulverized rock, can be abrasive, acidic, gritty, gassy and odorous. While not immediately dangerous to most adults, the acidic gas and ash can cause lung damage to small infants, to older adults and to those suffering from severe respiratory illnesses. Volcanic ash also can damage machinery, including engines and electrical equipment. Ash accumulations mixed with water become heavy and can collapse roofs. Volcanic ash can affect people hundreds of miles away from the cone of a volcano.

Sideways directed volcanic explosions, known as "lateral blasts," can shoot large pieces of rock at very high speeds for several miles. These explosions can kill by impact, burial or heat. They have been known to knock down entire forests.

Volcanic eruptions can be like apocalyptic events triggering other natural hazards, including earthquakes, mudflows and flash floods, rock falls and landslides, acid rain, fire, and under certain conditions, tsunamis.

Active volcanoes in the U.S. are found mainly in Hawaii, Alaska and the Pacific Northwest. The danger area around a volcano covers approximately a 20-mile radius however some danger may exist 100 miles or more from a volcano.

While in recent years a serious threat or disaster from a volcanic eruption has been a rare occurrence, historically volcanoes have been responsible for destruction on a massive scale.

One of the best known such eruptions was the August 1883 eruption of Mt. Krakatua, which destroyed two-thirds of the island, ejecting more than six cubic miles of debris into the atmosphere. The sound of the explosion was the loudest ever documented, and was heard as far away as Australia. The death toll was close to 40,000. But Krakatua, while well known, was far from the worst. The worst eruption that has been documented was the eruption of Mt. Tambora in Indonesia in April of 1816. Tambora killed an estimated 92,000 people, including 10,000 from explosion and ash fall, and 82,000 from other related causes.

The concussion from the explosion was felt as far as a thousand miles away! Mt. Tambora, which was more than 13,000 feet tall before the explosion was reduced to 9,000 feet after ejecting more than 93 cubic miles of debris into the atmosphere.

The effects of the eruption were felt worldwide: 1816 became known as the “year without a summer” because of the volcanic ash in the atmosphere that lowered worldwide temperatures. It snowed in New England that June, and crop failures were common throughout Northern Europe and North

America. As many as 100,000 additional deaths from starvation in these areas are thought to be related to the eruption of Mt. Tambora.

And these are just two of the worst of the devastating effects of volcanic eruptions in recordable history. Scientists speculate that that a super-eruption around Lake Toba, in Sumatra, Indonesia around 75,000 years ago caused a volcanic winter that came close to wiping out all of humanity!

For these reasons and more the worldwide dangers surrounding a volcanic eruption are too great to ignore, no matter where you live. But of course if you live in an area close to a known active volcano, you must prepare for the more immediate threat that it poses to you and your family.

Before a Volcanic Eruption

You have heard it before but we can't say it often enough, if you live in an area where you may have to face a volcanic eruption, the first things you need to be sure to do are:

- Build an Emergency Supply Kit, which includes items like non-perishable food, water, a battery-powered or hand-crank radio, extra flashlights and batteries – and Go Bag(s) as described in Chapter 9. In this case you need to be sure that your Go Bag includes a pair of goggles and disposable breathing masks for each member of the family to deal with the possibilities of volcanic ash, gasses and debris during an evacuation;

- Make a Family Emergency Plan. Your family may not be together when disaster strikes, so it is important to know how you will contact one another, how you will get back together and what you will do in case of an emergency.

During a Volcanic Eruption

- Follow the evacuation order issued by authorities and evacuate immediately from the volcano area to avoid flying debris, hot gases, lateral blast and lava flow;

- Be aware of mudflows. The danger from a mudflow increases near stream channels and with prolonged heavy rains. Unlike most lava flows, mudflows can move faster than you can walk or run. Look upstream before crossing a bridge and do not cross the bridge if a mudflow is approaching;

- Avoid river valleys and low-lying areas;

- Remember to help your neighbors who may require special assistance - infants, elderly people and people with access and functional needs.

If You Find Yourself Trapped Outdoors During an Eruption

- Immediately seek shelter indoors;

- If caught in a rock fall, roll into a ball to protect your head;

- If caught near a stream, be aware of mudflows. Move up slope, especially if you hear the roar of a mudflow.

Volcanic Ash

Thanks to Hollywood and other dramatic real-life images, you probably think that lava is the biggest danger posed by an eruption. Lava is very destructive, but in many cases, volcanic ash, presents the greater danger, because it is much harder to avoid, and spreads over a greater area.

Volcanic ash consists of tiny jagged pieces of rock and glass. Ash is hard, abrasive, mildly corrosive, conducts electricity when wet, and does not dissolve in water. Ash is spread over broad areas by wind. Falling ash can turn daylight into complete darkness, when accompanied by rain and lightning, the gritty ash can lead to power outages, prevent communications, and disorient people.

Specific Protection From Falling Ash

- Keep ash out of buildings, machinery, vehicles, downspouts, water supplies, and wastewater systems as much as possible. The most

effective method to prevent ash-induced damage to machinery is to shut down, close off or seal equipment until ash is removed from the immediate environment, but this may not be practical in all cases, especially for critical facilities;

- If you are unable to evacuate, in order to protect yourself from falling ash, you should remain indoors with doors, windows and ventilation closed until the ash settles;

- If you have a respiratory ailment, avoid contact with any amount of ash. Stay indoors until local health officials advise it is safe to go outside;

- Listen to a battery-powered radio or television for the latest emergency information;

- Wear long-sleeved shirts and long pants;

- Use goggles and wear eyeglasses instead of contact lenses;

- Use a dust mask or hold a damp cloth over your face to help with breathing;

- Stay away from areas downwind from the volcano to avoid volcanic ash;

- Stay indoors until the ash has settled unless there is a danger of the roof collapsing;

- Close doors, windows, and all ventilation in the house (chimney vents, furnaces, air conditioners, fans and other vents;

- Clear heavy ash from flat or low-pitched roofs and rain gutters;

- Avoid running car or truck engines. Driving can stir up volcanic ash that can clog engines, damage moving parts, and stall vehicles;

- Avoid driving in heavy ash fall unless absolutely required. If you have to drive, keep speed down to 35 MPH or slower.

It is very important that you stay out of the area defined as a restricted zone by government officials. Effects of a volcanic eruption can be experienced many miles from a volcano. Mudflows and flash flooding, wild fires, and even deadly hot ash flow can reach you even if you cannot see the volcano during an eruption. Avoid river valleys and low lying areas. Very few people who tried to watch an erupting volcano up close, lived to tell anyone about what they saw!

After a Volcanic Eruption

- Do not return to the disaster site or your home until authorities have said it is safe to do so. The area around an eruption can be very unstable, earthquakes, mudslides and other natural disasters are not uncommon following a major eruption;

- Go to a designated public shelter if you have been told to evacuate or you feel it is unsafe to remain in your home. If you live in the US you can text SHELTER + your ZIP code to 43362 (4FEMA) to find the nearest shelter in your area;

- Local authorities may not immediately be able to provide information on what is happening and what you should do. However, you should listen to NOAA Weather Radio, watch TV, listen to the radio or check the Internet often for official news and instructions as they become available;

- When trying to clean up after an eruption, cover your mouth and nose. Volcanic ash can irritate your respiratory system. Wear goggles to protect your eyes. Keep skin covered to avoid irritation from contact with ash;

- Clear roofs of ashfall. Ashfall is very heavy and can cause buildings to collapse. Exercise great caution when working on a roof.

Volcanic ash is unlike ordinary dust. It can do irreparable damage if it gets inside of machinery and electronics such as TVs, cameras and computers. It’s sharp, crystalline structure causes it to scratch and abrade surfaces when it is removed by wiping or brushing. In wet weather the ash deposits

are dampened down and the air can be clear, but in drier weather ash can easily be stirred up by wind and traffic. As a result suspended dust levels become much higher and can be at levels potentially harmful to health. The International Volcanic Health Hazard Network (IVHHN) – IVHNN.ORG – recommends the following specific do's and don'ts for ashfall clean-up.

Ash Clean up: outside

Do

- Put on a recommended mask before starting to clean. If you don't have one, use a wet cloth. Wearing protective eye wear (such as goggles) during clean-up is also advised in dry conditions;

- Moisten the ash with a sprinkler, before attempting to clean. This will help to stop the wind remobilizing it;

- Use shovels for removing the bulk of thick deposits of ash, anything over a few inches or so, stiff brooms will be required to remove lesser amounts;

- Place the ash into heavy duty plastic bags, or onto trucks if available;

- Since most roofs cannot support more than four inches of wet ash, keep roofs free of thick accumulation;

- Volcanic ash is slippery. Use caution when climbing on ladders and roofs;

- Guttering systems clog very easily so, if fitted underneath your roof, sweep away from the gutters;

- Cut grass and hedges only after rain or light sprinkling and bag clippings;

- Seek advice from public officials regarding disposal of volcanic ash in your community. In most cases, ash should be separated from normal rubbish for collection for disposal at a designated location-mixing ash with normal rubbish can result in damage to collection vehicles and take up space in landfills;

- Dampen ash in yards and streets to reduce suspension of ash, however try to use water sparingly - do not soak the ash. Widespread use of water for clean-up may deplete public water supplies. Follow requests from public officials regarding water use during cleanup operations;

- Remove outdoor clothing before entering a building.

Don't

- Do not soak the ash as it will cake into a hard mass, making cleanup more difficult. On roofs the added weight of the water will increase the risk of roof collapse;

- Do not dump the ash in gardens or on the roadside;

- Do not wash the ash into the guttering, sewers or storm drains. (It can damage waste water treatment systems and clog pipes);

- Do not drive unless absolutely necessary, driving stirs up the ash. Furthermore, ash is harmful to vehicles.

If You Must Drive:

If driving is crucial, drive slowly, use headlights and ample windscreen fluid. Using wipers on dry ash may scratch the windscreen. In heavier ashfall driving should only be undertaken in an emergency. Use water bottles and a cloth to clean the windscreen as required, this may be every few 100 yards.

In Addition:

- Change oil and oil filters frequently (every 50-100 miles in heavy dust; every 500-1000 miles in light dust);

- Do not drive without an air filter. If you can not change it, clean it by blowing air from the inside out. Do not change it until you notice a loss of power to the engine as a dirty filter is more effective than a clean one.

Cleaning Your Car

- Clean ash from inside your engine, trunk and spare tire storage area as well as the seating area. Brushing ash off the car can cause scratching;

- Have a service garage clean wheel brake assemblies every 50-100 miles for very severe road conditions, or every 200-500 miles for heavy dust conditions.

Ash Clean-up: inside

In general, surfaces should be vacuumed to remove as much ash as possible from carpets, furniture, office equipment, appliances, and other items. Portable vacuum systems equipped with high-efficiency particulate filtering systems are recommended whenever possible. The severity of ash intrusion depends on the integrity of windows and entrances, the air intake features, and the care exercised to control the transport of ash into a building or home via shoes and clothing. Care should also be taken to avoid further contamination during the emptying, cleaning, and maintenance of vacuum equipment. In hot climates, where windows are permanently open, or absent, clean up of houses may be needed several times per day. Clean up inside should only be undertaken after the outside areas have been well cleared.

Do

- Clean your house when public-works crews are cleaning the areas outside your house as a coordinated approach;

- Put on your mask before starting to clean. If you don't have one, use a wet cloth;

- Ensure good ventilation by opening all doors and windows before you start to clean;

- Only use one entrance to the building while cleaning to ensure occupants do not bring in ash into clean areas;

- Use a dustless method of cleaning such as washing with water and an effective detergent/wetting agent. Damp rag techniques or vacuuming should be used whenever possible. After vacuuming, carpets and upholstery may be cleaned with a detergent shampoo. Avoid excess rubbing action because the sharp ash particles may cut textile fibers;

- Glass, porcelain enamel and acrylic surfaces may be scratched if wiped too vigorously. Use a detergent soaked cloth or sponge and dab rather than wipe;

- High-shine wood finishes will be dulled by the fine grit. Vacuum surfaces and then blot with a wet cloth. A tack cloth used by furniture refinishers should also work well;

- Ash-coated fabrics should either be rinsed under running water and then washed carefully or they can be taken outside and beaten to remove the ash;

- Soiled clothing will require extra detergent. Wash small loads of clothing, using plenty of water so the clothes will have room to move freely in the water. Brush or shake clothes before washing;

- Moisten thick ash deposits on hard floors and place in bags, (avoid sweeping dry ash);

- Use a damp mop or wet cloth to clean hard floors;

- Clean your computer, TV and radio equipment using a vacuum cleaner or compressed air. Switch off the main power supply to the machine before carrying out this operation;

- For several months after an ash fall, filters may need replacing often. Air conditioner and furnace filters need careful attention. Clean refrigerator air intakes. Clean any surface that may blow air and re-circulate the ash. Stove fans and vents should be cleaned thoroughly;

- Keep children indoors and discourage play in dusty settings;

- Keep pets indoors. If pets go out, brush them before letting them back indoors.

Don't

- Do not use floor sweepers with side brushes to clear aisles and floors because they may re-entrain dust particles into the air;

- Do not clean by blowing with compressed air or dry sweeping as ash will be forced back into the air;

- Do not use fans or electric clothes dryers which might force ash back into the air.

Final Thoughts

In many ways Volcanoes are a great example of why preparedness matters. Unless you live right near one, in your day-to-day existence, the impact of a volcanic eruption probably doesn't cross your mind. But volcanoes, because they can have environmental impacts far beyond the site of their eruptions, and for years after, serve as a good reminder of how we live on a dynamic planet, and what happens in one part of the world can and does send far-reaching ripples that can affect every one of us.

That can be obvious, as in the case of a major volcanic eruption, or less so, as in the so-called "Butterfly Effect" where the flapping of the wings of a butterfly in Ethiopia, causes a change in air currents, that eventually grows into a hurricane that slams into the coast of the US.

Understanding how even the smallest of actions, by nature, or even individuals, can have huge impacts, is something that every Ultimate Survivor needs to always keep in mind.

Chapter 23

Winter Storms

“All I'm trying to do is not join my ancestral spirits just yet.”
-Joshua Nkomo

Some of us look forward to winter weather. Who doesn’t dream of a “White Christmas”? And what kid doesn’t remain glued to the TV or radio at that first flake to hear if school will be closed? But for all of its holiday sprit, and white and pristine landscapes, snowstorms and freezing weather can also be deadly, and costly to homes and property.

Winter storms can range from a moderate snow over a few hours to a blizzard with blinding, wind-driven snow that lasts for several days. Many winter storms are accompanied by dangerously low temperatures and sometimes by strong winds, icing, sleet and freezing rain.

One of the primary concerns is the winter weather's ability to knock out heat, power and communications services to your home or office, sometimes for days at a time. Heavy snowfall and extreme cold can immobilize an entire region.

The National Weather Service refers to winter storms as the “Deceptive Killers” because most deaths are not directly related to the storm. Instead, people die in traffic accidents on icy roads and of hypothermia from prolonged exposure to cold, or the improper use of generators and alternative heat sources.

But as always you can enjoy the best of winter and deal with the worst, by taking precautions and being prepared. The CDC advises that taking preventive action is your best defense against having to deal with extreme cold-weather conditions. By preparing your home and car in advance for winter emergencies, and by observing safety precautions during times of extremely cold weather, you can reduce the risk of weather-related health and other problems.

The Insurance Institute for Business and Home Safety adds that when winter weather is more severe than usual in your area, it can threaten your home as well as your health. Freezing temperatures can cause a number of problems ranging from water leaks to burst pipes and roof collapses. There are other risks to life and property that occur during freezing weather, due to improper usage of alternative heating sources. The use of such devices increases the frequency of fires due to installation and usage that does not follow best practices or manufacturer recommendations.

If you are in an area at risk for severe or freezing weather, make sure:

- If you use an alternate heating source, such as a pellet or wood burning stove, that it is properly installed and separated from all flammable surfaces;
- You know if your roof tends to build up ice dams at the eaves;
- You know how to estimate when your snow loads are getting to dangerous levels and how to clear them;
- You know how to prevent frozen water pipes;
- You have a plan to prevent water from leaking into your house from snow accumulation;
- You install a Carbon Monoxide monitor if you intend to use a fireplace or other alternative sources of heat.

Preparing Your Home For Extreme Cold and Winter Storms

Listen to weather forecasts regularly, and check your emergency supplies whenever a period of extreme cold is predicted. Make sure to keep that NOAA radio handy!

As always check on your Emergency Preparedness Kit and Go Bags. You should be prepared to be "snowed in" by severe Winter Weather with at least three weeks of food and water. In addition to the usual items recommended for your kits in Chapters 3 and 9, if you live where you may face severe winter weather, add the following items to your home preparedness kit:

- Rock salt or more environmentally safe products to melt ice on walkways;
- Sand to improve traction;
- Snow shovels and other snow removal equipment;
- Sufficient heating fuel. You may become isolated in your home and regular fuel sources may be cut off. Store a good supply of dry, seasoned wood for your fireplace or wood-burning stove;
- Adequate clothing and extra blankets to keep you warm.

If you plan to use a fireplace or wood stove for emergency heating, have your chimney or flue inspected each year. Ask your local fire department to recommend an inspector, or find one in the yellow pages of your telephone directory under "chimney cleaning."

Your ability to feel a change in temperature decreases with age, and older people are more susceptible to health problems caused by cold. If you are over 65 years old, place an easy-to-read thermometer in an indoor location where you will see it frequently, and check the temperature of your home often during the winter months. As always eat a healthy and immune system boosting diet, no matter your age.

Insulate any water lines that run along exterior walls so your water supply will be less likely to freeze. To the extent possible, weatherproof your home

by adding weather-stripping, insulation, insulated doors and storm windows or thermal-pane windows.

If you have pets, bring them indoors. If you cannot bring them inside, provide adequate shelter to keep them warm and make sure that they have access to unfrozen water.

Know where and how to shut off your main water valves in the event of a burst pipe.

In addition to your home, winterize your barn, shed or any other structure that may provide shelter for your family, neighbors, livestock or equipment.

Clear rain gutters; repair roof leaks and cut away tree branches that could fall on a house or other structure during a storm.

Winter Weather Hazards and Related Terms

- **Freezing Rain** - Rain that freezes when it hits the ground, creating a coating of ice on roads, walkways, trees and power lines;

- **Sleet** - Rain that turns to ice pellets before reaching the ground. Sleet also causes moisture on roads to freeze and become slippery;

- **Winter Weather Advisory** - Winter weather conditions are expected to cause significant inconveniences and may be hazardous. When caution is used, these situations should not be life threatening;

- **Winter Storm Watch** - A winter storm is possible in your area. Tune in to NOAA Weather Radio, commercial radio, or television for more information;

- **Winter Storm Warning** - A winter storm is occurring or will soon occur in your area;

- **Blizzard Warning** - Sustained winds or frequent gusts to 35 miles per hour or greater and considerable amounts of falling or blowing snow (reducing visibility to less than a quarter mile) are expected to prevail for a period of three hours or longer;

- **Frost/Freeze Warning** - Below freezing temperatures are expected.

Preparing Your Car

You can avoid many dangerous winter travel problems by planning ahead. Have maintenance service on your vehicle as often as the manufacturer recommends. If you live in an area prone to heavy snowfall, you should own at least one reliable 4WD vehicle. Every fall as winter approaches you should:

- Have your radiator system serviced, or check the antifreeze level yourself with an antifreeze tester. Add antifreeze, as needed;

- Replace your windshield-wiper fluid with a wintertime mixture;

- Replace any worn tires, and check the air pressure in the tires.

In addition during the winter, keep the gas tank near full to help avoid ice in the tank and fuel lines, and check or have your mechanic check the following items on your car:

- **Battery and ignition system** - should be in top condition and battery terminals should be clean;

- **Brakes** - check for wear and fluid levels;

- **Exhaust system** - check for leaks and crimped pipes and repair or replace as necessary. Carbon monoxide is deadly and usually gives no warning;

- **Fuel and air filters** - replace and keep water out of the system by using additives and maintaining a full tank of gas. A full tank will keep the fuel line from freezing;

- **Heater and defroster** - ensure they work properly;

- **Lights and flashing hazard lights** - check for serviceability;

- **Oil** - check for level and weight. Heavier oils congeal more at low temperatures and do not lubricate as well;

- **Thermostat** - ensure it works properly.

Install good winter tires, and make sure the tires have adequate tread. All-weather radials are usually adequate for most winter conditions. However, some jurisdictions require that to drive on their roads, vehicles must be equipped with chains or snow tires with studs. Take the time to check your Car Emergency Preparedness Kit, and update with the following winter items if necessary:

- A shovel
- Windshield scraper and small broom
- Flashlight
- Battery powered radio
- Extra batteries
- Water
- Snack food
- Matches
- Blanket(s)
- Tow chain or rope
- Road salt and sand
- Emergency flares
- Fluorescent distress flag

During A Winter Storm or Freezing Temperatures

- Stay indoors during the storm;

- If you must go outside, wear several layers of loose-fitting, lightweight, warm clothing rather than one layer of heavy clothing. The outer garments should be tightly woven and water repellent. Wear mittens, which are warmer than gloves. Wear a hat. A hat will

prevent loss of body heat. Cover your mouth with a scarf to protect your lungs;

- Walk carefully on snowy, icy, walkways;
- Avoid overexertion when shoveling snow. Overexertion can bring on a heart attack—a major cause of death in the winter. If you must shovel snow, stretch before going outside;
- Try to keep dry. Change wet clothing frequently to prevent a loss of body heat. Wet clothing loses all of its insulating value and transmits heat rapidly;
- Watch for signs of frostbite. These include loss of feeling and white or pale appearance in extremities such as fingers, toes, ear lobes, and the tip of the nose. If symptoms are detected, get medical help immediately;
- Watch for signs of hypothermia. These include uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness, and apparent exhaustion. If symptoms of hypothermia are detected, get the victim to a warm location, remove wet clothing, warm the center of the body first and give warm, non-alcoholic beverages if the victim is conscious. Get medical help as soon as possible. REFER BACK TO CHAPTER 6 FOR FIRST-AID FOR HYPOTHERMIA AND FROSTBITE;
- Drive only if it is absolutely necessary. If you must drive: travel in the day; don't travel alone; keep others informed of your schedule; stay on main roads and avoid back road shortcuts;
- Let someone know your destination, your route, and when you expect to arrive. If your car gets stuck along the way, help can be sent along your predetermined route;
- If the pipes freeze, remove any insulation or layers of newspapers and wrap pipes in rags. Completely open all faucets and pour hot water over the pipes, starting where they were most exposed to the cold (or where the cold was most likely to penetrate);

- Maintain ventilation when using kerosene heaters to avoid build-up of toxic fumes. Refuel kerosene heaters outside and keep them at least three feet from flammable objects;

- Conserve fuel, if necessary, by keeping your residence cooler than normal. Temporarily close off heat to some rooms;

- If you will be going away during cold weather, leave the heat on in your home, set to a temperature no lower than 55ºF.

Taking Shelter During A Winter Storm

If you are caught outdoors for an extended period of time during severe winter weather, the sheltering techniques you learned in Chapter 10 may prove inadequate. Here are ways to build some specific winter weather shelters.

According to the US Army Survival Manual, where you are stuck in the cold, and what you have with you, will determine the types of Winter Weather Shelters you can build.

You can build cold-weather shelters in wooded areas, open country and barren areas. Wooded areas usually provide the best location, while barren areas have only snow as building material. Wooded areas provide timber for shelter construction, wood for fire, and greater protection from the wind.

To make shelters from ice or snow usually requires tools such as ice axes or saws, but in all but the most extreme cold weather environments, your 6-in-1 Survival Tool should do the trick. Understand that building such a shelter will mean you will expend a lot of time and energy, so only undertake such a task, if you feel it is essential to your survival.

Be sure to ventilate any enclosed shelter, especially if you intend to build a fire in it. Always block a shelter's entrance, if possible, to keep the heat in and the wind out. You can use your backpack or snow blocks. Construct a shelter no larger than needed. This will reduce the amount of space to heat. A fatal error in cold weather shelter construction is making the shelter so large that it steals body heat, rather than saving it. Keep shelter space small.

Never sleep directly on the ground. If you do not have blankets or a sleeping bag with you -- lay down some pine boughs, grass or other insulating material to keep the ground from absorbing your body heat.

Never fall asleep without turning out your stove or lamp. Carbon monoxide poisoning can result from a fire burning in an unventilated shelter. Carbon monoxide is a great danger. It is colorless and odorless. Any time you have an open flame, it may generate carbon monoxide. Always check your ventilation. Even in a ventilated shelter, incomplete combustion can cause carbon monoxide poisoning. Usually, there are no symptoms.

Unconsciousness and death can occur without warning. Sometimes, however, pressure at the temples, burning of the eyes, headache, pounding pulse, drowsiness or nausea may occur. Get into the fresh air at once if you have any of these symptoms.

Snow Cave Shelter

The snow cave shelter is a most effective shelter because of the insulating qualities of snow. Remember that it takes time and energy to build and that you will get wet while building it. First, you need to find a drift about 9-10 feet (3 meters) deep into which you can dig.

Image: Courtesy US Army

While building this shelter, keep the roof arched for strength and to allow melted snow to drain down the sides. Build the sleeping platform higher than the entrance. Separate the sleeping platform from the snow caves walls or dig a small trench between the platform and the wall. This platform will prevent the melting snow from wetting you and your equipment. This construction is especially important if you have a good source of heat in the snow cave. Ensure the roof is high enough so that you can sit up on the sleeping platform. Block the entrance with a snow block or other material and use the lower entrance area for cooking. The walls and ceiling should be at least a foot to a foot and half thick. Install a ventilation shaft. If you do not have a drift large enough to build a snow cave, you can make a variation of it by piling snow into a mound large enough to dig out.

Snow Trench Shelter

The idea behind this shelter is to get you below the snow and wind level and use the snow's insulating qualities. Look around and decide where the wind is coming from. Find a snowdrift, tree, thicket, terrain feature etc. to get out of the wind. You want to be on the downwind side of any windbreak where the least wind is. You'll be able tell where that is by the depression, or the snowdrift in front of it. If you have your Go Bag with you as you should, you will have a tarp, or your solar blanket with which to create this shelter.

If you do not, and are in an area of compacted snow, cut snow blocks and use them as overhead cover. Dig a trench, about waist deep, two-to-three feet wide, and six feet long. The entrance should be on the downwind side so the wind doesn't blow directly into the shelter. Stretch out the tarp over the trench and then shovel snow on all the edges to keep the covering from blowing off. Build only one entrance and use a snow block or rucksack as a door. Tie long streamers of flagging to nearby trees around the shelter so it is easily visible. Get inside the trench, and hold your whistle in your hand.

(See Illustration next page of Snow Trench Shelter)

Snow Trench Shelter

Rescuers may be on snowmobiles, and may have difficulty hearing shouting over the wind, engine noise, two-way radio headsets and helmet liners. So, as soon as you hear engines, start blowing on your whistle, and keep blowing.

Snow House or Igloo

In certain areas, the indigenous peoples frequently use this type of shelter as hunting and fishing shelters. They are efficient shelters but require some practice to make them properly. Also, you must be in an area that is suitable for cutting snow blocks and have the equipment to cut them (snow saw or knife). A snow cave or snow trench is probably a better way to go.

(See Illustration next page of Snow House or Igloo)

Lean-To Snow Shelter
Construct this shelter in the same manner as you would any lean-to in other environments; however, pile snow around the sides for insulation.

Fallen Tree Shelter
To build this shelter, find a fallen tree and dig out the snow underneath it. The snow will not be as deep under the tree. If you must remove branches from the inside, use them to line the floor.

Tree-Pit Shelter
Dig snow out from under a suitable large tree. It will not be as deep near the base of the tree. Use cut branches to line the shelter. Use a ground sheet as overhead cover to prevent snow from falling off the tree into the shelter.

Image: Courtesy howstuffworks.com

Other Tips on Cold Weather Survival

If you find yourself forced to survive in a cold weather for any extended length of time, you must understand that it will likely be more difficult for you to satisfy your basic shelter, water, and food needs in a cold environment than in a warm environment. Even if you have the basic requirements, you must also have adequate protective clothing, and your will to survive will be tasked to its fullest.

The Army manual says in cold weather survival situations you not only have to have enough clothing to protect you from the cold, you must also know how to maximize the warmth you can get from it. For example, always keep your head covered. You can lose 40 to 45 percent of body heat from an unprotected head. Because there is much blood circulation in the head, most of which is on the surface, you can lose heat quickly if you do not cover your head. You can also lose a lot of heat from an unprotected neck, wrist, and ankles. These areas of the body are good radiators of heat and have very little insulating fat.

There are four basic principles to follow to keep warm. An easy way to remember these basic principles is to use the word **COLDER** as follows:

- **C-Keep clothing clean**. This principle is always important for sanitation and comfort. In winter, it is also important from the standpoint of warmth. Clothes matted with dirt and grease lose much of their insulation value;

- **O-Avoid overheating.** When you get too hot, you sweat and your clothing absorbs the moisture. This affects your warmth in two ways: dampness decreases the insulation quality of clothing, and as sweat evaporates, your body cools. Adjust your clothing so that you do not sweat. Do this by partially opening your parka or jacket, by removing an inner layer of clothing, by removing heavy outer mittens, or by throwing back your parka hood or changing to lighter headgear. The head and hands act as efficient heat dissipaters when overheated;

- **L-Wear your clothing loose and in layers**. Wearing tight clothing and footgear restricts blood circulation and invites cold injury. It also decreases the volume of air trapped between the layers, reducing its insulating value. Several layers of lightweight clothing are better than one equally thick layer of clothing, because the layers have dead airspace between them. The dead airspace provides extra insulation. Also, layers of clothing allow you to take off or add clothing layers to prevent excessive sweating or to increase warmth;

- **D-Keep clothing dry.** In cold temperatures, your inner layers of clothing can become wet from sweat and your outer layer, if it is not water repellent; can become wet from snow and frost melted by body heat. Wear water repellent outer clothing, if available. It will shed most of the water collected from melting snow and frost. Before entering a heated shelter, brush off the snow and frost. Despite the precautions you take, there will be times when you cannot keep from getting wet. At such times, drying your clothing may become a major problem. When moving, hang your damp mittens and socks on your pack. Sometimes in freezing temperatures, the wind and sun will dry this clothing. You can also place damp socks or mittens, unfolded, near your body so that your body heat can dry them. In a campsite,

hang damp clothing inside the shelter near the top, using drying lines or improvised racks. You may even be able to dry each item by holding it before an open fire. Dry leather items slowly. If no other means are available for drying your boots, put them between your sleeping bag shell and liner. Your body heat will help to dry the leather;

- **E-Examine** your clothes for worn areas, tears, and cleanliness;
- **R-Repair** your clothing early before tears and holes become too large to patch. Improvised sewing kits can be made from bones, plant fibers, 550 cord, and large thorns.

Other than the appropriate clothes and boots, and knowing how to care for them, a heavy, down-lined sleeping bag is a valuable piece of survival gear in cold weather. Ensure the down remains dry; if down gets wet, it loses a lot of its insulation value.

If you have properly prepared your cold weather Go Bag, there is no reason you should be “out in the cold” without a sleeping bag – but if for some reason you do not have a sleeping bag, you can make one out of parachute cloth or similar material and natural dry material, such as leaves, pine needles, or moss. Place the dry stuffing between two layers of the material.

Be aware of Snow Blindness. The reflection of the sun's ultraviolet rays off of a snow-covered area causes this condition. The symptoms of snow blindness are a sensation of grit in the eyes, pain in and over the eyes that increases with eyeball movement, red and teary eyes, and a headache that intensifies with continued exposure to light. Prolonged exposure to these rays can result in permanent eye damage. To treat snow blindness, bandage your eyes until the symptoms disappear.

You can prevent snow blindness by wearing sunglasses. If you don't have sunglasses, improvise. Cut slits in a piece of cardboard, thin wood, tree bark, or other available material, putting soot from your fire under your eyes will help reduce shine and glare.

Water is usually not a problem when stranded in cold conditions. Sources of water are almost always plentiful, and because of the cold, are usually safer and less contaminated then in other regions. However, follow the procedures to purify water as you learned in Chapter 11.

You can melt freshwater ice and snow for water. Completely melt both before putting them in your mouth. Trying to melt ice or snow in your mouth takes away body heat and may cause internal cold injuries. If on or near pack ice in the sea, you can use old sea ice to melt for water; because, over time sea ice loses its salinity. You can identify this ice by its rounded corners and bluish color. You can use your body heat to melt snow. Place the snow in a water bag and place the bag between your layers of clothing. This is a slow process, but you can use it on the move or when you have no fire.

NOTE: Do not waste fuel to melt ice or snow when drinkable water is available from other sources.

Obtaining food and hunting game if you are stranded in arctic or sub-artic territories, is challenging, but not impossible -- how challenging depends on where you are, and the time of year. During the summer months, for example, you can easily get fish and other water life from coastal waters, streams, rivers, and lakes. Most northern fish and fish eggs are edible.

The North Atlantic and North Pacific coastal waters are rich in seafood. You can easily find crawfish, snails, clams, oysters, and king crab. In areas where there is a great difference between the high and low tidewater levels, you can easily find shellfish at low tide. Dig in the sand on the tidal flats. Look in tidal pools and on offshore reefs. In areas where there is a small difference between the high- and low-tide water levels, storm waves often wash shellfish onto the beaches.

Unless you are a trained and skilled hunter, stick to fish and seafood. Although these animals may be abundant, without the proper training or weapons, it would be very difficult to take down seal, caribou, or bears. There are some plants growing in arctic and sub-arctic regions, some you may be able to recognize as edible. When in doubt use the Universal Edibility Test as described in Chapter 12.

Final Thoughts

Survival skills are a continuum. As you have learned througout this Section, natural disasters are interrelated and often caused by, or followed by one another. Early in this book you took a risk assessment to see what disasters you could most likely face, and to be best prepared for. But as you have no doubt learned by now, none of that should ever be taken for granted.

Just because you live in one area prone to certain disasters and not others; that does not mean you will never travel to, or find yourself in different environments. Remember too, how the Volcanic Eruption of Mt. Tambora in 1816 caused snow in June in New England half a world away!

That is why Ultimate Survivors are prepared for all disasters -- Winter, Spring, Summer and Fall!

End of Section III

Section IV

Excursionary Emergencies

“You know, I once read an interesting book which said most people lost in the wilds… they die of shame. What did I do wrong? How could I have gotten myself into this?' And so they sit there and they... die. Because they didn't do the one thing that would save their lives... Thinking”.
— David Mamet

Chapter 24

How to Survive Being Lost in the Wilderness

"When walking alone in a jungle of true darkness, there are three things that can show you the way: instinct to survive, the knowledge of navigation, and creative imagination. Without any one of them, you are lost."
— Toba Beta, My Ancestor Was an Ancient Astronaut

Getting lost while in the woods is a surprisingly common occurrence. It can happen while camping, on a hike, or just a simple nature walk.
This is particularly true for inexperienced hikers and backpackers.

In most cases, if you have become lost during a routine camping expedition, if you do not panic, and follow the advice you will find in this chapter, you should be able to find your way back out of the woods on your own.

However there are times when getting lost in the wilderness can lead to potentially life-threatening situations, where you will need to call on the very best of yourself and all of your skills and gear to survive. As any hunter or outdoorsman will tell you, Wilderness Survival Skills will serve you well in the aftermath of any of the Natural Disasters discussed in the last section, and almost any kind of emergency or crisis.

Have you ever gotten lost, even in a place more familiar than the woods, and it seemed like you were walking in circles? Turns out you probably were right. Recent research suggests that when you are lost, especially in a disorienting environment like the woods, or other wilderness area, you do tend to walk in circles.

The research was conducted by Jan Souman, with the Max Planck Institute for Biological Cybernetics in Tubingen, Germany. Souman wasn't even sure if that common sensation of “walking around in circles” was actually true. He suspected that when people were lost, and not sure where they are going that they might veer off to the left or right in the wrong direction, but he was not convinced that they indeed actually walked in true 360-degree circles.

To find out, he instructed nine people to walk as straight as possible in one direction for several hours. Six walkers forged through a flat, forested region of Germany. Three trekked through the Sahara desert in southern Tunisia. All of the walkers wore GPS receivers so that the researchers could analyze their routes.

The results, published in 2009 in the peer-reviewed journal *Current Biology,* showed that no matter how hard people tried to walk in a straight line, they often ended up going in circles without ever realizing that they were crossing their own paths. Circular walking by those in the study increased when visible clues such as the sun or moon were obscured.

To people that have done any Search and Rescue work, the results of the study should come as no surprise. Rangers and other rescue workers unfortunately know that dead hikers are often found within a mile of their campsites, or of where they entered the woods, or left a marked trail.

What you need to take away form this study is that if you know you are heading into any environment were you could potentially get lost, be sure to have something with you like a compass that could keep you moving in a straight line. If you become lost even in the densest forest in a developed nation such as the U.S., understand that you will rarely be more than 15- 20 miles from a road. If you can walk in a continuous straight-line, you will get found – if you walk in circles you will get dead.

But of course by now you know you would never go even on a recreational day hike, or camping expedition without your Go Bag, right? Which of course - includes a compass, a map, and many other things you will need to get by if you become lost in the wild.

What to Do If You are Lost in The Wilderness

First, try to avoid getting lost in the first place. If you are hiking, stay on trails. It’s possible to lose a trail, even if you only step off of it by as little as 20 or 30 feet. This is particularly true in dense woods. Take a map of the area if you have one. Practice how to use your compass as discussed in Chapter 9. Before you enter any wilderness area, even if you are going to use a marked and cleared trail, face the path you are going to take, and take a compass reading at the head of trail before you start out. If the path goes East, you know to get back where you started, you have to head West.

If you do become lost while camping, hiking, or venturing into the wilderness for any reason, Rangers and rescue professionals all recommend that you **STOP**. That is not just a thing to do physically, but is an Acronym for:

'S'- This is for stop. Take a deep breath and sit down for awhile. During this time you must simply acknowledge, without going over the problems that caused you to get lost again and again, that you are lost;

'T'- This is for think. Don't do anything at all until you assess your situation. It is during this time that you must remember whether or not anyone will miss you if you don't return when you're supposed to. This is why it's imperative to tell more than one person if you decide to go out into the wilderness. Further, let them know when to expect you back;

'O'- This is for observe. This should be done in conjunction with the thinking stage. What do you see around you that could help? What's the terrain like? How about the weather?

'P'- This is for plan. Once you've observed the terrain, thought about all the possible scenarios, and generally accepted your situation, it's time for the plan. First take care of immediate issues like injuries, a storm on the horizon, etc.. Before you left you should have thought through all the potential trouble you could get into – now is the time to carry out what you thought of.

Beyond STOP - any time you venture into the wilderness:

- Be sure to let someone know where you will be going and what time you should be expected back;

- If you find you've wandered off the path, stop immediately. In most cases, you will find that retracing your footsteps will bring you back to the trail;

- If you can’t locate a familiar trail -- stop and assess the situation. Try to stay calm. As always, this is the most important thing to remember: If you don't stay calm, you can't think straight. If you can't think straight, you won't be able to help yourself;

- Orient yourself. If you have no map or compass, you can still get a general idea of your location. Remember: the sun rises in the east and sets in the west. Moss only growing on the north side of trees is a fallacy, and not something that you can rely on. In the Northern Hemisphere the most reliable and easiest way to find North without a compass is to find Polaris or the North Star. To locate the North Star:

    1) Find the Big Dipper in the sky, (note: the Little Dipper pours into the Big Dipper);

    2) Follow the edge of the ladle 5 times its length up towards the end of the handle of the Little Dipper;

    3) The brightest star there is Polaris, the North Star, which is virtually north;

    4) Cassiopeia is a 'W' shaped constellation across the North Star from the Big Dipper. Its 'W' also points right at the North Star.

- If you have oriented your direction, but still can't find the trail, follow a river or stream downstream. In most populated areas you will eventually come to house or a road;

- Look for any familiar landmarks in the area, such as a distinctive mountain summit. This can help orient yourself so you can make your way out;

- If nightfall approaches and you don't know where you are, it is usually wiser to stay put and try to find your way out in the daylight. Wandering around in the dark greatly increases your chances of getting injured. Refer back to Chapter 10 on how to build simple shelters;

- If you have a whistle, (and if you have your Go Bag, you know that you do!) blow it periodically. The sound may attract help. The sound from a whistle travels farther and is more easily located than the sound of a shout.

Once again, Wilderness Survival -- whether you are planing a hike, weekend outing, or are Bugging Out to escape a Natural or Man-Made Disaster -- all comes down to preparation. Because as you know "P-POP:"

"Preparation is Power Over Panic"

What that means in this case is, before you take that trip into the woods, desert or hills, think before you take a single step from home about all of the worst-case scenarios. Imagine just what kinds of problems you could encounter, and ask yourself how well prepared and equipped am I to deal with them? Have a definitive plan of action of exactly what you would do in each of these situations. If you are traveling with family members, especially young children, make sure they too know exactly what to do in a given situation you may encounter.

In order to accurately assess those risks, you must educate yourself about the area in which you will be traveling. To start with you should:

- Get a very detailed map of the area;

- Talk to a safety council member, park ranger, or general expert on the wilderness area in question. Don't be afraid to contact these people, as they are usually more than happy to assist.

By doing this in advance of your trip into the wilderness, you will learn about the weather, animal life, appropriate food sources, and possible problems you could encounter beforehand.

It goes with out saying that you should *never, ever,* venture into a wilderness area without your Go Bag, fully equipped with the high-quality essentials as described in Chapter 9. Your evaluation based on the two bullet points above, can help you to determine some specific additional items beyond the Basic Essentials that may be more relevant to the area you will be trekking to.

If you have made these preparations before hand, especially telling more than one person where you are going and when you are expected back – then, should you become lost, the best thing to do is remain calm and stay put. If people know that you're out in the wilderness and are missing, someone will eventually come looking for you. So as long as you keep your wits about you, have your Go Bag with you, and are not in a place that does not put you in any immediate danger, usually the best thing to do is stay where you are. You should be able to survive until you are found.

Always remember your Rule of Threes:

You Can Survive For:

- Three minutes without air
- Three hours without shelter
- Three days without water
- Three weeks without food

If you need to stay put for a while, your first priority is to find and build adequate shelter, refer back to Chapter 10. Then think about the different methods of obtaining water and food as described in Chapters 11 and 12.

Other Methods to Find Direction Without A Compass or GPS

If you are not in safe location, if you have reason to believe you will not be looked for, or have waited long enough and it appears that rescue is not forthcoming – you may need to make the decision to try to find your own way back. If you do not have your compass, in addition to the methods

mentioned earlier, such as using the North Star, here are some other methods to orient on direction.

Watch Method

You may notice that people you consider “outdoorsy” types, tend were old style analog face watches, rather than more modern digital alternatives. They are not just making a fashion statement about rugged individualism; an analog face watch can be made into a simple compass using the sun and toothpick!

- Hold your wristwatch in front of you like a compass;
- Hold a toothpick or little twig or piece of grass up along the edge of your watch so it casts a shadow toward the center of the watch;
- Turn your watch until the shadow splits in half the distance between the hour hand and 12 on the watch face;
- 12 is now pointing South and 6 is pointing North;
- In the southern hemisphere, 12 points North and 6 points South.

Watch Method - Image: Courtesy thecompassdude.com

If you do not have a watch or have the wrong kind of watch, you can improvise with a circle in the dirt.

- Draw a big circle in the dirt with a stick;
- From the center of the circle, draw a line straight towards the sun. (this is your hour hand);

- Now, draw a line to 12 on the circle where it would be in relation to the hour hand;

- Halfway between the two lines is South.

Improvised Shadow Watch Method - Image: Courtesy thecompassdude.com

Star Method

Sometimes due to your location, clouds or other obstructions, it may be difficult to find and identify the Big Dipper, and therefore the North Star. But here is a way you can use any star you can see to find direction.

- Using a tent pole or other straight stick, position it on a tall rock or on a tree limb so it is steady and will not move;

- Stand or lay in a position and location that you can copy later. A good example is lying against the rock with your chin on your fist and mark your fist location on the rock with chalk or a rock scratch;

- Sight up the stick at a bright star that you can recognize later. Make sure you have a good fix on the position of the star aligned with the stick in your mind;

- Come back in a half hour, be sure to lie in the same position relative to the stick as before – DO NOT MOVE THE STICK;

- Notice which direction the star has moved. You may want to check this at 15 minute intervals for an hour;

- If the star has moved to the right, you are facing South;

- Moved Left = facing North;

- Moved Up = facing East;

- Moved Down = facing West;

- The star will most likely have moved up and right or down and right so you will need to estimate the direction, such as Southeast or Southwest.

Star Method - Image: Courtesy thecompassdude.com

Starting a Fire Without Matches or Other Modern Methods

If you have your Go Bag with you -- as well you should -- you should have several "modern methods" on-hand to start a fire including water-proof matches, lighter, and a magnesium striker. If for some reason you have been caught without these items, or they have been lost, or fail – here are some tried and true methods of starting a fire the "old-fashioned" way.

These techniques can and do work – but they are not as easy as you may have seen in the movies. Making fire without modern fire starters takes a lot of skill and patience, and can be physically demanding and frustrating. That is why it is so important that you carry more than one reliable method of starting a fire in your Go Bag.

You should practice these methods in your backyard until you can do one, or more well, before you should have to do so in an emergency situation.

All primitive fire-starting methods use heat generated by friction for ignition. The two most reliable "primitive" fire starting methods are:

The Fire-Plow

To use this method, cut a straight groove in a softwood base and plow the blunt tip of a hardwood shaft up and down the groove. The plowing action of the shaft pushes out small particles of wood fibers. Then, as you apply more pressure on each stroke, the friction ignites the wood particles.

(See the illustration on the next page)

The Bow and Drill

The technique of starting a fire with a bow and drill is practical but it requires much effort and patience to produce a fire. You need the following items to use this method:

- **Socket.** The socket is an easily grasped stone or piece of hardwood with a slight depression in one side. Use it to hold the drill in place and to apply downward pressure. This is also sometimes called a bearing block, or simply the “hand piece”;

- **Drill.** The drill should be a straight, seasoned hardwood stick about 3/4 inch in diameter and about 10 inches long. The top end should be round and the low end blunted (to produce more friction);

- **Fire board.** Although any board may be used, a seasoned softwood board about an inch thick and 4 inches wide is preferable. Cut a depression about 3/4 inch from the edge on one side of the board, this is where the drill will go. Make a V-shaped notch from the edge of the board toward the depression, cut as close to the center of the depression as you can. This will channel the black powder or “coal” you create with the drill;

- **Bow.** The bow is a resilient, green stick about 3/4 inch in diameter with a bowstring. The type of wood is not important. The bowstring can be any type of cordage. Tie the bowstring from one end of the bow to the other, without any slack.

Image: Courtesy Boy Scouts of America

First prepare and place a small amount of twigs and/or other kindling material in your fire pit.

Create a tinder nest of dry fibrous vegetation, such as dry grass or inner tree bark. Some people like to put the tinder nest directly under the V-notch, others suggest you make the tinder nest right by the fire board and use an ember pan made from a piece of bark, or place something like a leaf below the notch to catch and transfer the burning ember to the tinder nest.

Place one foot on the fireboard. Loop the bowstring over the drill and place the drill in the precut depression on your fire board. Place the socket, held in one hand, on the top of the drill to hold it in position. Press down on the drill and saw the bow back and forth to twirl the drill.

Once you have established a smooth motion, do not stop as it begins to smoke, apply more downward pressure and work the bow faster. This action will grind hot black powder into the tinder below the V-notch,

causing a spark to catch. Blow on the tinder until it ignites. Carefully move the burning tinder ball into your fire pit.

NOTE:
Primitive fire-making methods are exhausting and require practice to ensure success. Take the time to practice at home and achieve success, before you need to use either method in the field. If your survival situation requires the use of primitive methods, remember the following hints to help you construct and maintain the fire:

- If possible, use nonaromatic seasoned hardwood for fuel.
- Collect kindling and tinder along the trail.
- Add insect repellent to the tinder.
- Keep the firewood dry.
- Dry damp firewood near the fire.
- Bank the fire to keep the coals alive overnight.
- Carry lighted punk, when possible.
- Be sure the fire is out before leaving camp.
- Do not select wood lying on the ground. It may appear to be dry but generally doesn't provide enough friction.

Additional Water Sources

In Chapter 11 you learned a bit about ways to find and obtain water in the wilderness. Except in the most arid of places, in just about everywhere you may be lost or stuck; there will be some sources of water. However very few of these may be safe to drink. Ponds, springs and other places where water accumulates could be highly contaminated with bacteria, protozoa, and other toxins. If you have your Go Bag water purification equipment with you --- you can make these sources relatively safe to drink. Otherwise, refer back to Chapter 11 for other acceptable water purification techniques such as boiling and distillation.

In addition to the general techniques discussed at the end of Chapter 11, here are some additional specific sources where you may be able to find water in various wilderness environments.

- Bees or ants going into a hole in a tree may point to a water-filled hole. Siphon the water with plastic tubing or scoop it up with an

improvised dipper. You can also stuff cloth in the hole to absorb the water and then wring it from the cloth;

- Water sometimes gathers in tree crotches or rock crevices. Use the above procedures to get the water. In arid areas, bird droppings around a crack in the rocks may indicate water in or near the crack;

- Green bamboo thickets are an excellent source of fresh water. Water from green bamboo is clear and odorless. To get the water, bend a green bamboo stalk, tie it down, and cut off the top. The water will drip freely during the night. Old, cracked bamboo may also contain water;

- Wherever you find banana trees, plantain trees, or sugarcane, you can get water. Cut down the tree, leaving about a 30-centimeter (12-inch) stump, and scoop out the center of the stump so that the hollow is bowl-shaped. Water from the roots will immediately start to fill the hollow. The first three fillings of water will be bitter, but succeeding fillings will be palatable. The stump will supply water for up to 4 days. Be sure to cover it to keep out insects;

- Some tropical vines can give you water. Cut a notch in the vine as high as you can reach, then cut the vine off close to the ground. Catch the dropping liquid in a container or in your mouth;

- The milk from young, green (unripe) coconuts is a good thirst quencher. However, the milk from mature, brown, coconuts contains oil that acts as a laxative. Drink in moderation only. Do not drink the liquid from either if it is sticky, milky, or bitter tasting;

- You can get water from most plants with moist pulpy centers. Cut off a section of the plant and squeeze or smash the pulp so that the moisture runs out. Catch the liquid in a container;

- Plant roots may provide water. Dig or pry the roots out of the ground, cut them into short pieces, and smash the pulp so that the moisture runs out. Catch the liquid in a container;

- Fleshy leaves, stems, or stalks, such as bamboo, contain water. Cut or notch the stalks at the base of a joint to drain out the liquid;

- Most species of Palm Tree can also provide water. Bruise a lower frond and pull it down so the tree will "bleed" at the injury. Collect the liquid.

Finding Water and Other tips on Desert Survival
If you should find yourself lost or trapped in the Desert, obviously water and heat issues become more critical than in other Wilderness Survival Situations. Surviving in the desert is more about conserving water, than it is about finding sources of water.

Understanding how the air temperature and your physical activity affect your water requirements allows you to take measures to get the most from your water supply. The following measures will help you Ration Sweat - Not Water. The US Army Survival Manual says you must think of yourself as a water container, by conserving sweat you will conserve water.

- Find shade! Get out of the sun!

- Place something between you and the hot ground;

- Limit your movements;

- Despite the temptation to do so, do not remove your clothing. Cover your head, and protect your neck. Clothing helps by slowing the evaporation rate and prolonging the cooling effect;

- Food requires water for digestion; therefore, eating food will use water that you need for cooling. Ration your food accordingly. Alcohol is to be avoided, as it will accelerate dehydration;

- If travel is necessary, travel slowly and steadily.

If you are in the desert and are near a source of water, stay there. If you do not see one in your immediate vicinity – DON’T PANIC! Despite what you may think, deserts are not totally devoid of water. Sources exist, you just

have to know where and how to find them. Look for these Signs and Sources:

- Watch for desert trails, following them may lead to water or civilization;

- Flocks of birds will often circle over waterholes. Listen for their chirping in the morning and evening, and you may be able to locate their watering spot;

- Look for plants that grow only where there is water: cottonwoods, sycamores, willows, hackberry, salt cedar, cattails and arrow weed. You may have to dig to find this water;

- Cacti can contain a good source of water, once a barrel cactus is found cut off the top and mash or squeeze the pulp. Caution: do not eat pulp, place pulp in mouth, suck out juice and discard pulp. Without a machete cutting into a cactus is difficult and takes time since you must get past the long strong spines and cut through the tough rind;

- Keep on the lookout for windmills and water tanks built by ranchers;

- Morning dew accumulates on plants, though this method will not provide much water, it is better than none;

- Have containers ready for sudden rainstorms and flash floods – always keep your tarp spread out to accumulate any possible rain water;

- Water accumulates in valleys and low areas, and on the foot of concave banks of dry river beads;

- Water also accumulates on foot of cliffs or rock outcrops;

- First depression behind first sand dune of dry desert lakes might contain water;

- Wherever you find damp surface sand or green vegetation, you might find water;

- In a sand dune belt, any available water will be found beneath the original valley floor at the edge of dunes.

If you locate any of the above sources and the ground is dry, there is likely water just below the surface; if you dig deep enough you should find it.

Food should be your lowest priority in a desert survival situation. Remember you can go for 3 weeks or more without food, and eating will cause you to use more water, which is far more precious. But if you are facing starvation, as far as food in the Desert goes, the fruits of all cacti are edible. You may find other edible plants in the desert. Refer back to the Universal Edibility Test before consuming any. There are also a variety of small lizards and insects that you could catch for food.

More on Hunting and Trapping

In Chapter 12 you learned about a few methods of foraging and obtaining food in various survival situations. If you need to survive in the wild for an extended period of time, here are a few more specifics on trapping and hunting.

As stated back in Chapter 12, get over your aversions if you have any, about eating bugs, grubs, and other insects, as these will likely be present in almost any environment, and are great sources of protein and other vital nutrients.

If you should happen to have a small caliber Survival Rifle with you (See Chapter 31 on Firearms) you should be able to take several species of small game such as squirrels, ground hogs, badgers, rabbits and the like. If you do not have a firearm, you should also restrict your efforts to trap or snare animals to small game, as it is much easier than going for larger prey.

Beyond the Bugs

- **Amphibians** - Frogs are easily found around bodies of fresh water. Frogs seldom move from the safety of the water's edge. At the first sign of danger, they plunge into the water and bury themselves in the mud and debris. Frogs are characterized by smooth, moist skin. There are few poisonous species of frogs. Avoid any brightly colored

frogs or ones that have a distinct "X" mark on their backs, as well as all tree frogs. **Do not confuse toads with frogs**. Toads may be recognized by their dry, "warty" or bumpy skin. They are usually found on land in drier environments. Several species of toads secrete a poisonous substance through their skin as a defense against attack. Therefore, to avoid poisoning, do not handle or eat toads;

- Do not eat salamanders; only about 25 percent of all salamanders are edible, so it is not worth the risk of selecting a poisonous variety. Salamanders are found around the water. They are characterized by smooth, moist skin and have only four toes on each foot. DO NOT CONFUSE SALAMANDERS WITH LIZARDS AS MOST SPECIES OF LIZARDS ARE EDIBLE;

- **REPTILES -** Reptiles are a good protein source and relatively easy to catch. Thorough cooking and hand washing is imperative with reptiles. All reptiles are considered to be carriers of salmonella, which exists naturally on their skin. Turtles and snakes are especially known to infect man. If you are in an undernourished state and your immune system is weak, salmonella can be deadly. Cook food thoroughly and be especially fastidious washing your hands after handling any reptile. Lizards are plentiful in most parts of the world. They may be recognized by their dry, scaly skin, and they have five toes on each foot. The only poisonous ones are the Gila monster and the Mexican beaded lizard. Care must be taken when handling and preparing the iguana and the monitor lizard, as they commonly harbor the salmonella virus in their mouth and teeth. The tail meat is the best tasting and easiest to prepare. Turtles are a very good source of meat. There are actually seven different flavors of meat in each snapping turtle. Most of the meat will come from the front and rear shoulder area, although a large turtle may have some on its neck. Despite what you know, think you know, or may have heard, there really are no infallible rules for expedient identification of venomous snakes in the field. This is because species are so variant across the globe, and the guidelines all require close observation or manipulation of the snake's body. The best strategy is to leave all snakes alone. Where snakes are plentiful and venomous species are present, the risk of their bites negates their food value.

- **BIRDS** - All species of birds are edible, although the flavor will vary considerably. As with any wild animal, you must understand birds' common habits to have a realistic chance of capturing them. You can take pigeons, as well as some other species, from their roost at night by hand. During the nesting season, some species will not leave the nest even when approached. Knowing where and when the birds nest makes catching them easier. Birds tend to have regular flyways going from the roost to a feeding area, to water, and so forth. Careful observation should reveal where these flyways are and indicate good areas for catching birds in nets stretched across the flyways. Roosting sites and waterholes are some of the most promising areas for trapping or snaring. Nesting birds present another food source—eggs. Remove all but two or three eggs from the clutch, marking the ones that you leave. The bird will continue to lay more eggs to fill the clutch. Continue removing the fresh eggs, leaving the ones you marked.

- **Mammals** - Mammals are excellent protein sources. Generally speaking all mammals are edible. There are some drawbacks to obtaining mammals. The amount of injury an animal can inflict is in direct proportion to its size. All mammals have teeth and nearly all will bite in self-defense. Even a squirrel can inflict a serious wound and any bite presents a serious risk of infection. Also, any mother can be extremely aggressive in defense of her young. Any animal with no route of escape will fight when cornered. Unlike with fish, and birds, and reptiles some of you may find it more difficult emotionally to trap and kill mammals.

If you are unarmed Snares and Traps are a good alternative to acquiring game. Besides, well-laid traps are likely to snare more game than you can ever shoot, and helps to preserve ammunition. Why is trapping such an essential survival skill? Consider this, during the Great Depression the game animals were hunted down to almost nothing, but the trapper always fed his family. Minks, raccoons, opossums, skunks, foxes, coyotes, bobcats, muskrats, otters, squirrels, rabbits, beavers, ground hogs, weasels, badgers, wild pigs, even snapping turtles – can all be trapped.

Trapping is a numbers game. The more traps you set the more that will be hit. Traps and snares need to be placed in multiple locations, and it's also a good idea to use a variety of traps. Try to find small game trails, which are small trails through the grass and weeds. Often, rabbits and other small game use the same trails over and over to move to and from food and water sources. You may also find trails that lead into briar patches, thorn bushes and other types of brush. Small game uses those types of places as protection, or places to hide. They are good places to put a snare as well.

Snaring has been around for centuries. A simple snare consists of a noose placed over a trail or den hole and attached to a firmly planted stake. If the noose is some type of cordage placed upright on a game trail, use small twigs or blades of grass to hold it up. Make sure the noose is large enough to pass freely over the animal's head. When snared, as the animal continues to move, the noose tightens around its neck. The more the animal struggles, the tighter the noose gets. This type of snare usually does not kill the animal, at least not right away. There is a good possibility that when you check your snare, whatever you may have caught may still be alive. If an animal is trapped but alive, use a club or spear to kill it quickly and mercifully. Or, if you are an experienced hunter, you may have a different method. The choice is yours, but keep in mind to kill quickly, it is not only the humane thing to do, but many animals, even small game, will be capable of inflicting pain on the person checking the snare. They may bite, scratch or claw you.

NOTE: Any rope or cord will do for a snare, in an emergency, even vines will do -- but as wire makes for the most effective snares, you may want to include 50 ft of Snare Wire in your Wilderness Survival Go Bag.

Simple snare

Twitch Up Snare

You may have seen a simple Twitch-up Snare, also called a Spring Snare in the movies. It uses a noose as in a basic snare and an "engine" – a bent sapling, that when triggered snaps the animal into the air. This kills it more quickly and effectively, with less likelihood of escape then a standard snare, as it will be dangling above the ground. You need your snare wire or cordage, a live and supple sapling and two forked sticks to make this snare.

Image: Courtesy Willow Haven Outdoor

To make the snare:

- Bend the sampling down, and scratch a mark in the dirt where it touches the ground;
- Release the sapling.

- Place one of the forked sticks securely in the ground at your mark, with the short fork pointing down toward the ground. This will be the Base of your trigger;

- Now tie a line of cord or wire on the end of the other stick. This called the leader line;

- Tie your noose to the other end of this stick just above the V in the fork. This will be your trigger Hook;

- Now tie the Leader Line to the top of the sapling. Bend the sapling down so that the noose lies on the ground and you can lock the short forking branch of the Hook, into the short forking branch of the Base, like you where hooking your two index fingers together.

When the animal gets stuck it the noose, it will release the hook from the base, and be sprung into the air at the end of the sapling.

This is the simplest way to make this snare by finding two sticks that can hook together by their forked branches. If you have the time and the tools some like to make a trigger by carving notches that fit together into the Hook and Base.

Dead Fall Traps

You may have seen or heard of traps that use a large rock, log, or other heavy object supported by sticks to crush animals beneath them. These are called deadfall traps. One of the most common is called a 4-stick Deadfall. Despite what you may see online or in other survival manuals, this is not an easy trap to make or set. Here is a much simpler version of that trap that requires no particular lashing skills and is much less complex to set.

Basically it could be called a “T”-deadfall. It uses a large weight of course like a flat rock, a thin Bait Stick and only two other sticks that have been notched, so that they can interlock together with the Bait Stick between them.

All you need to do is carve out an L-shaped notch in the end of two sticks, so that you can put them back together as if forming a single stick. The best

way to do this is to take a stick roughly about 1- 2 feet in length (adjust for the size of the animal you want to trap) and about 2- 3 inches in diameter, and cut or break it in half. Then, make your notches, and you will know that it can be put back together to hold up your drop weight.

To set the trap, all you need to do is: Put your two notched sticks together, wedge the bait stick between them, and prop the rock or heavy plank up by the interlocked sticks forming an angle with the bait stick running under the heavy object.

When the animal fiddles around with the Bait Stick, it will trigger the two interlocking sticks to separate...releasing the heavy object.

Dead Fall Pit

If you are stranded for a long period of time, in an area where you know there are game trails frequented by large animals you may want to make a Dead Fall Pit. While, a Dead Fall Pit is a good way to catch larger animals, keep in mind that it will take a lot of time and energy to build. Make sure

you already have a good supply of food before exhausting the energy it will take to build a trap like this.

- First look for a game trail;
- Then start to dig your pit near the trail;
- When it is deep enough to hold the intended animal, place sharpened sticks in the bottom that point up;
- When your pit is finished put together a grill of long branches and then cover them with leaves and grass;
- Place them over the pit.

Be very careful where you build a Dead Fall Pit. This trap can also be lethal to you and your would-be rescuers, in addition to your intended prey.

Baiting A Trap

Baiting a trap or snare increases your chances of catching an animal. A baited trap can actually draw animals to it. The bait should be something the animal knows. Strange or unusual foods could arose an animal's curiosity and draw it in, but the unfamiliarity may cause it not to take the bait. Familiarity is important, but the bait, however, should not be so readily available in the immediate area that the animal can get it close by. For example, baiting a trap with corn in the middle of a cornfield would not

be likely to work. Bait that seems to work very well on small mammals is the peanut butter from an MRE or similar ration. Salt is also good bait. When using such baits, scatter bits of it around the trap to give the prey a chance to sample it and develop a craving for it. The animal will then overcome some of its caution before it gets to the trap.

A Note on Commercial Traps

This Chapter has mainly been discussing how to survive in the wilderness if you should become lost, or otherwise trapped or stuck out of doors away from home. We have therefore been mainly discussing "field survival" techniques when it comes to trapping. However, if you know you will be going into a situation where trapping may be vital to your survival, you may want to consider one or more Commercial Traps to include in your Emergency Survival Kit and or Go Bags. If you have prepared a "Safe" or "Bug Out" House, a dozen or so commercially available traps are probably a good idea to include with what you store there.

Professional and lifetime trappers agree that one of the easiest to use, and most readily available such commercial trap is the Conibear trap. The Conibear trap comes in a variety of sizes; the Conibear #110 is probably the best for survival situations. It is inexpensive, and can be used for rabbits, squirrels, muskrats, small raccoons and mink – people have reported even catching duck and other game birds in a #110. Beginners have a lot of success with this trap.

The #110 Conibear, trap is a 4 1/2 by 4 1/2 inch trap with a single spring. The next two sizes up are the 220 and 330 for larger animals respectively. According to professional trappers, if you have prepared a Survival Safe House, and you stock it with (6) #110s for the smaller animals, (4) #220s for medium size animals and (2)#330s for beaver size animals, this batch of only 12 traps should keep you in meat and fur just about anywhere in America.

Preparing Game

So now you caught it, what are you going to do with it? Skinning and butchering may come easy to you if you have grown up hunting, but if not, you need to get over any revulsion to this, if you want to survive.

First you must bleed the animal by cutting its throat. If possible, clean the carcass near a stream. Place the carcass belly up and split the hide from throat to tail, cutting around all sexual organs. Remove the musk glands that are in most mammals just above the anklebone of the rear legs, this will help avoid tainting the meat.

For smaller mammals, like squirrels and rabbits, cut the hide around the body near the mid section and insert two fingers under the hide on both sides of the cut and pull both pieces off. When cutting the hide, insert the knife blade under the skin and turn the blade up so that only the hide gets cut. This will also prevent cutting hair and getting it on the meat.

Remove the head and feet.
Remove the entrails (body organs) from smaller game by splitting the body open and pulling them out with the fingers. Do not forget the chest cavity. For larger game, cut the gullet away from the diaphragm. Roll the entrails out of the body. Cut around the anus, then reach into the lower abdominal cavity, grasp the lower intestine, and pull to remove. Remove the urine bladder by pinching it off and cutting it below the fingers. If you spill urine on the meat, wash it to avoid tainting the meat. Save the heart and liver. Cut these open and inspect for signs of worms or other parasites. Also inspect the liver's color; it could indicate a diseased animal. The liver's surface should be smooth and wet and its color deep red or purple. If the liver appears diseased, discard it. However, a diseased liver does not indicate you cannot eat the muscle tissue.

Butcher larger game into manageable pieces. First, slice the muscle tissue connecting the front legs to the body. There are no bones or joints connecting the front legs to the body on four-legged animals. Cut the hindquarters off where they join the body. You must cut around a large bone at the top of the leg and cut to the ball-and-socket hip joint. Cut the ligaments around the joint and bend it back to separate it. Remove the large muscles (the tenderloin or "back strap") that lie on either side of the spine. Separate the ribs from the backbone. There is less work and less wear on your knife if you break the ribs first, then cut through the breaks.

Boil large meat pieces or cook them over a spit. You can stew or boil smaller pieces, particularly those that remain attached to bone after the

initial butchering, as soup or broth. You can cook body organs such as the heart, liver, pancreas, spleen, and kidneys using the same methods as for muscle meat.

You can preserve meat as Jerky by drying. To preserve meat by drying, cut it into 1/4-inch strips along the grain. Hang the meat strips on a rack in a sunny location with good airflow. Keep the strips out of the reach of animals. Cover the strips to keep off blowflies. Allow the meat to dry thoroughly before eating. Properly dried meat will have a dry, crisp texture and will not feel cool to the touch.

For some of you, this section may not be pleasant, but should you need to do this in a survival situation -- be thankful for what Mother Nature has provided, take solace in that you have killed only to save your life and/or the lives of a loved one, and show your respect by trapping only what you need, and always being as merciful as possible.

Bears and Other Dangerous Wild Life

Sign on the Entrance to a National Park:
Rangers remind all visitors to the park that it is Bear mating season. We offer these tips to avoid confrontations with our Bear population. Pepper Spray can be used as an effective bear repellent – but NOT to spray at the bears! Carefully spray it upon yourself, it does ward off bears. Also, you should wear a necklace made up of small bells – this way bears will hear you coming, and not be startled and react violently.

Our Rangers also suggest that it is important you learn how to identify bear Scat (feces) so that you will know if bears are in the area. You can tell Bear scat from that of other animals because it will have a peppery smell and be filled with little jingle bells.

OK the above was meant to be funny, and in any survival situation keeping your sense of humor is a good thing. But it was also meant to remind you, that in the wild, encounters with large and dangerous animals can and do happen, and most of the time when they do, it is not the human being that will be walking away unscathed.

The best way to survive such encounters is to avoid them. In addition to lions and tigers and bears – oh my – you should also avoid large grazing animals with horns, hooves, and/or tusks and great weight such as wild pigs or boar. Move carefully through their environment. Caution may prevent unexpected meetings. Do not attract large predators by leaving food lying around your camp. Carefully survey the scene before entering water or forests.

The National Park Service (www.nps.gov) does offer the following (real) suggestions for minimizing encounters with bears:

- BE ALERT: See the bear before you surprise it or step on it. Watch for bear sign such as tracks, scat, and feeding sites (diggings, rolled rocks, torn up logs, ripped open ant hills);

- AVOID HIKING AT DAWN, DUSK, OR AT NIGHT: During the hot summer season these are the periods when grizzly bears are most active;

- HIKE CLOSE TOGETHER OR IN GROUPS: Whenever possible HIKE in groups or 3 or more people;

- DON'T EXPECT BEARS TO NOTICE YOU FIRST: Bears hibernate for approximately 5 months each year and have only 7 months of active time to obtain all of their nutritional needs. Therefore a bear with its head down feeding may not see you as you as quickly as you would think. Pay attention and see the bear before it sees you and before you surprise it;

- MAKE NOISE, ALERT BEARS TO YOUR PRESENCE: When hiking, periodically yell "Hey Bear" especially when walking through dense vegetation or blind spots, or when traveling upwind, near loud streams, or on windy days. Avoid thick brush whenever possible;

- AVOID CARCASSES: Deer and other large animal carcasses are a highly preferred bear food that bears will guard and defend against other scavengers or humans. Dead hoofed animals will attract and hold many bears near the carcass site. It is risky to approach a carcass; many bears may be bedded nearby just out of sight. If you

find a fresh dead ungulate carcass that still has a lot of meat remaining, leave the immediate area by the same route you approached the carcass from. If you walked to the carcass without encountering a bear you should be able to back out the same way without surprising a bear. Report all carcasses to the nearest ranger station or visitor center;

- STAY WITH YOUR GEAR: Don't leave your packs, lunches, food, or beverages unattended as they may attract and hold bears at the site. If you surprise a bear that's eating your stashed food you may lose more than your lunch.

Final Thoughts

Survival in the Wilderness can be grueling and demanding. It can also be made much easier by becoming more familiar with the wild, and gaining additional outdoor skills, which can be fun while doing recreational activities like Camping, Hunting and Fishing.

Take the time to get away from the TVs, computers, and all the technology you tend to rely on everyday, and spend a few weekends a month out in the woods with your family. If you have been an "urbanite" your entire life, start slowly – go to a modern recreational camping facility, just to begin to get a feel for outdoor living without all the modern conveniences. Bring your Go Bags with you, of course. It's a great way to get familiar with all of your gear, and to practice fire-making, shelter building, and navigation skills with and without a compass, in a safe environment.

Gradually build to some more challenging areas – as your skills grow, you will see your confidence and your family's confidence grow, and you might very well get to the point where the next crisis – is just another "walk in the park!"

Chapter 25

How to Survive Being Snowbound in Your Car

"I'm not saying that everything is survivable.
Just that everything except the last thing is".
— John Green (Paper Towns)

Snowstorms can be dangerous if you are caught unprepared for them, particularly on the road. For instance, a major snowstorm that hit the American Midwest in November 2010, caused over 400 traffic accidents in Minnesota and at least 2 deaths in Wisconsin. In 2009, many people who were caught in Washington, D.C.'s "storm of the century" were stranded on the highway for 30 hours or more before they were dug out. In fact, Popular Mechanics reports that 70% of winter storm fatalities annually occur in automobiles.

You know, all it takes are a few bad decisions; maybe a wrong turn or two, and an unexpected snowstorm, to turn a Holiday trek to grandma's house, into a struggle to survive. Don't think so? Recall the tragic story of the Kim Family. Driving home to San Francisco after spending Thanksgiving in Seattle, James Kim and his family became stranded on a remote logging road in the Pacific Northwest.

The Kim's had missed a turnoff from Interstate 5 to Oregon Route 42, a main route to the Oregon coast. Instead of returning to the exit, they consulted a map and chose an alternative route through the Wild Rogue Wilderness, a remote area in the southwestern part of the state, and kept driving in the rain and snow after dark. Lost, low on fuel and exhausted, the couple and their two daughters, Penelope and Sabine, stopped for the

night. By morning, the family was snowbound in their Saab station wagon -- only 20 miles from civilization, with no cell phone reception. A week later, searchers found Kati Kim and her two young daughters alive in the car. James Kim had set out on foot to get help two days earlier. His body was discovered Dec. 6 not far from the vehicle.

And don't think you need to be in the mountains like the Kim's were to get into winter-driving peril. In 2011, a driver in rural Wisconsin died after he left the safety of his stranded car and tried to walk to a farm just a mile across a snowy field on a subzero night. He made just half the distance before succumbing to exposure. Both tragedies could have been avoided if the drivers knew what to do to stay safe under their circumstances.

The first thing you probably realize when reading the above accounts is to never ever venture out during the winter months, even when the sky is clear, without your Go Bag in your vehicle. Remember in addition to the Basic Go Bag items discussed in Chapter 9 – your Winter Emergency Road Hazard Kit should also contain:

- A warm blanket or two
- Extra antifreeze and windshield wiper fluid
- Jumper Cables
- A snow scraper
- A tow chain
- An extra hat, scarf and set of gloves
- Road salt or sand

If you intend to, or need to do any kind of driving on mountain roads or back roads during snowstorm season, you should also consider taking a long a hand winch to pull your vehicle back onto the roadway, should it skid off.

If you normally keep your go bag in the trunk – bring it, and any other emergency supplies you may need into the passenger compartment. If you get snowed in you may not be able to reach the trunk for days or more.

If You Must Drive During A Snow Storm:

- Wear sunglasses. You might want to keep a pair in the car just in case the sun is reflecting off the snow;
- Be aware of blind spots created by snow banks;
- Be extra cautious of pedestrians and other vehicles in intersections;
- Allow extra time for braking and increase the distance between you and the car ahead of you;
- Reduce your speed and don't exceed the posted limit;
- If you start to lose traction, don't panic. Take your foot off the gas gradually reduce your speed. Accelerate again slowly once you feel traction is regained;
- If you start to skid, steer in the direction of the skid. Remember, steering can be more important than braking on slippery roads.

If you are traveling by road during the winter or need to take roads or mountain passes that are known to become impassable during winter – always tell someone, your ultimate destination and when you are expected to arrive.

If you are going to be driving across or through, back roads, forest roads, or mountain roads, do not rely on your GPS for navigation. In January 2010, The Associated Press reported that Jeramie Griffin and his fiancée followed a GPS "shortest route" from their home in Willamette Valley, Oregon across the Cascade Mountains, hoping to save 40 minutes on the trip. Following their GPS, the couple became stuck on local roads, out of cell-service range and short on formula for their 11-month-old baby daughter. Three days later, all were rescued safely, but the incident left local law enforcement perplexed. It was the third time in a month that drivers had become stranded in the area while trusting navigation to GPS.

If you are making such a trip through unfamiliar territory in winter, stick to the main rods, have a map, and consult with Highway Patrol or local authorities as to what route you should take, and what roads to avoid.

NOTE: Four-wheel drive DOES NOT improve braking! It is easy in a good powerful 4WD vehicle to start driving faster than is safe. 4WD is great for forward traction and controlling steering, but when it comes to braking, you are no better off than a regular car. When driving a 4WD on a snowy road, you may not even be aware of how slippery it really is because of your improved traction, until you try the brakes!

If You Become Trapped in Your Car During a Blizzard

Just as you learned about being lost in the woods, should you become snowbound in your car or truck, the first thing to do is STOP and assess the situation. Calm down, use your head and try the simplest solutions first. If you have a cell phone or CB radio in your vehicle, call for help. The sooner you can make contact with the outside world, the faster you'll be rescued. Your next priority has to be to take steps to prevent hypothermia and frostbite. Do everything you can to prevent losing heat from your body. If you have extra clothes along, put them on. Then:

- Turn on hazard lights and hang a distress flag from the radio antenna or window;

- Remain in your vehicle where rescuers are most likely to find you. Do not set out on foot unless you can see a building close by where you know you can take shelter. Be careful; distances are distorted by blowing snow. A building may seem close, but be too far to walk to in deep snow;

- You may be tempted to keep the engine ruining to run the heater for warmth. DO NOT DO THIS. You will consume too much fuel. Instead, run the engine and heater about 10 minutes each hour to keep warm. When the engine is running, open a downwind window slightly for ventilation and periodically clear snow from the exhaust pipe. This will protect you from possible carbon monoxide poisoning;

- Exercise to maintain body heat, but avoid overexertion. In extreme cold, if you do not have enough blankets for everyone in the vehicle, use road maps, seat covers, and floor mats for insulation. Huddle with passengers and use your coat for a blanket;

- Take turns sleeping. One person should be awake at all times to look for rescue crews;

- Eat regularly and drink ample fluids to avoid dehydration, but avoid caffeine and alcohol;

- Be careful not to waste battery power. Balance electrical energy needs - the use of lights, heat, and radio - with supply;

- Turn on the inside light at night periodically so work crews or rescuers can see you;

- If stranded in a remote area, stomp large block letters in an open area spelling out HELP or SOS and line with rocks or tree limbs to attract the attention of rescue personnel who may be surveying the area by airplane;

- Leave the car and proceed on foot, only if necessary - once the blizzard passes. If you are forced to move, make sure you clearly mark a trail from the vehicle. Leave a note in your vehicle stating your intention, the time you left, the direction you set out in and where you where headed. Be realistic about your ability to hike out of a heavy snow — what sounds like a good idea may become deadly if you don't make your destination by nightfall. Review how to make Snow Shelters in Chapter 23.

NOTE: You can use snow as a source of water – but always remember do not eat snow to prevent dehydration. Eating snow will lower you body temperature, and it uses your body's energy to melt it, which can speed hypothermia. Melt snow in a cup, water bottle, or other container, and then drink it.

Be prepared to leave the vehicle for short periods to accomplish certain tasks. For example, you should clear off some snow to reveal paint or

reflective surfaces so your vehicle can be seen from a search aircraft. You might need to leave to collect some snow to melt for drinking water or to take a bathroom break.

Otherwise, just be patient—in most cases you're not going to be able to shovel your way back to civilization or hike out safely – but you are likely being looked for. It is always best to stay with the vehicle. Think you can't last too long stuck in the snow in your car? In February of 2012 a Swedish man was discovered and rescued. He had been trapped in his car for TWO MONTHS since December 19th, when the vehicle became snowbound on a remote forest road.

When You Can Move

If the storm has passed, and you feel you can safely dig your car out and move, the biggest mistake most people make is trying to speed or power their way out. Spinning your wheels will only dig the car deeper, so this is to be avoided at all costs. Put your car in a low gear and accelerate slowly; give your wheels a chance to gain some traction. Going slowly forward a tiny bit, then putting it in reverse and going backward slightly can help give your car the momentum to get itself free, but don't do this for too long, it could overheat, and potentially ruin, your car's transmission.

If clearing and rocking don't do the trick, you may need to put something on the ground in front of your tires that your tires can grip. Things like pebbles, cat litter, salt or wooden planks are commonly used, but if you don't have any of these things handy, and nothing else works, you can use your car's floor mats. Just be forewarned, your mats will be destroyed. Also, slightly deflating your tires will give them more grip, since it increases the amount of rubber on the road (this is commonly done for off-roading).

Final Thoughts

As with a lot of the disasters discussed in this book – the best way to survive being snowbound in your vehicle is to avoid the situation, by staying off of the roads during, and when a Blizzard or severe winter storm is predicted. Most people, who wind up stranded, do so because they have miscalculated the severity of a storm, or their ability to drive through it or get ahead of it.

As an Ultimate Survivor it is your responsibility to yourself, your family, and others to be prepared and to be confident that you can handle yourself in an emergency – but it is just as important that you know your limitations.

Chapter 26

How to Survive a Plane Crash

"We have designed our civilization based on science and technology and at the same time arranged things so that almost no one understands anything at all about science and technology. This is a clear prescription for disaster"
- Carl Sagan

When was the last time you took a commercial flight? If you are like most people today, it was probably within the last month. It may have even been this week, as there are many of you for whom traveling by plane for business is as commonplace as taking a bus.

How many times have you heard the Flight Attendants give that safety demo? So often that you probably just tune it out. Which is a pity, because paying attention to that, and what you are about to read in this Chapter, could save you life during an air disaster!

Because only the most spectacular and dramatic airplane accidents make the news, it is a common misconception that if a plane goes down, that's it you are toast. That is probably why most passengers do just tune-out on the safety demo, figuring if something happens, what's the point? But, according to the Federal Aviation Administration, (FAA) contrary to popular belief, most air emergencies are very survivable – if you know how!

As you have learned with every other disaster discussed so far, The FAA advises surviving a plane crash starts with being prepared and having a plan. The first thing you should do is read the safety information card on

each and every flight you take. Not all airplanes are alike. Even if you are on the same commuter flight you take every week, the FAA says to read the card. Just because it is the same Flight Number, operated by the same, airline, they can and do switch equipment. Then, pay attention to the safety briefing, and always follow crewmember instructions. Flight crews are highly trained, and despite what you think, their primary responsibility is passenger safety in the event of an emergency – and not just serving soda and peanuts!

Other Tips for Surviving an Air Accident

There are many myths and misconceptions surrounding surviving a plane crash, the main one is that they can even be survivable at all. But an airplane crash doesn't necessarily mean certain death. In fact, of the 568 U.S. plane crashes between 1980 and 2000, more than 90 percent of crash victims survived! But that is not the only misconception about air safety. Another common belief is that certain seats are safer than others. There just is not a definitive answer as to where the safest place is to be seating during a crash, simply because every incident is different, and every aircraft is different.

Popular Mechanics magazine published a report based on extensive research of air disasters involving US Commercial Jets over the past 36 years, and concluded that it seemed that the rear seats had a 40% better chance of survivability, than seats more forward.

But the FAA disputes their conclusion, and officially is on record as saying, “that there is no safest seat.” The FAA also concluded in a 2005 report that there's no evidence that any one carrier is any safer than the next. They do suggest the following no matter what airline you are flying on, or where you are sitting.

- **Dress for Survival** – Think about the clothes you are wearing when flying. Women especially need to take this advice seriously. Imagine that you might have to run away from a burning plane, if you have to do that, how well are your flip-flops going to perform? How well are your high-heeled shoes going to perform? When you're sliding down that fabric slide out of the plane, will pantyhose present a problem? The FAA says shorts and skirts and high-heeled shoes just are not the

preferred attire for flying, because it's hard to run in those kinds of shoes and actually escape when you're not clothed properly. The agency suggests tie-on shoes that or will not slip off of your feet while running, and long pants. Jeans are good.

- **Brace Yourself** - Sometimes, passengers and crew do have advance warning that a flight is in trouble. If time is on your side, make the most of it. Review safety information about bracing for hard or emergency landings. The proper brace position depends on where you're sitting. For passengers with a seat in front of them, the suggested brace position is to cross your hands on the seat in front of you and rest your forehead on top of your hands.

  If you don't have a seat in front of you, bend over as far as you can, grab your legs behind your knees, and keep your head down until the plane stops.

  Sharp objects shouldn't be in your pockets, due to security rules, but be sure to take pens and pencils out of your pockets. Follow flight crew instructions regarding eyeglasses.

- **Protect Your Legs and Feet –** The FAA also recommends that you try to get your feet planted as far back as you can, because of the way that the legs and feet tend to fly out causing injury. Keeping your carry-on baggage under the seat in front of you and not in the overhead bin is also a good idea. That gives you a block there, so your feet and legs can't go up under the seat in front of you.

- **Flying With Family** - If you're with your family, talk to your children about what to do in the event of an emergency. Divide the responsibility of helping your children between you and your spouse. It's easier for one parent to help a single child than for both to try to keep everyone together.

- **Forget Your Baggage** - If you've got to evacuate a plane, don't try to take anything with you. If it's something that's really important to you, stick it in your pocket [or a waist pack] so your arms are free.

Items may get in the way of other passengers trying to evacuate or slow you down.

- **Exit Row Responsibility -** Passengers sitting in an exit row get extra responsibility and should pay special attention to flight attendants' briefings. Rather than taking that exit row because it gives you a little more room to stretch out, you should take those rows realizing and understanding that you are putting yourself in a position where others may be counting on you in a crisis. If you are seated in an exit row you must say to yourself, “yes, I know I'm sitting here and yes, I agree to listen carefully and to do whatever the flight attendant asks of me”.

- **Oxygen Mask –** As the briefing says, always put yours on first before you help others. That means even if you are flying with a child -- you will be useless to him or her, if you go unconscious.

- **Know Where the Exits Are –** When boarding a plane, as you go down the aisle, count the number of seats between your seat and the nearest exit by placing you hand on them. This way you can find the exit even in a dark or smoke-filled cabin. And remember, as the safety announcement says, the nearest exit may be behind you. So in that case, take the time to get up during the flight to use the restroom and do your seat count to that exit.

Just as in any of the disasters you have learned about so far, panic is your greatest enemy in the event of an airplane accident. It may be very difficult to keep your wits about you when a plane is plummeting from the skies, and many people are screaming and praying, but as always remember: “P-POP.”

“PREPARATION IS POWER OVER PANIC”

Remaining calm, clearheaded, and maintaining focus will do more to save you than anything else. Panic is the main reason that many passengers find themselves unable to even do something as simple as releasing their seatbelt when it is time to evacuate. In almost every plane crash victims are found still strapped into their seats, while others have evacuated to safety. The airline industry refers to the first 90 seconds of a plane crash as "golden

time." If you're able to stay calm and move fast within this time frame, you have a good chance at getting out of the plane.

Here are a few more tips you should remember if your plane is going down: In the event of fire, stay as low as you can and get out as quickly as possible. The smoke and fumes from a burning plane are highly toxic and more likely to kill you than the flames.

- On land, if you make it out of the plane in one piece, get as far away as possible as quickly as you can and tuck behind something large in case of an explosion;

- On sea, don't inflate your life vest until you're outside of the cabin. It will restrict your movement;

- Think before you drink. Consuming alcohol will slow your response time and cloud your decision-making.

If Your Plane Goes Down In The Water

As stated above, don't inflate your life vest until you're outside of the cabin. Once you are in the water with your vest, or using your seat cushions, or in a life-raft, your main goal is to get as far way from the aircraft as you can as quickly as possible.

The US Army Survival Manual says that you need to get clear and upwind of the aircraft as soon as possible but stay in the vicinity until the aircraft sinks. If you spot fuel or oil in the water, stay clear of that as well. The fuel could ignite as it flows from the aircraft.

If you are in a raft with other passengers, once you are away from harm, try to find other survivors that are in the water. The best technique for rescuing individuals from the water is to throw them a life preserver attached to a line. Another is to send a rescue swimmer from your raft with a line attached to a flotation device that will support the rescuer’s weight. This device will help conserve a rescuer’s energy while recovering the survivor. The least acceptable technique is to send an attached swimmer without flotation devices to retrieve a survivor. In all cases, the rescuer wears a life preserver. Try to select a crewmember, or someone else who

has had rescue training to be your rescue swimmer if at all possible. If you have not had such training, you need to know that you should never underestimate the strength of a panic-stricken person in the water. A careful approach can prevent injury to the rescuer and the victim in the water.

If you have not been trained in lifesaving techniques: Approach a survivor in trouble from behind… this way there is little danger the survivor will kick, scratch or grab you. Swim to a point directly behind the survivor and grasp his or her life preserver's back strap. Use the sidestroke to drag the survivor to the raft.

If you are in the water, try to make your way to a raft. If no rafts are available, try to find a large piece of floating debris to cling to. Relax; a person who knows how to relax in ocean water is in very little danger of drowning. The body's natural buoyancy will keep at least the top of the head above water but some movement is needed to keep the face above water. Floating on your back takes the least energy. Lie on your back in the water, spread your arms and legs, and arch your back. By controlling your breathing in and out, your face will always be out of the water and you may even sleep in this position for short periods. Your head will be partially submerged but your face will be above water. If you cannot float on your back or if the sea is too rough, float facedown in the water.

Survival Swimming

Anyone who spends a lot of time traveling by boat or by air should take a class in Lifesaving and Survival Swimming. Such classes are given by your local Red Cross Chapter and other similar organizations. Survival Swimming techniques are often included in other certifications such as SCUBA diving.

If you have not taken such training, the following are the best swimming strokes during a survival situation.

- Dog paddle stroke is excellent when clothed or wearing a life jacket. Although slow in speed, it requires very little energy;

- Breaststroke can be used to swim underwater, through oil or debris or in rough seas. It is probably the best stroke for long-range

swimming: it allows you to conserve your energy and maintain a reasonable speed;

- Sidestroke is a good relief stroke because you use only one arm to maintain momentum and buoyancy;

- The final technique is backstroke. This stroke is also an excellent relief stroke. It relieves the muscles that you use for other strokes. Use it if an underwater explosion is likely.

If you are in an area where surface oil is burning, discard your buoyant life preserver. Note: If you have an uninflated life preserver, keep it. Quickly cover your nose, mouth and eyes, and go underwater. Swim underwater as far as possible before surfacing to breathe. Before surfacing, use your hands to push burning fluid away from the area where you wish to surface. Once an area is clear of burning liquid, you can surface and take a few breaths. Try to face downwind before inhaling. Submerge feet first and continue as above until clear of the flames.

If you are in oil-covered water that is free of fire, hold your head high to keep the oil out of your eyes. Attach your life preserver to your wrist and then use it as a raft. If you have a life preserver, you can stay afloat for an indefinite period. You lose about 50 percent of your body heat through your head. Therefore, keep your head out of the water. Other areas of high heat loss are the neck, sides and groin.

In a Raft Until Rescue

The crash of a commercial airliner at sea will initiate a swift and massive Search and Rescue effort. If you are in a raft, you will likely be rescued, but here are the things you need to do until then.

First be sure to check the physical condition of all on board. Give first aid if necessary. Take seasickness pills if available. The best way to take these pills is to place them under the tongue and let them dissolve. Vomiting, whether from seasickness or other causes, increases the danger of dehydration. Try to salvage all floating equipment, food-stuffs, bottles of water, clothing, seat cushions, or anything else that could be useful to you

and your fellow passengers. Secure the salvaged items in or onto your raft. Make sure the items have no sharp edges that can puncture the raft.

If there are other rafts, lash the rafts together so they are about 6 to 8 feet apart. Be ready to draw them closer together if you see or hear Search and Rescue aircraft. It is easier for an aircrew to spot rafts that are close together, rather than scattered.

Remember, rescue at sea is a cooperative effort. Use all available visual or electronic signaling devices to signal and make contact with rescuers. For example, raise a flag or reflecting material on an oar as high as possible to attract attention. Have signaling devices ready for instant use.

Check the raft for inflation, leaks and points of possible chafing. Make sure the main buoyancy chambers are firm (well rounded) but not overly tight. Check inflation regularly. Air expands with heat; therefore, on hot days, release some air and add air when the weather cools. Try to decontaminate the raft of all fuel. Petroleum will weaken its surfaces and break down its glued joints.

Throw out the sea anchor if the raft is equipped with one, or improvise a drag from a bailing bucket, roll of clothing, or something else that may be in the raft. A sea anchor helps you stay close to where the plane went down, and in the search area.

Without such an anchor, in the unlikely event of less than immediate rescue, your raft may drift over 100 miles in a day, making it much harder to find you and your fellow survivors. Be sure to wrap the sea anchor rope with cloth to prevent its chafing the raft. The anchor also helps to keep the raft headed into the wind and waves.

Keep your raft as dry as possible. Keep it properly balanced. All personnel should stay seated, the heaviest ones in the center. If you have a crewmember aboard your raft, allow them to take charge, as they are trained to do so, and follow their directions as if your life depends on it – because it does!

If you are on a raft with only fellow passengers, calmly consider all aspects of your situation and determine what you and your companions must do to survive together. Inventory all equipment, food and water. Ration food and water. Assign a duty position to each person: for example; water collector, food collector, lookout, signaler, and water bailers.

Above all else: Remain Calm. Unless your aircraft was off course for some reason, and went down off of its flight path in an unknown position –help is on the way, and should arrive soon.

Final Thoughts

For the most part air travel is very safe travel. And yes as you may have heard, statistically speaking, you are far more likely to die in an automobile accident, or in a slip and fall in your own bathtub for that matter, than you are in a plane crash. But that is not to say you should not make those odds even better every time you board a plane by paying attention, and being prepared to know what to do in an emergency, no matter how unlikely.

Chapter 27

How to survive a shipwreck

"When the time for performance arrives,
the time for preparation is past."
— Thomas S. Monson

Countless novels, movies, TV series and Real Life adventures have been made about castaways and survivors of shipwrecks. This chapter will separate Fact from Fiction and teach you what you need to know about surviving being lost at sea.

As with any potential disaster or travel emergency, the best way to survive a shipwreck is to take every precaution you possibly can to avoid one, and or to be fully prepared to survive and be rescued should an accident occur. According to the UK based Royal Lifeboat Institution (www.rnli.org.uk) that starts on dry land before you launch. RLI says that before leaving dry land it is vital that to have everything you might need in the event of an emergency. Items you need to call for help should be very high on the list.

This includes a VHF radio to communicate with other mariners, flares and, depending on how far you're traveling, an emergency position-indicating radio beacon (EPIRB) or a personal locator beacon (PLB). These items will help to draw attention to your boat and all those on board should you get into trouble.

Life jackets that are regularly checked are also a must, as well as a life raft in case you have to abandon ship.

NOTE: Even if you are an expert swimmer and you are only a few miles from shore, WEAR A LIFE VEST ANY TIME YOU ARE ON BOARD A VESSEL, or know where you can grab one very quickly.

If you have to abandon ship, you want to make sure you've got what you need while waiting to be rescued. That means you need to have your Go Bag with you. In addition to the essential items detailed for your Survival Go Bag in Chapter Additional Items for your Marine Emergency Go Bag should include:

- Portable Emergency Flares
- Additional Water Proof Matches
- Additional Food and Water Rations
- Desalinization tablets
- Thermal or Cold Weather Gear in watertight containers
- A portable Solar Still
- Fishing line and hooks in a water tight tube or container

RLI recommends the further you go out to sea the more additional provision you should be sure to take.

When You Get Into Trouble While Boating

One of the first things to ask is, can you fix the problem? RLI recommends that if you have the tools, spare-parts and knowledge to fix the problem, then attempt to if you can safely do so.

If your boat is taking on water, find the leak and stem the flow using whatever you can, such as sails or cushions. But if the hole is too big or you're not able to contain it, then call the coastguard for help and get everyone ready to abandon the vessel.

Collect your Go-Bag, put on your life jackets and assemble at the back of the boat where the life raft will be launched. However, RLI and the US Coastguard stress that you should only abandon ship if you know your boat is sinking and cannot be recovered. A life raft should only be considered a

last resort. You should stay on the boat for as long as possible as it is a bigger target for Search and Rescue crafts to find you.

If you have no other option but to leave your boat, keep your energy up by drinking water and eating the supplies from your Go Bag. Use flares and your EPIRP and PLB to attract attention from rescuers.

As always DO NOT PANIC. If you sent a proper Mayday or Distress Call, help will be on the way. Even if you see land in the distance, rescue experts recommend staying put in the water. This is especially true if you are in the water without a raft. It can be tempting to try to swim to land if you see it in the distance, but distances can be very deceiving, and unless you know for a fact that you are close enough that you are within your physical ability to swim back to your departure point, the best thing to do is to stay in the water. Another dark reality: A lot of people drown near the beach because of rip currents or high surf. So don't frantically head for what you think is land. If you are with a group of passengers the best thing is to stay together as a group. The larger target will make it easier for rescuers to spot you, and you can more easily stay warm and conserve energy in the group.

Sea Survival

Surviving at sea can be the most grueling, the most mentally, and physically demanding survival situation you are likely to ever find yourself in. It will take all of your mental and physical preparedness skills, but it can be done, as proven by:

- Steven Callahan who with few supplies survived for seventy-six days in a leaking inflatable raft. Steve had to learn how to collect water using a solar still, fix his leaking raft, catch fish, and overcome incredible obstacles;

- Tami Oldham Ashcraft and her fiancé Richard Sharp, who set out to deliver a yacht from Tahiti to San Diego, but halfway through the trip found themselves in the middle of a Category 4 hurricane. Their boat capsized, Ashcraft was knocked unconscious sheltering below decks, and awoke to find that the boat had righted itself, but that her partners' safety line had snapped and he was gone. With the mainsail snapped, Ashcraft fashioned a temporary sail and worked a course

for Hawaii, over 1,500 miles away, arriving after 40 harrowing days at sea;

- 67 British sailors miraculously survived 20 days and 1,200 miles adrift at sea during WW2 after their ship sunk following a U-Boat attack. They floated on four lifeboats and survived on water biscuits, raisins and the odd raw fish caught by hand;

- World War 1 pilot Eddie Rickenbacker and his crew were flying from Hawaii to an air base in the South Pacific when their plane crashed into the ocean. The eight crewmembers survived 20 days in three life rafts with a handful of chocolate bars and oranges, and a fishing hook and line.

As you might imagine what all of these and many similar stories of survival at sea have in common was an insurmountable will to live, coupled with the right knowledge of what to do.

If You are Lost At Sea

- Abandon ship only when absolutely necessary. Use a life raft if available;

- If you must swim conserving energy is critically important. Grab anything that will help you float. Obviously, a life jacket is your best bet, but failing that, look for plastic containers used for food or fuel, or buoys or even a piece of wood. The key is to find ways to save your energy. Swimming furiously is a sure way to exhaust yourself and drown;

- Remember, if you were able to send out a distress signal or if you are near shipping lanes, try to stay put. Only paddle for shore if you are sure it is in reach, and you have some idea of where you're going;

- If you are in a life raft or lifeboat, try to take along as much warm and protective clothing as you can handle — wool and polypropylene and anything that's windproof or waterproof. Once in the raft, protect yourself from the wind, using clothing or a tarp. And stay as dry as

you can. Even in a raft the combination of wind and wet clothes could cause hypothermia;

- Stay Hydrated - Since at sea, fresh water is such a valuable commodity, you don't want to sweat any more than necessary, so limit both your physical exertion and exposure to the sun. If you can, make a sunshade with sails or a tarp. And if the weather is hot, keep your clothes on and get them wet. That will keep you cool and also protect you from getting badly sunburned. You cannot drink Sea Water without doing irreparable harm to your body. Hopefully you have grabbed your Go Bag, and/or had your life raft or boat stocked with fresh water. If you have a supply of water, start rationing right away. You really won't need to drink much water the first day, no matter how thirsty you feel. Then try to limit your intake to 12 to 16 ounces for a few days, eventually dropping it as low as two to five ounces a day. You can survive, but you'll definitely become weaker. If you are lost at sea for an extended period of time, capturing rainwater can be critical to your survival. Take a tarp or sail and shape it into a bowl to catch the rain. Even a garbage bag could work. Make sure you have some sort of water container set up at all times; you'd hate to lose a chance to collect water during a storm in the middle of the night. Ideally, you'll have a can or bottle you can store rainwater in. If not, look for anything that can hold water; you don't want your precious supply washed away by rough seas. And if you haven't been drinking much, don't guzzle a fresh supply of rainwater. That will make you sick;

- Use your stores of survival food first if you have them. These should be rich in carbs for sustained energy. Try for fish if you can, but remember that fish are high in protein, which requires more of your body's limited water to digest. Seaweed, if available is a better option. Any bird you can catch is edible;

- You can tell if you are approaching land by cumulus clouds which usually form over land, and wind generally blows toward land during the day and out to sea at night. Look for birds flying overhead, that is a good sign that land is near, and birds tend to fly towards land,

especially at night when they would be returning to roost after feeding.

More on Water

Water can be your most precious resource when stranded at see at sea. As you have already learned you can go for much longer without food than water. In addition to what was already mentioned, here are some other ways to obtain drinking water at sea, as recommend by the US Army Survival Manual.

Desalinization of Seawater -- You can only drink seawater that has been desalinized – or has had the salt removed. Most life-rafts or at sea survival kits include desalinization tablets. Many modern life rafts also come equipped with Solar Stills, which is a very simple device for removing or distilling salts and other impurities from any water source, including seawater. If your raft is not equipped with one, you can make one very easily. All you need is a large and smaller container, such as a bowl and a cup, some plastic warp or something similar, and tape or elastic bands. The solar still works on the process of condensation; just as the Earth's own water cycle creates pure rainfall from the oceans.

- Put the smaller container into the larger;
- Fill with Seawater, about 2/3 up to the top of the smaller container;
- Stretch the plastic wrap over the bowl; secure making a tight seal with tape or elastic bands;
- Put a weight like a rock in the center of the plastic wrap cover, so that it dips down toward the cup in the bowl, but not so it enter the cup;
- Leave apparatus in the sun. As the Saltwater evaporates due to the solar energy, it will condense on the inner surface of the plastic wrap, eventually dripping down into the cup as drinkable distilled water!

(See illustration on next page)

Simple solar still – Image: Courtesy U.S. Department of Energy

If you should be shipwrecked on a beach, you can make a much larger still to purify greater amounts of seawater by using a dug ditch, and a tarp.

Water From Sea Ice

In arctic waters, use old sea ice for water. This ice is bluish, has rounded comers and splinters easily. It is nearly free of salt. New ice is gray, milky, hard and salty. Water from icebergs is fresh but icebergs are dangerous to approach. Use them as a source of water only in emergencies.

What About Sharks?

Hollywood would have you believe that your greatest danger when lost at sea are sharks. The truth is of the many hundreds of shark species, only about 20 are known to attack humans, and if you are stranded in the water you will likely have other more immediate survival concerns than potential shark attack. Still, depending on where you are, sharks can present a problem, and there are things you can do when in the water to minimize the chance of an attack.

There are sharks in all oceans and seas of the world. While many live and feed in the depths of the sea, others hunt near the surface. The sharks

living near the surface are the ones you will most likely see. You should consider any shark longer than 3 - 4 feet dangerous. Sharks in the tropical and subtropical seas are far more aggressive than those in temperate waters. Sharks have an acute sense of smell and the smell of blood in the water excites them. They are also very sensitive to any abnormal vibrations in the water. The struggles of a wounded animal or swimmer, underwater explosions or even a fish struggling on a fish line will attract a shark.

Protecting Yourself From Sharks

In The Water Without A Raft

- Stay with other swimmers. A group can maintain a 360-degree watch. A group can either frighten or fight off sharks better than one person;

- Always watch for sharks. Keep all your clothing on, to include your shoes. Historically, sharks have attacked the unclothed people in groups first, mainly in the feet. Clothing also protects against abrasions should the shark brush against you;

- Avoid urinating. If you must, only do so in small amounts. Let it dissipate between discharges. If you must defecate, do so in small amounts and throw it as far away from you as possible. Do the same if you must vomit;

- If a shark attack is imminent while you are in the water, splash and yell just enough to keep the shark at bay. Sometimes yelling underwater or slapping the water repeatedly will scare the shark away. Conserve your strength for fighting in case the shark attacks;

- If attacked, kick and strike the shark. Hit the shark on the gills or eyes if possible. If you hit the shark on the nose, you may injure your hand if it glances off and hits its teeth.

In a Raft

When you are in a raft and see sharks:

- Do not fish. If you have hooked a fish, let it go. Do not clean fish in the water;

- Do not throw garbage overboard;
- Do not let your arms, legs or equipment hang in the water;
- Keep quiet and do not move around;
- Bury all dead as soon as possible; weight the body down as much as you can so it sinks far away from the raft and quickly. If there are many sharks in the area, conduct the burial at night;
- When you are in a raft and a shark attack is imminent, hit the shark with anything you have, except your hands. You will do more damage to your hands than the shark. If you strike with an oar, be careful not to lose or break it.

Landing On Shore

If you have been at sea in a raft or life vessel for an extended period of time without rescue, land in sight and accessible, may seem like your salivation. But landing on shore with a small craft may not be as easy as it seems.

You need to take your time and select your landing point carefully. Try not to land when the sun is low and straight in front of you. Keep your eyes open for gaps in the surf line and head for them. Avoid coral reefs and rocky cliffs whenever possible. There are no coral reefs near the mouths of freshwater streams.

Avoid rip currents or strong tidal currents that may carry you far out to sea. If you think the area is inhabited, signal ashore for help, and wait for the inhabitants to come out and bring you in. Or sail around and look for a sloping beach where the surf is gentle. If you have a choice, do not land at night.

If you are not alone in your raft, a good way of getting through the surf is to have half the survivors sit on one side of the raft, half on the other, facing away from each other. When a heavy sea bears down, half should row (pull) toward the sea until the crest passes; then the other half should row (pull) toward the shore until the next heavy sea comes along. This

alternating pattern will work you in toward shore, even in the roughest of surf.

If you are alone, as the raft nears the beach, ride in on the crest of a large wave. Paddle or row hard and ride in to the beach as far as you can. Do not jump out of the raft until it has grounded, then quickly get out and beach it.

If rafting ashore is not possible and you have to swim, wear your shoes and at least one layer of clothing. Grab your Go Bag, or anything else you think you will need to survive on shore. Use the sidestroke or breaststroke to conserve strength.

If the surf is moderate, ride in on the back of a small wave by swimming forward with it. Dive to a shallow depth to end the ride just before the wave breaks.

In high surf, swim toward shore in the trough between waves, as the seaward wave approaches, face it and submerge. After it passes, work toward shore in the next trough. If caught in the undertow of a large wave, push off the bottom or swim to the surface and proceed toward shore as above.

If you must land on a rocky shore, look for a place where the waves rush up onto the rocks. Avoid places where the waves explode with a high, white spray. Swim slowly when making your approach. You will need your strength to hold on to the rocks. You should be fully clothed and wear shoes to reduce injury.

After selecting your landing point, advance behind a large wave into the breakers. Face toward shore and take a sitting position with your feet in front, 2 or 3 feet lower than your head. This position will let your feet absorb the shock when you land or strike submerged boulders or reefs. If you do not reach shore behind the wave you picked, swim with your hands only. As the next wave approaches, take a sitting position with your feet forward. Repeat the procedure until you land.

If you have landed on an uninhabited shoreline, refer back to Section II for your Shelter—Water—Food survival techniques and requirements.

Final Thoughts

Water covers about 75 percent of the earth's surface, with about 70 percent of that being oceans and seas. It is probably pretty safe to assume that at some point you will be traveling through or over some vast expanses of water. There is always a chance that the plane or ship you are on will become crippled by such hazards as storms, collision, fire, mechanical failure, or act of aggression.

Your survival at sea will depend mostly upon your will to live, your survival skills, and capabilities to apply them to cope with the hazards you face, and your knowledge of your vessel, the survival equipment on board and your ability to use it.

Section V

Preparing For and Surviving Human Action Disasters

“They want us dead,” said Bond calmly…
“So we have to stay alive”.
— Ian Fleming, Moonraker

Chapter 28

Economic Collapse

"In the year 2025, the best men
don't run for president, they run for their lives..."
— Stephen King, The Running Man

Is The World Financial System on the verge of a catastrophic failure? Respected experts say that if you know your history, the answer is a definite "Yes".

The US has been through 3 major financial upheavals in the past. Current word events indicate that the fourth, and quite possibly the worst yet, could be just over the horizon. The impact on you, your family and your ability to survive not only financially, but also physically during such a meltdown cannot be understated. A World Financial crisis of the magnitude that could be coming will be as devastating to your way of life as any Hurricane, or Earthquake – and you must be equally prepared!

There is a good chance that many of you who are reading this Manual, are already reeling from the impact of the financial downturn that began in 2008. You may already have had to deal with job loss, foreclosure – or worse. For you everyday may already be just a struggle to get by. How much harder do you think it will get if whatever safety-net you have been relying on - whether that be a Government Program – or friends or family members who are doing well – suddenly also collapses?

Even if you have weathered the current financial storm, you cannot burry your head in the sand and pretend that what is going on in the world will not impact the big picture and eventually – you.

Let's look at some facts. Europe is on the brink of a major financial disaster. Moody's has recently downgraded Irish and Portuguese debt to junk, which puts them on par with Greece. This in turn has led interest rates on Spanish and Italian debt to jump significantly. This is a serious down turn of two major economies that will likely spread, like a disease. If and when that happens, the global economy will plunge into a crisis that will make the 2008 bankruptcy of Lehman Brothers look like a minor glitch.

Without getting into a long discussion on Global Economics, the problem is with the European Union. As Greece, Ireland, and Portugal were forced out of the credit markets by high interest rates, the EU stepped in, lending them more and more money. By 2014, Greek, Irish and Portuguese debt is projected to reach, respectively, 180 percent, 145 percent and 135 percent of GDP

In a nutshell, the EU's approach to the crisis has failed. If Greece, Ireland, and Portugal do not restructure their debt in an orderly fashion they will ultimately have to default unilaterally. In fact, the longer EU leaders put off negotiating a coordinated restructuring, the more likely a disorderly default becomes. Financial markets understand this, which is why these countries have been unable to borrow normally. Now, investors fear the same fate will befall Spain and Italy, two of the largest economies in Europe, with a combined GDP around four times the size of the Greek, Irish, and Portuguese economies combined.

"So what?" you are saying, "That's their problem not mine..." Wrong! Just as a natural disaster; such as a major Volcano can impact weather patterns and lives worldwide – so too, can a major financial crisis. Maybe even more so! Jean-Claude Trichet, Chairman of the European Central Bank (ECB) says it is naive to think of this as only a European problem. He was quoted recently, "Europeans are at the epicenter of a problem which is a global problem. The stage is European but the consequences will be felt from New York to Shanghai."

Respected economists say the U.S. economy could be particularly hard hit. A serious downturn in the Euro-zone would significantly lower demand for U.S. exports to Europe, which currently support over fourteen million jobs in the States. It would also send a ripple of fear though the global credit markets, raising the costs of financing U.S. public debt. In short the U.S. economies mediocre at best recovery would be dead in the water, before it could gain any real traction.

Very soon after that, the U.S could face a financial crisis that could make the Great Depression look like a cakewalk- complete with rioting, lawlessness – and total social and infrastructure breakdown.

Do you think that such a thing cannot happen in a modern and prosperous country? Then take a look at what happened in Argentina in 2001. Argentina had gone through various financial crises, but none as large as when their economy collapsed in 2001. The currency devaluated, and Argentina defaulted on its $132 billion (in US dollars) debt, the largest default ever. Rioting mobs of the middle class took to the streets after their bank accounts were frozen, and the President was forced to resign, barely escaping the presidential building by helicopter.

Think that can't or won't happen in the U.S, because U.S. banks would never steal people's money because there are laws against that, and our money is insured? Fernando Aguirre, who lived through the crisis in Argentina, says, "We had those same laws in Argentina, but still it happened. We had a constitutional right to private property. Yet the constitution mattered little during the collapse. Go right ahead — sue the government of the United States if something like that ever happens. Maybe you'll get some of your savings back in a few years. If there is anything still resembling the traditional Government in existence, and they feel like returning it."

Preparing for the Crisis

What Aguirre says you can do right now to prepare for the impending crisis echoes the thoughts of many other experts who are carefully watching world economic events. Move at least 10% of your net worth into gold or silver bouillon or coins in, put them in your own safekeeping – not a bank vault or safety deposit box. Says, Aguirre, "Every single Argentine wishes he

could go back in time, close his bank account, and put that money into gold. We would all do that if we had a time machine. Since you can't guess the future, all you can do is estimate what can happen and play the odds in your favor." In the event of a full economic collapse, if you have 10-20% of your savings in physical silver or gold coins, that's a percentage of your savings that will be spared.

Beside that, have at least one-month worth of expenses on hand in your home safe in cold hard cash. Yes, paper currency will be devalued very quickly during such a crisis – that is why you want your physical silver or gold. But in the very beginning, cash will be king. The cash should be in small bill denominations, 20's, 10's, 5's & 1's. What stores have supplies will not take credit cards for sure. And ATMs will be either exhausted, or looted very quickly.

Warning Signs

So what are the warning signs that the Financial Crisis is creeping up on your back-door? Look for lack of investment; higher interest rates; unemployment. If your bank starts coming up with excuses not to give you your money right away when you want to close an account, that's usually a sign of impending collapse.

Aguirre says look for hyperinflation, which can and does happen very quickly. "It can happen right in front of your eyes. It actually happened to me that the price of an item I picked in a store almost doubled in price by the time I reached the cash register. The employee just placed the sticker with the new price over the old one. Employees rushed around changing prices several times a day, all day long during the ongoing crisis. You could peel back the stack of stickers with the different prices and see how they had gone up in just a matter of hours."

Other Steps to Take

Besides converting a percentage of your savings into precious metals, there are other steps that those of you who have not done so already, need to take RIGHT NOW to prepare for the Crisis.

Get Out Of Debt - The global financial system is headed for a massive crisis. Just like in 2008, a lot of you are going to lose your jobs, and a lot of you

may face losing your homes. In such a harsh financial landscape, you have to travel as "lightly" as possible – which means you have to eliminate or significantly reduce your debts. Some forms of debt are worse than others. Mortgage debt is not that bad. We all need somewhere to live, and you may not be able to just run out and immediately pay off your mortgage.

But there are other forms of debt that are extremely toxic – like credit card debt. There are very few things that are as good at bleeding you dry as credit card debt. For example, if you have a $6000 balance on a credit card with a 20 percent interest rate and only pay the minimum payment each month, it will take you 54 years to pay off that credit card. During those 54 years you will pay $26,168 in interest rate charges on that credit card balance in addition to the $6000 in principal that you are required to pay back, and that is before any fees or penalties are even calculated! But most people, especially in America, just keep running up that credit card debt, without a clue. Remember President George W. Bush's best response to what was the most important thing the average American could do after 911? "Go Shopping!"

Save Money

According to a Harris Interactive survey taken in 2010, 77 percent of all Americans are living paycheck to paycheck. Another survey said that one out of every three Americans would not be able to make a mortgage or rent payment the next month if they suddenly lost their current job. A shockingly high number of American families are operating without any kind of financial cushion whatsoever. It may not take the next Financial Apocalypse for you to find yourself without a job.

At the barest minimum you need to have a cushion in liquid savings that will cover at least 6 months worth of expenses if you should lose you source of income today. Given the current conditions in the world, you better consider a cushion that will last you at least a year.

Non Financial Ways to Prepare

Besides the steps to protect your assets, and to have some valid currency, you MUST prepare for a Financial Meltdown, just as you would for any major natural disaster that could leave you figuratively and literally "out in the cold."

Make sure you Go Bag(s) are packed, fresh, and ready, and do the same for your Shelter- in-Place Emergency supplies. Have at least 3 weeks to one – month of stored food and supplies in place, as things could get ugly.

If you have prepared a Safe House, be sure it too, is well-stocked, and consider Bugging Out to it ASAP, before things get really bad.

If you do not have such a Safe House prepared, before the crisis, now would be a good time to reevaluate your home's security. Aguirre says that in Argentina, "During the first days after the economy collapsed, civil unrest, rioting and looting were out of control. A state of siege and military law was declared, enforcing curfew hours after 10 pm. This lasted a few months, and for months after that, while order was recovered in the capitol district, there were still occasional revolts and looting. The sense of lawlessness extended way beyond the visible accounts depicted by the TV and general media. It's during times like these that you realize you must have means of defending yourself and protecting your family."

You can find specific details on how to do so in Chapter 29 - War, Rioting, and Urban Unrest, Chapter 30 - Self Defense Basics, and Chapter 31 – Firearms.

Final Thoughts

Besides the specific preparations you need to make as discussed throughout this Chapter, another thing you need to do to prepare for a major financial crisis, is to stop relying on "what has been your norm."

The truth is that the system is failing, and you need to work hard to find ways to be more independent of the system. That doesn't mean you need to figure out how to live entirely "Off the Grid"- at least not yet. But it does mean you should seriously stop being so reliant on someone else to employ you indefinitely. A great way to do that now, while things are still functioning – is to start up a business in your spare time. Yes, that might mean you will have to spend less time in front of the TV or playing video games. But if someday you lose your job you will be extremely happy that you still have some income coming in.

Beyond that, think of ways to live more independently, such as starting the Survival Garden you learned about in Chapter 12. Right now you can run down to the local discount Super Market, and buy giant piles of food at prices that are still somewhat reasonable. But that will not be the case if a major financial crisis hits. So stock up NOW and also consider improving your hunting and trapping skills.

This is also where honing your survival skills to their Ultimate Level will have value well beyond keeping you and your family alive for the short-term. Think about getting the skills that can make you a valuable commodity for not only getting you and yours, but others through the coming crisis.

Chapter 29

War, Rioting and Urban Unrest

“Survival," I said softly. "It's selfish, and it's dark, and we've always been a species willing to do anything to satisfy our needs. Individuals have morals. Mobs have appetites.”
— Rachel Caine, Total Eclipse

Rioting, looting, warlike mobs hell-bent on destruction – they are a staple of any Hollywood Post-Apocalyptic movie. They are also the unfortunate aftermath of many real world natural disasters. Both natural and man-made disasters have always been known to bring out the best in people – those who rise to the occasion, and help fill sand bags, dig through rubble, or otherwise help out their neighbors. They also can bring out the worst— and as witnessed in the recent rioting in London; sometimes it does not even take a major catastrophic event to trigger mob behavior.

“Make Love Not War,” is a great philosophy of life, but from a survival perspective, it also is a very good idea for you to always be prepared for both!

One look at history and it can seem that war and conflict have always been a part of human existence. It has been said that “War is Hell,” and of course that is true. There is probably no greater survival situation you could ever find yourself in, than if a major war between your country and another was brought to your doorstep. Of course, the danger from direct attacks in its many forms is the major threat to life and limb during open warfare. But, there is also the possibility of being hurt, maimed, or killed indirectly from artillery, land mines, unexploded ordinances, air strikes, and other so-called

“collateral damage”. Moreover, modern precision weapon systems mean that vital infrastructure like electrical power; water and communications can, and likely would be, easy targets. Transportation of food and other essentials would also be disrupted.

While Americans are lucky to never have faced such prospects, the same cannot be said for much of Europe historically, and many places througout the world up until this very day.

But the nature of warfare has changed drastically over the last few decades. War between large states or “super powers” is a thing of the past. However civil wars, insurgencies, terrorism, irregular and guerilla wars, have increased. And as the tragic events of 911 have proven, are something even the U.S. is far from immune to.

What Exactly is Civil Unrest?

Unlike “war” or “terrorism”, “civil unrest” does not have a clear definition, and could mean different things to different people. Claire Wolfe, writing for Backwoods Magazine, has described Four Levels of Civil Unrest that you need to be aware of and prepare for.

- **LEVEL ONE:** The lowest level of civil unrest is when people turn on their own neighborhoods—as happened during the race riots of the 1960s and the Rodney King riots in Los Angeles. Level One civil unrest can be deadly and destructive, but mainly if you live, work, or must travel in the immediate area. Level One unrest is spontaneous, but is confined to a narrow geographical zone where the protestors live. Police response may be harsh, but it's localized. Unless you're in the middle of it, you should remain relatively unaffected.

- **LEVEL TWO:** Level Two civil unrest may also be focused on a single area. But in this case, rioters or protesters have deliberately targeted a business district, a facility, a transportation system, or an organization to impose maximum disruption. For example: the World Trade Organization protests in Seattle in 1999; young people with violence in mind and rage in their hearts attacked an entire downtown, affecting hundreds of businesses and tens of thousands of workers who hardly knew what hit them. As opposed to a random

flare up as in Level One, the target is chosen deliberately. Although still focused in one area, Level Two can disrupt normal life and business in a whole region or country depending on the nature of its target.

- **LEVEL THREE:** Level Three comes when mass unrest or authoritarian crackdown causes disruption at state or regional level. Then, no matter what the original cause or location of the trouble, everyone in the region is affected. Effects might include travel restrictions, random ID checks, mass arrests, food and fuel rationing, controls on money and banking, roadblocks, and other harsh "emergency" restrictions.

- **LEVEL FOUR:** Level Four is Level Three—but on a national or even international scale. It's martial law. If things ever get this bad, it's likely that the government itself will be a far bigger threat to everyone's well being than whatever the original cause of the clampdown was.

And of course, any level of civil unrest can lead to laws, regulations, and harsher police policies that end up affecting everybody in the long run.

What Can You Do to Prepare for Conflict

As you have probably come to learn, as with other disasters, the best way to deal with open conflict and violence is to try to avoid it at best, and be prepared for it at worst. During Civil Unrest or Open Conflict, the majority of deaths and injuries happen to people who are out on the streets – whether they are there to fight, loot or just stand in line for food or water.

So Rule Number One has to be to stay off the streets as much as possible. That means to prepare for acts of violence and civil unrest, as always the very first and most important thing is to have your Shelter-in-Place Emergency supplies and your Go Bag(s) well-stocked and ready. In addition:

- Hide a duplicate of your equipment/supplies, a stash of cash, silver/ gold, and firearms (more on this in Chapter 31) away from your home. If you do not have a Bug-Out or Safe House, consider renting a

storage locker, preferably in an older warehouse facility that does not use electronic access, because that could fail in a power outage;

- Keep Your Health Up – Review Chapter 1 on Survival Shape and Physical Preparedness;

- If you do not already have such preparations, consider gates, dogs, and other home security/defense products, such as Security Grilles for windows. The use of weapons, firearms and other methods of self-defense are matters of training and personal choice, and will be discussed at length in Chapters 30 and 31;

- Make common cause with your neighbors. Establishing strong ties with the people in your community—right now—is vital to every sort of emergency preparedness. In the event of a Level One or Two emergency, these are the folks who could come to your house to make sure you're okay. They might give you a ride out or a place to sleep if you accidentally end up in a "hot zone" of riot or protest. In a deeper or more long-term emergency, they could pool resources with you to make supply runs. They can advise you if they've spotted a roadblock. They might let you cross their land to avoid a route that has become dangerous;

- Buy A Video Camera – A big one, not the kind that is used for personal use, but a big camcorder that looks like it is used by TV News Crews. You can find these pretty cheap on EBay and such as they have been replaced by much smaller and digital models, it does not even have to work. It is not for filming, but a great way to “hide in plain sight” and stay safe during a riot. If you look like you are part of the Press, usually both rioters and police will avoid attacking you. You can complete the disguise by wearing a “Shooter’s Vest” with lots of pockets, and a baseball cap with a TV News logo on it, which you can usually find in any Thrift or Second hand store.

A Note About Home Defense

Even during times of peace, beefing up your home security is a very good idea. In these tough economic times, home invasions and smash and grab robberies are on the rise. According to Law Enforcement Professionals, an alarm system, along with video surveillance is excellent for home security,

and break-in prevention. Some of the latest such systems use Voice Over Internet Protocol (VOIP) technology to allow you to monitor your home remotely from anywhere you have an internet connection, even via your smartphone.

In addition to an alarm system, The National Crime Prevention Council offers a Security Checklist (www.ncpc.org) for homeowners that can help them to understand how to minimize the chance of break-ins. Some of the items included on the checklist are:

- To make sure to lock all outside doors and windows before you leave the house, even if it is only for a little while, and before going to bed;

- Have your windows and glass doors near entranceways somehow reinforced to prevent shattering;

- Be sure to leave lights on when you go out. When you are going on vacation, or if you will be gone for any extended length of time, use automatic timers to turn lights on in the evening and off during the day;

- Always check to make sure your garage door closed and locked;

- When away, arrange to hold you mail at the post office, or to have it brought in by a trusted friend or neighbor. The same for newspaper and magazine deliveries;

- Do not let your lawn become overgrown while you are away. Always make it look like someone is home. Be sure to arrange to have your lawn taken care of if you are out of town for a while;

- Your exterior doors should be metal, or hardwood, and all should be have deadbolt locks installed;

- You need to have adequate exterior lighting; floodlights with motion-detectors are highly recommended;

- Trim trees and shrubs so that they cannot be used as hiding places for intruders.

During Conflict

Get away and stay away from areas of rioting. You can be in just as much danger from the rioters, as Police and Civil Authorities that have been sent in to quell the violence, who often cannot, or do not care to – distinguish rioters from bystanders. If signs point to rioting and unrest being imminent, Bugging-Out to your prepared Safe House is probably a good idea. But understand that unlike getting away from a flood zone, while rioting usually begins in the cities, it can quickly spread to the suburbs and all areas as things get worse and society breaks down. So you need to be smart, use your head, don't panic, and follow these specific tips and techniques to avoid being a victim no matter where you are.

- Be aware by recognizing danger. Have communication such as a radio, CB, or scanner. Use your senses. Panic spreads fast so when you feel threatened like your hair standing on end and the adrenalin working. Take action. Fight down the panic and stay calm;

- Avoid confrontation and try to go around potential problems. Have an escape route that you have selected ahead of time;

- Act like the natives. Try to blend in so you don't attract attention. Be careful of what you wear. Be aware of your surroundings. Use your video camera as a defense as discussed in the section on preparation;

- Learn to defend yourself. Choose an art that is compatible to your beliefs and skills such as karate, aikido, mace, pepper spray, guns or other weapons. Armed or unarmed the best way to win a fight is not to have one, but if you are forced to face trouble head on, you should resist with everything possible in a life or death situation. More on Self Defense and Firearms in Chapters 30 and 31;

- Don't get involved in mobs or mob behavior. They become mindless and objectivity is lost;

- Crushed in a crowd? Self preservation is the key. Try to ride it out like a buoy in the sea. If caught in a crowd surge, stay away from anything solid like a wall, barrier, or pillar. Keep hands out of your pockets and remove your tie, or anything else that could be grabbed and take you down;

- Be careful of roadblocks. If Level Three or Four of unrest is reached, you may not only see the obnoxious police "checkpoints" you're burdened with today. You might also see two other things. One would be expanded police roadblocks, with warrantless searches, harsh questioning, and possibly mass arrests. Another could be "freelance" roadblocks set up by anybody from political protesters to bandits. If it's humanly possible, avoid roadblocks. It's not illegal to turn away from them, as long as you don't disobey any traffic laws. Police do consider it suspicious behavior and may come after you, even if you've done nothing wrong; but in a time of civil unrest, avoiding a roadblock could save your skin. Of course, both police and freelancers will set up their blockades to make them as hard as possible to avoid—all the more reason to be alert, know where roadblocks are likely to be, and have a mental map of alternate routes. If, in a time and place of unrest, you're in a line approaching a roadblock, watch what happens to the people ahead of you. If you see any sign that the motorists ahead are being abused, get out of there. This is also why it is best to Bug-Out to your Safe House before the "storm hits" and theoretically before such roadblocks are set up.

Specific to Acts Of Terrorism

The Department of Homeland Security defines terrorism as the use of force or violence against persons or property in violation of the criminal laws of the United States for purposes of intimidation, coercion or ransom. Terrorists often use threats to create fear among the public, to try to convince citizens that their government is powerless to prevent terrorism, and to get immediate publicity for their causes.

Acts of terrorism include, assassinations, kidnappings, hijackings, bomb scares and bombings, computer based cyber attacks, and the use of chemical, biological and nuclear weapons.

High-risk targets include military and civilian government facilities, international airports, large cities and high-profile landmarks. Terrorists might also target large public gatherings, water and food supplies, utilities, and corporate centers. Further, terrorists are capable of spreading fear by sending explosives or chemical and biological agents through the mail.

In the immediate area of a terrorist event, you would need to rely on police, fire and other officials for instructions. However, you can prepare in much the same way you would prepare for other crisis events.

To prepare for potential terrorist action DHS suggests:

- Have your Go Bag(s) and Shelter-in-Place Emergency supplies well stocked and ready;

- Wherever you are, be aware of your surroundings. The very nature of terrorism suggests there may be little or no warning;

- Take precautions when traveling. Be aware of conspicuous or unusual behavior. Do not accept packages from strangers. Do not leave luggage unattended. Unusual behavior, suspicious packages and strange devices should be promptly reported to the police or security personnel;

- Do not be afraid to move or leave if you feel uncomfortable or if something does not seem right;

- Learn where emergency exits are located in buildings you frequent. Notice where exits are when you enter unfamiliar buildings. Plan how to get out of a building, subway or congested public area or traffic. Note where staircases are located. Notice heavy or breakable objects that could move, fall or break in an explosion;

- Be familiar with different types of fire extinguishers and how to locate them.

You will learn more specific ways to prepare for Chemical Attack, Biological Weapon Attack, and Nuclear Attack in Chapters 32, 33 and 34 respectively.

What to Do if You Receive a Bomb Threat or Suspicious Package

Bomb Threat - If you receive a bomb threat, get as much information from the caller as possible. Keep the caller on the line, and if possible try to record everything that is said. Then notify the police and the building management. If you are notified of a bomb threat, do not touch any suspicious packages. Clear the area around suspicious packages and notify

the police immediately. In evacuating a building, don't stand in front of windows, glass doors or other potentially hazardous areas. Do not block sidewalk or streets to be used by emergency officials or others still exiting the building.

Suspicious Mail and/or Packages - Be wary of suspicious packages and letters. They can contain explosives, chemical or biological agents. Be particularly cautious at your place of employment. Some typical characteristics postal inspectors have detected over the years, which ought to trigger suspicion, include parcels that:

- Are unexpected or from someone unfamiliar to you;
- Are marked with restrictive endorsements, such as "Personal," "Confidential" or "Do not x-ray";
- Have protruding wires or aluminum foil, strange odors or stains;
- Show a city or state in the postmark that doesn't match the return address;
- Are of unusual weight, given their size, or are lopsided or oddly shaped;
- Are marked with any threatening language;
- Have inappropriate or unusual labeling;
- Have excessive postage or excessive packaging material such as masking tape and string;
- Have misspellings of common words;
- Are addressed to someone no longer with your organization or are otherwise outdated;
- Have incorrect titles, title without a name or not addressed to a specific person;
- Have handwritten or poorly typed addresses.

Final Thoughts

As seen in the rioting during the financial meltdown in Argentina and in the aftermath of Hurricane Katrina, almost any crisis or disaster, can quickly lead to societal norms falling apart. The worse and more long-term the disaster, the worse such unrest is likely to become. As always your best defense is preparedness.

But there is an interesting side-note that must be made to Ultimate Survivors when it comes to being prepared for, and even possibly *preventing*, acts of Civil Unrest during any kind of crisis. There will always be an element of society that gets destructive purely for destructions sake. But for the most part the kind of rioting, looting and violence that occurs during or after a disaster, is not done by anarchists, but simply by people who have panicked. And why have they panicked? Because, they were unprepared for the catastrophic event that befell them. If, as an Ultimate Survivor, you take your responsibility seriously, and you spread the word of why and how to be prepared, then there will be that many more people in your community who *ARE* prepared, and such acts of fighting for resources can be greatly reduced, and maybe even defused entirely.

As for those with anarchy on their minds, if they face a community of well-prepared and organized Ultimate Survivors – their actions can likely be shut down very quickly.

Chapter 30

Self Defense Basics For Survival Situations

"Relax. They're not going to kill us. They're going to TRY to kill us… And that is a very different thing."
— Steve Voake, The Dreamwalker's Child

Like First-aid, and many of the other skills covered in this manual, what you can learn in this Chapter is bare bones basics that can help you to defend yourself in a variety of situations, but all Ultimate Survivors are encouraged to take Martial Arts or other Self-Defense Training. No matter what Martial Art you chose to study -- and there are many, so you will likely be able to find one that fits your lifestyle and personal beliefs -- you will learn so much more than how to defend yourself. You will learn discipline, focus - even ways to get in better physical shape and stay in shape, all of which are critical in crisis situations.

Anyone who has pursued such training, especially to the Black Belt level has probably heard the following story, or some derivation of it. But it is particularly relevant to Basic Survival Self Defense.

Outside of a world-renowned martial arts studio, someone had tied up a violently nervous donkey. As a student walked up to the school, the donkey kicked him and broke his leg. Shortly afterwards another student came along, this student was more advanced and was quicker with his reactions. This time when the donkey brayed and attacked, the student managed to evade a direct hit, but the beast still connected and the student suffered a bad bruise and a twisted ankle. Along came another student, this one an advanced Black Belt. Once again the donkey attacked but this student spun expertly, and managed to avoid the attack completely. Soon the students

saw their Master instructor approaching. The question is what do you think the Master did?

When this parable is presented to novice martial arts students as it often is – the answers the instructor usually gets are probably the same ones you are thinking of right now: The Master killed the donkey with a single blow, he knocked the donkey unconscious and he broke the donkey's leg. Less aggressive and more Zen-like students often answer, “he was able to calm the donkey and set it free.”

The first answers, which are the most common, miss the point of survival completely. It is a mind-set that equates martial arts and survival as synonymous with fighting, which is a *big mistake*. People who give this answer think that since the teacher is a great Master he should be able to subdue a powerfully violent beast, which is easily stronger than a human, with force.

If you are one of those that thought a little less aggressively and thought of answers like, "He untied the donkey and let him free." That may be kinder and gentler, but it is still wrong – because in a survival situation, trying to reason with or calm down a violent aggressor – can still get you killed.

The answer of what the Master did, and why he truly IS a Master is simple: He saw the violent donkey and chose to use the back entrance to the studio, completely avoiding the dangerous animal. That is an example of survival, which has nothing to do with fighting. In fact, it is all about **NOT** fighting.

You need to understand that knowing how to fight and defend yourself is crucially important -- but fighting should always be a last resort when all other options have been exhausted. Avoidance, on the other hand, is the first best option. Remember the easiest life-threatening confrontation to walk away from, is the one you never encounter!

More than any move or technique you can learn in this Chapter, the main lesson you need to take away from it is this:

In a Survival Situation - Self-Defense is About Using Your Wits - Not Your Fists!

The Basics

There are many different ways to defend yourself, ranging from the use of firearms, non-lethal weapons such as Stun-guns or Pepper Sprays, hand weapons such as knives, swords and batons, improvised weapons, to hand-to-hand combat. But no matter how you choose to defend yourself, all Self Defense starts with the same two concepts:

- You need to understand your limitations;
- You need to be able to **assess the** threat level to you, and be aware of your surroundings at all times, in order to decide which, and bring advantage to, any self defense techniques that you may be forced to use.

No matter what skills or weapons you have at your disposal, if you practice the art of carefully evaluating your surroundings, and know what you are physically capable of, you are in a better position to prevent a lot of dangerous situations that you may possibly experience – and like The Master in the donkey story, maybe avoid confrontations altogether.

Tips and Techniques

When alone, it is important to ensure that you display an air of confidence that others can see. Whenever you are faced with a dangerous situation, it is important to ensure that you maintain this level of confidence. Always remember that unless someone actually jumps out and physically attacks you, there is always a chance you can defuse the situation and walk away without a blow being struck. By not backing down from a confrontation, by keeping up an air of confidence you may cause your aggressor to be the one to back down. Always maintain direct eye contact, this can intimidate your opponent, and also allows you to look for signs that he or she is about to make the first move.

When confronted by a potentially violent adversary the first thing you need to do is literally “size-up” the situation. Is the aggressor much larger or stronger looking than you are? Does he or she appear to be armed? Look

for baggy pants or other loose clothing; this is usually a sign that they are concealing a weapon of some sort. Is the aggressor wearing clothes like heavy or steel-toed boots, or spikes and chains that can cause you serious injuries? Now is the time to look for anything that you can use to your advantage, if violence erupts. Look for:

- Long hair and clothing you could grab;
- Friends--yours or the attackers--who may come to your defense or become otherwise involved;
- A red face, flushed with blood, implies that the attacker is not ready for fighting; otherwise the blood would be diverted to the muscles;
- A white, thin-lipped face and 'tight' voice imply that violence is imminent.

Follow your instincts. If you have a feeling that there is a problem, there usually is one. Assess your own situation, if fight or flight is imminent:

- Are you restricted in movement by your clothing? Especially by your footwear?
- Do you see anywhere nearby where you can flee to which would help you escape or gain an advantage? Remember, this is not a movie, this is life and death. There is nothing dishonorable or “unmanly” by running away if that will save your life!

When you have to Fight

Sometimes despite your best efforts to escape or avoid a confrontation, violence is inevitable. Only you will know when that line has been crossed and there is no other alternative but to fight to survive. But understand this; once you have made that decision, there is no turning back, and no holding back. It is you, or your attacker. When you do fight back, get angry and give it everything you have. Do not even think of fighting fairly, your attacker won't!

Kick, bite, scratch, gouge, do anything you can; with anything you have, to disable your opponent. Don't think twice about grabbing a handful of dirt, gravel or sand and throwing it into your attacker's face, or using your keys to thrust into his eyes. Sounds harsh? Too bad, he is trying to kill you!

During the confrontation, take any opportunity you can to escape, and get

to safety. This isn't a sign of weakness; it is sign of good sense!

Martial Arts expert and instructor Brian Sneeden, has written several articles and guides on basic self defense. He recommends the following techniques, if you are forced to fight.

Kicks – You probably instinctively know it, and it is 100% true, the most effective technique for putting down a male opponent is a kick or knee to the groin. When finding yourself in a conflict scenario, immediately assess your opponent's defensive capabilities. If your attacker is without a knife, gun or other weapon, make a quick attempt to distract your opponent while kicking his groin. If the blow connects and your attacker becomes temporarily immobilized, take the opportunity to run away or seek help, do not waste vital time taunting your attacker, or trying to deliver a "finishing blow." If the groin region is not a clear target, use your kicks to maintain distance between you and your attacker while maintaining balance and bodily equilibrium. Use easy and stable kicks such as the front kick (jabbing your heel waist-level at a opponent directly in front of you) or the shin scrape (kicking down at your opponent's shins and scraping down the leg) to maintain balance while causing as much damage as possible.

Punches and Blows – If you are untrained you can do far more damage with something in your hand, then with your fist or open hand. One of the primary instructions taught in self-defense workshops involves using your keys as a weapon. Quickly grab your keys and position them within your fist so that two keys jut out directly between your knuckles, with a key between your pointer and middle, as well as middle and ring finger, respectively. This creates a small weapon from your hand that will cause your punches to be more damaging. When punching your opponent, pivot your hips as if you were throwing a baseball. Forget the cowboy stuff and don't go for the jaw. Aim for the nose instead. Punches to the bridge of the

nose can easily break your opponent's nose, stunning him and causing bleeding. If you cannot reach your opponent's face, aim instead for the solar plexus region immediately below where your attacker's ribs end down the center of his body -- a blow to the solar plexus can render him disabled through loss of breath.

The following diagram illustrates the most vulnerable “strike points” on the human body – get to know them.

1. Crest of the Head
2. Coronal Suture
4. Temple
5. Bridge of the Nose
6. Orbits
7. Cheekbones
8. Outer Ear
10. Lips
11. Jawline
12. Side of Neck
13. Larynx
15. Clavicle
16. Acromion
17. Ribs
18. Sternum
34. Hipbone
35. Pubic Bone
37. Outside of Thigh
42. Kneecap
43. Shin
46. Instep
47. Toes

Improvised Weapons
Be prepared to use anything and everything you have at your disposal to defend yourself. The following can all be used very effectively against an opponent.

- Coins from your pocket can be thrown in an attacker's face, or you can wrap them up in a handkerchief or sock and use as a club;
- Use your bag, purse, briefcase, aim for the head;
- Umbrellas and walking sticks can be used as clubs or jabbed into feet or stomach, or brought up between the legs to an attacker's groin;
- Hard-soled shoes are essential to be able to kick effectively. Aim for the groin. Scrape your shoe down a shin;
- High heels should be aimed at an attacker's foot or hand. Putting all her weight on a thin heel means an average woman can exert a pressure of nearly three-quarters of a ton! But, you cannot run in high heels. Take them off and throw them, or use them to strike the attacker;
- A great Survival Tool is a large Mag Light or similar Tactical Flashlight -- it not only serves your needs for a flashlight in various Survival Situations, this powerful flashlight may dazzle an attacker, and also makes for a sturdy and handy club;
- Roll up a newspaper and jab it end first into the face or stomach;
- Jab a credit card, comb, hairbrush, anything into the upper lip below the nose;
- Scrape a comb across the attacker's face or back of the hand;
- Dig a pen or pencil into the attacker's hand or face, the attacker's impulse may be to defend the eyes;
- Powder from a compact may temporarily blind an attacker;

- Perfume, hairspray or deodorant can be sprayed into an attacker's eyes.

If Your Opponent is Armed

In situations where your opponent has a gun, it is ill-advised for you to attempt to fight or disarm your opponent unless you have received considerable training in doing so. In cases where you are held at gunpoint with a firearm, the safest and smartest strategy is to simply follow your attacker's commands unless he puts the firearm down, in which case you kick him in the groin. If your opponent is attacking you with a knife, pipe or other weapon, keep him at bay with kicks until he moves into close range.

A cane or a stick gives you reach over a knife. When dealing with an opponent armed with weapon other than a firearm, and you feel that cooperation is not an option -- disarming his weapon is your number one priority. Again this is not easy without proper self defense or martial arts training, but it can be done with careful grabs to the wrist and wrist-locks initiated on the hand holding the weapon. Wait until your opponent leads with an attack, and grab his wrist with one hand while either kicking him in the groin or striking his nose or solar plexus. If the pain of your blow has not weakened his grip on his weapon, use two hands to twist his wrist until causing enough pain to disarm him.

Non-Lethal Weapons

The military and law enforcement employ a number of non-lethal, or less then lethal weapons. These can include, blunt impact munitions, also known as “riot rounds,” electrical devices, chemical sprays, and directed energy weapons. Of the four, the two most common you would likely use for individual self defense would be chemical irritants, such as Pepper Spray, or electrical devices, also known as “Stun Guns.”

Pepper Spray – Pepper Spray is probably the safest, easiest to get, most effective, and easiest to use Non-Lethal Weapon to carry for self defense. Pepper spray or Oleoresin Capsicum, is used for personal protection in the familiar aerosol can. OC is a natural substance that is distilled from oils found in cayenne and other varieties of hot peppers. Upon contact with the skin OC causes an immediate burning sensation. But its effectiveness as a

defensive weapon is because it is an extremely potent eye irritant. When sprayed in or near the eyes, OC immediately causes them to tightly shut, burn, tear, and swell up. Pepper spray also causes the nose, throat, and sinuses to burn and swell making it very difficult to breathe. The burning sensation is so severe, and the autonomic response of the eyes snapping shut so quick, that even if your attacker is under the influence of drugs, or is otherwise oblivious to pain, they will be unable to keep their eyes open when hit in the face with a blast of OC. Similar to pepper spray is pepper gel, which instead of being aerosolized, is a shot of OC laden goop propelled by compressed air that sticks to the face of the target causing instant incapacitation. Pepper Spray has often been inaccurately referred to as "Mace," which is actually the brand name of the OC products made and distributed by Horsham, PA based Mace Security International.

Stun Guns - Electric shock weapons or bio-effect weapons are designed to cause electro muscular disruption, (EMD) or incapacitating a combatant by totally overriding their nervous system. The best known of these so-called "stun guns" is the TASER. Unlike a bullet, impact weapon, or chemical agent, which have to hit a certain part of the body to be effective, the EMD effect is substantial wherever the device makes contact with the body, even through layers of clothing. EMD causes immediate and uncontrollable contraction of the muscle tissue, bringing an opponent down, regardless of physical size, strength, or pain tolerance.

Unlike the kind of "Stun Guns" that deliver their EMD pulse via direct contact with prongs on the device, The TASER has the advantage of allowing you to keep your distance from your attacker. TASERs are not considered firearms, but there are restrictions on the purchase of them, and the legality of carrying one in certain states. Check with the company's website (www.taser.com/products/self-defense-products/taser-c2) to find out the local laws in your area.

Everyday Pocket Weapons

Many people chose to carry a concealed handgun for self-defense. How you do or do not feel about guns is a matter of personal choice, but no one should carry a gun without proper training. If you have no moral objection to firearms, you should take a specific Self-Defense Shooting course before purchasing a handgun and applying for a carry permit, if they are available

where you live. More on Firearms both handguns and others for home and personal defense will be discussed in the next Chapter.

Similarly, knives and large edged weapons in particular such as swords, though lethal, require a fair amount of training to use effectively in combat. There are however a few very simple to use and easy to carry "everyday" pocket weapons that could save your life if you are attacked during a time of unrest, or anytime on a city street!

- **Smith & Wesson Tactical Pen** – You have heard the expression "The pen is mightier than the sword?" Well this one just might be! This fully functioning pen is made of anodized aluminum and tapers to a sharp jabbing point on the non-writing end that can do significant damage to the eye, or other soft tissue of any assailant. As of the writing of this Version of the Manual they have not been banned by the TSA, so you can even carry one on an airplane and be prepared for an attempted terrorist takeover of your flight. Another similar Tactical Pen is the Cold Steel Pocket Shark.

- **Kubotan** – A Kubotan is a common "keychain" weapon that can be very effective for self defense in close quarter combat. The traditional Kubotan is composed of a high-impact plastic rod approximately 5-inches long and about a half inch around. It is lined with six round grooves that are designed to give the handler an additional grip. It usually sports a slit ring at the end where you can attach keys. A Kubotan is designed to strike bony surfaces, nerve points and tissue. If done effectively, it has the ability to temporarily paralyze or cause extreme pain to your attacker giving you more time to escape. The best places to attack when using the Kubotan are the stomach, the groin, the solar plexus, the arm, the hipbone, the shin, the collarbone, the kneecap, the ankle and the throat. But you can never go wrong anywhere you connect with a Kubotan, the pain and damage inflicted by your blow will increase tremendously. You may see the Kubotan referred to as a Kubotan Yawara, or Yawara Stick, these are just variations, usually with a pointed rather than the rounded or blunt end of the traditional Kubotan.

- **Expandable Baton** – An expandable baton is a very popular hand weapon used by Law Enforcement Professionals and Special Forces Operatives. An expandable baton is very effective against an attacker because it gives you reach, surprise, and speed. Expandable batons are usually 6-inches when collapsed, making them easy to carry, but with the flick of a wrist they can expand to anywhere from 12 to 25 inches. Sometimes the mere expansion of the baton, along with a loud "Ki-Ai!" Karate yell - is enough to intimidate your attacker into submission. There are two kinds. A flexible spring type, that is very effective in being able to deliver extremely fast bone shattering whip-like blows. There other type expands to a solid baton, which allows both swinging and thrusting strikes. Either way they make for a most effective personal defense weapon, especially against multiple adversaries.

Surviving A Confrontation With Multiple Attackers

As you saw in the last Chapter, mob violence can be a very real problem in many survival situations. "David A" (real name withheld for security reasons) is a former Israeli Special Forces Operative, who now runs a world-renowned Executive Protection Agency. David has written several books on Urban Self Defense. He recommends the following when confronted by a gang or mob bent on violence.

First and foremost as you have heard over and over again in this chapter -- Survival often means NOT fighting, if you see an escape route -- take it now. David also says see if you can talk your way out of the situation. This may not be as hard as it sounds, but it does take a certain amount of finesse, confidence, and a very clear head. Here are some tips:

- Look and stand strong, do not be intimated – BUT telling a group that's ready to take you apart to "F"- off, or otherwise use inflammatory speech, does nothing to diffuse the situation;

- Remember you are probably dealing with people that are close to the edge and already feel they have nothing to lose. Stay calm & don't show any fear;

- Apologize – Believe it or not, saying you are sorry, but without giving ground, or breaking eye contact, is often enough in “gang mentality” for the leader to look like Top Dog in front of the group without a fight ensuing.

The mob’s body language will be your best way to gauge your danger level. Watching the group’s body language will give you a clue to when they are ready to attack. The following actions may be a signs of an attack.

- Watch for the assailant to do something like removing a hat or shirt;

- Your attacker may start to make erratic movements such as rubbing his nose, pushing his hair back or clenching his teeth;

- Watch the groups eyes, they may start to glance at each other for cues on when to attack;

- Watch the attackers fists, often times they will tighten them right before they are ready to attack you.

If it seems like violence is about to erupt, and you are unarmed, quickly scan your surroundings for possible improvised weapons. Beer bottles, tree branches, garbage cans, bricks, and remember even your keys, or the comb or pen in your pocket can used as improvised weapons in an emergency situation.

The key to surviving a gang attack, is understanding that you will *not* have to fight the whole group. In fact your goal is to fight as few of them as possible. David says instead of defeating each of their bodies, you must instead destroy their minds. You do this by making sure your first strike is spectacular, very visible, dramatic, and preferably deadly. The more visible and the greater the injury is, the greater the psychological effect it will have on the rest of the group. The first few seconds of the fight are critical, if you can emotionally defeat the group with your first blow, many of them will scatter without ever throwing a punch.

You need to identify the leader, the strongest link. This person is your main threat and must be taken out first. Taking out the leader can destroy the

group's willingness to fight and is the first step to surviving the attack. Remember, you want to create a strong visible injury that will make the group rethink its attack. In a life or death situation confronted by multiple attackers there are no rules. Target the leader, take out his eyes, break his kneecaps, break his nose – even be willing to scream like banshee and bite and rip out his throat – you'd be surprised how intimidating that could be to a mob! Your goal is to immobilize the attackers by any means available – make it hurt, and make it count - - and you just might make it out.

Final Thoughts

As stated in the beginning, please do not take any of the advice given in this Chapter as a substitute for getting yourself some real martial arts or self - defense training. If anything, the tips and techniques in this section should open your eyes as to just how dangerous the world could become in the aftermath of certain natural and man-made disasters, and just how imperative getting such training, now, while you can – could be.

Chapter 31

Firearms

"One thing that makes it possible to be an optimist is if you have a contingency plan for when all hell breaks loose."
Randy Pausch, The Last Lecture

No Preparedness Manual could ever be complete without a discussion of firearms. There are those of you who grew up on farms, hunted with your fathers and grandfathers, perhaps served in the military – for whom there is no controversy whatsoever when it comes to guns and survival gear. For others, guns remain a touchy subject. If you are in the first group, your gun cabinet is probably already full, and your ammo boxes well stocked.

This Chapter is designed to speak to the latter group. And to that group, even if you have never held a weapon in your life, or despite where you stand on the Second Amendment, you must come to accept that in many a Survival Situation, a gun and the skill and ability to use it – could mean the difference between life and death.

That having been said – no one, absolutely no one – should consider purchasing and using a firearm without proper training. A gun in an untrained hand can put you at greater risk, than having no gun at all. Please, if you do not intend to take a class, make that several classes, to develop your shooting skills, and continually practice them -- **STOP** reading right here and **DO NOT** consider including firearms as part of your Emergency Preparedness Plans.

However, if you are willing to make the commitment to handle and operate firearms safely and responsibly – then read on.

Ask a dozen survivalists or "Preppers" what are the best guns to have on-hand for personal protection, protecting your property, and being able to hunt game should the S*it Hit The Fan, and you will likely get dozens of different answers. That is because there are just too many different types of guns, different calibers of ammunition, and such disparities in marksmanship skills and hands-on experience to come up with a definitive or simple answer.

The best gun, or guns to put in the hands of an Ex-Marine, cannot possibly be the same for the average homeowner. Even amongst different branches of the military, Army Rangers debate with Navy SEALs over what is the "best" gun, and the deadliest ammo.

About the only thing that they can agree on is that there is certainly no single gun that could suffice for every single survival situation. Now that is not to say that you need to build an arsenal, as admittedly some hardcore survivalists do, but you do need to have a selection of at least a few firearms of different types, to serve different purposes.

Building Your Personal Set of Survival Firearms

You see, the reason that there is so much debate about what guns you need to have and to be able to handle when and if things go really bad, is because guns are too often thought of as weapons. This is true even of many gun enthusiasts; maybe it is especially true among gun enthusiasts. But as a person thinking about guns and preparedness who has had little or no experience with them, you need to think of firearms not as a weapon – but as a survival *tool*, not very different from your flashlight or hand-axe. If you think of a gun that way, then you will better understand the minimum collection you need to get the job done.

Even if you have never fired a shot, you probably know that there are three basic types of Firearms: Rifles, Shotguns and Handguns. Within each of those there are subcategories based on how the ammo is chambered and fired, - single-fire, automatic, semi-automatic, or pistol or revolver – and the caliber (size) of the round.

At the bare minimum you should consider owning and learning to use at least one from each category – a long rifle, a shotgun, and a handgun. Well-known survivalist Trip Williams, who runs and monitors the website, alpharubicon.com, has written a comprehensive article entitled *Selecting a Survival Battery of Firearms*. In it Trip suggests that you should have:

- A "Fighting Rifle" for defense/offense
- A Rifle for hunting if fighting rifle is not suitable
- A Shotgun for defense/hunting
- A .22 Rifle for small game & plinking (informal target practice)
- A Handgun for defense

What Trip describes as a "Fighting Rifle" is where most controversy comes in. The entire family of semi-automatic, magazine fed rifles, also known as "Assault Rifles" of suitable caliber (meaning 7.62 NATO, 7.62 x 39, or 5.56 NATO) is overpriced and in many states, over-restricted. The most commonly available weapons in this category are the AR-15, AK-47, SKS, M1A, FN-FAL, HK's 91 & 93, and Ruger's Mini-14. In truth, however, pretty much all of the available choices are well constructed and serviceable, which makes selection mostly a matter of personal preference and budget.

There are those who hold the view that a magazine-fed semi-auto [assault rifle] is not needed...as most of you will not likely have to fight an infantry engagement. Regardless of who is right, they have some valuable insights in weaponry choices, and encourage the lever-action .30-30, .44 or .357 Magnum as worthy alternatives. Here are some of their arguments: Rapid fire repeater, greater magazine capacity than most, much better trigger actions than most any battle rifle you'd care to name. Light weight. Cost is less than 20% of an assault rifle. These are, you have to admit, some pretty significant considerations. Think about it - you can buy two lever-action guns (at @ $200 each) and a thousand rounds of ammo (@ $500, if you shop around) for less than one state-of- the art assault rifle ($1200 & up) with enough still left over to either get ANOTHER thousand rounds or a handgun, shotgun, or a couple of .22's… Pretty convincing.

Trips article goes into great detail on the makes and models of the guns he recommends in each category and why – and is definitely recommended reading - - http://www.alpharubicon.com/leo/battofweps.htm.

But if this is your first foray into considering firearms as part of your Emergency Preparedness Plans, you need to scale back a bit to the very basic "must haves." As you train, get more familiar with more types of firearms; you will be in a better position to know how to expand your set.

Still, there will be those that have a difference in opinion as to what those "must haves" should be. The Ultimate Survival Project is, and always will be an open forum, and we welcome differences of opinion, suggestions, and other recommendations on any Survival Related topic –including one as hotly debated as firearms.

To decide what firearms are right for you – you really have to think about what you think you most likely will be hunting, or defending yourself from. There is an old adage that says if you are hunting, then you need a hunting rifle. It follows therefore that for "Survival" you need a Survival Rifle. If you are talking about a Survival Rifle in its most literal sense of the word, as in a gun that you can take with you as part of your Go Bag, then it has to be lightweight and easily mobile. At the same time it must have enough firepower to be capable of procuring food, or to offer you protection against a hostile threat.

Many agree that there is none better at that than the AR-7. The AR-7 made by Henry Arms is the civilian available version of the famous U.S. Air Force "floating survival rifle." The components of the AR-7 break down, and all fit into the waterproof stock of the weapon; it becomes small enough to carry in your Go Bag. It is a favorite of bush pilots, boaters, and outdoorsman the world over. It is chambered for .22 long rifle ammo, making the ammunition cheap and plentiful, which is always a concern when thinking about your firearm choices. The action is semi-auto, and it takes an 8 round magazine, two of which also fit into the stock. It is ideal to have in your Go Bag for picking off squirrels, rabbits or other small game, and in the hands of a good shooter, adequate for self-defense in an emergency situation. The whole weapon is as light as a feather weighing only 2.5lbs. It will float both when collapsed and when fully assembled. This rifle is also inexpensive and goes for anywhere from $150 used to $250 for the new ones.

Beyond a go anywhere Survival Rifle such as the AR-7, sticking with the .22L ammo for its lightweight and cheap price making it easy to stock and carry a lot of in a survival situation, many recommend the Ruger 10/22. The Ruger 10/22 is one of the most popular and reliable .22 rifles in the world. It is attractive because of its many available upgrades, and after market accessories such as scopes and extended magazines.

Big game hunting/counter-sniping rifles are the next group of guns to be considered. The selection of a big game rifle depends on the variety of game to be hunted. In the lower 48 states, a bolt-action rifle chambered in .308 Winchester or .30-'06 will normally handle most big game. Regional differences will determine exactly what you need. For example, in the plains and desert states, you might need a scoped rifled chambered in a flat-shooting cartridge such as .270 Winchester or .25-'06. No matter which chambering you select, it is important that you buy a well-made rifle with a robust action. Remington, Ruger, and Winchester among others all make guns with these qualities.

A Marlin Model 336 lever Action Rifle is a good choice and is a favorite amongst hunters across the country. It shoots fast, is accurate and will bring down anything in North America, and as Trip Williams suggested its lever action makes it almost as quick between rounds as an auto, making it a great defensive weapon as well. It is commonly chambered for 30-30 Winchester or 35 Remington, and ammunition is plentiful and not too expensive. As a survival rifle, it is an excellent choice as it is lightweight, handy and easy to pack. Used Marlin Modal 336s can be had for as low as $200 and even when new, are quite economical.

Shotguns

A shotgun is a staple for home defense and survival situations. Also called “scatter guns,” aiming becomes less of a requirement, and they can be fired fast repetitively.

The Mossberg 500 Shotgun in 12 or 20 Gauge is one of the most economical and versatile shotguns you can buy. A shotgun has certain advantages and disadvantages over a rifle. Specifically a shotgun is a very flexible in that it can shoot a variety of loads from low powered small-pellet game loads, to heavy buckshot capable of taking down the largest game

animals (or intruders). The disadvantage is that the shotgun can be uncomfortable for women or small-framed shooters due to the recoil. This can be mitigated with practice and training, and a reduction from 12 ga. to 20 ga. for smaller shooters. What makes the Mossberg 500 a great choice for a general-purpose survival and preparedness weapon is the fact that it can be both a game getter and defensive weapon. The Mossberg 500 can be outfitted with a variety of barrels to perform multiple duties. The shotgun has another advantage. It can be stored with shells in the magazine tube and be made ready to fire with ease, yet cannot go off accidentally as there is no round in the chamber. This is an advantage when being kept handy during the aftermath of a natural disaster when you want to be able to deploy the weapon at a moments notice. Used Mossberg 500s can be had for as little as $120

Handguns

Many experts say that for personal protection, survival, or home protection, you should always consider a revolver, over an automatic pistol because of the reliability and less likelihood of the revolver to jam. A revolver is inherently safe, and if a round fails, another trigger pull will be instinctive and chamber and fire the next round. The caliber should be no less then .357 magnum and maybe, preferably, a .44 magnum.

Trip Williams has this to say on the matter of handguns. Nothing spells relief when things go bump in the night like a heavy handgun. The primary requirements are absolute reliability, adequate power and the accuracy to hit your target. The details are as numerous as the choices. The long-time favorite is the M1911A1-style .45. A large, heavy, and powerful handgun, its exploits are legendary. There are vastly more modern pistols, but very few approach the success of it's long heritage, and none has the wide base of knowledge, spare parts, or accessories. The Glock line is one that has been fantastically popular. Available in all the modern, effective calibers, in magazine capacities from 9 to 33 rounds, there is probably a Glock that is right for you. The U.S. Military has purchased the Beretta M92 and the Sig/Sauer P228 for our standard military pistols, and many Federal and State agencies have followed their lead.

Smith & Wesson, Heckler & Koch (HK), Walther, Browning, Ruger and Taurus round out the most popular autos with a variety of models to fill any need.

Trip continues, all this talk about semi-auto's should not lead you to believe that revolvers somehow became ineffective the day everyone started switching to autos - far from it. A properly loaded revolver of quality design and manufacture is still potent medicine, and in the hands of a trained person can stand and deliver the goods. No other handgun can compare with the .357's stopping record when using 125 grain hollow-points. And no other weapon is as versatile in as many conditions as a good four or six-inch barreled .38 revolver.

To add to Trips thoughts, there are several automatic pistols that have been chambered to fire .22L rounds, and you may want to consider one or more of these since you will be purchasing and stocking .22L ammo for your rifle(s).

A Note on Children and Firearm Safety

If you have made the decision to keep firearms in your home, your Bug-Out Vehicle, or Safe House, as part of your Emergency Preparedness plan, then you also must take the responsibility for protecting children, yours, and others, from accidents. Regardless of how you feel about guns, no one wants to see a gun-related accidental death or injury of a child. The Sporting Arms and Ammunition Manufacturers Institute, Inc. the leading trade association representing gun manufacturers, says "if you are not willing to accept basic responsibilities and adhere to important rules of firearms ownership and storage, we urge that you not purchase a firearm."

Common Sense About Kids and Guns (www.kidsandguns.org) recommends that parents who own a gun:

- Unload it and Lock it up.
- Lock and Store Ammunition Separately.
- Hide Keys Where Young Children Cannot Find Them.

They suggest that all parents:

- Ask if guns are safely stored anywhere you child visits or plays.
- Talk with your kids about gun safety.
- Teach young children NEVER to touch a gun, and to alert an adult if they find or see one.

Bows and Other Weapons

Long bows and crossbows require even more training and practice to gain a level of proficiency for them to be of any use to you in a survival situation than do firearms. For that reason, they have been left out of this discussion. However there are survival situations where such weapons could have an advantage over firearms. If you have an interest in learning how to use such arms, by all means take a course in archery and/or bow hunting. In any survival situation the more skills you have the better off you will be.

Final Thoughts

As with the previous Chapter on Self Defense, the best this Chapter can hope to do is to get you thinking the way you should about firearms, and provide you with a brief overview and some practical advice.

You need to do your own research, assess your risks, and get yourself some serious training and range time, before you can decide what firearms you want to include in your Emergency Preparedness Plan.

Chapter 32

Chemical Attack

"We have provided for the survival of man
against all enemies - except his fellow man"
Lyman Lloyd Bryson

Terrorists could use a direct chemical attack, or can attack a chemical plant or chemical storehouse resulting in a release of toxins that could cause chaos and havoc. Either scenario can be devastating and one you must be prepared for – especially if during your risk assessment you realized you live in the vicinity of such facilities.

Chemical agents are poisonous vapors, aerosols, liquids and solids that have toxic effects on people, animals or plants. Used in a direct attack they can be released by bombs or sprayed from aircraft, boats and vehicles. They can be used as a liquid to create a hazard to people and the environment. Some chemical agents may be odorless and tasteless. They can have an immediate effect (a few seconds to a few minutes) or a delayed effect (2 to 48 hours).

FEMA warns that a chemical attack would likely come without warning. Signs of a chemical release include people having difficulty breathing; experiencing eye irritation; losing coordination; becoming nauseated; or having a burning sensation in the nose, throat and lungs. Also, the presence of many dead insects or birds may indicate a chemical agent release.

Since a chemical attack will likely mean that it is unsafe to go outdoors, review your plans for Sheltering-in- Place. The best room to use for shelter is a room with as few windows and doors as possible.

IMPORTANT NOTE: Unlike your Shelter Room for Wind Events such as Tornados and Hurricanes, where the lowest room in the house was recommended, for most chemical events, this room should be as ***HIGH*** in the structure as possible to avoid toxic gases that are usually heavier than air and sink.

Before a Chemical Threat

Chemical weapons have been an ugly part of warfare in the past. The Chemical Weapons Convention was ratified by more than 160 nations in 1997 with the goal of eliminating government sanctioned production, storage, and use of chemical weapons. The United States is actively destroying its stockpile of chemical agents and has successfully eliminated over 25% to date. However, the Department of Homeland Security (DHS) reminds you that the 1995 sarin attack on the Tokyo subway by the cult Aum Shinrikyo proves that fabrication and use of chemical weapons by non-state groups is very possible. Twelve people died and more than 5,000 were injured in that terrorist attack.

The plans you make to prepare for a chemical attack echo many of those you have learned for natural disasters, probably most closely to that of preparing for a Volcano, as toxic gasses can accompany volcanic eruptions. So that means make sure you have built your Emergency Supply Kit, and Go Bag(s). Specific items that you may need to add to your baseline kit include:

- Plastic for doors, windows, and vents for the room in which you will shelter in place. To save critical time during an emergency, pre-measure and cut the plastic sheeting for each opening;

- Make a Family Emergency Plan. Your family may not be together when disaster strikes, so it is important to know how you will contact one another, how you will get back together and what you will do in case of an emergency;

- Plan places where your family will meet, both within and outside of your immediate neighborhood;
- It may be easier to make a long-distance phone call than to call across town, so an out-of-town contact may be in a better position to communicate among separated family members;
- You may also want to inquire about emergency plans at places where your family spends time: work, daycare and school. If no plans exist, consider volunteering to help create one;
- Know your community's warning systems and disaster plans;
- Notify caregivers and babysitters about your plan;
- Make plans for your pets;
- If you know you live in an area that has been the target of terrorists using chemical weapons in the past, or where they are likely to be used, you may consider upgrading the simple dust or Bio-hazard masks in your kit to actual gas masks.

During The Attack or Chemical Event

According to DHS, the severity of a chemical attack is related to the chemical's toxicity and its concentration when it reaches people. Many variables affect the concentration of a chemical including wind and its own volatility. The release of toxic chemicals in closed spaces, such as in subways, airports, or financial centers, could deliver doses high enough to injure or kill a large number of people. In an open area, a toxic chemical cloud would become less concentrated as it spreads and would have to be released in large quantities to produce a lot of casualties. Potential delivery methods of toxic chemicals include:

- Ventilation systems of a building;
- Misting, aerosolizing devices, or sprayers;
- Passive release (container of chemical left open).

- Bombs, mines, or other explosive devices that contain chemicals other than those used to create the explosion;

- Improvised chemical devices that combine readily available chemicals to produce a dangerous chemical;

- Sabotage of plants or vehicles containing chemicals;

- Introduction of toxins in the food and water supply.

In the event of Chemical Attack

- If at all possible, quickly try to define the impacted area or where the chemical is coming from;

- Take immediate action to get away;

- If the chemical is inside a building where you are, get out of the building without passing through the contaminated area, if possible;

- If you can't get out of the building or find clean air without passing through the area where you see signs of a chemical attack, it may be better to move as far away as possible and shelter-in-place.

If you are instructed to remain in your home or office building, you should:

- Close doors and windows and turn off all ventilation, including furnaces, air conditioners, vents, and fans;

- Seek shelter in your internal room, the highest in the house, and take your disaster supplies kit;

- Seal the room with duct tape and plastic sheeting;

- Listen to your radio for instructions from authorities.

If you are caught in or near a contaminated area, you should:

- Move away immediately in a direction upwind of the source;
- Find shelter as quickly as possible;
- If you are outside, quickly decide what is the fastest way to find clean air. Consider if you can get out of the area or if you should go inside the closest building and shelter-in-place;
- Do not leave the safety of a shelter to go outdoors to help others until authorities announce it is safe to do so.

Other Means Of Exposure

While a release into the atmosphere is the most likely route a chemical attack would take, it is not the only way that such an attack could occur.

- **Exposure through Food** - Chemical agents can make foods highly toxic, sometimes without changing the appearance or taste of the foods. Butter, oils, fatty meats, and fish absorb nerve agents so readily that removing them is virtually impossible. The food supply is vulnerable to intentional contamination by toxins such as botulinum toxin.

- **Exposure Through Water** - Toxic chemicals could be used to contaminate the drinking water distribution system. Surface water sources in the area of a chemical release could become contaminated, but dying fish or aquatic life might warn of the release before human use. Deep ground water reservoirs and protected water storage tanks are regarded as safe sources of drinking water following a vapor release of chemical agents. There are methods of treating large volumes of potentially contaminated water for emergency drinking.

Symptoms of Exposure

Visual signs of exposure could include people grouped together who exhibit similar symptoms such as choking or eye irritation. Symptoms in the animal

population (birds, wildlife, pets) can be important first indicators, often at concentrations much lower even than those detected by hand-held devices.

Acutely toxic chemicals can cause injury or fatalities if they are inhaled or absorbed by the skin. The harm that chemicals can cause depends on:

- The degree of toxicity
- The concentration of the chemical,
- The route of exposure, and
- The duration of the exposure.

Treatment if you are exhibiting Symptoms of Exposure
There are reliable antidotes for nerve agent exposure, which may be available from medical professionals. Some antidotes, such as atropine, pralidoxime chloride, and diazepam, are contained in first responders' medical kits, but larger quantities of these antidotes may be found at hospitals and treatment facilities. A specific antidote kit is available for cyanide, but it may have to be administered in a hospital. Supportive medical care and hospital therapy is required for large exposures to phosgene and chlorine vapor.

Most health effects from a chemical attack would occur quickly. Some injuries from acute exposure to toxic chemicals, such as eye damage and chemical burns, can persist for a lifetime. Detailed information on the possibility of developing other types of health effects later in life would be made available once a specific exposure is known. Of the military chemical weapons, only mustard gas is a known carcinogen. Although some industrial chemicals are carcinogenic, the risk of developing cancer later in life is not likely to increase significantly following a one-time exposure.

Decontamination
Even if you are not showing immediate signs of exposure, you must take steps to cleanse yourself if you believe you have been exposed to a chemical agent. Decontamination is needed within minutes of exposure to minimize health consequences.

A person affected by a chemical agent requires immediate medical attention from a professional. If medical help is not immediately available, decontaminate yourself and assist in decontaminating others.

Decontamination guidelines are as follows:

- Use extreme caution when helping others who have been exposed to chemical agents;

- Remove all clothing and other items in contact with the body. Contaminated clothing normally removed over the head should be cut off to avoid contact with the eyes, nose and mouth. Put contaminated clothing and items into a plastic bag and seal it. Decontaminate hands using soap and water. Remove eyeglasses or contact lenses. Put glasses in a pan of household bleach to decontaminate them and then rinse and dry;

- Flush eyes with water;

- Gently wash face and hair with soap and water before thoroughly rinsing with water;

- Decontaminate other body areas likely to have been contaminated. Blot (do not swab or scrape) with a cloth soaked in soapy water and rinse with clear water;

- Change into uncontaminated clothes. Clothing stored in drawers or closets is likely to be uncontaminated;

- Proceed to a medical facility for screening and professional treatment.

Other forms of Toxic Attack

It is important to distinguish biological toxins, from biological pathogens (germs), or disease causing biological attacks, as will be discussed in the next chapter. Substances such as botulinum toxin and ricin are toxins produced by plants, animals, and bacteria. Other examples include toxins from dangerous algal blooms and snake venoms. These substances can be gathered in nature, or alternatively, created in labs. Unlike biological

agents, they do not reproduce or spread from person to person. Unlike other chemical agents, they are not volatile (they do not vaporize) and tend to be more toxic on a weight basis.

Botulinum toxin is a nerve toxin produced by bacteria. It causes botulism, a rare but serious paralytic illness that can be fatal. An antitoxin is available to treat botulism, but must be administered within hours of exposure.

Ricin is a toxin from castor beans that is part of the waste produced when castor oil is made. It is very toxic—a dose the size of the head of a pin could be lethal, but only if injected. Ricin is not absorbed by the skin and is not effective when eaten or inhaled except in impractically large amounts. Ricin was reportedly found in Al Qaeda caves in Afghanistan in the 1980s. There is no antidote for ricin poisoning.

Final Thoughts

An act of chemical terrorism was once thought of as only the plot for a bad movie; however, the possibility of chemical terrorism should not, and cannot be ignored, especially in light of events during the past 10 years. Terrorist incidents involving nerve gas, and ricin, have demonstrated that anywhere, even the U.S. is vulnerable to chemical threats.

Preparing for such a possibility may seem scary, but the consequences of being unprepared are much more frightening.

Chapter 33

Biological Weapon Attack

"The will to win is nothing without the will to prepare."
— Juma Ikangaa

In many ways the prospects of a biological or "germ warfare" attack by terrorists is far more frightening than the possibilities of a Chemical Attack. The 2001 anthrax attacks were only the barest tip of a far more insidious and deadly iceberg. The so-called "Amerithrax Attack", killed five people and sickened 22 others, and for many, who do not agree with the conclusion that Bruce Edwards Ivins was the loan culprit, still largely remains unsolved. According to a 2006 statement from Dr. Margaret Hamburg, the current FDA Administrator, if the same quantity of dry-powdered anthrax used in the Amerithrax Attacks, was released into the ventilation system of the World Trade Center it could have killed far more people than the airplane attacks did on 9/11.

DHS defines a biological attack as the intentional release of a pathogen (disease causing agent) or biotoxin (poisonous substance produced by a living organism) against humans, plants, or animals. An attack against people could be used to cause illness, death, fear, societal disruption, and economic damage. An attack on agricultural plants and animals would primarily cause economic damage, loss of confidence in the food supply, and possible loss of life.

It is useful to distinguish between two kinds of biological agents:

- Transmissible agents that spread from person to person, such as smallpox or Ebola, or animal to animal, such as hoof and mouth disease;

- Agents that may cause adverse effects in exposed individuals but that do not make those individuals contagious to others, such as anthrax.

The Centers for Disease Control (CDC) says the agents of greatest concern, that it calls its "Category A" Bio-Hazards, are those that:

- Can be easily disseminated or transmitted from person to person;

- Result in high mortality rates and have the potential for major public health impact;

- Might cause public panic and social disruption; and require special action for public health preparedness.

The CDC puts in this category:

- Anthrax
- Botulism
- Black Plague
- Smallpox
- Tularemia
- Viral hemorrhagic fevers (Ebola, Marburg, Lassa, Machupo)

To then be used in an attack, these agents need to be obtained in sufficient quantity and "weaponized." They could be:

- **Isolated from sources in nature**. These threat agents are either biotoxins or agents that cause zoonotic diseases (that occur in wildlife and are transmissible to humans)—except for smallpox, which is solely a human disease and has been eradicated from nature.

- **Acquired from laboratories or bioweapons stockpile.** Smallpox virus is officially studied in only two laboratories in the world. Anthrax is widely studied in labs. Hemorrhagic fever viruses are studied only in limited high-security locations. Most high threat agents had been studied and stockpiled in bioweapons programs outside the United States until as recently as the 1990s.

- **Synthesized or genetically manipulated in a laboratory.** This would require expertise and access to advanced technology.

For an attack on people, biological agents could be disseminated in one or more of the following ways:

- Aerosol dissemination is the dispersal of an agent in air from sprayers or other devices. The agent must be cultured and processed to the proper size to maximize human infections, while maintaining its stability and ability to produce illness. An aerosol attack might take place outdoors in a populated area or indoors, e.g., in the ventilation system of a building, in the subway, on planes. It takes expertise to process biological agents to maximize the effect of aerosol dissemination, but even relatively crude devices could have an impact;

- Food or water, especially ready-to-eat food (vegetables, salad bars) could be intentionally contaminated with pathogens or toxins. The water supply is less vulnerable because dilution, filtration, and the addition of chlorine can kill most disease-causing organisms;

- Human carriers could spread transmissible agents by coughing, through body fluids, or by contaminating surfaces. Most agents would make people ill or incapacitated before they become highly contagious, thereby reducing transmission of the disease;

- Infected animals can cause people to become ill through contact with the animals or contaminated animal products;

- Insects naturally spread some agents such as plague bacteria, and other vector-borne illnesses, and could potentially be used in an attack;

- Physically distributed through the mail or other means.

What could make a Bioterrorism attack so insidious is that, unlike a chemical or nuclear attack, a biological attack could go undetected for hours, days, or potentially weeks, until people, animals, or plants show symptoms of disease. If there are no immediate signs of the attack as with the anthrax letters, a biological attack would probably first be detected by local health care workers observing a pattern of unusual illness or by early warning monitoring systems that detect airborne pathogens. Evidence of an attack may appear in animals before humans.

Before The Attack

Like a Chemical Attack the very nature of a bioterror attack, means it will come with no warning. And as stated above, by the time anyone shows symptoms, you and your family may already have been exposed to the pathogen, or toxin.

So your first and best defense is to always, always, follow the practices of staying in Survival Shape and boosting your immune system to peak levels, as outlined in Chapters 1 and Chapter 19, and following the infectious disease prevention techniques you learned in Chapter 19.
Beyond that:

- As always your preparedness starts with building your Go Bag(s) and your Shelter-in-Place Emergency Supply Kit, and checking to ensure that all food items are fresh, and all equipment is working and properly maintained;

- Make a Family Emergency Plan. Your family may not be together when disaster strikes, so it is important to know how you will contact one another, how you will get back together and what you will do in case of an emergency;

- Plan places where your family will meet, both within and outside of your immediate neighborhood;

- It may be easier to make a long-distance phone call than to call across town, so an out-of-town contact may be in a better position to communicate among separated family members;

- You may also want to inquire about emergency plans at places where your family spends time: work, daycare and school. If no plans exist, consider volunteering to help create one;

- You need to know your community's warning systems and disaster plans;

- Make plans for your pets;

- Consider installing a High Efficiency Particulate Air (HEPA) filter in your furnace return duct. These filters remove particles in the 0.3 to 10 micron range and will filter out most biological agents that may enter your house. If you do not have a central heating or cooling system, a stand-alone portable HEPA filter can be used.

NOTE: HEPA filters do not filter out chemical agents, and will not help you during a chemical attack, however they are useful in *biological* attacks. If you have a central heating and cooling system in your home with a HEPA filter, leave it on if it is running or turn the fan on if it is not running. Moving the air in the house through the filter will help remove the agents from the air. If you have a portable HEPA filter, take it with you to your Shelter in Place Room, and turn it on.

During The Attack

Once it has become known that a Bioterror attack has been launched, it may take time for public health officials to determine the nature of the pathogen or contagion used, and for them to tell you exactly want to do.

You need to watch TV, listen to the radio, or check the Internet for official news and information including signs and symptoms of the disease. You also need to be informed of the areas that are, or can be in danger, and if and where medications, or other special treatments, or preventive gear are

being distributed, and where you should seek medical attention if you become ill. Be sure that your Battery and/or Hand Crank/Solar radio is with you at all times!

- If you become aware of an unusual and suspicious substance, quickly get away;

- Protect yourself. Put on your biohazard mask that you have in you Go Bag, or emergency kit. In lieu of masks, cover your mouth and nose with layers of fabric that can filter the air but still allow breathing. Examples include two to three layers of cotton such as a t-shirt, handkerchief or towel. Otherwise, several layers of tissue or paper towels may help;

- If you believe you have been exposed to a biological agent, remove and bag your clothes and personal items. Follow official instructions for disposal of contaminated items;

- Wash yourself with soap and water and put on clean clothes;

- Contact authorities and seek medical assistance. You may be advised to stay away from others or even quarantined;

- If a family member becomes sick, it is important to be suspicious;

- Do not assume, however, that you should go to a hospital emergency room or that any illness is the result of the biological attack. Symptoms of many common illnesses may overlap;

- Use common sense, practice good hygiene and cleanliness to avoid spreading germs, and seek medical advice;

- Consider if you are in the group or area authorities believe to be in danger;

- If your symptoms match those described and you are in the group considered at risk, immediately seek emergency medical attention;

- Follow instructions of doctors and other public health officials.

- If the disease is contagious expect to receive medical evaluation and treatment. You may be advised to stay away from others or even deliberately quarantined;

- For non-contagious diseases, expect to receive medical evaluation and treatment;

- In a declared biological emergency or developing epidemic, there may be reason to stay away from crowds where others may be infected.

After the Event

After a biological agent has been identified, officials will take steps to characterize how long the agent will persist. Clean-up within buildings may entail the use of gas or liquid decontaminants to kill the agent. For example, chlorine dioxide gas was released through ventilation systems of buildings contaminated with anthrax. In some cases, multiple rounds of decontamination may be necessary.

A biological attack can have psychological effects as dangerous as its physical ones. In fact, it is these psychological effects, such as the spread of fear and panic that the perpetrators of such an attack will count on. During a Bioterror attack when symptoms, and the ability to tell who is infected or exposed, and who is not can be unclear, that kind of fear can spread quicker than the contagion. Isolation, civil unrest, and neighbors turning against neighbors can be the result.

Your preparedness is your best immunity against “psychological contamination” and the only way to beat the terrorists at that game!

Final Thoughts

If you think the relative difficulty in creating or obtaining biological agents or weapons is your best protection against them, unfortunately you are mistaken. Much as the CDC, DHS, and other Governmental agencies, not only in The States, but worldwide, would have you believe that -- if you do -- you are like an ostrich with your head in the sand.

Many anti-terrorist professionals agree that the potential for another attack of anthrax or other lethal living agent remains very high today, and they cannot believe how the federal government has cut funding to Bioterrorism Alert and Response programs, basically turning a blind eye to the impact of the Amerithrax Attack. The truth is, it is entirely possible and likely that even a relative amateur could pluck strains from the environment that would be just as virulent as the anthrax used in the mailings.

And that says nothing about countries such as Iran, that continue biological weapon's programs, and the host of new and emerging pathogens, any one of which that could be easily harvested and weaponized.

But again, rather than being afraid of such a threat, being prepared for it as thoroughly as you can be, is your best defense against any act of terror.

Chapter 34

Nuclear Attack and Radiological Disasters

"Life is a preparation for the future; and the best preparation for the future is to live as if there were none."
— Albert Einstein

For many the very concept of "preparedness" and Civil Defense began with the idea of building Fallout Shelters during the 1950's. Some of you may still remember the "Duck and Cover" drills conducted in schools. But, then The Cuban Missile Crisis brought with it the policy of "Mutually Assured Destruction"; which meant that any use of Nukes by either Superpower would result in full scale Thermonuclear War. Faced with such a frightening reality, the idea of being able to survive such an onslaught in any kind of shelter seemed unlikely, so Fallout Shelters fell out of vogue.

Many years later, with the "end" of the Cold War, nuclear Armageddon seemed even more unlikely, so Public Shelters and Municipal Civil Defense programs also began to disappear on grand scale.

While it is true that the likelihood of a full-scale nuclear conflict between Superpowers is far less likely then it was decades ago, the risk of a more targeted nuclear strike by a terrorist state or organization, or the release of a radiological event, has actually increased.

Whether launched on a large ballistic missile, a smaller tactical device or so-called "briefcase bomb" any nuclear blast will have long ranging physical damage, major loss of life, and leave in its wake long-term physical and

emotional health issues. All nuclear devices cause deadly effects when exploded, including blinding light, intense heat (thermal radiation), initial nuclear radiation, blast, fires started by the heat pulse and secondary fires caused by the destruction. In the grand scheme of things it may be true that nuclear attack is less likely than other natural and even man-made disasters, but then again, what if a nuclear disaster were to occur from a catastrophic failure of a nuclear power plant, like Chernobyl or more recently, Fukushima? Even though this is the last chapter of this section it is vitally important to know some simple steps that can save your life and the life of your family.

Assess the Risk

Like many disasters, your preparedness for a nuclear event starts with assessing your risk of being a target, or being in close proximity to a potential target. True a terrorist use of a nuclear device is totally unpredictable, and wherever such an event takes place it will likely have far reaching effects, but certainly there are places that are more likely targets than others.

The Department of Homeland Security identifies the following most likely targets of nuclear attack.

- Strategic missile sites and military bases.
- Centers of government such as Washington, DC, and state capitals.
- Important transportation and communication centers.
- Manufacturing, industrial, technology.
- Petroleum refineries, nuclear and electrical power plants, and chemical plants.
- Major ports and airfields.
- Major cities and financial centers.

If you live near any of the above, your risk is greater than someone who does not.

The number and type of fatalities and injuries that would occur after a nuclear explosion, depend on many factors including the yield of the nuclear device, the population near the site of the explosion and in the fallout path, and weather conditions. The hazards associated with a nuclear

detonation are Shockwave Effects, Thermal Effects, Radioactive Fallout, and Electromagnetic Pulse effects.

The extent, nature and arrival time of these hazards are difficult to predict. The geographical dispersion of hazard effects will be defined by the following:

- The size of the device. A more powerful bomb will produce more distant effects;

- The height above the ground the device was detonated. This will determine the extent of blast effects;

- The nature of the surface beneath the explosion. Some materials are more likely to become radioactive and airborne than others. Flat areas are more susceptible to blast effects;

- The existing meteorological conditions. Wind speed and direction will affect arrival time of fallout; precipitation may wash fallout from the atmosphere.

Before the Blast

A Nuclear Event of Cold War magnitude would leave most attempts at shelter construction or preparation only for the most advanced preppers – but as stated in the beginning of this Chapter, since that is a far less likely scenario, there are things you can and should do to prepare for the nuclear threats of today.

It may sound like a broken record again, but you know by now the very first thing you need do to prepare is – say it with us now – *"Build your shelter in place Emergency Preparedness Kit and have you Go Bag(s) ready to go and well stocked with quality equipment."* You may even consider adding a radiation detection device and potassium iodide tablets to your Go Bag - especially if you live within 10 miles of a nuclear power plant.
Beyond that:

- Make a Family Emergency Plan. Your family may not be together when disaster strikes, so it is important to know how you will contact

one another, how you will get back together and what you will do in case of an emergency. Understand that communications in the aftermath of a nuclear event may be difficult or totally non-existent. (See section on Effects of EMP) Plan on some methods of communication other than cell phones;

- Plan places where your family will meet, both within and outside of your immediate neighborhood;

- Know your community's warning systems and disaster plans, including evacuation routes;

- Find out from officials if any public buildings in your community have been designated as fallout shelters. If none have been designated, make your own list of potential shelters near your home, workplace and school. These places would include basements or the windowless center area of middle floors in high-rise buildings, as well as subways and tunnels;

- If you live in an apartment building or high-rise, talk to the manager about the safest place in the building for sheltering and about providing for building occupants until it is safe to go out;

- During periods of heightened threat increase your disaster supplies to be adequate for up to at least three to four weeks.

Taking shelter during a nuclear blast is absolutely necessary. There are two kinds of shelters - blast and fallout. The following describes the two kinds of shelters:

- Blast shelters are specifically constructed to offer some protection against blast pressure, initial radiation, heat and fire. But even a blast shelter cannot withstand a direct hit from a nuclear explosion;

- Fallout shelters do not need to be specially constructed for protecting against fallout. They can be any protected space, provided that the walls and roof are thick and dense enough to absorb the radiation given off by fallout particles.

Most communities no longer have designated blast or fall out shelters. Look for buildings or facilities with large basements, such as hospitals. Not a pleasant prospect but hospital morgues make for great shelters, as they usually are in the lowest basement, and have heavy concrete walls.

Other Places to Take Shelter

- Boiler Rooms and Pipe Runs and Chases (a pipe run or chase is under large buildings such as schools that are a series of catacombs housing pipes and electrical conduits, usually below the basement);

- Subways and Other Tunnels;

- Underground Parking Garages;

- Bank Vaults – a great shelter if you can get access, and not locked in if electronic or timed locks fail in the blast;

- Caves – as long as you stay well back from the entrance.

The three factors for protecting yourself from radiation and fallout are Distance, Shielding and Time.

- **Distance** - the more distance between you and the fallout particles, the better. An underground area such as a home or office building basement offers more protection than the first floor of a building. A floor near the middle of a high-rise may be better, depending on what is nearby at that level on which significant fallout particles would collect. Flat roofs collect fallout particles so the top floor is not a good choice, nor is a floor adjacent to a neighboring flat roof.

- **Shielding** - the heavier and denser the materials - thick walls, concrete, bricks, books and earth - between you and the fallout particles, the better.

- **Time** - fallout radiation loses its intensity fairly rapidly. In time, you will be able to leave the fallout shelter. Radioactive fallout poses the greatest threat to people during the first two weeks, by which time it has declined to about 1 percent of its initial radiation level.

Remember that any protection, however temporary, is better than none at all, and the more shielding, distance and time you can take advantage of, the better.

The Anti Radiation Diet

Just as you learned in Chapter 19 on how to boost your immune system in preparing for a Pandemic, there are certain foods and nutrients that can improve your body's ability to mitigate the effects of radiation.

You body has an amazing ability to protect and heal itself, but it can use a little help. Diet and your body's susceptibility to radiation are closely related. Radiation and pollutants destroy vitamins A, C, E, K, essential fatty acids, calcium and neuro-hormones.

If your body lacks calcium, potassium and other nutrients, it will more readily absorb the radioactive elements that are similar in structure to these nutrients. Your best bet is to eat natural, fresh, organic and unprocessed foods as much as possible, while limiting your intake of, white sugar, red meat, refined wheat, caffeine and homogenized milk. Here is a list of widely recommended foods and food supplements that can help to balance your body's chemistry and increase you resistance to radiation sickness.

This list is by no means exhaustive, but it will give you a good starting place.

- Calcium/magnesium - The New England Journal of Medicine reported that calcium might prevent precancerous cells from becoming cancerous. It also protects against strontium 90 and other radioisotopes with a similar structure to calcium;

- Vitamin A or beta-carotene - This vitamin manufactures antibodies, maintains and protects mucus membranes, and protects the thymus gland, the master gland of the immune system. It helps guard against tumor formation and cancer;

- Coenzyme Q10 - This substance protects against many chemicals and radiation, offering immense benefits to the immune system;

- Vitamin C + bioflavinoids and rutin - A protective dose of between 500mg and 2,000 mg can counteract toxins and radiation;

- Vitamin E - Neutralizes harmful free radicals and protects delicate membranes;

- Zinc - Zinc has been shown to help strengthen the T-cell-producing thymus gland. Aim for 50 to 100 mg daily, available from grains, nuts, seeds and legumes;

- Selenium - Selenium fights cancer and protects against carcinogens, by helping to produce a free radical scavenger called glutathione peroxidase;

- Proanthocyanadins (Grape seed extract/Pycnogenol) is considered to be one of the most powerful antioxidants or free radical scavengers, grape seed extract helps counteract stress, pollution and radiation;

- DHEA - There have been many reported benefits of DHEA, but as far as radiation protection it slows the production of free radicals, and inhibits the growth of cancers and carcinogens. A good food source of DHEA is wild yams.

Consider taking the above as nutritional supplements, and also make the foods rich in them a greater part of your diet. All of the superfoods and immune system boosting foods mentioned in Chapters 1 and Chapter 19 are all also high in these “anti-radiation” nutrients.

Another proven effective way to minimize the damage of radiation exposure to your body is to take Potassium Iodide or Potassium Iodate. One indisputable long-term effect of exposure to low levels of radioactive fallout is cancer of the thyroid. This is because the thyroid absorbs radioactive iodine, concentrating the dangerous isotopes and causing long-term harm. This can be insidious, as you will probably not feel sick in the week, or even months during or after the fallout incident, but years down the road it could cause serious problems, not the least of which is cancer. It has been clinically proven that by taking Potassium iodide or iodate orally before and during fallout, the thyroid will be “filled to capacity” with iodine and, as a result, will not “want to” absorb damaging amounts of radioactive

iodine isotopes. You should obtain a source ahead of time, as the pills can be safely kept for years – especially if you live near a nuclear power plant. In some such communities the plants themselves will provide pills to residents in the area.

During the Blast

If there is advanced warning of an impending nuclear attack, people should listen to authorities about whether to evacuate the area, or to seek shelter underground as soon as possible.

- Find the nearest building, preferably built of brick or concrete, and go inside to avoid any radioactive material outside;
- If better shelter, such as a multi-story building or basement can be reached within a few minutes, go there immediately;
- Go as far below ground as possible or in the center of a tall building. The goal is to put as many walls and as much concrete, brick and soil between you and the radioactive material outside;
- Stay where you are, even if you are separated from your family. Inside is the safest place for all people in the impacted area. It can save your life;
- During the time with the highest radiation levels it is safest to stay inside, sheltered away from the radioactive material outside;
- Radiation levels are extremely dangerous after a nuclear detonation but the levels reduce rapidly;
- Expect to stay inside for at least 24 hours unless told otherwise by authorities;
- When evacuating is in your best interest, you will be instructed to do so. All available methods of communication will be used to provide news and/or instructions;
- People in the path of the radioactive material - downwind from the detonation - may also be asked to take protective measures.

If you should be caught outside when a blast occurs you should:

- Not look at the flash or fireball - it can blind you;
- Take cover behind anything that might offer protection;
- Lie face down on the ground and protect exposed skin (i.e., place hands under the body), and remain flat until the heat and shock waves have passed;
- Cover the mouth and nose with a cloth to filter particulates from the inhaled air;
- Take shelter as soon as you can, even if you are many miles from ground zero where the attack occurred - radioactive fallout can be carried by the winds for hundreds of miles. Remember the three protective factors: Distance, shielding and time;
- If you find a cloud of debris moving towards you, leave the area by a route perpendicular to the path of the fallout;
- If a cloud is not visible or the direction of the fallout is unknown, seek shelter. A basement or center of a high-rise building away from windows or doors would be best;
- If you believe you have been exposed to contaminated dust and debris, remove outer clothing very carefully as soon as is reasonable; if possible, shower, wash hair, and change clothes before entering a shelter. Do not scrub harshly or scratch skin.

What is an Electromagnetic Pulse? (EMP)

In addition to other effects, a nuclear weapon detonated in or above the earth's atmosphere can create an electromagnetic pulse (EMP), a high-density electrical field. An EMP acts like a stroke of lightning but is stronger, faster, and shorter. An EMP can seriously damage electronic devices connected to power sources or antennas. This includes communication systems, computers, electrical appliances, and automobile or aircraft ignition systems. The damage could range from a minor interruption to actual burnout of components. Most electronic equipment within 1,000

miles of a high-altitude nuclear detonation could be affected. Battery-powered radios with short antennas generally would not be affected. Although an EMP is unlikely to harm most people, it could harm those with pacemakers or other implanted electronic devices.

NOTE: Most modern vehicles with an electronic ignition will not start after an EMP release, and may never start again due to on-board computers and circuits being fried. One of your "survival skills" should be knowing how to drive a manual transmission, and you should consider that your Bug Out Vehicle be a reliable, yet older vehicle with a carburetor (as opposed to electronic fuel injection) and a clutch. Knowing how to drive a stick, and "roll start" a car by popping the clutch, could make all the difference between getting out of harms way, and being stuck in a dead zone.

After a Nuclear Blast

Decay rates of radioactive fallout are the same for any size nuclear device. However, the amount of fallout will vary based on the size of the device and its proximity to the ground. Therefore, it might be necessary for those in the areas with highest radiation levels to shelter for up to a month, or more.

However, long term effects of exposure to nuclear radiation cannot be understated. The August 1945 bombings of Hiroshima and Nagasaki were the only detonation of nuclear weapons except for testing purposes, and survivors and their children continue to experience problems more than six-decades after the acute effects of radiation have subsided. Radiation damage continues to produce a wide range of physical problems, including leukemia, cancer, and many others, which appeared in the surviving population of the Japan blasts two, three, even ten years later. In addition to these effects found in survivors of the Hiroshima and Nagasaki bombs, according to Japanese data, there were also the following health problems.

- **Blood Disorders -** There was an increase in anemia among persons exposed to the bomb. In some cases, the decrease in white and red blood cells lasted for up to ten years after the bombing.

- **Cataracts -**There was an increase in cataract rate of the survivors at Hiroshima and Nagasaki, who were partly shielded and suffered partial hair loss.

- **Malignant Tumors -** All ionizing radiation is carcinogenic, but some tumor types are more readily generated than others. A prevalent type is leukemia. The cancer incidence among survivors of Hiroshima and Nagasaki is significantly larger than that of the general population, and a significant correlation between exposure level and degree of incidence has been reported for thyroid cancer, breast cancer, lung cancer, and cancer of the salivary gland. Often a decade or more passes before radiation-caused malignancies appear.

- **Keloids -** Beginning in early 1946, scar tissue covering apparently healed burns began to swell and grow abnormally. Mounds of raised and twisted flesh, called keloids, were found in 50 to 60 percent of those burned by direct exposure to the heat rays within 1.2 miles of the hypocenter. Keloids are believed to be related to the effects of radiation.

The heaviest fallout would be limited to the area at or downwind from the explosion. 80 percent of the fallout would occur during the first 24 hours.

People in most of the areas that would be affected could be allowed to come out of shelters within a few days and, if necessary, evacuate to unaffected areas.

But understand that even low levels of radiation can be dangerous when you are exposed for prolonged periods of time. And it is especially dangerous to young children, who should be protected to the greatest extent possible. If you cannot avoid being in an area where fallout lands, then you should minimize your exposure and create a barrier between yourself and the fallout. This is especially important for young children and pregnant women. Dirt, concrete, bricks and other dense, solid objects offer the best protection from fallout.

You do not have to be within the immediate vicinity of a nuclear blast to feel the effects of fallout. For example, in the event of a nuclear conflict between Pakistan and India, even the U.S. could feel the effects of fallout.

Once fallout is predicted to start, sleep in the basement, especially along the walls that are underground, to enhance the minimal protection offered by your house. Pile items on the floor above you – such as books and heavy or thick furniture, because everything between you and the fallout on your roof will offer you some degree of protection, and when dealing with long-term exposures, even a slight improvement in your protection is worth it.

You will have to closely monitor Public Health Officials as to when and if you can return to your home.

Listen for any information regarding contaminated food or water supplies. Public health officials should be able to identify contaminated water and food, such as milk and produce, and replace them with clean food from outside the area.

Clean-up activities would focus on areas near ground zero contaminated with long-lasting radioactive isotopes, such as certain plutonium and uranium isotopes. There are temporary measures that can be taken to "fix" radioactive materials in place and stop the spread of contamination. These include "fixative" sprays such as flour and water mixtures, road oil, or water that can be used to wet ground surfaces. In the days and weeks following the attack, officials might be expected to:

- Establish a plan for careful monitoring and assessment of affected areas;

- Impose quarantines on contaminated areas as necessary to prevent further exposures;

- Remove contamination from areas where people might continue to be exposed;

- Keep citizens informed about the situation.

Radiological Dispersion Device (RDD)

Related to, but not the same thing as a Nuclear Blast Attack, is a Radiological Dispersion Device, or RDD. An RDD combines a conventional explosive device — such as a bomb — with radioactive material. It is designed to scatter dangerous and sub-lethal amounts of radioactive material over a general area. In that respect an RDD attack more closely resembles a Chemical or Bio-terror attack. Often called a “dirty nuke” or “dirty bomb” an RDD is considered a far more likely terrorist threat, than the use of a nuclear explosive device.

The primary purpose of terrorist use of an RDD is to cause psychological fear and economic disruption. Some devices could cause fatalities from exposure to radioactive materials. Depending on the speed at which the area of the RDD detonation was evacuated or how successful people were at sheltering-in-place, the number of deaths and injuries from an RDD might not be substantially greater than from a conventional bomb explosion.

Your preparation for an RDD attack should closely resemble the same things you would do in the event of a Chemical or Biological Attack.

While the explosive blast will be immediately obvious, the presence of radiation will not be known until trained personnel with specialized equipment are on the scene. Whether you are indoors or outdoors, home or at work - be extra cautious. It would be safer to assume radiological contamination has occurred - particularly in an urban setting or near other likely terrorist targets - and take the proper precautions. As with any radiation, you want to avoid or limit exposure. This is particularly true of inhaling radioactive dust that results from the explosion. As you seek shelter from any location (indoors or outdoors) and there is visual dust or other contaminants in the air, breathe through the cloth of your shirt or coat to limit your exposure. Use your dust mask, or Bio hazard Mask from your home emergency kit or Go Bag. Even if you manage to avoid breathing radioactive dust, your proximity to the radioactive particles may still result in some radiation exposure.

If the explosion or radiological release occurs inside, get out of the building immediately and seek safe shelter. Otherwise:

If You Are Outside During the Explosion

- Seek shelter indoors immediately in the nearest undamaged building;
- If appropriate shelter is not available, cover your nose and mouth and move as rapidly as is safe upwind, away from the location of the explosive blast. Then, seek appropriate shelter as soon as possible;
- Listen for official instructions and follow directions.

If You Are Inside During the Explosion

- If you have time, turn off ventilation and heating systems, close windows, vents, fireplace dampers, exhaust fans, and clothes dryer vents. Retrieve your disaster supplies kit and a battery-powered radio and take them to your shelter room;
- Seek shelter immediately, preferably underground or in an interior room of a building, placing as much distance and dense shielding as possible between you and the outdoors where the radioactive material may be;
- Seal windows and external doors that do not fit snugly with duct tape to reduce infiltration of radioactive particles. Plastic sheeting will not provide shielding neither from radioactivity nor from blast effects of a nearby explosion;
- Listen for official instructions and follow directions.

The Threat of Nuclear Power Plants

If you are old enough to remember “Duck and Cover” drills and Fallout Shelters, then you certainly remember the accident at Three Mile Island, and the fears of the “China Syndrome.”

You didn’t have to be born a generation ago also to remember Chernobyl, a nuclear disaster whose effects are still being felt to this day. And more recently the tsunami that swept through Japan’s Fukushima reactor, the total effects of which and impact to the environment and human life, are

yet to be fully known. As recently as March of 2012, UK newspaper *The Guardian* reported, "One of Japan's crippled nuclear reactors still has fatally high radiation levels and much less water to cool it than officials estimated, renewing doubts about the plant's stability." Prompting many to believe once full-disclosure is made, that Fukushima will go on record as a nuclear disaster worse even then Chernobyl.

Despite the Three Mile Island incident, and the ongoing controversies surrounding the value of Nuclear Power vs. the hazards of current plant technology, 20% of the power in the U.S. is provided by Nuclear Power Plants. Contrary to popular belief that "there are only a few still operating", there are nuclear power plants in most states in the country. Nearly three million Americans live within 10 miles of an operating nuclear power plant.

Nuclear power plants represent a clear and present danger, one that everyone needs to be aware of, whether you live near one or not. As evidenced by Chernobyl and Fukushima, you cannot always rely on the utility or regulatory agencies involved, to have adequate plans in place to control leaks or other plant emergencies.

If you live in close proximity to a nuclear plant, your emergency preparedness plans should include preparation for a Nuclear Accident. These should echo those of your preparations for a Nuclear Attack, but you need to pay particular close attention to the techniques mentioned to strengthen your immunity to radiation exposure.

In addition, you need to be aware of these terms, which are used to identify Nuclear Plant Emergencies (in the United States)

- **Notification of Unusual Event** - A small problem has occurred at the plant. No radiation leak is expected. No action on your part will be necessary.

- **Alert -** A problem has occurred, and detectable amounts of radiation could leak inside the plant. This will not affect you and no action is required.

- **Site Area Emergency -** Area sirens may be sounded. Listen to your radio or television for safety information.

- **General Emergency -** Radiation could leak outside the plant and off the plant site. The sirens will sound. Tune to your local radio or television station for reports. Be prepared to follow instructions promptly.

If you live in the vicinity of a plant, and ANY of the above alerts are given, you should immediately start taking your prophylactic iodine.

If an accident at a nuclear power plant were to release radiation in your area, local authorities would activate warning sirens or another approved alert method. They also would instruct you through the Emergency Alert System (EAS) on local television and radio stations on how to protect yourself.

- Follow the EAS instructions carefully;

- Minimize your exposure by increasing the distance between you and the source of the radiation. This could be evacuation or remaining indoors to minimize exposure;

- If you are told to evacuate, keep car windows and vents closed; use re-circulating air;

- If you are advised to remain indoors, turn off the air conditioner, ventilation fans, furnace and other air intakes;

- Shield yourself by placing heavy, dense material between you and the radiation source. Go to a basement or other underground area, if possible;

- Do not use the telephone unless absolutely necessary;

- Stay out of the incident zone. Most radiation loses its strength fairly quickly – but in the worst kind of accidents, such as at Chernobyl, contamination has lasted for years, and you may never be able to return to your home.

Final Thoughts

A generation ago, the threat of Nuclear War was a very real one, and while that threat may have minimized, the need to be prepared, for it and other nuclear disasters has not.

As you have come to the conclusion of this, the last chapter (at least for now) in this Manual, you have certainly come to the realization that threats are variable. Some diminish and increase with the changing times; changing weather patterns, changing political affiliations, even changing attitudes – but what remains constant -- is the need to prepare!

Do you think those who built Bomb Shelters in the ‘50s and ‘60s felt foolish that they spent the time and money to do so, and never needed them? Never think for a minute that is true.

Anyone who has taken the time and effort to build a Home Emergency Preparedness Plan for themselves and their families would tell you they would be just as happy, probably even happier to have it, and never needed to use it – than to have needed it -- and did not have it to use!

END OF SECTION V

CLOSING THOUGHTS

"It is at such moments you realize that you and the other are,
in fact - one. It's a big realization. Survival is the second law of life.
The first is that we are all one."
Joseph Campbell

We have spent a lot of time in this Manual teaching you how to be more self-reliant and self-sufficient. We want you to take away how to survive without *reliance* on technology, and the other modern conveniences and infrastructure that you probably thought you could never do without, before you chose to download this Manual. What we hope that you have learned is the kind of "self-reliance" that is born out of confidence. But not the kind of "self-reliance" that means how to survive as an individual, without helping, or needing the help of others.

You see, there is a common misconception that "Survival of the Fittest" relates to a kind competition that leaves the Ultimate Survivor as some kind of "Last Man Standing."

Nothing could be further from the truth. The Ultimate Survival Project is first and foremost a COOPERATIVE effort that has brought together the best information, and the minds, and thoughts of the best "Preppers" and will continue to do so -- to ensure not only your survival as an individual, but the survival of our communities, our countries, our species, and ultimately our world.

Even the term "Survival of the Fittest" as used by Darwin is one of the most misquoted, and misunderstood in science. Many people have taken the phrase out of context to mean that nature is a continual "tooth and claw" battle to survive.

That is not how it used in Darwin's writings. He used the term Survival of the Fittest" to describe how a species ensures that its offspring survive, to ensure the survival of that species. Instead of celebrating competition and struggle, Darwin highlights the need for different members of the community to cooperate with one another in order to ensure the survival of the entire species.

Did you know that in his book *The Descent of Man*, Darwin used the word "love" 95 times, while his most famous phrase, "survival of the fittest," appears only twice?

Darwin, who has been misunderstood and often misquoted to believe exclusively in our competitiveness, actually noted that humankind's real power comes from our "ability to perform complex tasks together, and to sympathize and cooperate."

There are countless examples of how nature is cooperative and not competitive. Democratic decision-making is the norm amongst many species, from insects and birds, to deer and primates. There is growing scientific evidence that human beings actually function better and remain healthier when expressing positive emotions, such as love, caring, compassion, and gratitude, versus their negative counterparts, anxiety, frustration, anger and fear.

How many times have you caught yourself saying you were so angry that you "couldn't think straight?" If you have gotten to this point in this manual, then you know that "not thinking straight" can get you killed!

The Founding Members of the Ultimate Survival Project believe, as did Darwin, that our nature as human beings is to be *cooperative* and not inherently competitive.

We do not hold that humanity is at its core selfish, with individuals only holding their own interests at heart. As a species, we are better than that. We believe that we all have our Ultimate Survival as a species as our goal. And to that end, that each of us wants to contribute to society and life as a whole in whatever way he or she can, by using his or her abilities, and yes, their survival skills -- for the good of all.

The Ultimate Survival Project has been launched Full-Throttle midway through the year 2012, that is not an accident. It is not, however because we necessarily buy into the gloom and doom "End of The World As We Know It" scenarios attached to this year, but because we admit that things are changing. Systems, both man-made and natural, are breaking down.

The planet does seem to be at a tipping point, and maybe the hype surrounding “2012” can help to open people’s eyes to it.

When faced with a world in a state of such radical fluctuations, when the old ways of living in that world, of interacting with one another, and with nature do not seem to work any longer, an individual life-form -- or its species – has only two choices. To either die and become extinct or to rise above the limitations of its current condition and position in the world, through an evolutionary leap forward.

The Ultimate Survival Project taken as a whole is not only about what you need to do to Survive a world that is on the brink of a major change, but more importantly about what YOU CAN DO to move that change into the kind of world more of us would want to continue to survive in and be a part of.

Ultimate Survivors not only plan to live for today…
But to Build for a Better Tomorrow

With that in mind, we urge and encourage you to share this Manual with your friends, neighbors and loved ones and ask that they to do the same.

The Ultimate Survival Project Team

About the Author

Steve Goodman is an award-winning multimedia writer with three decades of experience. Mr. Goodman has written for television programs featuring, cutting edge civilian and military technologies that have appeared on PBS, PAX, Discovery, A&E and other national networks.

Mr. Goodman is a former First Responder, and a recognized authority on survival, rescue protocols, law enforcement techniques, combat and tactical weaponry, and is a regular correspondent to publications such as *Ground Combat Technology*, *Special Operations Technology, Tactical ISR Technology, Air Med and Rescue, Aviation After Market Defense* and *US Coast Guard Forum.*

Steve is proud to bring his background, experience and credo "Preparedness is Power Over Panic" to the vital mission of the Ultimate Survival Project.

Steve lives on the beach in South Florida with his lovely wife Cynthia, darling daughter, Lailee and two cats, Minnie and Fisher.

Epilogue

Here's How You Can Help Us
Better Serve the World

The Ultimate Survival Project, LLC is truly "the people's project," – a worldwide, community-based effort in which everyone is encouraged to participate. If you have (or know of) a video you want the rest of the world to see or a particular camping, survival, or emergency preparedness skill that has not been fully covered in this manual, please check the link on your "PPP" **P**ersonal **P**rofile **P**age - on the TUSP web site for more information: www.TheUltimateSurvivalProject.com

If our editorial team incorporates your material into one of the monthly updates or adds it to a future edition of the Manual, you will receive full credit and attribution with your name posted on our "Special Thanks widget" for all the world to see. Furthermore, if you have excellent language skills and would be willing to translate this manual or the TUSP web site, please step forward by emailing us at: www.Info@FreeSurvivalBook.com your contribution will again be publicly recognized in the "Special Thanks widget" on our Web site: www.TheUltimateSurvivalProject.com

And last, certainly not least but actually most important of all, is the manner in which we acknowledge those who help our community reach out to the entire World by encouraging their email and social media contacts to get their own free copy of this vitally important Manual.

Every family member not living with you should have his or her own copy so they can begin implementing their own, "EPP", Emergency Preparedness Plan. The same is true for every one of your friends, business associates or members of your civic, fraternal or religious organizations. Now that you have come to the end of this manual you have a far better understanding of the importance of taking action. And now there's a free and easy way you can help others get started, just as you have. By clicking the link below:

REFER A FRIEND
[CLICK HERE, (*refer a friend campaign link*)]

Thanks for your support: *The Ultimate Survival Project Team*

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NOAA

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Outdoor Life Magazine

Popular Mechanics Magazine

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