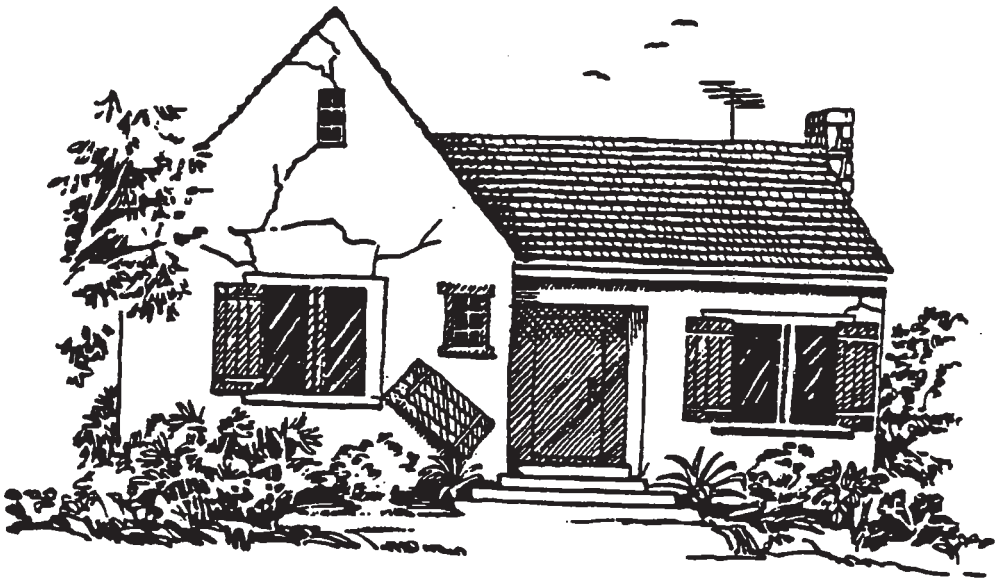
EMERGENCY PREPAREDNESS HANDBOOK

Rockford Illinois Stake



"A religion that is not capable of saving its people temporally will never have power to save them spiritually."

Joseph Smith

How-To-Do-It Manual For Families
1st Printing April 1997

ROCKFORD 1st WARD
EMERGENCY PREPAREDNESS PLAN

The following information was originally compiled by the Personal and Family Preparedness Committee of the Bonneville 1st Ward in the Provo Utah Bonneville Stake. It has been modified by the Welfare Committee of the Rockford First Ward to better meet our needs in the Midwest. The guidelines set forth in this booklet are broken down into two categories: 1) General guidelines that would apply to any area of the country and, 2) Specific instructions applicable only to the Rockford 1st Ward and/or Rockford Illinois Stake geographic areas.

It is hoped that families will read this booklet not once but several times so that they may be thoroughly familiarized with the actions proposed herein. Then, if and when an emergency should develop, they may act quickly and decisively, taking the proper steps to save themselves and others and to minimize property damage.

We do not know what lies in the future, nor do we intend to alarm or upset. The probability of any of the emergencies listed in this booklet ever happening to any of our ward members is very remote. Nevertheless we must be prepared. We urge you as ward members to prayerfully consider this information and to modify it to conform to your family circumstances.

Rockford 1st Ward
Welfare Committee

P.S. The contents of this booklet are intended to assist individuals and families in coping with emergency hazards. However, final decisions on preparation for or actions taken during an emergency are the sole responsibility of individuals. No one knows your needs or can take care of you better than you can - nor does any one else have that responsibility. Information and examples contained within this booklet are provided for illustration and advice only. Therefore, no liability is assumed by the ward or its committee members, and they disclaim any responsibility for the use or misuse of any information or products contained in this publication.

TABLE OF CONTENTS

Page

Page

Page

Page

EMERGENCY PHONE NUMBERS

Fire Department 911

Police Department 911

Ambulance 911

Poison Control Center . . . . . 961-2430 (Swedish American Emer. Room)

Northern Illinois Gas Company 965-2011

Commonwealth Edison Electric Company . . . 1-800-334-7661

Rockford Water Department 987-5700

Rockford City Information Referral Line . . . 987-5500

Highway Patrol (State Police)--emergency . . 963-7687
non-emergency . . . 963-7688

Road Conditions Report 962-7051

Family Doctor . . . . . _____

Family Pharmacy . . . . . _____

Home Teachers . . . . . _____

. . . . . _____

Visiting Teachers . . . . . _____

. . . . . _____

Quorum Leader . . . . . _____

Bishop . . . . . _____

Other: _____ _____

_____ _____

_____ _____

_____ _____

EMERGENCY BROADCAST SYSTEM

RADIO STATIONS

All local radio stations in Rockford are members of the National Emergency Broadcast System. They will be on the air with information and instructions in the event of an emergency. Several of these stations have sufficient backup generators to keep them on the air should a general power failure occur. Those are the stations that we have listed here. We have also listed one of the several AM radio stations in Chicago that broadcast with a powerful enough signal to reach Rockford. Those stations can also be a resource to us in the event of a widespread emergency.

STATION	FREQUENCY	PHONE NO.	COMMENTS
WROK	1440 AM	394-1440	These first three stations are the primary Emergency Broadcast stations for Rockford. That is, they receive the signal first and then broadcast it to all the other stations. They share a generator but each station has its own broadcast tower.
WZOK	97.5 FM	SAME	
WXXQ	98.5 FM	SAME	
WNTA	1330 AM	874-7861	Likewise, these three stations share a generator.
WXRX	104.9 FM	SAME	
WKMQ	95.3 FM	SAME	
WMAQ	670 AM	(312) 670-6767	Broadcast strength is 50,000 watts. Also has a generator.

TEACHINGS OF THE BRETHREN

Ezra Taft Benson
April Conference, 1965

For years we have been counseled to have on hand a year's supply of food, Yet there are some today who would not start storing until the Church comes out with a detailed monthly home storage program. Now suppose that never happens? We still cannot say we have not been told.

Should the Lord decide at this time to cleanse the Church...a famine in this land of one year's duration could wipe out a large percentage of slothful members, including some ward and stake officers. Yet we cannot say we have not been warned.

October Conference, 1973

What are some of the calamities for which we are to prepare? In section 29 the Lord warns us of "a great hailstorm sent forth to destroy the crops of the earth." (D&C 29:16). In section 45 we read of "an overflowing scourge; for a desolating sickness shall cover the land." (D&C 45:31). In section 63 the Lord declares he has "decreed wars upon the face of the earth. . ." (D&C 63:33).

In Matthew, chapter 24, we learn of "famines, and pestilences, and earthquakes. . ." (Matt. 24:7). The Lord declared that these and other calamities shall occur. **These particular prophecies seem not to be conditional. The Lord, with his foreknowledge, knows that they will happen**. Some will come about through man's manipulations; others through the forces of nature and nature's God, but that they will come seems certain. Prophecy is but history in reverse -- a divine disclosure of future events.

Yet, through all this, the Lord Jesus Christ has said: ". . .if ye are prepared ye shall not fear." (D&C 38:30).

. . .Here then is the key -- look to the prophets for the words of God, that will show us how to prepare for the calamities which are to come. . .For the righteous the gospel provides a warning before a calamity, a program for the crises, a refuge for each disaster.

. . .As to the foodstuffs which should be stored, the Church has left that decision primarily to the individual members. Some excellent suggestions are available from the Church Welfare Committee. "All grain is good for the food of man. . ." (D&C 89:16) the Lord states, but he particularly singles out wheat. Dry, whole, hard grains, when stored properly, can last indefinitely, and their nutritional value can be enhanced through sprouting if desired.

It would be well if every family have on hand grain for at least a year.

From the standpoint of food production, storage, handling, and the Lord's counsel, wheat should have high priority. Water, of course, is essential. Other basics could include honey or sugar, legumes, milk products or substitutes, and salt or its equivalent. **The revelation to store food may be as essential to our temporal salvation today as boarding the ark was to the people in the days of Noah**.

President Harold B. Lee has wisely counseled that "perhaps if we think not in terms of a year's supply of what we ordinarily would use, and think more in terms of what it would take to keep us alive in case we didn't have anything else to eat, that last would be very easy to put in storage for a year. . .just enough to keep us alive if we didn't have anything else to eat. We wouldn't get fat on it, but we would live; and if you think in terms of that kind of annual storage rather than a whole year's supply of everything that you are accustomed to eat which, in most cases, is utterly impossible for the average family, I think we will come nearer to what President Clark advised us way back in 1937." (Welfare conference address, October 1,

1966.)

. . .Those families will be fortunate who, in the last days, have an adequate supply of each of these particulars.

. . .Concerning clothing, we should anticipate future needs, such as extra work clothes and clothes that would supply warmth during winter months when there may be shortages or lack of heating fuel. Leather and bolts of cloth could be stored, particularly for families with younger children who will outgrow and perhaps outwear their present clothes.

Wood, coal, gas, oil, kerosene, and even candles are among those items which could be reserved as fuel for warmth, cooking, and light or power. Some may be used for all of these purposes and certain ones would have to be stored and handled cautiously. It would also be well to have on hand some basic medical supplies to last for at least a year.

When will we learn these basic economic principles? However, ". . .when we really get into hard times," said President Clark, "where food is scarce or there is none at all, and so with clothing and shelter, money may be no good for there may be nothing to buy, and you cannot eat money, you cannot get enough of it together to burn to keep warm, and you cannot wear it." (*Church News*, November 21, 1953, p. 4)

. . ."How on the face of the earth could a man enjoy his religion," said Elder George A. Smith many years ago, "when he had been told by the Lord how to prepare for a day of famine, when, instead of doing so, he had fooled away that which would have sustained him and his family." (JD 12:142)

And President Brigham Young said, "If you are without bread, how much wisdom can you boast, and of what real utility are your talents, if you cannot produce for yourselves and save against a day of scarcity those substances designed to sustain your natural lives? . . . If you cannot provide for your natural lives, how can you expect to have wisdom to obtain eternal lives?" (JD 8:68)

Let us not be dissuaded from preparing because of a seeming prosperity today, or a so-called peace.

Thanks be to God for a prophet, for this inspired program, and for Saints who so managed their stewardship that they could provide for their own and still share with others, What a marvelous way to become a savior on Mount Zion!

. . .The days ahead are sobering and challenging. Oh, may we be prepared spiritually and temporally.

October Conference 1980

...You do not need to go into debt, may I add, to obtain a year's supply. Plan to build up your food supply just as you would a savings account. Save a little for storage each pay check. Can or bottle fruit and vegetables from your gardens and orchards. Learn how to preserve food through drying, and possibly freezing. Make your storage a part of your budget. Store seeds and have sufficient tools on hand to do the job. If you are saving and planning for a second car or a T.V. set or some item which merely adds to your comfort or pleasure, you may need to change your priorities. We urge you to do this prayerfully and to do it now. I speak with a feeling of urgency. I have seen what the days of tribulation can do to people.

Too often we bask in our comfortable complacency and rationalize that the **ravages of war, economic disaster, famine, and earthquake cannot happen here. Those who believe this are either not acquainted with the revelations of the Lord, or they do not believe them. Those who smugly think these calamities will not happen, that they will somehow be set aside because of the righteousness of the saints, are deceived and will**

rue the day they harbored such a delusion.

October Conference 1987

...fathers...you have a sacred responsibility to provide for the material needs of your family...(one) vital aspect of providing for the material needs of your family is the provision you should be making for your family in case of an emergency. Family preparedness has been a long-established welfare principle. It is even more urgent today...Yes, brethren, as fathers in Israel you have a great responsibility to provide for the material needs of your family and to have the necessary provisions in case of emergency.

Victor L. Brown
April Conference, 1980

There should be no misunderstanding on this point. The fundamental principle of welfare services is that *you and I provide for our own needs.* If serious economic disruption were to occur, the Church would do all in its power to alleviate suffering by supplementing member efforts. But it would not be able to do for the Saints what we have been taught to do for ourselves for over forty years -- that is, to have a year's supply of food, clothing, and, where possible, fuel; to have savings in reserve; and to possess basic production skills. this counsel has been given at least twice a year for all these years. Some have followed the counsel of the Brethren and are prepared, as were the five wise virgins. Some, like the foolish virgins, do not have enough oil in their lamps. (See Matt. 25:1-13.)

October Conference 1980

I do not want to leave the impression that nothing has been done. There are those faithful Saints who have their year's supply and are taking care of themselves. They know of that peace which comes from being obedient and being prepared.

. . .We have been taught that we should build our reserves over a period of time, that we should not go into debt to do so, that we should buy those things we use and use them on a rotation basis, that we should use common sense in preparing ourselves to be independent and self-reliant. There has never been extremism or fanaticism associated with these teachings.

. . .Our concern and the thrust of my message, which has been repeated from this pulpit many times, is that the welfare program rests on the basic principle of personal and family preparedness, not on Church preparedness. We are concerned that because the Church program includes production projects, canneries, bishops' storehouses, Deseret Industries, and other visible activities, our people are mistakenly led to believe these things replace the need for them to provide for themselves. This simply is not so.

J. Richard Clark
October Conference, 1980

My dear brothers and sisters, the greatest test for any generation is how it responds to the voice of the prophets. Our prophets have admonished us to

1. Increase our personal righteousness.

2. Live within our means and get out of debt.

3. Produce, can, and store enough food, clothing, and, where possible, fuel for one year.

This straightforward counsel has not been followed by all of you. Some have believed and complied; others have waited until they could be sure the storm clouds were really gathering; and still others have rejected the counsel.

. . .*People respond only to what they are prepared to believe.* **The Brethren hesitate sometimes to talk in bold terms regarding the realities of the economy and the need for individual and family**

preparedness. Such talk is interpreted by the black-cloud watchers as a time of general calamity, and many stampede to the grocery stores to get ahead of the hoarders.

In April 1976 Bishop Featherstone suggested a one-year goal for members to store a year's supply of food. Some of those who had not yet begun a home storage program rushed out and plunged deeply into debt to buy hundreds of dollars of groceries. They then sat back, as did the Prophet Jonah, to see what was going to happen to Nineveh: It was as if Brother Featherstone had officially set doomsday as April 1, 1977. This was not his intention. The Lord's way has always been an orderly preparation, not one of second-guessing, confusion, and panic.

In addition to our reserve of food, we should build a cash reserve.

Vaughn J. Featherstone
April Conference, 1976

. . .Brothers and sisters, what have we done in our stakes and wards to see that every Latter-day Saint has a year's reserve of food to sustain life? Let's not only keep teaching this principle, but let's also teach our people how.

. . .Second, decided what is needed to bring your present reserve levels to a year's supply. Then make a list and prepare a plan. Consider first, what are the basics? -- wheat (or grain from your locale), sugar or honey, dried milk, salt, and water. Most of us can afford such basics. Buy them from your monthly food budget allowance. The Church discourages going into debt to buy for storage.

. . .I should like to address a few remarks to those who ask, "Do I share with my neighbors who have not followed the counsel? And what about the nonmembers who do not have a year's supply? Do we have to share with them?" No, we don't *have* to share -- we *get* to share! Let us not be concerned about silly thoughts of whether we would share or not. Of course we would share!

Spencer W. Kimball
The Teachings of Spencer W. Kimball
Bookcraft, p. 372

I am not howling calamity, but I fear that a great majority of our young people, never having known calamity, depression, hunger, homelessness, joblessness, cannot conceive of such situations ever coming again. There are thousands of young families in this city who could not stand suffering a three-months period without the threat of their home being foreclosed, their car repossessed, their electric and home equipment being taken back and themselves being reduced to unbelievable rations in the necessities.

The great difficulty is that when difficulty times come, those who in normal times could lend assistance are also under the wheel of the grinding mill. **It may be impossible to anticipate and prepare for the eventualities of depression, war, invasion, bombing, but we can go a long way**. What I have seen with my own eyes makes me afraid not to do what I can to protect against the calamities.

. . .The first reaction is: We just cannot do it. We can hardly get by using every cent of income monthly. The answer is eloquent. If you can hardly get by when you are earning increasingly, well employed, well, productive, young, then how can you meet emergencies with employment curtailed, illness and other unlooked-for problems arising?

Scandinavian Area Conference
Copenhagen, Denmark, August 1976

We want you to be ready with your personal storehouses filled with at least a year's supply. You don't argue why it cannot be done; you just

plan to organize and get it done.

Harold B. Lee
Address Delivered at BYU Leadership Week, June 16, 1953

The only safety and security there is in this Church is in listening to the words that come from the prophets of the Lord, as if from the mouth of the Lord himself. And they have spoken; they have told us to prepare, and it is not for us to argue whether we should or whether we should not. We have the prophets today telling us what our responsibility is here and now. God help us not to turn deaf ears, but go out while the harvest is yet possible and build on a foundation such that when the rains descend, and the floods come, and the winds blow, and beat on the house, our house will have stone walls.

Bruce R. McConkie
April Conference 1979

I stand before the Church this day and raise the warning voice. It is a prophetic voice. . .it is a voice calling upon the Lord's people to prepare for the troubles and desolations which are about to be poured out upon the world without measure.

For the moment we live in a day of peace and prosperity but it will not ever be thus. Great trials lie ahead. All of the sorrows and perils of the past are but a foretaste of what is to be. And we must prepare ourselves temporally and spiritually. . .

Be it remembered that tribulations lie ahead. There will be wars in one nation and kingdom after another until war is poured out upon all nations and two hundred million men of war mass their armaments at Armageddon. . .

There will be earthquakes and floods and famines. The waves of the sea shall heave themselves beyond their bounds, The clouds shall withhold their rain, and the crops of the earth shall wither and die.

There will be plagues and pestilence and disease and death. An overflowing scourge shall cover the earth and a desolating sickness shall sweep the land. Flies shall take hold of the inhabitants of the earth, and maggots shall come in upon them. "Their flesh shall fall from off their bones, and their eyes from their sockets."

It is one of the sad heresies of our time that peace will be gained by weary diplomats. . .or that the predicted plagues and promised desolations. . .can in some way be avoided.

We must do all we can to proclaim peace, to avoid war, to heal disease, to prepare for natural disasters - but with it all, that which is to be shall be. . .we do not know when the calamities and troubles of the last days will fall upon any of us as individuals or upon bodies of the Saints. . .We do not say that all of the Saints will be spared and saved from the coming day of desolation.

It may be, for instance, that nothing except the power of faith and the authority of the priesthood can save individuals and congregations from the atomic holocausts that surely shall be.

And so we raise the warning voice and say: Take heed; prepare: Watch and be ready.

Marion G. Romney
October Conference 1978

Now I would like to repeat what you have heard a thousand times, more or less, about taking care of yourselves. **You ought to now, more than at any time since we have been in this welfare work, make sure that you are prepared to go through a period of stress on the resources you have provided for yourselves. The necessity to do this may come any day. I hope it doesn't come too**

soon, in fact, I hope it doesn't come in my lifetime. But it will come sooner or later.

Never forget this matter of providing for yourselves, even though you don't hear as much about it now as you did a few years ago. Remember that it is still a fundamental principle, one that has been taught the Saints ever since they came to these valleys of the mountains. We have always been urged to provide ourselves with enough supplies in the day of harvest to last us until the next harvest. Be sure that you do so. Do it in your own way, but be prepared to take care of yourselves through a period of need.

I don't know how things will work out. People say to me, "What will we do? If we have a year's supply and nobody else has anything, it will be gone in a day." Well, it will last as long as it lasts, but I'm not worried about that. If I do what the Lord tells me to do, and you do what the Lord tells you to do, he will take care of us alright.

Bishop Gary A. Barnes

D&C 112:24-25

24) Behold, vengeance cometh speedily upon the inhabitants of the earth, a day of wrath, a day of burning, a day of desolation, of weeping, of mourning, and of lamentation; and as a whirlwind it shall come upon all the face of the earth, saith the Lord.

25) And upon my house shall it begin, and from my house shall it go forth, saith the Lord.

Joseph Smith taught that "*A religion that is not capable of saving its people temporally will never have power to save them spiritually.*"

I assume that most of you believe that this Church holds the keys to save you spiritually. If you did not believe that then you would not be a member of it. As Joseph explained, it is impossible for this Church to hold those keys without simultaneously holding the keys to save you temporally. However, temporal salvation, as with spiritual salvation, though offered to you, is of no value to you unless you follow the advise, counsel and instructions on how to qualify to obtain it. I might also add parenthetically that inasmuch as the family is the basic unit of the Church that we might be surprised to learn on the day of judgment that if we fail to save our families temporally by following the counsel and instruction of the Brethren that we will also be denied the ability to save them spiritually.

There is a story told about Brigham Young who was in an informal gathering of men one day and one of the men present reported that his barn had burned down during the night. All of the men in the group expressed their sorrow and regret at what had happened. President Young listened to each of the men say how sorry they were until it was his turn to speak. Whereupon he reached into his pocket, pulled out his wallet, handed the unfortunate man some money and said "I'm sorry $50 worth." He then explained to the brethren that words are merely empty tokens of insincere feelings unless they are supported by actions which give meaning to the words.

Each of us have told our wives and children that we love them. Are these words empty tokens of insincere feelings or do we take the actions which give meaning to these words? The Lord has told us that wives and children have claim upon their husbands and fathers for temporal support (see D&C 83:2-4). It is therefore the responsibility of the husband to demonstrate his love for his wife and children by complying with this commandment of the Lord, providing for the temporal needs of the family.

The Lord has explained through His Prophets that providing for the family means more than just feeding them one day at a time, or from pay-day to pay-day as so many of our priesthood brethren currently do (and for those of you who have only enough food in the house to last a few days or a

week or two without having to go to the store, regardless of how much money you may have in savings or in your checking accounts, you are still living from pay-day to pay-day) -- The Brethren have taught that providing for the family means to lay up in store those provisions necessary to sustain our families for a minimum of one year during a day of need.

Failure to do so will result in two grave consequences:

1) In the here and now it will prove that we do not truly love our wives and children because any verbal expressions to the contrary are only empty tokens of insincere feelings inasmuch as we have failed to give meaning to those words by our actions.

2) When the time of need comes our families may suffer privation and possibly even death by starvation because of our selfish lack of obedience to God's command. How will we feel in that day of need if our wives and children look to us in bewildered expectation and we are not able to feed and provide for them, knowing full well that we could have provided if only we had obeyed. The scriptures tell us the condition of such a man:

> But if any provide not for his own, and specially for those of his own house, he hath denied the faith, and is worse than an infidel.
>
> I Timothy 5:8

And why would we have denied the faith? Because faith is demonstrated by our works. As James states, ". . . faith without works is dead . . ." (see James 2:20), and in this case this may be literally true. Such a person is worse than an infidel and would have been better off never having heard the Gospel of Jesus Christ for having been warned, counseled and commanded in his duties to provide for his family, should he fail to obey and thereby cause the starvation of his family he may be surprised to learn on the day of judgment that he is classed among the thieves and murderers, having literally caused the death of his family by willful rebellion to God's command. Let us therefore be ". . . doers of the word, and not hearers only . . ." (James 1:22).

Throughout the years we have been told many reasons why we should store food and other provisions. Some have tried to console us by saying that food storage is only provident living. We never know when we may get seriously sick or perhaps lose our job and have no choice but to fall back upon our reserve storage. This has even happened to many individuals and their lives have been greatly blessed because they obeyed the command of the Lord during their days of plenty. However, to use this argument as sound reasoning or justification for storing food clearly demonstrates either a lack of faith or a failure to understand the revelations of the Lord.

Both the Church and the government have programs that are more than adequate to provide for the needs of those who become sick or who temporarily lose their employment. This is the main thrust of the day to day welfare program. If this were the only reason for being counseled to store food then the counsel would never have been given. Go back and read again the quotes from the Brethren at the beginning of this chapter and you will notice that they are not using this argument as the basis for their counsel. The reasons they state are:

1) God commanded that we do it.

2) Global earthquakes.

3) Seas heaving themselves beyond their bounds.

4) Global Famine.

5) Hail storm to destroy the crops of the earth.

6) Global calamities.

7) As essential to our temporal salvation as boarding the ark was to the people in the days of Noah.

8) Economic disaster.

9) Nuclear war.

10) Great trials - the most severe ever.

11) Floods.

12) Drought.

13) Plagues, pestilence, and disease.

The Brethren openly talk about these matters, knowing full well that these things are coming and that there is nothing we can do to prevent them. All we can do is prepare now, while we can, to take care of ourselves when calamity strikes.

Even nuclear war, as unpleasant a thought as it is, is talked about in General Conference and we are told to prepare for it. Do these reasons sound like mere local or familial setbacks? Of course not! Even though these things may happen to individuals it is the much more encompassing and compelling reasons of global disaster that we are commanded to prepare to meet. The Lord is not trifling with me and He is not trifling with you. The prophet Elijah summed it up very succinctly when he said: "...How long halt ye between two opinions? If the Lord be God, follow him . . ." (I Kings 18:21).

Over one hundred years ago President Wilford Woodruff counseled the Saints in his day to store food and other items. He lamented that they were slow to do as they had been counseled. During the October 1875 conference he stated:

"There is another word of the Lord to me, and which has been like fire shut up in my bones for the last three months; that is, to call upon all the inhabitants of these mountains, so far as I have an opportunity, to go to and lay up their grain, that they may have bread...'Oh yes,' say some, 'Heber C. Kimball cried, `famine,' for years, and it has not come yet." Well, bless your soul, there is more room for it to come. "Who am I, saith the Lord, that I promise and do not fulfill?" The day will come when if this people do not lay up their bread they will be sorry for it...that is the voice of the Lord to me."

J.D. 18:127-128

Just as it was in President Woodruff's day, there are many people today, perhaps even the majority according to the statistics, that believe that the Brethren have been telling us to store food for so long with nothing happening that we really don't need to listen to them. Let us be reminded that Noah prophesied of the coming flood for over one hundred and twenty years (see Genesis 5 & 6, also Moses 8). During that time the people continued to mock him and to torment him, yet he called them to repentance continually, and warned them of the impending flood as he continued to build the Ark and gather provisions.

Then Noah and his family entered the ark with all the animals and closed the door. Do you know what happened then? Absolutely nothing. How long would you sit in an ark with your wife and children and a bunch of animals with the door shut waiting for it to rain before you would give up? Especially if you could hear the people outside laughing and making fun of your preparations? Noah and his family sat in the ark for seven days before it started to rain. But when it started to rain, it rained!! And in an instant suddenly, as a whirlwind the torrents poured upon the earth until all flesh, except for Noah and his family and the animals he had gathered, perished in the flood.

After over one hundred and twenty years of preaching and a week inside the ark the word of the Lord was fulfilled. The Savior told us that the last days will be as they were in the days of Noah and the Brethren have been preaching to us now for almost one hundred and twenty years to lay in store

enough food, clothing, and fuel to last for one year. Do you know how long Noah and his family were in the ark? According to Genesis, from the day the door of the ark was closed to the day that it was opened was one year and seventeen days. As they emerged from the ark can you imagine the awe they must have felt for their deliverance from the horrible destruction that had surrounded them because of their obedience to the instructions of the Lord to prepare and lay in store. And Noah had to get a year's supply not only for himself and his family but also for all the animals aboard the ark.

What are the instructions of the Lord to us today? To repent, to store food and clothing, and to continue in the line of our duty. Heber C. Kimball warned...

> If judgments must need begin at the house of God, and if the righteous scarcely are saved, how will it be with the wicked? **Am I looking for famines? Yes, the most terrible and severe that have ever come upon the nations of the earth.**
>
> J.D. 5:20-21

It is for these reasons of famine and global destructions that the revelations instructing us to store food have been given. The Lord knows what the future will bring and there is nothing that we can do to prevent it. We, like Noah, either obey and survive, or like the people to whom he preached, disobey and perish - the choice is ours.

Many students complain of not being able to store food because of living in a small apartment or of simply not earning enough money to allow for food storage in the budget. Both of these arguments are without basis. The poorest among us are rich and prosperous compared to how we will be when calamity strikes. In that day we will regret not having taken advantage of the opportunities we had passed by. Rather than going out on a date with your wife and spending $10.00 or $20.00 or more on food and entertainment which is neither wholesome, nourishing, or long lasting why not use that money to purchase 50 or 100 pounds of wheat or beans? Wheat sells for about $14.00 for 100 pounds and beans sell for about $25.00 for 100 pounds. By going without a monthly date for only a few months and investing that money in food storage a struggling couple may lay in store a years supply of basic food stuffs within a very short time period. As for storage space, put it under your bed or on the closet floor with a board over the top of it to put your shoes on, or under the sofa. If you are really serious about storing now for your future survival you will find a place to put it.

Let us prepare now, while we can, for the night cometh quickly in which no labor can be performed. And why can it not be performed then? Because there will be no food in the stores, or in the restaurants, or in the markets. If you expect to live then, begin to store now. Otherwise we will be classed among those who the Lord called the deniers of the faith, being worse than an infidel.

Bishop Gary A. Barnes
Bonneville 1st Ward
Provo, Utah

GENERAL INSTRUCTION ON PERSONAL & FAMILY PREPAREDNESS

Now I think the time is coming when there will be more distresses, when there may be more tornadoes, and more floods . . . more earthquakes . . . I think they will be increasing probably as we come nearer to the end, and so we must be prepared for this.

Victor L. Brown

Disasters are a fact of life. Each year, more than 25,000 disasters, large and small, natural and man-made, strike across the United States. That's more than 60 disasters every day! Since disasters are an inescapable part of living, survival knowledge and preparation become a common sense insurance policy for your continuation of life. Most disasters and emergencies have a common core of resultant problems. Preparation for one kind of anticipated emergency can greatly enhance your chances of survival in other disaster situations. Learn to do those things which will help you be ready for, and cope with, almost any type of natural disaster.

The Rockford 1st Ward Welfare Committee has created this booklet for YOU to be your personal "How-To-Do-It" Handbook. It is designed to encourage and help you develop your own plan for emergency preparedness.

Perhaps the most basic thing to remember during an emergency is to KEEP CALM. This may mean the difference between life and death. In many disasters, people have been needlessly killed or injured because they took thoughtless actions when they should have done something else - or have done nothing at all when proper action was essential.

In time of an emergency, taking proper action may save your life. Take time to think, and then take the considered action that the situation calls for. Usually, this will be the action you have planned in advance, or the action you are instructed to take by responsible authorities. But failure to act could be death.

Rockford has no central warning system to inform citizens of impending disasters or emergencies. In order to spread the warning signal to others, all the city's police cars would be dispatched to drive through the city streets and use the P.A. system built into the cars, to verbally warn all the people they could. As a practical matter, there is no way that the few cars the city has could ever inform even half the residents of the city if time was a real constraint.

Most people within the city would have to rely on being warned by word of mouth from a neighbor or be lucky enough to have the radio or television on. If you have your radio or T.V. on and thus learn of a general warning, DO NOT use the telephone to warn others; go door to door to warn your neighbors. If you tie up telephone lines simply to get information or to warn others you may prevent emergency calls from being completed and thereby make the situation even worse. Therefore, once you have been warned, get all your information from the radio or television and warn others personally, door to door.

EMERGENCY SUPPLIES :
Each family unit should store a year's supply of

food, clothing, water (20 gallons per person), and, where possible, fuel. In the event of a major disaster our very lives may depend upon whether or not we have prepared these items. The Brethren have been urging us for many years to so equip and supply ourselves. If we should have need of these items during an emergency and come up wanting, we would have no one to blame but ourselves. In addition to these long term storage items each family should also have an emergency preparedness kit in which is packed all the items the family would need to survive for one week. These kits are the heart and core of survival in a major disaster because neither the Church nor the government will be able to mobilize relief supplies in less than 4-7 days. This kit should include, but not be limited to, the following items;

1) Food which requires no refrigeration or cooking.

2) One change of clothing for each family member.

3) Water (at least 3 gallons per person).

4) First aid supplies (including instruction book).

5) Medications required by family members (insulin, heart pills, etc.).

6) Bedding (sleeping bags or blankets).

7) Valuable papers and documents.

8) Games for children - reading material for adults (scriptures, etc).

9) Infant care items if necessary.

10) Tools (ax, shovel, etc.).

At the end of this section are several lists of things to include in an emergency preparedness kit. These lists contain suggested items and quantities, however, your family is unique and you should prepare your own kit to contain items tailored to your families needs. The important thing to bear in mind regarding your kit is that it be stored in an easily accessible place known by all family members and that it be portable so that it could be picked up at a moments notice.

The family should discuss and practice orderly and efficient evacuation of their residence. At the time of a disaster, they will then be prepared to evacuate immediately.

Each individual in the family should know where to go, what to take and for whom he is responsible. A prearranged family gathering place should be designated in case a disaster strikes when family members are scattered between work, school, shopping, etc., and the family residence is destroyed.

Each family member should know how to contact community emergency resources (fire, police, ambulance, poison control center, etc.) if communication is possible.

Each individual (excluding infants and small children) should be trained in basic first aid.

Each individual should be adequately immunized.

Each individual or family owning an automobile should keep it in good repair and the gas tank always at least half full.

Each family should carry adequate insurance and maintain an inventory of household possessions.

FIRE PROTECTION AND FIRE FIGHTING :

Fires are a special hazard in a time of disaster. They may start more easily and the help of the fire department may not be readily available. Therefore, it is essential that you:

1) Follow the fire prevention rules given in chapter 13, and be especially careful not to

start fires.

2) Know how to put out small fires by yourself and teach your family members to do the same.

3) Have on hand simple tools and equipment needed for fire fighting (See chapter 13).

AFTER A NATURAL DISASTER :

Use extreme caution when entering or working in buildings that may have been damaged or weakened by the disaster, as they may collapse without warning. Also, there may be gas leaks or electrical short circuits.

DO NOT take lanterns, torches or flames of any type into buildings that have been flooded or otherwise damaged by a natural disaster, since there may be leaking gas lines or flammable material present.

Stay away from fallen or damaged electric wires, which may still be dangerous.

Check for leaking gas pipes in your home. Do this by smell or with a soapy water solution applied to the gas pipes with a paint brush. If there is a leak the soapy solution will make bubbles. NEVER check for leaks using a match or candle. If you detect gas:

1) Open all windows and doors.

2) Turn off the main gas valve at the meter.

3) Leave the house immediately.

4) Do not turn on or off any electrical switch or appliance.

5) Notify the gas company or the police or fire department.

6) Do not re-enter the house until you are told it is safe to do so.

If any of your electrical appliances are wet, first turn off the main power switch in your house, then unplug the wet appliance, dry it out, reconnect it, and finally, turn on the main power switch (Caution: Don't do any of these things while you are wet or standing in water). If fuses blow or circuit breakers trip when the electric power is restored, turn off the main power switch again and then inspect for short circuits in your home wiring, appliances and equipment.

Check your food and water supplies before using them. Foods that require refrigeration may be spoiled if electric power has been off for some time. Also, don't eat food that has come in contact with flood waters. Be sure to follow the instructions of local authorities concerning the use of food and water supplies.

If needed, get food, clothing, medical care or shelter at the Rockford Ward meetinghouse or the Red Cross stations or from local government authorities.

Stay away from disaster areas. Sight seeing could interfere with first aid or rescue work, and may be dangerous as well.

Write, telegraph or telephone your relatives, after the emergency is over, so they will know you are safe. Otherwise local authorities may waste time locating you -- or if you have evacuated to a safer location, they may not be able to find you at all. However, do not tie up the phone lines if they are still needed for official emergency calls.

Do not pass on rumors or exaggerated reports of damage.

Follow the advice and instructions of your local government on ways to help yourself and your community recover from the emergency. In the event of a major disaster we would be basically on

our own to fare the best we can. Therefore, it is extremely important that in such an emergency we follow the instructions of this booklet. Also, relief will be organized along priesthood lines.

In the following chapters there are several different listings of items to include in your family emergency preparedness kit. All of these lists contain the basics plus additional items that may be needed in an emergency. Use these lists as suggestions only. Modify them to fit the needs of your family.

WHAT IS "PSYCHOLOGICAL READINESS"?:

"Psychological Readiness" means that you are mentally prepared to meet a crisis and is just as important as physical preparedness. Many people try to avoid thinking about earthquakes or other forms of disaster because it creates a great deal of apprehension. As you walk through the process of becoming better informed and prepared, some of your fears may actually increase, while others are laid to rest. Fortunately, intellectual and physical control encourage emotional control and will lead to less stress during the event.

This is critical, because during a calamity, your survival can depend on how you cope with emotional stress and shock. If you have thoroughly thought out the possibilities in an emergency ahead of time, it will help you to control your panic reactions, make correct decisions and assist others.

Children are especially vulnerable to psychological trauma if they have had no preparedness training. Help them to understand earthquakes and other types of disasters; how to appropriately respond in a variety of situations and where to seek adult assistance. Make plans and rehearse them. Afterwards, reassure children. Do not leave them unattended and encourage them to talk about the experience and their feelings.

We certainly can't simulate a severe earthquake, but we can stimulate your imagination towards the consequences of one. This kind of "mind-set" must be a daily fact of life. If you implant the "correct" mind responses ahead of time, you have a much greater chance of surviving and acting appropriately during a disaster. You may never have to cope with a disaster, but in case you do, everything depends on knowing how!

FAMILY COUNCIL - THE PLACE TO BEGIN:

As a family, you need a sound plan for earthquake and other types of disaster survival - another kind of "insurance" just in case of a severe earthquake or other disaster with all its many consequences should strike. Your family survival plan will:

. . .Assure you of better protection and more self-reliance in case of a major disaster or emergency.

. . .Provide you with an adequate supply of food, water, clothing, medical supplies, and equipment.

. . .Inform each family member of his responsibilities in an emergency.

Ideally, you will help prepare your family members for their own protection through thorough and sensitive education, done calmly and in a matter-of-fact manner BEFORE AN EARTHQUAKE OR OTHER DISASTER STRIKES. You should give basic instruction on earthquakes and other possible disasters to your

children as soon as they are old enough to understand.

Your chances of survival will be much higher if your family knows what to do and is trained to act as a unit. You can use the "team" concept that everyone has a vital job in emergency situations. You must discuss and formulate your family preparation plans. Develop exercises or activities which will make your instructions more clear. Rehearse them. You may choose a game-like format, but make sure your family knows that the purpose of these exercises is the serious one of learning to meet and cope with any disaster or emergency which may affect your home and family. In short:

- DEVELOP A FAMILY PLAN

- ASSIGN RESPONSIBILITIES

- ESTABLISH ACCOUNTABILITY

- REHEARSE YOUR FAMILY PLAN

- <u>THEN PUT YOUR PLAN ON PAPER</u>

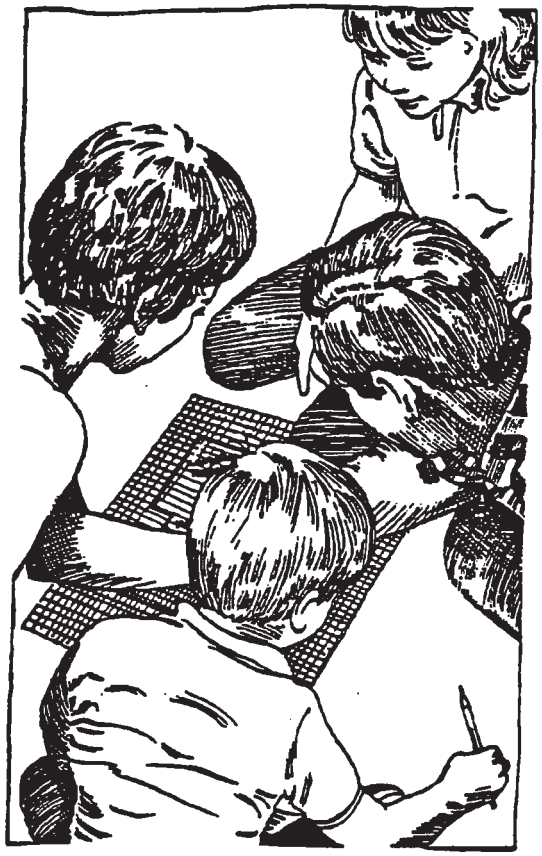
This will help you to learn where supplies are located, remember all escape routes and utility turn off locations. Post the completed plan along with the Check List where it can be used by family members, baby sitters and neighbors before and during emergencies.

* Sketch the floor plan of the place where you live.

* Show a second way to exit from each room (and if you need special equipment, where it is stored).

* Make notations of areas where emergency food, water, first aid kit and fire extinguishers are stored.

* Mark location of gas, water (house and street) and electricity turn-off, including wrench and other necessary tools.



* Indicate location of family's outdoor meeting place.

* Note safest place to be in each room during an earthquake.

* Locate hazards in your home and how they can be corrected.

* List Out-of-State Family Contact's name and phone number.

* List the date your plan was prepared and the date for its next revision.

<u>SUGGESTED TOPICS FOR FAMILY DISCUSSION</u>:

No two family emergency plans will be alike, but

there are certain essentials each person in your household should know. This is a guideline for the kinds of subjects your family will want to discuss.

1) How can we prepare ourselves to respond in a positive, appropriate manner during and after a disaster? (Learn the DOs and DON'Ts at home or away from home.)

2) Who will be responsible for giving orders, for rounding up family members and getting them started on their emergency tasks without delay? Who is the backup person to give these emergency orders?

3) Where are the locations in our home that represent potential danger during an earthquake? That offer the most protection?

   * Do we need to rearrange the way things are stored?

   * Do we have beds that are located under windows that could be moved?

   * What appliances and furniture needs to be secured?

4) How shall we rehearse our earthquake response plans? (Have family earthquake drills periodically. Evaluate our drills and decide how we can improve our performance.)

5) If we become separated indoors, where will we plan to meet outdoors?

6) What are the best escape routes from our house if regular exits are blocked? (Pay special attention to rooms located above or below the main floor.) What are our search and rescue plans?

7) Are we prepared to evacuate our home in one-half hour or less if need be?

8) How can we practice fire prevention all year? What is our plan in case of fire? What actions will we take to protect our home from fire after an earthquake?

9) Do we want to purchase earthquake insurance? We will need to weigh the costs and benefits.

10) What should we do if an earthquake strikes when we are at work? at school? on the freeway? at the market? at a football game? in a theater?

11) Where is the nearest emergency shelter location - to our house? to our school? to our places of work?

12) What is our plan if we are in separate parts of the city during a severe earthquake?

13) What are the best ways to reunite our family after an earthquake?

14) Which out-of-state relative or friend will serve as our "family contact center" where others can get in touch or leave messages? Teach children this telephone number.

15) What is the Civil Defense plan for major emergencies in our area?

16) Are there any special hazards near our home? Are we in a possible inundation area in case of dam failure?

17) How can we get our neighbors involved in similar preparedness planning? Cooperative efforts among neighbors can save lives and property in times of disaster!

18) How can we develop the ability to be self-sufficient if we are isolated from help?

19) How much ready cash will we need? Banks may be closed over a large geographic area.

20) What emergency supplies do we need to

assemble? Who should be responsible for this task?

21) Where will we store our emergency supplies?

22) What is the Emergency Broadcast System (EBS)? Why should we tune in after a disaster?

AS YOU MAKE YOUR PLANS, IMAGINE LIVING CONDITIONS UNDER EACH OF THESE THREE POSSIBILITIES:

1) Your house suffers some damage - broken windows, fallen plaster, minor roof damage, bricks toppled. Some of your utilities have been disrupted but you can stay in the house.

2) Your house is so badly damaged that it is unsafe for occupancy. You must not stay in the house but could "camp out" in your own backyard or nearby open area or safe shelter.

3) Your house and the entire neighborhood has been declared unsafe and you must relocate a distance from home for a period of time, say two weeks.

As you hold your family counsels and discuss these topics be sure to do so in an informed and calm atmosphere. The purpose of these discussion is to educate family members on their responsibilities during an emergency and to train them in what to do to insure the safety of not only themselves but of the entire family.

Children often do not totally understand what grown-ups are talking about, but they do understand the emotions that are expressed. Please take special steps to avoid doing or saying anything that will cause feelings of alarm or fear in children. Be sure to instill within them a sense of well being and confidence. Help them to know that regardless of the situation they will know how to handle it.

Every member of your family should be totally familiar with a number of predetermined family gathering places. Children especially should be periodically reminded of where these places are. In the advent of an emergency children need to know where their parents will be waiting for them. This will decrease their anxiety and allow them to cope more effectively with the disaster.

The next section lists several different areas of assembly that your family should be familiar with and know where to meet under what kinds of circumstances.

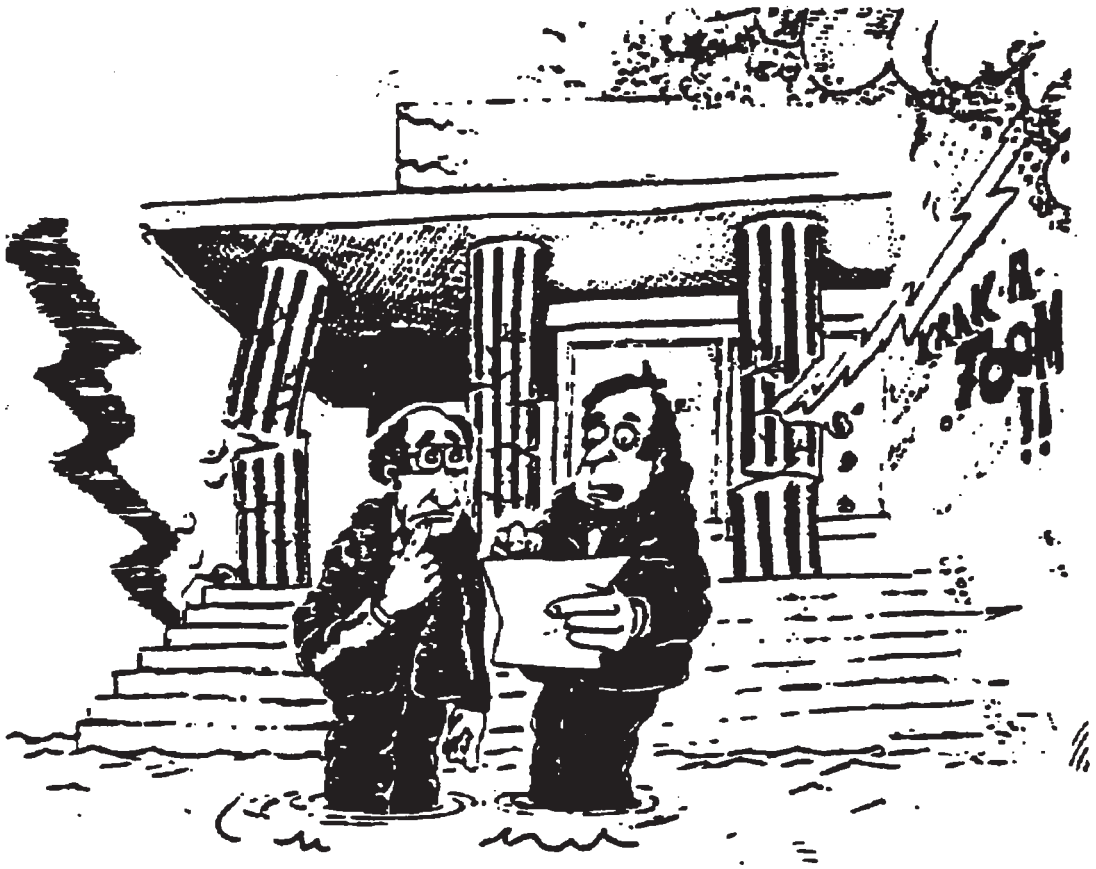
ASSEMBLY PLANS

FAMILY - Each Family should have an assembly area immediately outside of their home, such as a tree, streetlight, etc. This would be the location to which every family member should go if the home should catch on fire. This will prevent time being wasted searching for family members who are safe and could save the life of the would-be searcher.

Each family should also have a prearranged assembly area designated in case a disaster should destroy the family residence while the family members are scattered between work, school, shopping, etc. This could be the church meeting house, a close friend or relative's home or a particular spot in a city park.

Every family should also designate an Out-of-State Family Contact. This should be an individual to whom family members can report their location and condition in case of a general disaster or evacuation.

WARD - In the event of a major disaster (severe earthquake, flooding, etc.) the Rockford 1st Ward Meetinghouse will serve as an emergency medical center and as a coordinating center for search and rescue operations, mass feeding station, and cleanup coordination as needed. These operations will be conducted from the Bishop's office and will be coordinated with stake and government efforts.



"But this is Plan B..."

24-HOUR POCKET SURVIVAL KIT

If you plan a trip or hike to the out-of-doors, or if you are going to be traveling anywhere by car where you will be away from civilization for many miles, you should carry the basic essentials of life and rescue. Emergencies occur when you least expect them. Sudden storms, both winter and summer can be disastrous. Survival during these emergencies is difficult for even the experienced. A properly prepared emergency kit could prevent a cold night in the snow or possibly save a life.

The first few hours of any wilderness or storm survival emergency will be the most important. Decisions made during this period usually determine life or death. Only you can act to solve that problem. It's your body, and your problem. The types of weather storms that such a survival kit could be useful in combating are as follows:

RAIN	Cold and wetness can cause extreme body heat loss.
WIND	Cools the body and blows away heat faster than the body can produce it.
BLIZZARD	Cold, heat loss, mobility threatened, mental stress.
SUN	Body heat gain, dehydration, blindness, burns.
FOG (DARK)	Loss of direction, mobility, heat loss, mental stress, fear.

Weather, however, is not the only enemy to combat during times of emergency or crisis. The human body itself may pose tremendous obstacles to be overcome. Listed below are the major body enemies, in their order of importance, or destructive ability.

YOURSELF	The mind controls the body, self-confidence, attitude, fears, determination, imagination, ability, skills, panic.
INJURY	Affects the priorities of life, mobility, skills, dexterity, compounding the problem of acquiring the necessities of life.

TEMPERATURE CHANGES

The human body has a very narrow temperature tolerance, only about six degrees. Any change in temperature will affect the normal production of the life energies in the cells.

An individual in an unexpected emergency must recognize the challenge or threat to his life, must react to the body's problem indicators, must ascertain the priorities to maintain life, and must combat the body's enemies that threaten life. A simple survival kit like the one listed below can help solve many of the problems a person would encounter if caught in a storm unexpectedly. Commercial survival kits are available but are also quite expensive. With a little ingenuity and for less than a dollar, you can make your own.

STORAGE CAN - Any small clean can will do, such as a band-aid can. This will be used to carry the items listed below. The lid can be made water tight by sealing with several wraps of electrical tape.

CANDLE - Half of a Christmas candle or plumber's candle will help kindle a fire or heat water. Fire starters made from tightly rolled paper soaked in paraffin will also work well.

BUTANE LIGHTER - Any small butane lighter (like a Bic or Cricket cigarette lighter) will work fine to light fires.

MATCHES - A penny box of strike-anywhere matches waterproofed by coating with wax or nail polish.

GARBAGE BAG - Thirty-gallon size. Pull up over legs and tuck into pockets to protect legs from wind and rain. These bags can be used for shade from the sun also.

LEAF BAG - Seven-bushel size fits a 6 ft. man. Cut a hole in the sealed end for face or head. Cover head if possible (not face).

TAPE - May be used to close face opening, patch clothing, as emergency bandage and to secure top and bottom bags against rain and wind.

FOOD - Six to twelve cubes of sugar will give instant energy needed to move muscles for heat production. Bouillon cubes, ration bars and milk tablets will also provide energy and will store well. Wrap all in plastic.

WATER - Due to the size of this small kit it is impossible to carry water. However a half dozed Iodine Tablets can be added to purify water found in streams or in puddles.

FISHING EQUIPMENT - 50 ft. of heavy test fishing line (nylon), lures, flies, sinkers and hooks.

WIRE - Five to ten feet of light flexible wire for snares. 18-gauge will do fine.

WHISTLE - To let searchers know where you are. It is much easier to blow a whistle than to yell for help.

ALUMINUM FOIL - Two sheets 12 inches square or larger to make drinking and cooking utensils.

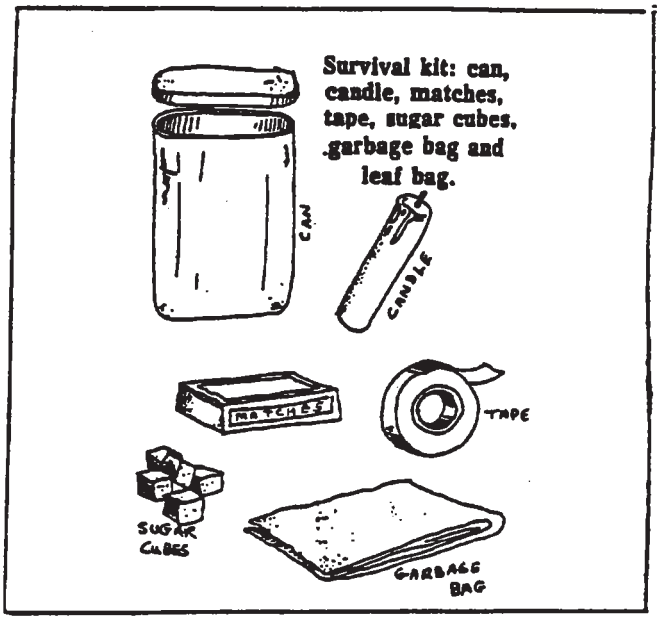
PENCIL & PAPER - For messages to searchers giving directions as to where you may be headed if you are forced to travel.

COMPASS - To determine direction of travel.

QUARTERS - Two for phone calls.

MISC. - Small mirror, one-sided razor blade, or small knife, three band-aids.

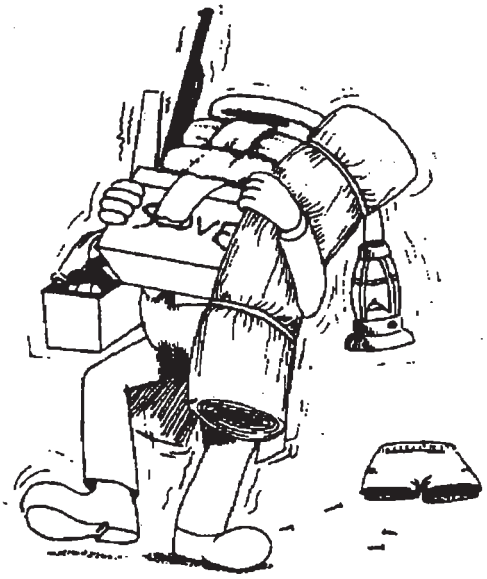
In survival situations you must draw on all your resources. Your powers of reasoning and outdoor techniques play a crucial role in the outcome of unforeseeable predicaments. Add your own personal survival kit and a little common sense and you will come out ahead.



24-Hour Pocket Survival Kit

72-HOUR EMERGENCY SURVIVAL KITS

The objective of the Family 72-Hour Emergency Preparedness Kit is to have, previously assembled and placed in one location, all of those essential items you and your family will need during a 72-hour time period following an emergency. When an emergency occurs you will probably not have the luxury of going around the house gathering up needed items, especially if you have to evacuate your home on short notice.



There are many reasons why families should prepare 72-Hour Emergency Survival Kits for every member of the family. In many types of natural disasters there is no time to organize the supplies necessary for evacuation. Often the police or other civil authorities may drive through a neighborhood and warn individuals to evacuate immediately, giving no time to gather anything except something that can be grabbed as you run. Accidental chemical spills from trains or trucks may release toxic or explosive fumes so dangerous that time equates to the life and death of the unsuspecting residents of the neighborhood. Mud slides, flash floods, and many other natural disasters may require evacuation of the home within two to three minutes.

In time of need it is too late to gather the needed supplies. Take time now to gather what ever your family needs to survive for three days (72 hours) based upon the assumption that those items are the only possessions you will have. Include food, water, clothing, shelter, and a source of heat packed into a container small enough and light weight enough for each family member to easily carry his own kit. Store these kits in a closet near the front door or some other easily accessible place where they can be quickly and easily grabbed on the way out the door.

Why pack a kit for 72 hours? What is so special about that number? In the event of an emergency it would require at least 72 hours before Church or governmental forces could be mobilized to feed you and your family. One State's Civil Defense Director has even suggested that families prepare a <u>two week kit</u>, because in a wide spread major disaster it could take that long to get things organized.

Plan your kit with the idea of having to carry it because it is very likely that you will not be able to use the car, gas stations will probably not be functioning, and roads may not be accessible. Emergencies may occur on holidays, weekends or perhaps in the middle of the night when gas stations are not likely to be open. Gas pumps do not function without electricity, which is usually the first service to be disrupted in even a minor disaster. Plan to carry water, warmth, food, energy, and shelter in your back pack or kit. You must be totally self-sufficient during these first 72 hours. The home in your pack must be adequate and include (figuratively speaking) a kitchen sink, stove, pantry, medicine chest, bathroom, bedroom, clothes closet and home.

Pack all items in plastic Zip-loc type bags to keep them dry and air tight. This will prevent a liquid item from spilling and ruining other items in your kit and keep rain and other forms of moisture away from the items stored.

It would be a good idea to test your kit several times until you feel totally comfortable and assured that you could really live for three days with no other items in your possession. You may want to begin testing your kit by turning off the gas, water, and electricity to your home for three days and use only the items you have in your kit. When you feel comfortable with this it would be a good idea to go camping with your family and take only your 72-hour kits (no other camping gear allowed). Be sure to walk, carrying your kit, a minimum of two or three miles or more to be sure that in the event of an emergency you could really carry it as far as would be needed.

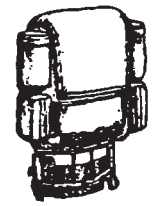
Under stress man is at the mercy of his mind. Fear may well be responsible for more deaths than exposure, hunger, and injury combined. Fear and imagination plague almost every person who is face to face with a crisis. Realizing you have fears and that these are normal emotions in unfamiliar situations, you will be aware of them and better able to cope with them as they appear. Fears can be expected in any outdoor problem situation. Fear of the unknown and fear of your ability to cope with the situation will be foremost, along with a fear of being alone, darkness, suffering, or death. Fear is usually based on lack of self-confidence and lack of adequate preparation and experience. Knowledge and experience (practice sessions), will help to instill confidence and help to control fear.

As you assemble your kit be sure to keep a list of it's contents and their location inside the kit so that you can find them easily. Also keep a list of the dates when certain items need to be reviewed, especially foods, outgrown clothing and medications so that they may be properly rotated.

CONTAINER FOR YOUR KIT

This item is very important. Having a container that is well organized makes for easy access of any item during a frantic moment. Periodic inventory is also easily accomplished when the contents of the kit are laid out in an orderly fashion.

The container you choose for your kit must be waterproof, have some type of a carrying handle, and must be able to be carried easily by family members. Listed here are several types of containers you may consider:



BACKPACK: This is the most convenient, versatile, and appropriate container in which to store and carry your 72-Hour Kit. We strongly recommend that you seriously consider this type of container. It must be of a large size, of waterproof nylon, lightweight frame (internal or external), padded shoulder straps, and padded hip belt. It need not be expensive. If you are not able to use your car to evacuate, a backpack will allow you to carry your kit comfortably for long distances while freeing your hands for carrying small children or other items.

BELTPACKS (fanny packs): These must be of waterproof nylon and are especially good for expanding a backpack. However, they are simply too small to be seriously considered for a 72-hour kit by themselves.

SUITCASES: If used they must be waterproof, sturdy, and have a padded carrying handle. However, for most individuals they would prove too bulky and difficult to carry for long distances.

POLYETHYLENE PLASTIC BUCKETS: These are very air tight and waterproof but are also very awkward to carry for any distance at all. If you do use one please be sure to attach a sturdy padded handle. They come in four, five, and six gallon capacity.

DUFFLE BAG: Very awkward to carry long distances. If used get the kind that has shoulder straps like a backpack. Also be sure to get one

made of waterproof nylon rather than cotton as many of them are.

TRUNK OR FOOTLOCKER: Must be sturdy, and waterproof with a strong, padded handle. They are great for placing in your car; however, they are very difficult to carry when full and even then generally require two individuals.

PLASTIC GARBAGE CANS: They hold a lot of items and are good for initially collecting items for the kit just to be sure you have everything you need, but to carry them, even just to the car, is difficult at best and impossible for most people. For this reason we strongly discourage anyone from considering using a garbage can for their 72-hour kit.

WATER

Water is the single most important item to plan for in your 72-Hour Kit. Allow a minimum of one half gallon (preferably one full gallon), per person per day. This is absolutely essential. The body can live without food for extended periods of time, up to a month or more; but can live only for about thee or four days without water. This is not considering stressful or emergency situations.

Be sure that all family members know where to find safe water, how to purify water, and how to turn off the water supply to your home. See chapter 7 "*Water Storage and Purification*" for further details.

Carry your water inside your backpack (or other container) or strapped to the outside. Use canteens, empty two liter soda pop bottles (the "soda pal" carrying strap makes these very convenient), bota bags, or empty plastic milk bottles. Be sure that all water containers are clean and free of leaks and defects. Check them periodically to insure that they have not developed any leaks and to verify that the water is still usable.

In addition to the water you actually carry with you be sure to carry supplies to purify additional water. Liquid chlorine bleach, iodine tablets and iodine crystals are good purifying agents. Learn how to use them and rotate them properly to insure maximum shelf life (See chapter 7 "*Water Storage and Purification*" for further details).
Remember that the best way to purify questionable water is to bring it to a boil for ten minutes. Nevertheless, be sure to include in your kit any one of the above mentioned items to purify water because in times of emergency you may not be able to build a fire or have access to other heat sources to boil water.

FOOD

You should include in your kit a three-day supply of non-perishable food, preferably requiring no refrigeration, cooking or preparation. The food items should be compact and lightweight such as freeze-dried foods (most preferable because of ease of preparation, longest shelf life, but also the most expensive), in sealed packages, food items in small cans, or food items that are individually sealed in Zip-loc plastic bags.

Your first priority in food should be to include the most nutritious and high calorie food items first. Make sure it is a well-balanced diet. Nutrition is important because in an emergency you will be under unexpected stress and fear, which depletes your body of vital nutrients very quickly. This is why it is also a good idea to include a good multiple vitamin/mineral supplement, a high dosage or mega dosage stress B-Complex vitamin

and a calcium supplement. To sustain life for 24 hours it takes about 1700 calories with the body at rest at a comfortable (not cold) temperature. Stressful or emergency conditions, which are physically exhausting and emotionally draining, can expend 4,000 to 6,000 calories in just one day.

Keep in mind both the storage life and the nutritional life of the foods you put in your kit. A food's nutritional value will be gone long before it spoils. That is why it is important to rotate or replace your food items. Keeping a record will help you rotate or replace food items before they spoil.

FORMULA FOR PUTTING TOGETHER A 72-HOUR FOOD SUPPLY:

The following formula will give a rough indication of the amount of foods your family will need to store to take care of your emergency needs. Remember that in a time of emergency you will not be able to eat all of the things you are accustomed to eating. These items are designed to sustain life and provide nutritional support for all bodily functions. These items should be rotated on a regular basis to preserve freshness. As the old items are rotated, eat them so that you will know what your 72-hour emergency diet would be like. If you find that some foods are too objectionable then substitute some other food in their place until over time you are storing items that not only sustain life but which you and your family also enjoy eating.

To compute the amount of food your family will need simply multiply:

Number in Family times 3 (days) = _____ (Meals)

____Meals X 2 = _____ servings meat/protein products.

____Meals X 2 = _____ servings milk/dairy products. *

____Meals X 4 = _____ servings fruit/vegetable products.

____Meals X 4 = _____ servings bread/cereal products.

* For each child add 4 extra servings of milk/dairy foods for the 72 hour period.

* For each teenager add 8 extra servings of milk/dairy foods for the 72 hour period.

The following guidelines should help you determine which foods your family should consider storing for your 72 hour kit. Remember that there is no perfect food or group of foods so use these guidelines to select foods your family will enjoy eating while satisfying the nutritional needs and storable qualities necessary.

1) Select nutritious foods your family will enjoy, and rotate them in your home food supply. Buy your emergency supply a few items at a time, to avoid strain on your weekly budget.

2) Make the majority of the foods, or at least the first day's menus, edible without any heat or cooking. Choose foods requiring little or no water for preparation.

3) Provide a means of cooking those foods that need heat - for example: a Sterno stove, a 3-lb. empty coffee can to use as a cooking container, a 1-lb. coffee can for mixing juices and pudding, a spoon for stirring, and a supply of matches in a waterproof container. A saucepan with water may be used to heat small cans of food (labels removed). Then the same water can be used for clean up.

4) Choose foods which are easy to store and which have high food value. Use mostly dried and instant-type foods with some canned goods. (Canned items are heavy to carry. Include vitamins or other supplements if desired.

5) Select foods which will keep for at least 6 months in a cool dark place.

6) Stock a 72-hour food supply which is compact enough to store in a back pack or container, to be carried by one person. If your family is large, more than one container may be needed.

7) Store bottled drinking water beside the food supply, allowing at least 1 1/2 gallons of water for each person (for 72 hours).

8) Don't forget other non-food items which would make the serving of meals possible and convenient. Be conservative - don't include the kitchen sink!

9) Quantity foods like instant milk, oatmeal, hot chocolate mix may be measured out in one-meal portions and stored in sealed plastic bags. Be very careful to expel all excess air before sealing.

10) Choose or package foods in one-serving or one-meal size, to eliminate leftovers.

11) Label each food in the food supply with the date of purchase or last date it should be used. (Be sure you can tell which date you mean.)

IN SHORT: BE ABLE TO PRODUCE THREE DAYS OF GOOD MEALS FOR YOUR FAMILY ANYWHERE WITH A MINIMUM OF TIME, EQUIPMENT, HEAT OR ENERGY, AND WATER.

Store ready to eat items that do not need heating or water. Nutrition is not the most critical factor. Store foods that are convenient to use, which store well, and give high energy. The sample menu below will supply 2,100 calories per day and most of the essential nutrients. The quantities listed are amounts per day.

Meats: 1/4 lb. per person:

Tuna	Sardines
Spam	Vienna Sausages
Corned Beef	Chicken
Deviled Meats	Beef Stew

Peanut Butter 1/4 lb.	Graham Crackers 1/2 lb.
Canned Juices 12 oz.	Powdered Milk 1/4 lb.
Dried Fruits 1/2 lb.	Cheese Spreads

This may be augmented with other foods such as:

Military k-Rations
Military C-Rations
Canned Fruit
3 Gallons of water
Sugar Cookies
Sweetened Cereals
Hard Candy
Prepared Meals in-one
Soups and Stews
Canned Nuts
Dry Noodles
Bouillon Cubes
Instant Rice
Powdered Potatoes
Malted Milk Tablets/Powder
Macaroni & Cheese Mix

Individual Packets of:
Instant Oatmeal
Dried Soups or Stews
Instant Pudding
Granola Bars
Hot Chocolate
Kool-Aid (Presweetened)
Herbal Teas
Powdered Gator-Aid
Ramen Instant Noodles
Sugar Cubes
Pork and Beans
Powdered Beans
Tang
Canned Spaghetti

SAMPLE MENUS FOR 72-HOUR KITS

	BREAKFAST	LUNCH	DINNER
FIRST DAY:			
	Granola Vienna Sausages Instant Orange Drink Chocolate Milk	Graham Crackers with Peanut Butter and jelly and/or cheese spread. Canned Green Beans Dried Apple Snacks Powdered milk	Beef Jerky and Baked Beans Brown Bread Canned carrots Fruit leather Powdered milk
SECOND DAY:			
	Quick-Cooking or instant Oat meal Brown Sugar Prunes Hot Chocolate	Split Pea Soup (Dehydrated mix) Almonds Crackers with Chicken Spread Peaches Powdered milk	Canned Beef Stew Rye Crisp Canned Whole kernel Corn Instant Pudding Powdered milk
THIRD DAY:			
	Spam Wheat Thin crackers Instant orange drink fruit leather	Tuna Graham crackers Dry chicken soup mix Tomato juice	Chili Crackers Hard candy Powdered milk

A 72-hour supply of these light weight carry-out foods for one person will weigh around 4 pounds (not counting liquids) and can easily fit into a small back-pack. A high protein, high energy spread for graham crackers can be made by blending the dry powdered milk, peanut butter and honey.

If you prefer to carry really high energy light weight foods in your back-pack you might consider:

Powdered Milk
Instant Orange Drink (vitamin C enriched)
Dried Apricots or Raisins & Apples
Hard Candy
Chewing Gum
Sugar Cubes

"CARRY OUT" FOODS FOR EVACUATION"

Peanut Butter or Whole Almonds
Turkey or Beef jerky (optional)
Graham Crackers
Honey (optional)
Pure Water (if needed)
Tomato juice
Instant Oatmeal
Shredded Coconut
Granola Bars
Fruit Leathers
Solid Dextrose
Dry Soup Mixes
Freeze Dried Meats
Sugar Cookies

In addition to the food you will be carrying you should also include in your kit sufficient utensils and cooking equipment. Items that you might consider are:

MESS KIT: Such as a stainless steel military type or the aluminum Boy Scout type. These are very compact and contain both cooking pots and skillets as well as plate and bowl. They are available at most sporting goods stores and at military surplus stores.

METAL UTENSIL SET: Include a metal knife, fork, and spoon such as the Boy Scout type or military type. They come in a plastic case and are available at most sporting goods stores.

CAN OPENER: A regular can opener is probably too bulky and heavy for inclusion in your kit. Use the P-38 type of military can opener or a can opener on your pocket knife.

METAL FOLDING COOK STOVE AND FUEL: A portable cook stove that uses sterno fuel or compressed fuel tablets is a must. They are available at most sporting goods stores and will not only allow you to cook your foods indoor or out, but will also lend a great deal of emotional security in times of stress.

METAL DRINKING CUP: A stainless steel drinking cup such as a Sierra Cup or other brand name can be used for drinking as well a doubling for a cooking pot.

SHELTER

The objective of shelter is to provide emergency housing. It is extremely important to be physically protected from nature's weather elements such as the wind, cold, rain and sun. A person away from the comforts of home after evacuating is wholly dependent upon a limited supply of usable energy and the insulation qualities of the body shelter he wears or carries with him. In addition, shelter not only protects from the elements of nature but it also protects from the destructive elements of emotional stress by establishing a "home" and providing privacy.

There are many types of shelter that can be easily included in your 72-Hour Kit, you may want to consider some of the following:

FAMILY TENT: These are large enough for the entire family and must be of waterproof nylon, lightweight, and compact. If your family consists of more that two or three individuals however, the "Family Tent," though great for camping, is probably too heavy and awkward for serious consideration in a 72-Hour Kit, especially if it contains metal poles or is made of canvas.

BACKPACKER'S TENT: These are light weight, very compact and usually are self supporting

without the need of ropes or stakes; such as a three man dome tent. You may need more than one of these tents to provide for your entire family but they are light weight and easily carried.

TUBE TENTS: These are one-man type, plastic tents that are open on both ends. They are very inexpensive and, for the most part, are very impractical - giving a false sense of security. They do a very poor job of keeping out wind and rain.

RAIN PONCHO: This is a must for every family member. Rain ponchos are made of either waterproof nylon (the best type), or of plastic. They keep out the wind and the rain and are large enough to be worn over your pack when walking, thus keeping all of the contents of your backpack dry at the same time. The nylon ones also have snaps on them that can be used to adjust the size and to make a make-shift shelter.

GARBAGE BAGS (30-gallon or 7 bushel leaf bags): These are excellent for many different purposes. They can serve as a rain poncho, ground cloth, "lean-to" or other shelter, or as a garbage container. Can also be cut and spread out to collect rainwater or used in constructing a "solar" still. A seven bushel size fits a six foot man. Cut a hole in the sealed end for a face and head opening. Cover head if possible (not the face). The 30-gallon size can be pulled up over legs and tucked into your pockets or pants to protect legs from wind and rain. They can also be used for shade from the sun. Tape may be used to close the face opening and to secure the top and bottom plastic pieces together making a rain suit.

NYLON ROPE OR CORD: You should have a minimum of 50 feet of 1/4 inch nylon rope or cord for tying, hanging, or building shelters. Nylon is best because it will not be damaged by moisture and does not sag under constant strain. However, nylon is very slippery so learn to tie knots that work with nylon.

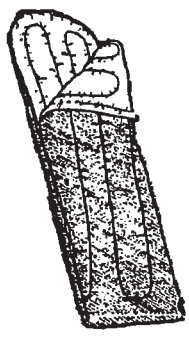
DUCT TAPE: (One roll) Duct Tape can be used to make repair in tents or other shelters, to aid in shelter construction and for joining garbage bags to make rain suits. It also has many other uses for improvising and constructing under emergency conditions.

SPACE BLANKETS & BAGS: (aluminum coated Mylar) Space blankets are excellent insulating material. They can be used for shelter construction or for wrapping around you to keep warm. They are light weight, compact and very inexpensive. They can literally be a life saving item and are a definite must for ever 72-Hour Kit. Space bags can be used inside your sleeping bag for additional warmth or substitute as a sleeping bag in absolute emergencies.

BEDDING

Bedding should be warm, lightweight, comfortable, waterproof and compact. Once shelter has been provided the next most important item in sustaining life and helping to keep a positive mental and emotional attitude is to be able to sleep comfortably, dry and warm. The following items should be considered and appropriately provided in your 72-Hour Kit.

SLEEPING BAG: (2 1/2 pound Hollow-fill II) Hollow-fill sleeping bags are very warm, being rated at 0°F to 10°F. It should have a waterproof nylon covering and have a waterproof nylon or plastic carrying bag. Hollow-fill II are the state-of-the-art in sleeping bags. The fibers in them are hollow, which



greatly adds to its insulation qualities. This type of sleeping bag also dries out fast if it gets wet. Goose down bags, though warm, dry out slowly when wet. To maximize the warming ability you should shake out your sleeping bag every time you take it out of it's carrying bag. When using it daily be sure to shake it vigorously every day to allow the fibers to fluff up and thus trap as much insulating air as possible. Also unzip them, open them up, and allow them to air out every day to let sweat, condensation, and moisture evaporate. This is especially critical during cold weather camping. You will sleep much more comfortable and warm if you do not sleep in your clothes because doing so will cause you to sweat during the night, the evaporation of which will make you cold.

INSULATION: Under your sleeping bag you will need some insulation to protect you from the cold ground. Though foam pads are generally thought of as an item of comfort their true importance is in insulating you from the ground. The best types are "closed cell" foam pads about 3/8 of an inch in thickness. They are very light weight and are easily attached to the backpack for carrying. You may also use a poncho, plastic ground cloth, or even newspapers, leaves, and pine boughs for insulation but they are not nearly as effective as the closed cell foam pads.

BLANKETS: Blankets can be used to make a bed roll but generally they are not as comfortable nor as warm as a sleeping bag. Wool blankets are the best since they retain their warming ability even when wet. However, blankets are very heavy and bulky.

AIR MATTRESS: Many people use an air mattress when camping because they are very comfortable. Nevertheless, air mattresses are practically useless as an insulator and are very heavy and bulky to carry in a backpack and are therefore not endorsed as an item you should consider carrying with you.

PILLOW: Most people find it very uncomfortable if not impossible to sleep without a pillow. Purchase a small inflatable pillow for your kit if you need one to conserve the weight and bulk of carrying a regular pillow.

SPACE BLANKET OR BAG: As explained in the previous section space blankets and space bags (aluminum coated Mylar) are very efficient at retaining body heat and are a must for every 72-Hour Kit. Even when used by themselves, without the added benefit of a sleeping bag they will keep you warm during the night. In cold winter weather they may not be entirely comfortable but they will probably keep you warm enough to keep you alive. Being plastic, however, they are impervious to moisture. This is good for keeping out rain but they also retain sweat and condensation from your breath. You may find that periodically during the night you will have to air them out in order to sleep comfortably. They can also be used during the day to protect from rain, sun, and to retain body warmth.

CLOTHING

Include in your kit one change of clothing and footwear, preferably work clothing. Anticipate severe weather conditions. If you have a growing family remember to update clothing sizes and needs at least once a year.

The primary function of clothing, apart from just having something clean to wear, is to retain a layer of radiated warm air close to the body. Any cooler air passing the body tends to remove this warm air. The faster the wind (exchange of air), the greater the body heat loss. Therefore it is important to retain this body heat to preserve life.

Exposure to wind, cold, or wetness may lower the body core (internal) temperature below it's normal 98.6°F. This results in a condition known as hypothermia (see chapter 15 for further details on hypothermia). This causes a rapid, progressive mental and physical collapse. During accidental lowering of the body temperature, the mind and thinking deteriorate, and muscle coordination declines. The body must be rewarmed, or the cold will continue to lower the body temperature until the vital organs fail, resulting in death. This will happen when the temperature of the body has dropped only 4 to 6 degrees.

Radiation and wind chill are the leading cause of heat loss. An unprotected head may lose up to 50% of the body's total heat production at 40°F. "If your feet are cold, put on a hat!" Therefore be sure that you include a garment with a hood or a stocking cap to cover your head.

Wet clothing can extract heat from your body 240 times as fast as dry clothing. Wet clothing loses more than 90 percent of its insulation value. It is therefore essential that you stay dry during times of emergency, or if you do get wet that you get dried off as quickly as possible. One can die from shivering (hypothermia) in only two hours.

COTTON: Try to avoid wearing cotton clothing. Tight cotton clothing holds water next to the skin. Wet inner clothing causes freezing. Cotton clothing "wicks" (draws water up the very small individual fibers), thus retaining water and spreading it over the entire body, causing loss of body heat at an even greater rate.

WOOL: Wool clothing is best. Wool is a natural thermostatic insulator that keeps you warm in the winter and cool in the summer. Wool is naturally durable and can withstand rugged and tough wear. Wool also repels water and has the unique property of keeping the body warm even if it does get wet. Wool dries from the inside out and does not "wick."

HEAVY-DUTY WOOL SOCKS: Two pairs - one for wearing and one pair for keeping feet warm while sleeping.

GLOVES: Heavy-duty leather work gloves should be included to protect hands from rocks, thorns, sticks and exposure from harsh environments to which they are not accustomed.

SUN GLASSES: One pair, polarized plastic for eye protection.

FIRE & FUEL

Electrical power and natural gas service to your home may be the first services interrupted during a natural disaster. Alternate fuel sources will be needed whether you evacuate from your home or are allowed to stay at home during the emergency. Fuel will be needed for keeping you and your family warm, dry and cheerful, for cooking, heating and purifying water, and for signaling. For information on alternate fuels you can use in your home during an emergency see Chapter 9 *"Emergency Heating, Cooking & Lighting."* This section refers only to fuel and fire building during emergency evacuation and includes only items you could easily carry with you.

Every member should have the materials and know how to start a fire from at least six different sources:

1) MATCHES: Carry at least two dozen wooden kitchen matches that have been either dipped in wax or nail polish to make them waterproof or carry them in a waterproof container.

2) METAL MATCH: Waterproof, fireproof, durable, and non-toxic. Will light thousands of fires. Available at sporting goods stores.

3) BUTANE LIGHTER: Butane lighters, such as a *Bic* cigarette lighter, are excellent ways to light a fire.

4) MAGNESIUM: Magnesium fire starters are good for starting fires with wet or damp wood. Shave magnesium shavings off of a magnesium block with a pocket knife and them strike a spark from a flint starter with a pocket knife. Magnesium burns exceptionally hot and will ignite almost any combustible material. Works even when wet and can be purchased at most sporting goods stores.

5) SMALL MAGNIFYING GLASS: Use a magnifying glass to concentrate sunlight onto paper, shredded bark or other tinder.

6) FLINT AND STEEL: A spark from flint and steel (such as an empty cigarette lighter or flint and steel striking bar), when directed at dry paper (especially toilet tissue), shredded bark, dry grass or other tender, if persisted in patiently will work very well to start a fire. This is the most reliable "non-match" method of starting a fire.

7) COMMERCIAL FIRE STARTER KITS: These come in a variety of styles and fuels.

8) STEEL WOOL: Fine steel wool (used for scrubbing pot and pans - but not Brillo pads or other types that have soap already impregnated into them), can be used for tinder. Hold two "D" flashlight cells together in one hand (or one 9-volt transistor radio battery), while touching one end of a clump of steel wool to the positive end of the battery and the other end of the steel wool to the negative end of the battery. The current causes the steel wool fibers to incandesce and thus produce a flame. It burns very hot and fairly fast so have lots of other tinder to burn once the steel wool ignites.

9) CANDLES: Candles can be used for warmth, light, and starting fires. To start a fire simply cut a piece of candle about 1/2 inch in length and place it on top of the tinder. When lit the wax will run over the tinder making it act as a wick and ignite. You can also place small twigs and other easily burnable materials directly into the flame to build the fire.

10) CAR BATTERY: If you are near your car you can easily put sparks into tinder by attaching any wires to the posts and scraping the ends together in the tinder.

11) STERNO: Sterno fuel and stoves make an excellent cooking fuel when backpacking or in emergencies. Sterno can be lit with a match or by a spark from flint and steel. Slivers of gelled sterno can be cut from the can and placed on top of tinder and lit with flint & steel or with a match. It burns hot enough to ignite even damp tinder.

12) COTTON BALLS: Cotton balls and gauze from the first aid kit make excellent tinder and can be ignited with sparks or with matches.

13) FUEL TABLETS: Fuel tablets such as tri-oxane and gelled fuels store well and ignite quickly and easily. Some of them can be fairly expensive however.

14) BUTANE and PROPANE STOVES: These are made especially for backpackers. The fuel is cheaper than sterno, it burns hotter and it heats better in windy situation than other fuels. Propane however, is more difficult to light as outside temperatures near zero.

These items, or at least several of them, should be assembled into a kit, placed inside a plastic bag, nylon bag, or other container and labeled as "FIRE STARTING KIT" and placed in an easily accessible place inside your backpack. Teach all family members how to use them and let them practice building fires with all of them until they feel totally confident with their ability to do so.

Even little children aged five or six can be safely instructed in correct fire building techniques under proper supervision. Then, if an emergency arises, they will not panic or feel overwhelmed or frightened at the prospect of building a fire for their warmth and protection.

FIRST AID

It is most important to work on updating your first aid skills. The life or death of a family member may depend on your first aid abilities during a disaster. The American Red Cross offers classes in first aid and CPR which cost little or nothing. It's wise to take advantage of these classes. You can upgrade your first aid kit according to the training you have in first aid. Include only items in your first aid kit you are familiar with and know how to use properly.

This section refers only to first aid items to include in your 72-Hour Kit. For a more comprehensive treatment of first aid and supplies to store see chapter 10 *"FIRST AID KIT AND ASSISTANCE."*

FIRST AID KIT TO INCLUDE:

Consecrated Olive Oil
First aid manual, First Aid Merit Badge book or Scout Handbook
Aromatic Spirits of Ammonia
Water purification tablets
Table salt, baking soda
Aspirin, tylenol, etc. (for both children and adults)
Eye drops
Nasal spray
Petroleum jelly (Vaseline)
Diarrhea medication (kaopectate, milk of magnesia)
Laxative
Prescriptions
Safety pins
Adhesive and/or paper tape
Hydrogen Peroxide
Bandages
Gauze roll
Coban elastic bandage (or Ace bandage)
Heavy string
(Tetanus immunization every 5-10 years)
Needle and thread
Antiseptic cream
Burn ointment
Alcohol
Iodine
Band-aids
Triangular bandages (at least 2)
O.B. kit if wife pregnant
Water proof container for first aid kit
Q-tips
Tweezers
Burn ointment (for minor burns only)
Spray on artificial skin-type disinfectant

MISC. ITEMS TO INCLUDE

In addition to all of the items discussed in this chapter you will also need many other items to make yourself and your family comfortable during an emergency. Families with small children should also include some games that will entertain them such as coloring books and crayons, story books, table games, etc. Also such items as blankets, pacifiers, bottles, formula and diapers must be provided for where applicable. Adults will also need items to entertain themselves such as games or reading material. Consider including many of the following items in your kit.

Battery Powered radio with extra batteries.
Flashlight and extra batteries.
Instructional manual on emergency preparedness (such as this booklet).
Plastic bucket with tight fitting lid
Plastic bags and ties
Cash money ($100-$200 in one dollar bills)
Duplicate credit cards.
Toilet paper and paper towels.
Tooth brush and tooth paste.
Sugar free gum.
Disinfectant (bleach, pinesol, etc.).
Feminine hygiene needs.
Hand cream.
Soaps, shampoo, and cream rinse.
Paper cups, plates, plastic utensils.
High quality pocket knife or utility knife.
Ax, shovel.
Paper and pencils.
Books and games, crafts, needlework, etc.
Scriptures.

FAMILY INFORMATION RECORD

In addition to emergency survival supplies you should also collect vital family information, record and keep it in at least two safe places -- a fire resistant "get-away" box that you can take with you if you have to leave the home, and a safe-deposit box at your bank or credit union. The following items would be useful for you to record and keep in these two locations:

1) Genealogy records.

2) Full Name and Social Security Numbers of all family members.

3) Listing of vehicles, boats, etc. with identification and license numbers.

4) Listing of all charge account card numbers and expiration dates, bank account numbers (both checking and savings), insurance policy numbers, securities, deeds and loan numbers showing the company name, address and telephone numbers.

5) Name, address and telephone number for each of the following:

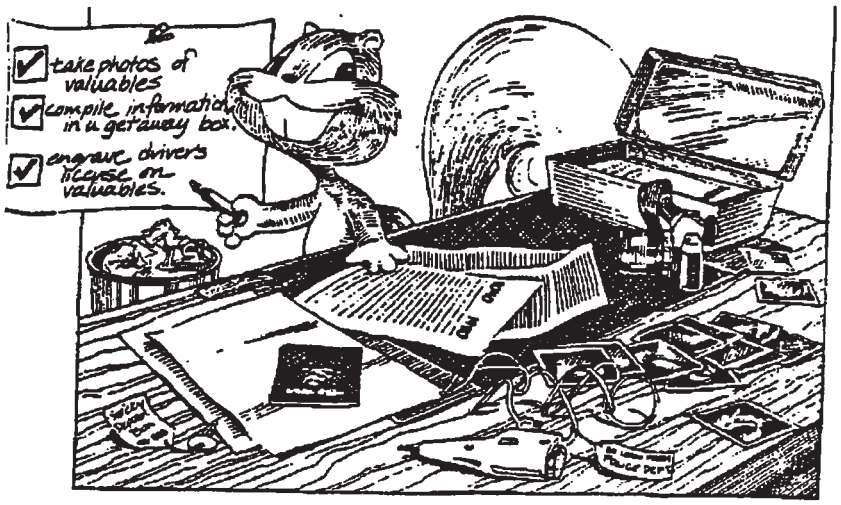
Employer	Police
Schools	Fire/Paramedics
Family Contacts	Doctor
Utility Company	Hospital
Attorney	Civil Defense

6) Location of important documents such as:

Insurance Policies	Deeds
Loans	Securities
Safe-Deposit Box Key	Will
Letter of Instruction	Licenses
Birth/Death Certificates	Citizenship Papers
Social Security I.D. Cards	
Vehicle Titles (Pink Slips)	
Tax Returns (last 5 years)	

7) Photographs of all valuables for documentation for insurance claims.

This chapter has been devoted to those areas of preparedness that would be critical in the event of an emergency of the magnitude where you would be forced to leave your home on short notice and could take with you only those things that you could grab and run. Please give serious consideration to assembling your 72-Hour Emergency Preparedness Kit and keeping it in a location where you can get at it for immediate evacuation. The balance of this book will deal with issues that assume you will be allowed to remain in your home.


take photos of valuables
compile information in a getaway box.
engrave drivers license on valuables.

LONG TERM STORAGE - 1 YEAR SUPPLY

"...Put your money in foodstuffs and wearing apparel, not in stocks and bonds...Let every head of every household see to it that he has on hand enough food and clothing, and, where possible, fuel also, for at least a year ahead..."

J. Reuben Clark

"...We reaffirm the previous counsel the Church has always given, to acquire and maintain a year's supply -- a year's supply of the basic commodities for us...We encourage families to have on hand this year's supply; and we say it over and over and over and repeat over and over the scripture of the Lord where He says, `Why call ye me, Lord, Lord, and do not the things which I say?'"

Spencer W. Kimball

"...Members of the Church have been counseled to...have sufficient food, clothing, and fuel on hand to last at least one year..."

Ezra Taft Benson

The gospel of Jesus Christ teaches independence, industry, thrift, and self-respect. Latter-day Saints have been counseled to be prepared to care for themselves and their families in times of need.

Planned storage in the home will assist the membership of the Church to be self-sustaining in times of need. The likelihood of accident, illness, or unemployment faces nearly every family at one time or another. Wars, depressions, and famines, as well as earthquakes, floods, tornados and other natural disasters are possibilities to consider in planning for the care and protection of the family.

The home production and storage program is an integral part of the Church welfare services but is undertaken individually, according to the needs of each member or family. Its application, therefore, differs in relation to circumstances, but the responsibility of preparedness remains solely upon the individual family. The vast majority of commodities in the Bishop's Storehouse system of the Church must be found, as the Brethren have counselled, within the homes and basements of individual families.

A primary consideration is the storage of foods. No particular recommendations are made as to the kinds or amounts of food to be stored because of the varying factors involved, such as locale, availability of products, climate, special diets, and the number of family members and their ages. What each family does in adapting a program of home production and storage is an individual matter.

Home storage of food should begin with basic items that will sustain life in an emergency, in case there was nothing else available to eat. Later, after these basics are obtained in adequate amounts, consideration could be given to storing foods that are ordinarily eaten. The choice of which foods to store must be based on a consideration of food value, shelf life and storage qualities.

Proteins, vitamins, minerals, and fats are essential for the maintenance of good health. Many foods that are adaptable for long term storage either lack certain essential vitamins or lose vitamins during storage. When basic foods are stored they need to be supplemented with fruits and vegetables that

will supply adequate amounts of vitamins C and A.

The following basic items might be considered for storage. Indicated with the item is the approximate amount of each needed to sustain an average woman for one year as emergency storage. More would be needed for a man and less for children.

Grains (Wheat, rice, or other cereals):	300 lbs.
Powdered milk (nonfat):	100 lbs.
Sugar or honey:	100 lbs.
Beans & legumes:	150 lbs.
Flour:	100 lbs.
Cooking oil or shortening:	2 Gal.
Salt:	5 lbs.
Baking Powder:	1 lb.

These items used exclusively provide a diet that supplies approximately 2,300 calories per day, which is recommended for an average woman twenty-five years old. The above suggested quantities may be proportionately reduced as other foods are added.

To the basic foods listed, others may be added according to availability, cost, and individual taste. Those frequently chosen are the dried legumes (peas, beans, peanuts, lentils) -- which are high in protein and store well -- vegetable oils or shortening, dried fruits and vegetables, and canned meats and fish. Dehydrated and freeze-dried foods may be included, however foods preserved in this way are more expensive, but they store well and better retain their vitamin content. It would also be a good idea to store (and use through rotation), a good multiple vitamin and mineral supplement.

A diet of the items listed above may be different that the one you are accustomed to eating. You should eat more of these items now so that your system may adjust to them. For example: tortillas made from flour, oil, baking powder, salt and water are much easier to make and will cook much quicker than bread.

People in highly mobile situations, such college students, armed services personnel, or those who have small homes with little storage area, may find it more difficult to store a year's supply of food, clothing, or fuel. **This does not release them from the obligation of doing their best to be prepared for an emergency.** Often in rather limited space, basic food items such as wheat, nonfat dried milk, sugar or honey, and salt can be stored. Closets, attics, space under beds, or even space made available by family or friends can be utilized for food storage. It is better to have food storage sufficient for a few months than to have no storage at all.

As has been indicated, the food storage program is to be adapted on an individual basis. The Church neither sponsors nor endorses any commercial products or firms.
Successful food storage is dependent on the following:

1) Quality of products. Obtain the top grade whenever possible and store it away from other products that may affect the flavor of the food.
2) Proper containers. Usually metal storage cans or heavy plastic containers with air-tight lids are best.
3) Storage facilities. Areas that will permit easy access, usability, and temperature control are best.
4) Temperature. Foods store best at from forty to sixty degrees Fahrenheit. (Foods may be stored in a higher temperature range, but the shelf life diminishes in proportion to the higher temperature.)
5) Rotation. This is fundamental to a successful storage program in preventing spoilage and minimizing loss of food value and flavor. Date food items as you purchase or can them, then store new supplies of food at the back of the shelves, moving earlier purchases forward to be used first.
6) Ventilation. Use storage areas that are well ventilated, clean, dark, dry, and cool. If your conditions are less satisfactory, rotate contents

more frequently than recommended. Even though space may be limited, there are usually "hidden areas" for storage. Use your imagination!

7) Placement. Do not place food storage containers on or against cement or dirt floors and walls. Place pieces of wood between the storage containers and the floor or wall to provide ventilation and protect against moisture.

8) Debt. Do not go into debt. Acquire food items gradually. At the very least, save a few dollars a week for storage items. Using the basic foods in day-to-day menus can cut food costs and allow you to purchase more supplies. Or, as a family, give up some of the non-essentials for a short time until you can accumulate additional foods. Through prayer and concerted effort, you can work out a food storage plan that will provide you with security and peace of mind.

Specific information regarding foods and variable storage factors in given localities may be obtained from local government agencies, colleges, universities, or those professionally engaged in food businesses.

Acquiring a year's supply should be done in an orderly and systematic manner, consistent with a family's income. Borrowing money to acquire food storage is not advocated.

Sufficient durable clothing also could be included in a home storage program to take care of the requirements of a family for at least a year's time. This clothing should accommodate the needs for the seasonal periods.

It is wise also to store fabrics, thread, needles, and other sewing items. The provident housewife will take advantage of sales of materials suitable for making the clothing her family may require and will store her purchases until such time as they are needed. Savings are also possible in keeping clean, used clothing on hand which can be remodeled or cut down for a younger member of the family, or refurbished.

If possible, a reserve of fuels (coal, oil, wood, etc.) should be part of the storage plan. Various types of supplementary heating and cooking units, some of which are portable, are available on the market. Those should be selected that would, in an emergency, serve both for the preparation of foods and for warmth.

In addition to the aforementioned storage items, first aid articles, prescribed medicines (as directed by a physician), soaps and cleaning agents, matches, and other such necessary items may be considered. A reserve of bedding should be included.

Care should be exercised in selecting items and arranging for storage. Wise budgeting will help minimize costs and will permit savings. Replenish supplies as they are needed.

Security through the home storage program can be strengthened by the observance of further counsel that:

1) We live righteously.

2) We avoid debt.

3) We practice thrift.

4) We have a willingness to work.

All members are encouraged to participate in the home production and storage program in order to provide for their own.

If any provide not for his own, and specially for those of his own house, he hath denied the faith and is worse than an infidel.

1 Timothy 5:8.

(Adapted from a publication by the Church of Jesus

Christ of Latter-day Saints entitled: "Essentials of Home Storage" printed in October of 1973 - publication # PGWE0370 10/73 185M)

The Church is very dedicated in encouraging members to acquire the basics needed to provide for themselves for a minimum of one year. Not only is encouragement given, but the Brethren also indicate what should be stored and in what quantities. They have also built canneries throughout the Church where members may go and can their own food. We are fortunate to live in an area where a cannery is located very near. The cannery in Naperville is open to the public and you may use it to prepare and can a wide variety of dry packed food items (the cannery recently terminated its wet pack canning program). Also, the Rockford Stake owns equipment that can be used for dry pack canning. In fact, you can bring this equipment right to your garage and with very little training be able to can your own dry foodstuffs.

The following is a reprint of a two page flyer prepared by the General Welfare Services department of the Church explaining the "Dry Pack" services available to families at local welfare canneries.

DRY PACK FAMILY CANNING : For many years, Church leaders have encouraged members to store food during times of plenty in order to be prepared during times of want. Recently the First Presidency restated their counsel in a letter to Bishops with instructions to read it in Sacrament Meeting:

> *"We continue to encourage members to store sufficient food, clothing, and where possible, fuel for at least one year. We have not laid down an exact formula for what should be stored. However, we suggest that members concentrate on essential foods that sustain life, such as grains, legumes, cooking oil, powdered milk, salt, sugar or honey, and water. Most families can achieve and maintain this basic level of preparedness. The decision to do more than this rests with the individual."*
>
> June 24, 1988

To assist members in complying with this counsel, Welfare canning facilities provide dry pack equipment and some food products for individuals, families, and groups. Other food items, whether dry, fresh, canned, etc., may be stored by families as their tastes and means allow.

Dry foods are those which contain so little moisture they will not support the growth of mold. Grains, dry beans, non-fat dry milk and dried vegetables are examples.

WHAT TO STORE : There are many recommendations on how much wheat and food a family should store for emergencies. The stored items depend upon the circumstances and preferences of the family. . . .Select foods that will provide adequate nutrition, that your family likes, and will eat on a regular basis. Experience has shown that the most successful storage programs are those where the likes of the family are considered and an active use and replace-rotation system is adopted.

CAUTION : Dry pack canning is not recommended for products that contain oil or egg or are moist enough to support the growth of mold and/or other undesirable organisms. The following should **NOT** be dry pack canned:

Brown Rice	Dried Meats
Cooking Oil	Egg Noodles
Roasted Nuts	Peanut Butter
Honey	Coconut
Baked Goods	
Flour Mixes Containing Leavening	

EQUIPMENT & SUPPLIES : Dry pack canning may be performed in Church canneries. A portable dry pack sealer may be available from Church canneries for checkout on a first-come, first-serve basis. If available, cans and lids may be purchased

from Church canneries for canning performed outside of Church canneries using the portable sealer. **Under no circumstances may any dry pack equipment be used, or finished product stored at, or distributed from Church tax-exempt properties such as meetinghouse grounds or buildings. Also, under no circumstances may dry pack product be canned for the purpose of resale.**

Persons or ecclesiastical units interested in dry pack canning or in purchasing portable dry pack sealers should contact their regional Church cannery for information.

STORAGE CONDITIONS : All dry foods contain a small amount of moisture and if not stored properly may pick up additional moisture from humid air. Any increased moisture will decrease the shelf life of dry foods and, in some cases, the foods may pick up enough moisture to support mold growth. Therefore, dry foods which are to be stored must be dry initially and kept that way. If there is doubt about the moisture content of the food, have it checked by a competent laboratory or grain elevator. All product purchased for storage should also be high quality, clean, and free of any signs of mold.

Potential insect and rodent infestation is a challenge in storing dry foods. Rodents can gnaw through almost any container material except glass or metal. Thus for long-term storage, dry foods must be stored in rodent-proof containers with a seal which will not allow the passage of moisture, insects and rodents.

Dry foods cannot be assumed to be free of insect eggs. Flushing with carbon dioxide gas before canning is an effective method of preventing insect activity. Carbon dioxide replaces the oxygen in the cans; insects cannot exist without oxygen.

To maximize shelf life, the products should be stored away from direct sunlight and in a dry, cool environment. It is important to remember that all dry pack foods should be rotated to keep them palatable and nutritious.

A recipe book with exciting ways to use basic dry pack foods may be purchased from Church canneries for a small fee.

DRY PACK INFORMATION : Wheat, beans (all types), other grains such as oats, barley, non-fat dry milk, and pasta products are packed into a one gallon can (#10). Then CO_2 gas or an activated iron packet is used as a preservative. The CO_2 gas displaces the oxygen which effectively reduces the oxidation process in the product that causes spoilage or rancidity. Removal of oxygen also keeps insect larva such as weevils in a dormant state. The activated iron packet rusts when exposed to air, effectively using up the oxygen inside the can and accomplishing the same end as the CO_2. The packaging of these products in one gallon cans gives the extra protection of keeping rodents and insects out. The container protects from water or moisture damage and provides an easy, convenient way to store.

Remember that any type of preservation only delays the break-down and final spoilage of the product being stored. It is recommended that these canned items be rotated. The shelf life of canned products is conditional upon the temperature (suggested 33-68^0 F), humidity, storage area, and quality of the product.

GUIDELINES FOR "DRY PACK" SCHEDULING :

In the Rockford area we have two ways to dry pack. First is to call Michael Goodwin of the Third Ward (963-7089) to arrange for the use of the Stake equipment. You must purchase your own commodities and then you can dry pack them at Brother Goodwin's home, your home, or another location of your choosing (not at the Church building, however).

The second method is to dry pack at the Naperville

cannery. If you already have experience using the machinery you may dry pack during the day by yourself. Just call Brother or Sister Spencer (at the cannery) at 630-369-1379 to let them know you're coming. If you need instruction in how to use the equipment, call Brother Willard Smith (630-851-4928) to make an appointment to go in the evening and receive instruction from him. The cannery can purchase commodities for you and have them available when you arrive.

If you use the Rockford Stake equipment you can purchase commodities from several sources. One is through the Naperville cannery. Another is through Walton Foods (please talk to Sister Linda McElhaney [968-8821] about this source.) A third source in the very near future is to purchase commodities (or even finished dry packed foods in cans) from Michael Goodwin who will be starting a business for this purpose. You can contact him for information and prices at 963-7089.

We hope that all of you will take advantage of the wonderful opportunities to work at the cannery or to borrow the Rockford Stake dry pack equipment to prepare, can, and store your own foods to be used in your family food storage program.

WHEAT

300 pounds of wheat or other whole grains should be stored for each family member for a year's supply. Consider the following when buying wheat:

1) Buy **dark hard winter** or **dark hard spring** wheat.
2) Buy **number 2 grade or better** (not less than 58 pounds of wheat per bushel).
3) **Protein** content should be from **12-15 percent.** (The effect of protein deficiency is most serious in children between the ages of one and six. It affects both physical and mental development.
4) **Moisture** content should be **10 percent or less.**
5) The wheat should be **clean and free from living insects and foreign matter.** (The supplier should be willing to verify low moisture, protein content, cleanliness, and absence of living insects).

After purchase, the wheat should be placed in a sturdy, moisture-proof container. The best container for wheat storage is a five-gallon airtight metal container with a tight-fitting double-friction lid (seal is the same as a paint can). These will hold about 35 pounds of wheat and can be stacked to save space. Sturdy polyethylene plastic buckets with tight fitting lids are also acceptable for wheat storage. Wheat can also be dry pack canned. Don't store wheat directly on concrete floors. Keep cool and dry and away from steam, water pipes, unvented clothes dryer, wet clothes, etc.

Since there may already be insect eggs present in the wheat which may hatch in due time, the stored wheat should be checked periodically for signs of insects. If infestation is found, several options may be considered. The degree of infestation may determine which you choose. Highly infested wheat, which appears to be covered with insect shells, contaminated with fine debris (excreta), and slowly crawling with insects, should be discarded if replacement is available. Such wheat may safely be used for animal or fowl feed. In times of emergency however, it may still be used with confidence because it will not hurt you even though it may not be a pleasant thought to consider. If time and resources are available infested wheat may be treated in a number of ways:

. Up off cement floors in garage and outbuildings

1) It may be placed in a roasting pan or on a deep cookie sheet at a wheat depth of not more than two

inches and placed in the oven at 200^0 F. for one hour. Killed insects will dry out if left open to the air in a dry climate and may be removed by dropping the wheat in front of a fan or a moderate wind to blow away the debris while catching the grain in a large container. This should be done prior to subsequent storage.

2) If the wheat is stored in an airtight container, it may be treated with dry ice. Remove all the wheat, except for one to two inches, from the container. Drop a piece (not pulverized) of dry ice (one-fourth pound per five-gallon container) in the container and pour the wheat on top of it. Place the lid on, but not tightly, for five to six hours; then tighten the lid to be airtight. Leave the wheat for at least one week; then use fan or wind to clean as suggested above. This method also works very well for packing wheat for long term storage. If used for storage do not open until time to use it.

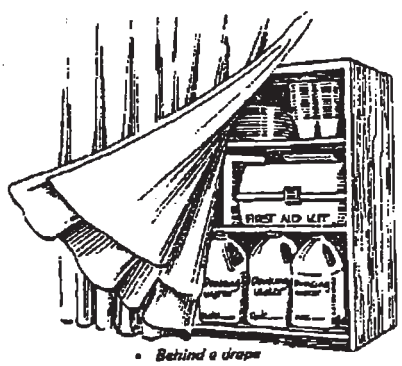
3) Place the entire container of wheat in a freezer at 0 degrees F. and leave it there for five to six days. Then remove it, allow it to dry, and clean as above (if infested), or place it into long term storage.

4) The belief that placing Bay Leaf in wheat will prevent infestation is a myth. It does not work! Work whole wheat and other whole grains into your family's diet gradually to prevent potentially serious digestive problems.

A good hand-powered wheat grinder or mill is absolutely essential. Metal grinders are easier to use than stone grinders, though some people believe that stone grinders do a much better job of grinding. Some electric grinders can be converted to bicycle power which makes grinding much easier. Grind only enough flour to be used in a week's time for greatest freshness and nutrition. Whole wheat flour should be stored no more than six months and white flour no more than 12 months, and only in airtight containers located in a cool, dry location.

OTHER GRAINS

The 300 pound per person grain requirement for a year's supply should ideally include a variety of grains. Cereals or grain crops such as wheat, oats, barley, rye and rice are grown for their edible seeds. Enriched grains, especially whole grain products, are important sources of the B vitamins, magnesium, iron and fiber. The following are some examples of various grains you may choose to store, they all store very well and can all be dry pack canned at the Naperville Church Cannery or with Rockford Stake dry pack equipment.



Behind a drape

OATS : Oat groats are high in fat and protein. Oat and rye flours can be used as a substitute for wheat flour for people with wheat allergies. Most people store oats in one of two forms: 1) Rolled oats (old-fashioned), used in cooked cereals, cookies, etc., and 2) Rolled oats (quick), which cook faster and produce finer textured cereals and cookies. Oat flour can be used almost anywhere that wheat flour is used.

RYE : This grain stores very well and is widely used in Northern Europe in breads, porridges, and as meal. Rolled rye flakes are used in granola mixes, breads and hot cereal.

TRITICALE : This is a cross between rye and wheat. It is higher in protein than either rye or wheat and is usually mixed with other flours for milder, sweeter flavored bread. Triticale can also be sprouted for increased vitamin content.

CORN : Field corn is used for flour and meal in cornbreads and tortillas. Ground yellow corn (cornmeal) is used for bread, cereal, and for batters and coatings.

POPCORN: Stores very well. It can be used for popping corn or can be ground into meal for cornbread. Popcorn "old maids" can virtually be eliminated by running ice cold water over the kernels before throwing them into the popper.

BARLEY : (hulled, pearled) is used in casseroles, soups, and beverages. It stores very well.

MILLET : Stores well and is used for casseroles, porridges and soups. Millet has an egg-like flavor.

RICE : Rice is an excellent grain for both nutrition and for long term storage. It is available in three lengths:

1) ***Long grain rice*** is distinguished because its length is four to five times its width. The grains are clear and translucent. The grains remain distinct and separate after cooking.

2) ***Medium grain rice*** is about three times as long as its width. This type is less expensive than long grain rice. This is due to the fact that it requires a shorter growing season and produces a higher yield per acre. It is also easier to mill than the long grained variety.

3) ***Short grain rice*** is only one and a half to two times as long as it is wide. It is generally the least expensive of the three lengths.

In addition to the three length of rice there are also five different kinds of rice to select from. It is therefore important to be able to distinguish between the different varieties available:

4) ***Brown rice*** is the whole, unpolished grain of rice with only the outer fibrous, inedible hull removed. Brown rice requires more water and longer cooking time than white rice (cooks in 45 minutes). It has a delightful, chewy texture, with a distinctive nutlike flavor.

5) ***Regular milled white rice*** is rice from which hull, germ, outer bran layers and most of the inner bran are removed in the milling process. The grains are bland in flavor and are fluffy and distinct when cooking directions are followed (cooks in 15 minutes).

6) ***Parboiled rice*** (sometimes called processed or converted rice), has been treated to keep some of the natural vitamins and minerals the whole grain contains. It has been cooked before milling by a special steam pressure process. It requires longer cooking time than regular milled white rice, but after cooking the grains are fluffy, separate and plump (cooks in 25 minutes).

7) ***Pre-cooked rice*** (quick type), is completely cooked. It needs only to stand in boiling water to be ready for serving. Cooking this product will result in a gummy, indistinguishable mass (cooks in 5 minutes).

8) ***Fortified or enriched rice*** -- This product is a combination of highly fortified rice with ordinary milled rice. A coating of vitamins and minerals (thiamine, niacin, iron, and sometimes riboflavin), is used to fortify rice. This coating adheres to the rice and does not dissolve with ordinary washing or cooking.

9) ***Wild rice*** is not rice at all but the seed of a wild water grass found around the Great Lakes region. It is much more expensive than the types of rice described above. Many Americans have discovered this rice and developed a taste for it. The demand for it is almost greater than the supply.

GENERAL COOKING INSTRUCTION FOR RICE : Do not wash rice before cooking or rinse it after cooking. Rice is one of the most sanitary foods. Rice grown and milled in the U.S. is clean. Nutrients on the surface of the rice are washed

away if it is washed or rinsed before cooking.

Do not use too much water when cooking rice. Any water drained off means wasted food value. Too much water makes soggy rice. Too little water results in a dry product.

Do not peek when cooking rice. Lifting the lid lets out steam and lowers the temperature.

Do not stir rice after it comes to a boil. This breaks up the grains and makes the rice gummy.

Do not leave rice in a pan in which it is cooked for more than five to ten minutes or the cooked rice will pack.

GENERAL NOTES ON GRAIN & RICE STORAGE : Uncooked milled rice (white, parboiled, and precooked) keeps indefinitely without refrigeration. Because of the oil in its bran layers, brown rice has a shelf life of only about six months. Refrigerator or freezer storage is recommended. Cooked rice may be stored in the refrigerator for up to one week or in the freezer for six months.

Purchase only clean, insect-free, dry grain products (10-12 percent moisture or less) from a reputable miller. Store grains in metal airtight, five-gallon square cans that have a seven-inch diameter opening at the top and a friction lid. Well-made rigid plastic containers would also be satisfactory. Avoid storing any grain in an open container. Store in a clean, cool, dry place, off the floor (preferably 18 inches) and away from damp areas. Rotate the supply.

Flour should never be stored by apples, onions, potatoes, etc., as it will absorb moisture from them causing it to spoil more quickly and it will also take up their flavors.

OTHER GRAIN PRODUCTS : In addition to storing whole grains you may also consider storing grain products such as:

Pastas.
Noodles.
Spaghetti.
Elbow macaroni.

ABC pastas - Alphabet noodles, used in soup and stew.

Shell pastas - used in soup, stew, salad, and casseroles.

Soup mix - Usually contains white rice, split peas, lentils, pearled barley, and ABC pastas. It stores very well -- just add flavoring from bouillon, stock or other flavoring agents.

Pasta products are a good source of complex carbohydrate which gives the body energy and stamina. Unlike sugar based foods that give so called "Quick Energy," like pouring gasoline onto a fire, pasta products provide long term energy for the body to draw upon, like hot coals in a fire that burn long, hot, and slow, allowing proper cooking to be done.

NON-FAT DRY MILK/DAIRY PRODUCTS

75 pounds of non-fat dry milk per person for one year.

Milk and dairy products provide most of the calcium in our diet. They also supply vitamin A and protein. Most milk has vitamin D added to it. Milk comes in many forms: whole, skim, low-fat, evaporated, buttermilk, and non-fat dry milk. Milk products include yogurt, ice cream, ice milk, and cheese, including cottage cheese. The various levels of fat in milk products allow for many individual choices in the diet.

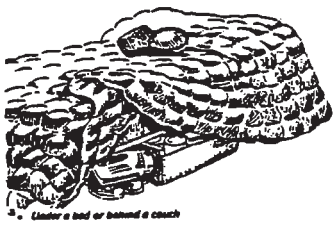
Every adult needs at least two 8-ounce servings of milk or other foods high in calcium per day. Though bones stopped growing long ago, calcium is still being removed from and replaced in the bones. Proper intake of calcium throughout adult life is important. The average American consumes about 557 pounds of dairy products in one year (fresh milk equivalent).

Non-fat dry milk is a wholesome dairy product made from fresh milk. Only the cream, which contains the fat, and water are removed. It still contains the calcium and other minerals, the vitamins, natural sugar and high quality protein that make liquid milk such a valuable food. Non-fat dry milk, or powdered skim milk, does not have as much fat and is somewhat lower in calorie content than whole milk (dried) and will store much longer.

Many dairy products can be made from powdered milk, such as reconstituted milk, cottage cheese, yogurt, cream cheese, and hard cheeses.

Powdered milk may be purchased in both instant and regular forms. There is no nutritional difference between the two forms, and the storage life is equivalent.

Buy only "extra" grade (the best of the three grades available). "Extra" grade contains four percent or less moisture. It should have been dried using a **"low heat spray process."** It should ideally also have been **fortified with vitamins A and D.** Lower quality powdered milk will develop an "off" flavor sooner than high quality milk and will be harder to mix.



Dry milk should be stored in a tightly covered container (metal, rigid plastic, or glass) and stored in a cool, dry, and dark location up off the floor. Dry milk **must be rotated**, even if you package and store it correctly. Dry milk will store well at 40° F. for 36-60 months and at 70° F. for 12-24 months. Dry milk will store for much longer extended periods of time when canned in vacuum packed cans or nitrogen packed cans.

Learn to save money on milk. Mix a quart of milk made from powder and water with a quart of whole milk and refrigerate it overnight. Use that milk to drink and use powdered milk to cook with. Doing this will help you rotate the powdered milk properly.

To flavor dry milk and make it more palatable try adding a little vanilla, honey, nutmeg, cinnamon, almond, cream or cream substitute, banana, or chocolate. Adding air to the milk by mixing it in a blender helps improve flavor, as does serving the milk **ice cold.**

A free publication is available called ***Nonfat Dry Milk***, by Flora H. Bardwell, Pub. No. EL-142, Utah State University, Extension Services, Logan, Utah 84321.

Other dairy products you may choose to consider as part of your year's supply include:

Canned evaporated milk (shelf-life about one to two years).

Canned baby formula (shelf-life about one to two years).

Powdered baby formula -- This is a "whole" type milk (shelf-life about two years). Rotate it.

Cream substitutes (non-dairy creamer). Shelf-life one to four years if vacuum packed.

Cheese spreads -- Shelf-life one year.

Brick cheese -- If cheese is to be stored for a long period of time, wrap it in cheesecloth dipped in white distilled vinegar and placed in

a plastic bag. Secure the bag with a twist tie and refrigerate. Shelf-life is six months to one year. Cheese can also be frozen.

Powdered cheese -- Dehydrated form, stores several years. Use it dry or mix it with liquid or oil. The texture and consistency of the powder, dry or reconstituted, does not resemble fresh cheese, but it does add cheese flavor.

Margarine -- Storage life is up to one year if stored in a very cool location.

Butter -- Flavor granules -- these require only hot water to develop the flavor of melted butter. The granules can be used to flavor vegetable, pasta, soups and sauces (because butter flavor granules contain no fat, they cannot be used for sauteing or frying).

Powdered butter (dehydrated) -- Has a shelf-life of several years. Butter powder can be reconstituted to make a butter spread. It can also be used to flavor sauces and soups.

Dried eggs -- Freeze-dried and dehydrated egg solids are prepared by removing 90 percent or more of the water from fresh eggs. Dried egg products are available as whole egg solids, egg white solids, egg yolk solids, and various blends. Store dried egg solids in airtight containers in a cool location. They have a shelf-life of about two to three years. Most died egg products are nitrogen packed.

SUGAR OR HONEY

100 pounds of sugar and/or honey per person for one year should be stored.

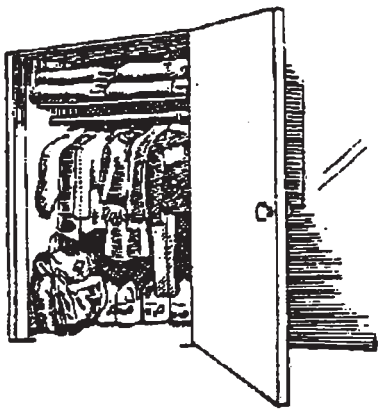
Sugars are high in calories and low in nutrients and are one of the most maligned of all foods. There is no scientific evidence that sugar is responsible for all the problems attributed to it. The main health hazards from eating too much sugar are a possible increase in dental caries and obesity.

White refined granulated sugar, if stored in a cool, dry place in a sealed container, will usually maintain its food value indefinitely. Though over time it may harden and become lumpy it will easily return to its granulated state by stirring or crumbling with your fingers or a spoon.

Brown sugar should be kept in containers with tight-fitting lids. Unlike white sugar, it should be kept moist, or it will harden and, unlike white sugar, once it gets hard it is not easily returned to its granulated state. It can, however, be dissolved and used in syrups, etc.

Powdered sugar should be kept dry and stored in containers with tight-fitting lids. It generally will not harden.

Corn syrup will crystalize after long periods of storage. Should this happen place the container in a pan of hot water (not boiling), to melt the crystals. It stores well in a sealed container placed in a cool, dark location.



Pure crystalline honey (no added water), when properly ripened and stored at room temperature it will store indefinitely. Honey is more expensive than refined beet or cane sugar. Honey contains about 400 calories per pound less than refined sugar and is about twice as sweet as refined sugar (which means you will use about half as much to achieve the same sweetening affect).

About 80 percent (by weight) of extracted honey is sugar, mostly in the form of simple sugars, which are easy to digest because they are already in the form that can be absorbed by the body. Most of the remaining weight is water. There are, in addition, small amounts of protein, minerals, and vitamins (the mineral and vitamin differences between honey, brown sugar and white sugar are negligible. Neither honey nor brown sugar is significantly better than white sugar). Flavor, aroma, and color of honey vary with the kind of flowers from which the bees gather the nectar to make the honey. As a rule, the lightest colored honeys are the mildest, such as sweet-clover, clover, or alfalfa honey. The darkest honey produced is buckwheat honey.

The greatest share of extracted honey is sold in liquid form, but crystallized honey is becoming increasingly popular. Honey in crystallized form may be called "creamed," "candied," "fondant," or "spread"; it has a fine texture, spreads easily, and doesn't drip.

The top grade of honey, as labeled by the U.S. Department of Agriculture, is U.S. Grade A or U.S. Fancy. Next is U.S. Grade B or U.S. Choice. The most important factor in the grading of honey is flavor with respect to the predominating floral essence or floral blend. Absence of defects ranks next in importance. Also considered is clarity -- that is, freedom from air bubbles, pollen grains, or other fine particles.

Creamed honey may be kept at room temperature or in the refrigerator. Keep in the refrigerator if the temperature of the room is very warm. Creamed honey may partially liquefy if stored at too high a temperature.

Honey kept for many months may darken slowly and become stronger in flavor but will still be usable.

Honey may crystallize as it gets older or if kept at refrigerator temperatures or lower. Crystallization does not injure the honey in any way. To bring crystallized honey back to liquid form, place the container of honey in a pan of warm water (not boiling), until the crystals disappear. If further heating is necessary, raise the container of honey off the bottom of the pan by putting a rack under it and set the pan over low heat. Be careful not to overheat; too much heat causes the honey to change color and flavor, though it does not change nutritionally.

Honey may be used, measure for measure, in place of sugar.

The Honey Association recommends that **infants under one year old should not be given honey because it is a raw product and may contain naturally occurring bacteria their systems cannot handle.**

Other products in the sugar category you may wish to store include:

Jams and preserves.
Flavored gelatin and pudding mixes.
Powdered drink mixes.
Sweet toppings and syrups.
Candy.
Soft drinks.

SALT

5 pounds per person should be stored for one year.

Table salt is composed of sodium and chloride. One teaspoon of salt contains two grams of sodium. Sodium is a vital nutrient, playing an important role in maintaining blood volume and pressure by attracting and holding water in the

blood vessels. Salt is needed by the body for enzyme reactions and keeps balance of acids and bases in the body. It also helps in the absorption of other nutrients, including carbohydrates. However, a little sodium goes a long way. Most Americans eat two-four times more sodium than they need. But if the kidneys are functioning properly, excess sodium should be excreted. **A safe and adequate intake is about 1.1 to 3.3 grams of sodium daily.** One teaspoon of salt equals two grams of sodium.

Salt may be used with drying to improve storage time (as with fish) or with water to reduce spoilage (as with vegetables). Wash away excess salt before using the food.

About five pounds of iodized salt per person will fill the requirement for one year. Iodized salt is best as it will help in proper functioning of the thyroid gland. **In hot climates the amount needed may be as much as ten pounds.** Pickling salt may also be stored for bottling pickles and rock salt for making ice cream. Store salt in it's original container in a dry, cool, dark location and it will keep indefinitely.

FATS AND OILS

20 pounds of fats or oils per person should be stored for one year (1 gallon equals 7 pounds). Soybeans, flax, safflower, sunflower, and caster beans are examples of crops which are grown primarily for their oil. Soybean oil, for instance, is used in thousands of ways, but cooking oil and margarine are common uses. Fats supply concentrated energy and are a source of fat soluble vitamins (A, D, E, and K). Fat also composes part of the structure of cell membranes and helps to cushion body organs. Most cooking oils and shortenings will store for two to three years if kept in a cool, dark, dry location.

For long term storage of liquid cooking oils purchase "cold pressed" types. Olive oil and corn oil are also very good storage oils and have a better flavor than soybean and safflower oils. You may wish to consider storing fats and oils in the following forms:

Cooking oil (vegetable oil), and Shortening.
Butter (fresh and dried), and Margarine or margarine powder.
Mayonnaise.
Salad oils and dressings (Dried mixes are also available).

DRIED BEANS AND LEGUMES

60 pounds of dried legumes per person should be stored for one year (Beans, peas, lentils, etc.). Beans provide an economical substitute for meat or other animal protein. Beans contain the highest protein content of all commercial seed crops. Beans are a good source of several B vitamins, as well as iron, calcium and magnesium. Beans are also an excellent source for starch and fiber.

Dry beans are available in several forms -- packaged in transparent packages, loose, or canned. The following are important factors in selection:

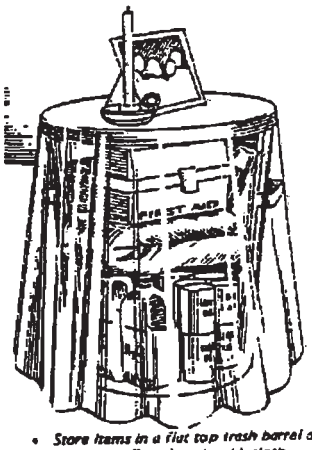
1) Bright, uniform color. Color will vary with the variety of beans, but loss of color usually indicates long storage time.

2) Uniform size. Uniformity of size will result in a more evenly cooked product since small beans cook faster than large beans.

3) Freedom from defects. Cracked seed coats, foreign material, and pinholes caused by insects are

signs of a low quality product.

About one-third of all dry beans are officially inspected. Federal grades are generally based on shape, size, color, damage and foreign material. The packaged beans, which are on the grocery shelf, are normally the highest grades.



• Store items in a flat top trash barrel and cover with floor length tablecloth.

Dry beans are an easily stored food. They should be kept in a tightly covered, metal, glass, or plastic container in a dark, dry, and cool location. The quality should be good for many years when stored under these conditions. Older beans will require longer soaking and cooking periods than freshly harvested beans, especially in dry climates.

Varieties of beans you may wish to consider for storage are:

Navy Beans -- Navy beans are also known as pea beans, a small white bean used in navy bean soup, baked beans, casseroles and ethnic dishes. A large portion of the crop is used in canned beans and tomato sauce.

Pinto Beans -- The pinto bean is a variety of the red kidney bean which was first cultivated by the Indians of South and Central America. The pinto bean is grown in Southeastern Utah and Southwestern Colorado. It is used in Mexican dishes, such as refried beans.

Kidney Beans -- The kidney bean is large, red, and kidney shaped. They are frequently used for chili con carne and in salads, main dishes and casseroles.

Black Beans -- Black beans are also known as turtle beans and are used in Oriental and Mediterranean cooking. A rich, thick soup is made with black beans in the Southern United States.

Lima Beans -- There are two classes of lima beans - large seeded, or Fordhook type, and small seeded, known as baby limas. In the southern part of the United States, the lima bean is called butter bean.

Chick Peas -- Chick peas are also known as garbanzos in Spanish-speaking countries. Chick peas have a nut-like flavor and keep their shape well when cooked. Chick peas are used on salads and in casseroles and soups.

Black-Eyed Beans -- Black-eyed beans are also known as black-eyes peas or cow peas in different areas of the country. They are primarily used as a main dish vegetable and are traditionally served on New Year's Day in the South as a token of good fortune during the new year. They are small, oval-shaped, and creamy white with a black spot on one side.

Split Peas -- Split peas are green and yellow. In grocery stores, split peas come cleaned in one-pound packages. large quantities in bulk might also be available in specialty shops. Split peas are commonly used in soups.

Lentils -- As the name implies, the lentil looks like a double lens. Lentils are dried on the plant and go through a number of processes to remove any extraneous plant materials. They always need to be looked at carefully before cooking. Lentils are grown in the United States and come in various shades of brown. Almost all are grown at an altitude over 2,000 feet in Washington and Idaho.

Soybeans -- Soybeans are primarily used as a meat extender. They have a mild flavor, are high in nutritional content, and have a high oil content which limits shelf-life to two or three years. Dry soybeans may be purchased year-round and are prepared for eating in the same ways as other dry beans. Soybeans can be sprouted for salads or

served as a vegetable.

Textured vegetable protein (TVP) is a vegetable protein made from soybeans, but its texture is similar to that of meat. When used with meat, TVP absorbs the flavor and cannot be distinguished from the meat. It can be bought as unflavored or flavored (beef, ham, bacon, or chicken). Shelf-life is two to three years.

VITAMIN AND MINERAL SUPPLEMENTS

365 tablets or capsules per person per year. Vitamins are needed by the body only in very small amounts, but as the word indicates, they are **vital to the normal functioning of the body.** They are "helpers" and "regulators" in many body processes. Megadoses of vitamins are potentially harmful to the body.

Minerals are also required by the body in very small amounts. Like vitamins, minerals work with other nutrients as helpers and regulators in the body. As with vitamins, you should avoid taking megadoses of minerals and trace elements.

It is recommended that 365 vitamin or vitamin/mineral tablets or capsules be stored for each family member to help compensate for possible deficiencies in the diet due to a lack of a variety of foods, and because of vitamins lost during food processing, storage, and preparation. Vitamins and minerals come in the forms of tablets, chewables, capsules and liquid, to meet the needs of family members of all ages. Shelf-life is about three to five years if stored in a cool, dry and dark location. Consult your doctor.

Despite careful food planning, **women may still need an iron and calcium supplement,** particularly if they are pregnant or nursing. Storage of iron and calcium should be carefully considered.

High quality protein supplements are also available. Buy only the best quality. They have a shelf-life of one to two years.

SUGGESTIONS ON STORAGE OF CANNED FOODS

The following is an excerpt from instructions by The General Church Welfare Committee:

"When foods are processed in metal cans coated with tin or enamel linings, the question frequently arises as to the length of time these foods can be safely stored for human consumption. Canned foods that have been in storage for a long period of time in cans that are not bulged or leaking are as safe to eat as the first day packed. However, they may have lost some of their flavor due to a chemical reaction in the can. This reaction is not poisonous, but does alter the flavor, texture, and nutritive value. The rate at which chemical reaction occurs doubles with each 18^0 F. rise in temperature. 50^0 F. storage will hold four times longer than 80^0 F. temperature.

Due to the various temperatures where canned food may be stored, it is difficult to determine the definite period of time at which all canned foods will hold We will group some of them. The short shelf life products are the highly acid and pigmented foods such as grapefruit and orange juice, black and red cherries, all colored berries, prunes and plums. these canned foods generally have an average storage life of one to two years. Other fruits such as peaches, pears, apricots, and applesauce should average from two to three years. Vegetables such as beets, carrots, green beans,

spinach, greens, tomatoes and tomato juice, should have an average storage life from three to four years. Vegetables and meats such as peas, corn, lima beans, and roast beef should have an average from four to five years. Canned milk should be agitated every thirty days. This prevents the fats from separating, and the product should be consumed within a year.

Canned goods should be stored in a cool, dry place, the cooler and dryer the canned goods are kept, the longer they will last. Place the oldest canned goods on the shelves so that they will be used first. Fruits, vegetables and meats properly processed in glass jars and stored in the home will keep in a cold, dark, dry place fully as long as canned goods. Some fruits, such as the highly pigmented, will keep longer in a glass container."

THE FAMILY STORE

"Every father and mother are the family's storekeepers"

James E. Faust

. . .We still have the year's supply room in the basement with the sign designating it as the `Peterson Family Store.'"

H. Burke Peterson

Most families fall into one of four categories where food storage is concerned: 1) due to improper stock rotation canned goods are lost to spoilage, 2) food is hoarded with the intent of never having to use it, they don't and so the family doesn't know what they have stored or how much they have stored, 3) the food is stored, used over a period of time, and then never replaced, or 4) the task of storing a years supply of food appears so overwhelming that families never get started. This Family Store concept presented here is designed to overcome all of these problems by eliminating spoilage as much as possible, if not all together, to continually replenish the storage items used, and to simplify the storage task so that it doesn't seem monumental.

STEP #1 - INVENTORY

Before any food storage program can be successfully implemented a family needs to know what is already stored and in what quantities as well as what should be stored. With this knowledge a systematic plan can be developed for acquiring the storage items needed. The first step therefore, is to take a complete inventory of the items you currently have stored. Copy the form on the next page "Perpetual Inventory Sheet" and keep a separate sheet for every item you have in storage. Write the name of the item at the top of the form, the date the inventory was taken and the number of units on hand in the Balance column.

STEP #2 - THE BUDGET

One of the basic elements for insuring the success of this system is to establish a monthly family food budget. If your family is not presently using a budget begin to do so immediately. It will not only help you with food storage but will help you get out of debt and to save for items you want to buy. Often the argument is used that the income is so small that the family just lives from pay check to pay check so what good is a budget? These are the families that need a budget the most. If you develop and stick to a budget, you will be surprised at how much money you used to waste each month. Obviously, for a budget to work you must force yourself to stay on it and live within your means.

STEP #3 - THE FAMILY STORE

The family should establish a "Store" in their basement, or some other location in the home. Storage items which you place in the store should be used freely by the family in preparing daily meals. All of the commodities in the "Family Store" should be assigned a price that is easy to work with but which reflects the approximate market value of the item. For example a can of mushroom soup may cost 23 cents at the supermarket but for convenience the "Family Store" may assign it a price of 25 cents.

Each item in the "Family Store" should be listed on a separate "Inventory Sheet" (an example of this sheet is provided on the next page), indicating the

item, its assigned price and the number of units of the item in storage (i.e., cans, bottles, boxes, etc.).

STEP #4 - SHOPPING

A "Monthly Charge Slip" should be kept at each location in the home where storage items are located. Throughout the month the spouse may spend money at the supermarket for various food items. If he or she uses any items out of the "Family Store," however, he or she must make an entry on the "Monthly Charge Slip." This slip records charges against items used from the "Family Store" and as with any other charge account it must be settled at the end of the month.

While at the supermarket the spouse may see a particularly good buy on an item such as green beans and buy 10 cans to place in the family store. The amount of this purchase is recorded in the "stored" column of the "Monthly Charge Slip" and offsets the cost of items used during the month much like a cash payment on a regular charge account.

STEP #5 - POSTING

At the end of each month the "Monthly Charge Slips" are posted to the respective "Perpetual Inventory Sheets" reflecting the usage or added storage of each item in the "Family Store" so that you will always know the quantity you have on hand of every item you have stored.

STEP #6 - SETTLING THE CHARGE ACCOUNT

At the end of the month the last two columns of the "Monthly Charge Slips" are totaled. The main purpose for this is to determine the general trend in the family store; is storage maintaining its level fairly constantly, or is it increasing or decreasing? However if the family elects, this information may be included in the food budget as follows: if the "used" column is greater than the "stored" column a debt is owed to the family store. To clear this debt the difference should be deducted from the next months food budget and placed in the store's "Kitty" (along with an additional $10 or so, so that the store can grow). However if the "storage" column is greater than the "usage" column the difference should be added to the next months food budget. Regardless of which column is the greatest the "Kitty" should be increased by as least $10 or so every month to insure a constant growth in the family store's inventory.

As food items are used under this system they are not replaced can for can, but dollar for dollar. Therefore a dollars worth of corn may be replaced with a dollars worth of beans, or soap.

This system works for many people and we hope it works for you. The important thing however is that we comply with the commandment to store these items.

PERPETUAL INVENTORY SHEET

Item: ______________________________ Unit Price: ________________

DATE	UNITS USED	UNITS STORED	BALANCE (UNITS)	DATE	UNITS USED	UNITS STORED	BALANCE (UNITS)

MONTHLY CHARGE SLIP

DATE	QTY.	ITEM	PRICE @	$ STORED	$ USED

WATER STORAGE AND PURIFICATION

"...Store enough water for each member of your family to last for at least two weeks..."

Vaughn J. Featherstone

"...Boiling the water was too difficult because of the scarcity of fuel. So mothers were taught to purify it by putting three drops of chlorine bleach in each quart of water. Purifying the water has reduced illness due to diarrhea, amoebae, and typhoid fever..."

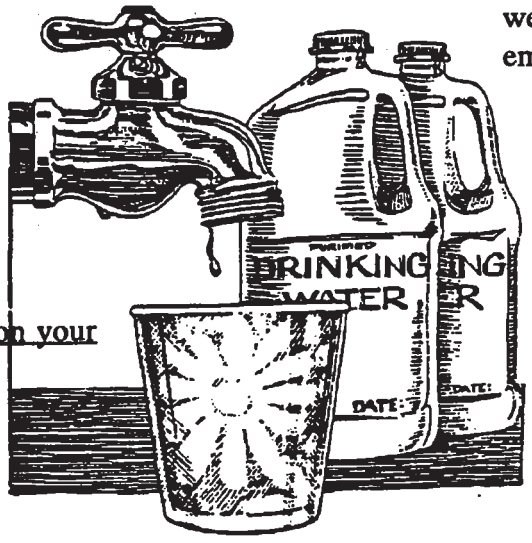
Victor L. Brown

"...Water, of course, is essential..."

Ezra Taft Benson

During times of serious emergency, the normal water supply to your home may be cut off or become so polluted that it is undrinkable. In fact, a supply of stored water, could be your most precious survival item! Again, the time to prepare is NOW, not after disaster and disruption strike when none may be available.

Health department and public water safety officials use many safeguards to protect the sanitary quality of your drinking water. However, this protection may break down during emergencies caused by natural disasters.



You and your family may then be on your own to provide a safe and adequate water supply. If you have to leave your home, finding and decontaminating water will be a major problem. Remember that typhoid fever, amoebic dysentery, diarrhea, infectious hepatitis, salmonella and giardiasis are diseases often associated with unsafe water, not to mention the many kinds of parasites that may be contracted. Don't take a chance! Under emergency conditions, NO WATER CAN BE PRESUMED SAFE. ALL DRINKING AND COOKING WATER MUST BE PURIFIED.

Most people need two quarts of water per day though one quart per day will sustain life. Considering washing and other uses a gallon per day per person in not too much. The exact quantity depends on the size of the person, amount of exertion, weather and perspiration loss. If there are family pets, include sufficient additional water for them. You should store a two week supply of water to meet emergency needs. A family of four would thus need at least 56 gallons of pure water for their 2-week reserve supply. With careful use, this amount would be sufficient for drinking and food preparation. Water for clean-up purposes is also desirable if space is available.

In a disaster, water lines are often cracked or broken and impure substances pollute the water. Immediately after a major natural disaster, prevent contamination to your home water supply by shutting off the valve that leads to the water main. Does everyone in your home know where this valve is and how to turn it off? Don't take a chance if the water from your tap is cloudy or has an unpleasant smell. PURIFY BEFORE

USING!!

There are several other sources of liquid if your water is turned off - water drained from the hot water tank (most tanks contain 30-60 gallons of usable water), dipped from the toilet flush-tank (not the bowl!), melted ice cubes, canned fruit and vegetable juices, and liquid from other canned goods. However, your supply of extra pure water is by far the best resource. Commercially bottled drinking water is available in sealed plastic containers, or you can easily purify it yourself for very little money.

Drain the hot-water heater monthly, allowing water to run until it flows clear. This process will ensure that it remains free of mineral and rust deposits and will also save on fuel.

If your home is multi-level, you can drain the existing water in the pipes by gravity flow for use during emergencies. Do this by first turning off the water at the main valve. Then open a faucet on the top floor to let air into the system and drain water from a faucet located at the lowest level.

To draw emergency water from a water heater:

1) Turn off the gas/electric supply to the heater.

2) Close the main water valve to your home or the inlet water valve at the top of the water heater.

3) Open any hot water faucet to allow air to get into the tank.

4) Drain water into a container by opening the drain plug or faucet at the bottom of the heater.

5) If this does not work disconnect the hot water line at the top of the tank to allow air to get into the tank.

6) Never turn on the electricity or gas until the intake valve is reopened and the water heater is full of water.

WATER STORAGE FACTS

Tests over the past several years have demonstrated that water may be stored for indefinite periods of time without spoilage if simple precautions are taken. Water storage for emergency use is extremely important because water is more essential than food in sustaining life during emergency periods. You can live for four to six weeks without food but it is impossible to survive more than three or four days without water. Here are the facts and instructions on the storage of safe water.

Containers: Jugs, bottles, jars or other containers made of glass or polyethylene (heavy, hard plastic) with tight-fitting caps or tops are the most suitable (metal containers, with the exception of proper canning containers, and soft plastics such as water bed bladders, have the disadvantage of possible corrosion or of giving the water an unpleasant taste). Some plastics, such a those used to make milk bottles, are biodegradable and will gradually self destruct within a relatively short time period causing them to leak, so don't use them. Empty two liter pop bottles make excellent containers. They are convenient in size and shape (even little children can carry them). They have a bursting strength of over 200 lbs per square inch, meaning that they will not break if dropped or stepped on and can be frozen without bursting. They are also the right size for containing one days worth of water, apply the rule of thumb "One two-liter pop bottle of water per person per day." And the pop bottles are free if you drink the pop. Be sure that all containers used for water storage are thoroughly clean. Sunlight has an adverse effect on plastic, therefore, water stored in plastic containers should be kept away from direct exposure to sunlight.

Liquid chlorine bleach bottles are made of thicker

polyethylene plastic, and may be used for water storage if the empty bottles are thoroughly rinsed with hot water. However the use of bleach bottles for water storage is not recommended because of the potential danger of accidentally drinking bleach instead of water. If bleach bottles must be used for water storage, be certain to remove the bleach label and write the word "WATER" indelibly across the bottle. It is important to prevent children from identifying a certain shape, size and color container with water if that container normally comes filled with bleach or another hazardous substance. The importance of keeping bleach-filled containers out of the reach of children cannot be overemphasized.

Quantities: At least one-half gallon per day per person for a two week period, or a minimum of seven gallons per person, for drinking and food preparation. It would be best to store one gallon per person per day. Thus a two week supply of fourteen (14) gallons per person should be sufficient.

Sources: Preferably from the source normally used by the family for drinking purposes because the family members are accustomed to its taste and mineral content.

If there is any doubt as to the bacterial safety of water for storage, it must be purified by boiling vigorously for 10 minutes or by adding laundry bleach (liquid) in accordance with the instructions on the label of the bleach bottle. Generally, one-half teaspoon will purify 5 gallons of clear water, and one teaspoon of bleach will purify 5 gallons of cloudy water. Do not add bleach to water that is intended for long term storage. Add it, if necessary, only at the time of use.

Supplemental Sources: Supplemental emergency water for drinking, washing, food preparation and for sanitation can be obtained from hot water tanks, toilet tanks, or other utility sources within the building. Also drink fruit juices, soft drinks or water packed foods, such as tomatoes.

Shelf Life: If stored in clean containers and if safe bacterially at the time of storage, water will remain safe because disease organisms tend to die out with storage. Thus, the longer the water is stored the safer it will become from the bacteriological standpoint.

Potable water stored in glass or polyethylene containers will remain safe, but may change somewhat in appearance, taste, or odor. Although some of these qualities may be disagreeable, they will not harm you. Stored water should be checked every few months to determine whether containers have leaked or if any undesirable characteristics have developed in appearance, taste or odor. If so the water may be replaced.

Because water quality varies throughout the country, no set rule can be given for shelf life. Current experience shows, however, that some water taken directly from a tap and stored several years in glass or polyethylene containers cannot be distinguished by appearance, taste or odor from freshly drawn water from the same tap.

It is physically impossible to store a years supply of water because of the sheer volume and space it occupies. A years supply of wheat takes up less space than a two week supply of water. Therefore, though it is absolutely essential to store a two or three week supply of water it is likewise essential that you know how to locate and purify water when there is none coming from your tap.

LOCATING USABLE WATER OUTDOORS

Obviously the easiest place to get water outdoors is to dip it from a stream, river or lake. However these may not be available in your area or they may be dried up or unfit to drink. But just because you may not see water flowing freely in streams or rivers, or find any in lakes or ponds does not mean that there is no water to be found. If you know how to find water outdoors it is very plentiful even when it may appear that none is available. Most moisture will be found in shallow depressions or on

the sloping side of a hill. The steep side of hills has a faster runoff and less area for water collection. The water table is usually close to the surface. Look in the following places for usable water. Remember, however, that this water in not potable, that is, it is not drinkable in its present state. It must be purified before it can be used for drinking purposes. See instructions for doing this in the next few pages.

1) Search at the base of cliffs and rocks where abnormal amounts of vegetation is thriving.

2) Search in dry mud holes. The bends in river beds usually provide the easiest source. You will probably have to dig to reach water.

3) Look anywhere the ground is damp or muddy.

4) Dig where patches of salt grass, cattails, greasewood, willows, or elderberries grow in low spots.

5) Dig a hole in the ground 12 to 24 inches deep and wait for water to seep into it. If the dirt in the hole is moist yet no water seeps into it scoop up the mud, wring it in a cloth to force out the water. Catch the drops in a container and purify.

6) Arise before dawn and mop up dew from rocks and plants with a cloth and wring it into a container. If cloth is not available, use dry grass. You will collect about a quart an hour. Remember to purify it before use.

7) Cut or slice the top off large cacti and mash the center or pulp with a stick. The pulp is then wrung to obtain water. Carry cut slices of pulp as an emergency water source.

8) Tap a tree by drilling a hole about 3 inches deep and inserting a hollow stem or straw. Maples, birch, aspen, and white pine are the best and produce drinkable quantities from February through April. Wild grape vines one inch or more in diameter will also produce drinkable quantities of water. Notch them six or eight feet above your drinking notch to allow air to enter the stem.

9) Throw a plastic sheet over the top of leafy trees and bring the ends together to drain into a container. This way you will catch evaporation and dew which will drain into the container.

10) Some vines and green plants can be chewed or sucked but will not sustain life. Be sure you know edible types.

11) In the Rockford area the water table ranges from 10 to 120 feet below the surface of the ground (with it being closer to the surface the closer you live to the Rock river). If you live close to the river just start digging. 10 to 20 feet may sound like a long way to dig but it is really quite easy. Just dig a deep hole and wait for the water to seep into it. If you live far from the river, digging a personal well is not a viable option according to local authorities.

HOW TO PURIFY WATER FOR DRINKING

Though all of the methods described above obtain water outdoors they will yield only non-potable (non-drinkable) water. Even water obtained from crystal clear mountain streams and lakes is not fit for drinking unless it is first purified to guard you against infection by microscopic organisms. There are several methods of water purification. Be familiar with all of them and obtain the supplies necessary to implement several of them.

Drinking water that has not been properly disinfected may result in catching any one of several severe or discomforting diseases, the most

likely of which is Giardia. After drinking water containing this tiny microorganism it will take ten days to three weeks before symptoms begin. Usually the first indication that an individual has contracted Giardia is explosive diarrhea, a bloated abdomen, belching, gas that would shame a pack mule, nausea, vomiting, loss of appetite, cramps, and fatigue. You are not likely to die of giardiasis, but you might wish you would before it is over. The diarrhea usually lasts a week or more but the symptoms may linger for months causing general debility and significant loss of weight. Left untreated the symptoms usually go away by themselves only to return again in a few weeks. Most people who contract Giardia do not blame the water and never suspect it as the cause because they did not get sick until so long after they drank the water (due to the gestation period of the organism).

All water obtained out doors (lakes, streams, etc.), is subject to pollution and contamination from radiation particles, dirt, bacteria, or other pollutants and requires purification consisting of a two step process. First it must be ***clarified*** or cleansed of all physical impurities such as dirt and debris. Then it must be ***disinfected*** or made biologically safe to drink. Individuals should understand that **NO** home method of water treatment can guarantee safety of the water. Certain water treatment methods described in the following pages can reduce the risks involved, but emergency treatment of water cannot guarantee the same quality water as a supply of properly stored water. Gadgets and devices which are sold with a claim that they can "purify any water" should be avoided.

STEP #1

CLARIFICATION - (Removing Physical Pollutants):

Use one of the following two methods for removing physical pollutants:

SETTLING: Settling is one of the easiest methods to remove most debris and suspended particulants, including radioactive fallout particles, form water. Furthermore, if the water to be used is extremely muddy or murky, settling it before filtering will extend the life of the filter. The procedure is as follows:

A) To clear muddy water let it stand for 12 to 24 hours. This will allow any sediment to sink to the bottom of the container. A handful of clay soil in each gallon of water will help speed this settling process.

B) To speed the settling process add a small amount of powdered kitchen alum - about 1/4 level teaspoon per gallon. Larger amounts are not more effective! Crystals take much longer to dissolve than does powder. The alum reacts with the water, producing a precipitate which slowly settles and absorbs impurities. After settling is complete (fifteen minutes to an hour to two, depending on the water) pour or dip the water into another container, being careful not to stir up the sludge at the bottom. Discard the sludge, and the water is ready to be disinfected. Since alum contains a fairly high amount of aluminum it should be used sparingly, especially by individuals who are trying to restrict their exposure to aluminum products.

C) If the water is thought to be contaminated with radioactive fallout then fill a bucket or other deep container three-quarters full of the contaminated water. Dig pulverized clay or clayey soil from a depth of four or more inches below the ground surface (to avoid adding fallout contaminated dirt to the water), and stir it into the water. Use about a 1-inch depth of dry clay or dry clayey soil for ever 4-inch depth of water. Stir until practically all the clay particles are suspended in the water. Let the clay settle for at least 6 hours. The settling clay particles will entrap and carry most of the suspended fallout particles to the bottom and cover them. Carefully dip out or siphon the clear water, then filter this water as described below and then

disinfect it.

Clarification is important; clear water can be purified using less chlorine or iodine than you need for cloudy water and the disinfectants are more potent since the bacteria has no place to hide (bacteria often burrow into suspended mud and other debris in order to escape the chlorine or other disinfectant).

FILTERING: This is the fastest way of eliminating physical pollutants from water but be sure that your straining material is fine enough to trap all the sediment or you may be disappointed in the results. Use pieces of cloth, paper towels, coffee filters, or even layers of grass and charcoal.

A) **Capillary siphoning** will also eliminate most particles and silt from the water. Elevate the polluted water above another container and run a piece of braided yarn, strips of cloth (cotton works best), string, or terry-cloth towel between the two containers as a filtering medium. If yarn or string is used it helps to soak them in clean water first to get the process started. Dirt and debris will not be soaked up but will remain in the top container while clean water passes through the medium and drips into the container below. Capillary action filters are very effective but are very slow, cleaning only about a cup of water per hour.

B) **Hose siphoning** is much more effective. Take a six or eight foot section of garden hose and stuff a cotton ball or two into one end. Place that end of the hose into a bucket or container of muddy water and suck on the other end until water begins to come through. Then place the free end of the hose into another container placed below the muddy container. Gravity will pull the water from the higher container into the lower container while trapping the sediment in the cotton ball and allowing only clear water to flow through the hose. If the water is very muddy be sure to let it settle for at least two hours before attempting to siphon it or the cotton will become clogged with too much mud and the siphon will cease to function. When the cotton ball becomes clogged simply remove it and replace it with a clean one. This filter will clean approximately one quart of water in two hours. However, if the water is very muddy the cotton ball will have to be replaced very frequently.

C) **Coffee filters** are also an excellent filtering medium. Place three or four of them (one inside the other), into a mason jar and let the edges protrude over the rim of the jar. Screw on a jar ring to hold them in place and pour the muddy water into the filters. It will pass through the filters and drip into the jar. When the filters become clogged with sediment simply replace them. This type of filter will clean approximately one quart of very muddy water in two hours.

D) **Can filters** are also very excellent filters and are easy to make. Just clean a large can (a #10 can or large juice can, etc.), and with a nail puncture several holes in the bottom of the can near the center (avoid making holes near the edges of the can). Then place an inch or two of washed, crushed charcoal (can be purchased at any pet shop or taken from a fire), in the bottom of the can and cover that with three or four inches of glass wool or polyester aquarium filter filling (can be purchased at any pet shop). In an emergency paper towels, toilet tissue, pieces of cloth or even dried grass will work. Be sure to pack the material tightly against the sides of the can so that no water can leak around it without being filtered. Suspend the can above a clean container. Pour the polluted water into the can and it will drip into the clean container below. As with all other filters be sure to let muddy water settle before running it through the filter. This type of filter, depending upon the size of the can, will filter up to two gallons of water per hour.

E) **Earthen Filters**: If radioactive fallout is suspected then the settling process indicated above is only the first of a two step process. It must also be passed through an earth filter. Filtering through earth removes essentially all of the fallout particles

and more of the dissolved radioactive material than does boiling-water distillation, a generally impractical purification method that does not eliminate dangerous radioactive iodides. Earth filters are also more effective in removing radioactive iodides than are ordinary ion-exchange water softeners or charcoal filters. In areas of heavy fallout, about 99% of the radioactivity in water could be removed by filtering it through ordinary earth. To make the simple, effective filter shown in the diagram below, the only materials needed are those found in and around the home. This expedient filter can be built easily by proceeding as follows:

1) Perforate the bottom of a 5-gallon can, a large bucket, a watertight wastebasket, or a similar container with about a dozen nail holes. Punch the holes from the bottom upward, staying within about 2 inches of the center.

2) Place a layer about 1 1/2 inches thick of washed pebbles or small stones on the bottom of the can. If pebbles are not available, twisted coat-hanger wires or small sticks can be used.

3) Cover the pebbles with one thickness of terry cloth towel, burlap sackcloth, or other quite porous cloth. Cut the cloth in a roughly circular shape about 3 inches larger than the diameter of the can.

4) Take soil containing some clay (almost any soil will do), from at least 4 inches below the surface of the ground. (Nearly all fallout particles remain near the surface except after deposition on sand or gravel.)

5) Pulverize the soil, then gently press it in layers over the cloth that covers the pebbles, so that the cloth is held snugly against the sides of the can. Do not use pure clay (it is not porous enough) or sand (it is too porous). The soil in the can should be 6 to 8 inches thick.

6) Completely cover the surface of the soil layer with one thickness of fabric as porous as a bath towel with a couple of inches of washed pebbles on top of that. This is to keep the soil from being eroded as water is poured into the filtering can. The cloth will also remove some of the particles from the water.

7) Support the filter can on rods or sticks placed across the top of a container that is larger in diameter than the filter can. (A dish pan will do.)

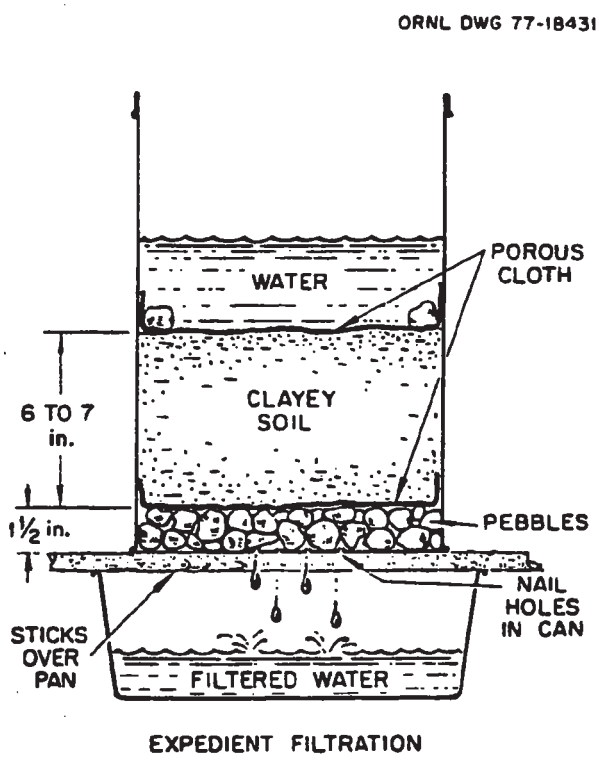


Fig. 8.11. Expedient filter to remove radioactivity from water.

The contaminated water should be poured into the filter can, preferably after allowing it to settle as described above. The filtered water should also be disinfected by one of the methods described below.

If the 6 or 8 inches of filtering soil is a sandy clay loam, the filter initially will deliver about 6 quarts of clear water per hour. (If the filtration rate is faster than about 1 quart in 10 minutes, remove the upper fabric and recompress the soil, it is not doing the job properly.) After several hours, the rate will

be reduced to about 2 quarts per hour.

When the filtering rate becomes too slow, it can be increased by removing and rinsing the surface fabric, removing about 1/2 inch of soil, and then replacing the fabric. The life of a filter is extended and its efficiency increased if muddy water is first allowed to settle as described above. After about 50 quarts have been filtered, rebuild the filter by replacing the used soil with fresh soil.

STEP #2

DISINFECTING - (Removing Biological Pollutants) :

Once the physical pollutants have been removed the job is only half done. These physical pollutants, though unpleasant to the taste, are usually quite harmless. The important task is now to make the water safe to drink by eliminating or killing the microbiological pollutants.

CAUTION : All of the chemical disinfectants listed here are *poisonous*. They kill germs on contact and they will also kill you if you do not handle them properly. These chemicals should be respected but not feared. If used properly they not only will not harm you but will protect your health and could even save your life. Keep these, and all chemicals, out of the reach of children. Water disinfectants must be able to kill the hardiest organisms - especially amoebic cysts, the dormant encapsulated form of the amoeba which is harder than the active, free swimming form, and the enteroviruses which are the most resistant of the disease producing organisms. At the same time, the disinfectant must be harmless to humans in the quantities used for purification. It must also be easy to use, be effective even in the presence of organic pollutants, work in a wide range of acidity, alkalinity and temperature, not be offensive to the taste and work relatively quickly.

While there is no single product that accomplishes all of the above there are several products that are acceptable. There are five main methods of accomplishing this however each of them have both good and bad characteristics. Be aware of the limitations and precautions of each and be prepared to implement several of them in a time of emergency. The methods of chemically disinfecting polluted water indicated below are listed in order from the *least* effective to the *most* effective means of making it drinkable.

1) **HALAZONE:** Water purification tablets (Halazone tablets which slowly release chlorine into the water), are available in most drug stores and sporting goods stores and are recommended for your first aid kit. Halazone tablets are the least effective method of chemically disinfecting polluted water. Though they are effective in killing most waterborne bacteria, they do not kill GIARDIA, and alkaline water or water containing certain protein contaminants greatly reduce its effectiveness against hepatitis, amoebic cysts, and enteroviruses. Halazone was abandoned by the military as a form of personal water treatment during World War II and was replaced by iodine tablets, yet halazone is still readily available in most sporting goods stores. Four tablets will purify 1 quart of water if it is clear, double the dosage for cloudy water. Halazone tablets have a shelf life of only 5 months when stored at 90 degrees fahrenheit if they are unopened but lose their effectiveness in less than 48 hours if allowed to get damp or if exposed to air.

2) **CHLORINE:** Liquid household chlorine bleach can be used to purify water provided the label says that it contains hypochlorite as its ONLY active ingredient. Do not use granular or powdered forms of household bleach, they are poisonous!! To treat water add 8 drops of bleach per gallon of water or one teaspoon for five gallons. Liquid bleach loses strength over time, rotate bleach to keep fresh. If bleach is a year old, the amount used should be doubled. Two-year old bleach should not be used.

Purchase an eye dropper to add bleach. Keep it for

this purpose only; or you may use a plastic bottle with a dropper nozzle. When using chlorine bleach mix thoroughly by stirring or shaking the water in the container. Let stand for 30 minutes. A slight chlorine odor and taste should be detectable in the water. If not, repeat the dosage and let stand for an additional 15 minutes before using. Iodine added to the water will also have a strong taste. IF WATER IS CLOUDY - DOUBLE THE DOSAGE.

3) **IODINE:** Iodine is an excellent purifying agent that is not affected by many of the conditions that affect chlorine. Its effectiveness is not significantly altered by either acid or alkaline water, or by nitrogen contaminates (created by decaying organic matter such as leaves and other plant structures in the water). In fact iodine is the most dependable and effective method available to the general public. It does have some draw backs however. There are three main forms of iodine which can be used for water purification.

TINCTURE OF IODINE: A 2% solution of tincture of iodine, as found in most first aid kits, can be added to polluted water. Use 3 - 10 drops of tincture of iodine per quart of water or 12 - 40 drops for a gallon (ranging from clear to murky water) and let it stand for 20 minutes before using. As with all forms of water purification be sure to loosen the lid to the container and allow some of the iodine treated water to spill over onto the lid and threads of the container to disinfect them too. Tincture of iodine, though stronger than chlorine is still not strong enough to kill the cyst form if giardia or many of the water borne viruses.

IODINE TABLETS: Tableted iodine in the form of tetraglycine hyperiodide (sold in sporting goods stores under the names of Coghlan's Globaline, and Portable Agua) are very effective against all forms of bacteria, however they are less effective against the dreaded protozoa GIARDIA LAMBLIA. Iodine tablets usually have a relatively short shelf life (losing 20% of their effectiveness in just six months) and are very sensitive to heat and light. They turn color from grey to yellow as they become less potent. The usual dose is one tablet per quart of clear water and two for cloudy.

IODINE CRYSTALS: Crystalline iodine is the most effective method of chemically purifying water at home or out of doors. In the crystal form iodine has an infinite shelf life and is very inexpensive. Great care should be exercised however when handling crystalline iodine. DO NOT TOUCH IODINE CRYSTALS! They can cause severe skin burns and can be fatal if swallowed in sufficient quantity. They also produce toxic fumes and will discolor or corrode almost anything they come in contact with. However when used in the dosage suggested for water purification they are very safe and very reliable. Only persons who are sensitive to iodine or who are being treated for hyperthyroidism might suffer any ill effects from this method; no other adverse physiological symptoms have been noted in tests using sample groups. If you should get an iodine stain on your skin or other objects while handling the crystals the stain will easily be removed with alcohol.

To use iodine in this form add 4 to 8 grams of USP grade resublimed iodine crystals to a one ounce, clear glass bottle with a leak proof bake lite cap, not plastic. Any size bottle can be used but a one ounce bottle is convenient for carrying and for measuring the proper dosage. Plastic bottles are not acceptable, since they take on an opaque brown stain and leak or distort over time. After pouring the crystals in the bottle (remember to not touch them) fill the bottle with water and shake vigorously for one minute, then allow the bottle to sit for one hour before using.

Crystals can be placed inside a small (1 inch X 1 inch) nylon bag sewed shut with nylon thread to insure that they remain inside the bottle. Use very fine mesh nylon material such as a piece of an old slip or similar fabric. Any other fabric (i.e., cotton, polyester, etc.), will be dissolved by the iodine over time. The only draw back to this

pouch is that you can no longer see the crystals and cannot tell when they have totally dissolved.

The solution above the crystals contains an amount of iodine that depends on the temperature of the water in the bottle, therefore the amount of solution needed to disinfect a quart of water depends on the temperature of the disinfectant solution (not the water being treated). It will range from 10 cc's (Cubic Centimeters) at 100 degrees fahrenheit to 20 cc's at near freezing temperatures. The cap of the iodine solution bottle makes a handy measuring device, once you determine how many cc's it holds (10 cc's is about 5 or 6 cap fulls or about 1/2 the bottle when using a one ounce bottle). The recommended quantities will produce the proper 4 parts per million (PPM) concentration of iodine in the drinking water.

When adding the iodine disinfecting solution to polluted water remember to use only the solution in the bottle -NEVER LET THE IODINE CRYSTALS LEAVE THE BOTTLE! If you swallowed one of the crystals, even a small one, it will cause great intestinal problems and in sufficient quantities it can be fatal.

The contact time, the amount of time necessary to treat the water, depends on the temperature of the water being treated (not the temperature of the IODINE SOLUTION, which determines the amount of solution to use). Under normal conditions, about 70 degrees and warmer, the water is disinfected after about 15 minutes. For cold, near freezing water, approximately 40 minutes will be necessary. For turbid or cloudy, heavily contaminated water use a strength of 8 PPM (double the recommended solution) and a contact time of 20 minutes to increase germicidal potency.

As the iodine solution in the bottle is used add more water to it. The iodine crystals in the bottle will gradually dissolve keeping the solution at the saturation point at all times. A one ounce bottle used in this fashion will treat about 1,000 quarts of water before the iodine crystals are totally dissolved. IMPORTANT - if there are no more crystals visible in the bottle do not use it because there is no indication as to the strength of the solution. Should this happen immediately add more iodine crystals to the bottle. Iodination, using this simple kit, is a method of disinfecting water which is particularly well suited for travelers and hikers. It is easy to use, stores for ever without loss of strength, and is effective against the most resistant micro-organisms. The following chart shows the proper amounts of solution to use and the appropriate contact times to use.

TEMPERATURE OF IODINE SOLUTION	QUANTITY OF SOLUTION TO USE	TEMPERATURE OF POLLUTED WATER	CONTACT TIME
40 C (104 F)	10 CC	40 C (104 F)	15 Min.
30 C (86 F)	12 CC	30 C (86 F)	15 Min.
20 C (68 F)	13 CC	20 C (68 F)	20 Min.
10 C (50 F)	16 CC	10 C (50 F)	30 Min.
3 C (37 F)	20 CC	3 C (37 F)	40 Min.

Since temperature is very important in using this method of disinfection and since a thermometer will probably be too big to get into the bottle of iodine solution, simply place it next to the bottle (taking care to keep it out of direct sun light). The iodine solution will usually be about 10-15 degrees cooler than the surrounding air in the summer (or if indoors). During the winter when out of doors the solution will be only a degree or two cooler than the surrounding air.

4) BOILING:

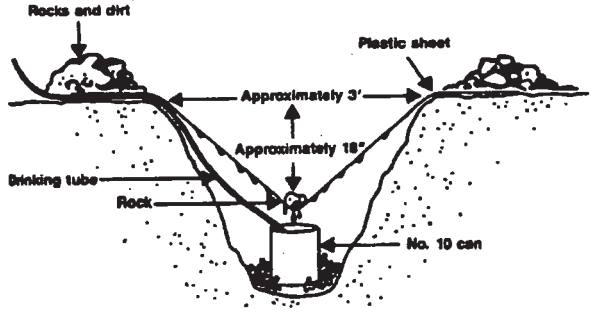
Water sterilization by boiling is preferred over any method of chemical disinfection because disease-causing microorganisms cannot survive the heat of a sterilizing boil. If water is cloudy, only heat sterilization can be fully relied upon to assure complete destruction of these organisms because they can "hide" by burrowing into the microscopic particles that cause cloudiness in water and thereby escape the action of disinfecting chemicals and remain capable of producing disease. Water that is

boiled vigorously for five minutes will usually be safe from harmful bacterial contamination, adding one additional minute for each 1,000 feet of altitude. In the Rockford area this means we should boil water a minimum of 6 minutes. To conserve fuel during times of emergency use a pressure cooker. Bring it up to 15 lbs. Remove it from the heat and allow it to return to room temperature by itself.

Boiling for the proper time period is the safest way to disinfect water because it does not depend upon the ph (acidity or alkalinity) of the water, the temperature or clarity of the water. It is the only process which is known to totally kill all bacteria, viruses and micro organisms. However, boiling is useless when trying to purify water that has been contaminated by chemicals and some organic toxins. Even distilling such contaminated water is ineffective because many chemicals have a lower boiling point that does water so they vaporize and then recondense along with the water. To improve the taste of boiled water add charcoal from the fire or first aid kit. This will not only improve the taste but also remove objectionable odors. Let the water stand for 45 minutes. Then pour it back and forth to mix air with it, giving the water a fresh not flat taste.

5) SOLAR STILL:

A solar still (or other form of distillation) is the only method of purifying water that eliminates both the physical and the microbiological pollutants at the same time. Dig a hole in the ground about three feet in diameter and about 18 inches deep. Place a cup or other clean container in the center of the hole (see the diagram below). Cover the hole with a piece of plastic and place rocks or soil around the edges to seal the hole from outside air circulation. Place a small rock in the center of the plastic directly over the cup.

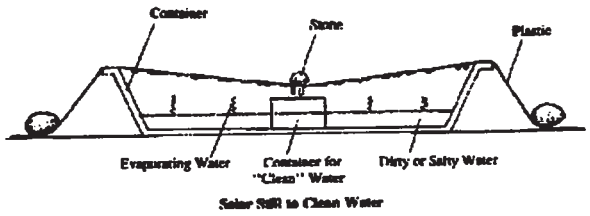


As the sun's rays strike the plastic it will warm the soil, evaporate the water in it, condense it on the plastic and cause it to drip into the cup. A still of this type could yield about one quart of water per day. If necessary, contaminated water and even urine or other non-potable water could be added to the soil to speed the process.

A drinking tube can be fastened to the drinking cup and extended to the outside of the still but this is optional.

Two of these stills in operation in even the driest desserts will produce enough water for one person each day. Placing green plants, sliced cactus or other moist objects in the pit will increase the amount of water produced.

A slight modification of this still can be used to purify polluted water and salty ocean water. Rather than digging a hole in the ground and evaporating the water in the soil merely place a very large diameter container, such as a pan, under the plastic and fill it with the polluted or salty water. Then continue with the still as above (see diagram below).



Solar Still to Clean Water

HOME WATER "PURIFICATION" DEVICES

Owning a water "purifier" will not safely substitute for stored emergency water. So-called "purifiers" can promote a false sense of security. In a water emergency the "purifier" cannot produce water,

and it may not be able to decontaminate unsafe water. Under some circumstances, certain "purifiers" have been known to add to the water's contamination. Even distillation can result in unacceptable contaminants in the distilled water if the source water is contaminated with certain organic chemicals. Similarly, reverse osmosis devices may not be able to remove all hazards from contaminated water.

Water treatment units containing silver impregnated charcoal or carbon are not to be used on unsafe water. According to the U.S. Environmental Protection Agency, ". . .any representation, either directly or by implication, of these products as `water purifiers' constitutes a false or misleading claim." EPA has clearly stated that "...the directions for use must clearly reflect that the product is only intended for use on potable water which is microbiologically safe for drinking." (Federal Register Vol. 41, No. 152 p. 32778-32781, August 5, 1976). These units may be able to improve the taste of water that has been boiled or water disinfected with bleach, iodine or Halazone.

There is no home-use device that can be fully relied upon to produce safe drinking water from whatever contaminated water may happen to be available in an emergency.

PRECAUTIONS

1) If no water is available, do not eat because eating uses up the body's water reserve in the digestion process.

2) Store water in your stomach rather than the canteen. Men have died from dehydration with water still in their canteens. Drink at consistent intervals whether thirsty or not when in extremely dry or dessert surroundings.

3) Water polluted by animals or mud tastes bad but is harmless when boiled 5 to 10 minutes, or when purified by the other methods outlined above.

4) When in desert areas don't travel on foot during the heat of the day. Travel at night and even then always walk slowly when you do travel.

5) Drinking blood or urine increases dehydration of the body because of the high salt and mineral content. If necessary soak clothing in urine to cool the body by evaporation when in dessert conditions.

6) Do not drink water from swimming pools. The chlorine level is too high and will kill beneficial bacteria in the digestive track causing temporary diarrhea. This water can be used for washing and for pouring down toilets.

HOME WATER PURIFICATION KIT

Every home should have as part of it's storage program an emergency water purification kit. The ;contents of this kit will allow you several alternatives for purifying your water should you need to do so. We do not know of any commercially prepared kit so you will have to make your own. Assemble the following materials and store them in a water tight 5-gallon plastic bucket (like what is used for wheat storage). Then be sure that every member of your family knows how to use each of the items in the kit to insure good health during times of emergency.

1) 5-Gallon plastic bucket. Contains the items used to compose the kit, keeps them clean and sanitary, can be used to make the earthen filter described on page 46, or can be used as a settling bucket.

2) Six feet of plastic hose (1/2 inch or 3/4 inch swamp cooler hose or garden hose), to be used as a siphon.

3) Box of cotton balls, to be stuffed inside the hose as filtering material.

4) Strips of cotton material for capillary action filtration.

5) 100 coffee filters, to filter or strain muddy water.

6) A small can of powdered alum.

7) A bag of glass wool or polyester filtering material for aquariums. Can be purchased at any pet shop and is used for filtering muddy water.

8) A box of charcoal for aquariums. Can be purchased at any pet shop and is used for improving the taste of disinfected water.

9) Two towels for placement in the earthen filter.

10) A large nail for perforating the bottom of the container when making an earthen filter.

11) One quart of liquid bleach (be sure to date the bottle and rotate it every year).

12) One bottle of iodine tablets.

13) One bottle of tincture of iodine.

14) One bottle of iodine crystal/water solution.

15) Solar still materials.

16) Instruction booklet (xerox this chapter).

These materials should provide you with enough disinfecting options to chemically purify up to 2,000 gallons of impure water. This is enough water to supply the emergency needs of a family of eight for a year.

EMERGENCY SANITATION

At all times and under all conditions, human beings must have sufficient water, adequate food and proper sanitation in order to stay alive and healthy. When people are living under emergency conditions even for a week or two - water and food may be scarce and it may be difficult to maintain normal sanitary conditions. Water and food supplies may have to be "managed" - that is, taken care of, kept clean, and rationed to each person. Sanitation also may have to be managed and controlled, perhaps by setting up emergency toilets and rules to insure that they are used properly.

CARE AND USE OF WATER SUPPLIES

Under emergency conditions the average person would need at least 1 quart of water or other liquid per day to drink, but more would be useful (to allow some for washing, etc.). Therefore a rationing plan might be required in your home or community. (Some communities may continue to have potable water available and families could relax their rationing plans).

As explained in the section on water storage, properly stored water may keep fresh for an indefinite period. Use this water first. In addition to water stored in containers, there is usually other water available in most homes that is drinkable (See chapter 7).

Use stored water and other uncontaminated water first. If necessary, "suspicious" water (such as cloudy water from regular faucets or perhaps some muddy water from a nearby stream, pond, or puddle), can be used after it has been purified. For instruction on water purification see chapter 7.

If you are asked to shut off the service valve that controls the water supply to your home, or if the taps do not flow following a disaster, turn off all the water outlets. These include taps or faucets, valves on pipes supplying float-controlled equipment such as flush toilets, air cooling equipment, and heating equipment. Then when the water comes on again your home will not be flooded as these floatation devices sometimes stick after they have been allowed to dry out.

Turn off the gas or electricity that supplies your hot-water heater after closing your home water service valve, or when your water supply is interrupted for any other reason. Otherwise, if the limited supply of water remaining in your hot-water storage tank continues to be heated, an explosion may occur. Also, if no more water can reach the tank, continued heat will soon muddy its contents through oxidation and make the water useless for washing or drinking purposes.

If your water service is cut off following enemy attack, or other natural disaster, do not try to telephone or otherwise communicate with your local water department or water company. The officials in charge will already be doing all they can to restore your service. Complaints will only add to their burdens. Besides, you will be using telephone lines that are needed for other emergencies.

Once service is restored, the water from your faucets may have a strong chlorine taste. Do not worry about this. It is a sign that extra precautions are being taken for your safety. If there is any doubt about leaks in the water mains or other possible sources of contamination, more chlorine than usual will be added to the water supply by health officials to make sure that it is safe.

Be alert for instructions regarding water usage from your public health officials, or from the water department itself. These are the proper authorities to advise you about the safety of your water supplies. Their instructions will be relayed to you by messengers, radio, mobile loudspeakers, handbills, or newspaper stories. Don't listen to or pass on any rumors about the safety of your water supply. Pay attention to official instructions only.

CARE AND USE OF FOOD SUPPLIES

Except for growing children and pregnant women, most people could do quite well in an emergency situation on half the food intake they are accustomed to receiving.

It is especially important to be sanitary in the storing, handling, and eating of food so as to avoid digestive upsets or other more serious illness such as typhoid, dysentery, and diarrhea, and to avoid attracting vermin. Be sure to:

1) Keep all food in covered containers.

2) Keep cooking and eating utensils clean.

3) Keep all garbage in a closed container or dispose of it outside the home when it is safe to go outside. If possible, bury it. Avoid letting garbage or trash accumulate inside the shelter, both for fire and sanitation reasons.

4) Wash hands and utensils frequently.

5) Prepare only as much food as will be eaten at each meal.

6) Paper cups and plates are handy things to have if the water supply is cut off, because they need not be washed and can be burned with the rubbish. Paper towels and napkins are good, too, when laundry needs cannot be met.

7) Refrigerators and home freezer units should be kept closed as much as possible once the services they depend on are cut off. The foods they contain will keep longer if you plan your meals well in advance so that you won't have to open the doors any oftener than necessary. If the gas or electric service is not restored within 12 hours, eat or cook the most perishable items in your refrigerator before they spoil. If foods show signs of decomposition, throw them out before they contaminate other foods that keep better.

8) Food will keep in home freezer units, after they are shut off, for varying periods depending on the amount and kind of food, the temperature at which it was kept, and the construction of the freezer. Frozen meats and other frozen foods can be preserved for later use by cooking them soon after they have thawed or by quick refreezing before they have completely thawed.

Official instructions regarding food will be issued locally in the event of an emergency. These instructions will tell you the type of disaster and its effect upon milk and other foods. Follow official instructions closely. Don't listen to rumors, and don't pass them on to others.

LAUNDRY AND CLEANING SUPPLIES :

During times of emergency it is critical that sanitation be strictly observed in the cleaning of clothing, bedding materials and all kitchen and food preparation utensils. Be sure to store a years supply of the following items:

1) Deodorizer tablets and air fresheners

2) Lysol-type disinfectant

3) Laundry detergent, one that can be used in cold water as well as hot.

4) Liquid chlorine bleach.

5) Dish detergent.

6) Bar soap.

7) Shampoo and conditioner

8) Toothpaste and toothbrushes.

9) Deodorant, hair spray.

10) Feminine supplies.

11) Shaving supplies.

12) Solar shower (plastic bag of water heated by the sun with attached spray nozzle.

13) A couple of washtubs, a hand-operated wringer (available at most auto supply stores), and a plumber's friend (used as an agitator) may prove useful for washing clothes if there is no electricity for an extended period of time.

14) Extra broom and mopheads.

A booklet entitled Housecleaning on a Shoestring is available by writing to the Cooperative Extension Service, Utah State University, Logan, Utah 84321. It contains useful recipes to make home cleaning products out of basic ingredients found in the home. Basic cleaning ingredients to store for the recipes include: Ammonia, vinegar, baking soda, washing soda, whiting, mineral spirits, boiled linseed oil, soap jelly, liquid detergent, rubbing alcohol, pine oil, gum turpentine, kye and kerosene (look for these items at supermarkets and paint, hardware or drugstores).

DISPOSAL OF GARBAGE AND RUBBISH

Garbage may sour or decompose, rubbish (trash) will not, but offers disposal problems in an emergency. Garbage, or any mixed refuse containing garbage, must be carefully stored and handled if odor and insect nuisances are to be prevented. Since rubbish alone is fairly easy to dispose of, garbage should be kept separate from it and not mixed. The following suggestions will make it easier for you to take care of the refuse problem:

1) Garbage should be drained before being placed in storage containers. If liquids are strained away, garbage may be stored for a longer period of time without developing an unpleasant odor. After straining, wrap the garbage in several thicknesses of old newspapers before putting it into your container. This will absorb any remaining moisture. A tight-fitting lid is important to keep out flies and other insects.

2) You should keep one or more 20-gallon cans on hand for emergency use, if possible. If you live in an apartment building, get the largest kitchen garbage container for which you have space.

Final disposal of all stored garbage and refuse can be accomplished in the following manner provided there is no danger from radioactive fallout:

1) All stored garbage should be buried if collection service is not restored and if unpaved yard areas are available - keep a shovel handy for this purpose. Do not dump garbage on the ground, because it will attract rats, skunks and other scavengers. Dig a hole deep enough to cover it with as least 18 to 24 inches of dirt, which will prevent insect breeding and discourage animals from digging it up.

2) Do not establish a community dump without permission from proper authorities. Garbage dumps quickly become infested with rats capable of carrying disease germs over a wide area. If necessary, local authorities will pick sites where refuse may be left for supervised burning or burial as soon as conditions permit.

3) Other rubbish may be burned in open yard areas or left at dumps established by local authorities. Cans should be flattened to reduce their bulk. Do not deposit ashes or rubbish in streets or alley ways without permission. Such material may interfere with the movement and operation of fire-fighting and other emergency equipment.

SEWAGE DISPOSAL

Proper management of toilet facilities during times of emergency may have a greater affect on your health than any other single element of sanitation. Bacterial infections such as typhoid and dysentery can be just as devastating as the earthquake or flood that caused the emergency.

Unsanitary toilet conditions may cause disease and under some conditions can be lethal, yet with proper planning and by taking the proper sanitary precautions it is very easy to insure good health. Water Flush toilets cannot be used, of course, when water service is interrupted. The water remaining in the fixture is not sufficient to flush the wastes down the sewer. Clogging may result.

Even if water is available, local authorities may ask you not to use toilets, wash basins, and other fixtures connected with soil pipes. The sewer mains may be broken or clogged, which would make it impossible to carry off the wastes. Or water may be needed for fire fighting. It is therefore necessary for every family to know emergency methods of waste disposal.

An emergency chemical toilet consisting of a water tight container with a snug-fitting cover, should be an integral part of your preparedness program. It could be a garbage container, or a pail or a 5 gallon plastic bucket. If the container is small, a larger container like a 20 or 30 gallon garbage can, also with a tight fitting lid, should be available to empty the contents into for later disposal. If possible, both containers should be lined with plastic bags or garbage can liners. NEVER deposit human waste or garbage on the open ground. If you have no other alternative for disposal it is safe to bury waste in trenches 24-30 inches in depth.

Every time someone uses the toilet, he should pour or sprinkle into it a small amount of regular household disinfectant, such as creosol, pinesol, chlorine bleach, baking soda, alcohol, laundry detergent, or insecticide to keep down odors and germs. After each use, the lid should be replaced.

EMERGENCY CHEMICAL TOILET

The following items should be stored together inside a five gallon plastic bucket. The bucket will serve as the toilet during an emergency.

5-Gallon plastic bucket (With tight fitting lid).
2 Large boxes of garbage can liners (30 gallon size).
1 gallon of liquid chlorine bleach.
Pinesol
6-8 rolls toilet paper.
Sanitary napkins and belt.
Tampons.
2 boxes baking soda
2 boxes trash can liners (8-10 gallon size).
Paper towels
1 bar hand soap

To use this toilet simply remove the contents from the bucket, insert a large plastic garbage can liner into the bucket and fold the edges over rim of the bucket. Mix one cup of liquid chlorine bleach to one half gallon of water (do not use dry or powdered bleach as it is caustic and not safe for this type of use) and pour this solution into the bucket. This will kill germs and insure adequate coverage. Though the bucket may be some what uncomfortable to sit upon it certainly beats the alternative. For greater comfort you can remove the seat from the toilet and secure it to the top of the bucket.

After each usage replace the lid securely upon the bucket to keep insects out and to keep the smell contained. When the bucket is one third to one half full tie the garbage bag liner shut and dispose of it appropriately (i.e., burying it, placing it inside a large covered metal garbage can for later disposal, or placing it in an approved disposal location). Put another liner inside the bucket and continue as above.

Other chemicals that can be used in place of liquid

chlorine bleach are: HTH (calcium hypochlorite), which is available at swimming pool supply stores and is intended to be used in solution. Following the directions on the package it can be mixed and stored.

CAUTION: Do not use Calcium Hypochlorite to disinfect drinking water as it kills all the beneficial bacteria in the intestinal tract and thus causes mild diarrhea. Portable toilet chemicals, both liquid and dry, are available at recreational vehicle (RV) supply stores. These chemicals are designed especially for toilets which are not connected to sewer lines. Use according to package directions. Powdered, chlorinated lime is available at building supply stores. It can be used dry. Be sure to get chlorinated line, not quick lime, which is highly alkaline and corrosive.

CAUTION: Chlorinated products which are intended to be mixed with water for use can be dangerous if used dry. You may also use powdered laundry detergent, Lysol, Pinesol, Ammonia, or other household cleaning and disinfecting products.

Where radioactive fallout does not present a hazard, a temporary pit privy may be constructed in the yard for use by several families. This offers a good method of waste disposal over extended periods of time. The structure need not be elaborate, so long as it provides reasonable privacy and shelter. The pit should be made fly-proof by means of a tight-fitting riser, seat, and cover. A low mound of earth should be tamped around the base of the privy to divert surface drainage and help keep the pit dry. Accumulated waste should be covered with not less than 12 inches of earth when the privy is moved or abandoned.

Persons in city apartments, office buildings, or homes without yards should keep a supply of waterproof containers on hand for emergency waste disposal.

Homemade soil bags may also be used and are easily made by putting one large grocery bag inside another, with a layer of shredded newspaper or other absorbent material between. Apartment dwellers should have sufficient grocery bags on hand now for possible emergencies.

If you have a baby in your home, it is best to keep an ample supply of disposable diapers on hand for emergency use. If these are not available, emergency diaper needs can be met by lining rubber pants with cleansing tissue, toilet paper, scraps of cloth, or other absorbent materials.

INFANT NEEDS

Caring for the needs of infants and toddlers in times of emergency poses a special problem. These little ones cannot care for themselves nor provide proper sanitation during good times let alone in the difficult times of emergency. Yet infants and toddlers are among the highest risk group for disease and injury.

Families with infants and small children should take special precautions to insure the safety and comfort, as well as the emotional security of these little ones.

When assembling items for your 72-Hour Kit be sure to include all necessary items for infants. It would be a good idea to include a separate back pack or other container that holds nothing but infant supplies (which can be surprisingly voluminous). This kit should be kept with the kits of other family members so that it will not be forgotten in a moment of haste. Because of the tremendous vulnerability of infants and toddlers to disease and injury it would be better to leave your own kit behind and take the kit with infant needs if a choice had to be made of which to carry. Also be sure to rotate the items in an infant kit regularly, every two to three months, because babies and toddlers grow at unbelievable rates. Diaper sizes change, as do clothes, almost overnight. As the baby begins to out-grow a diaper size rotate it out of the backpack and replace

it with the next larger size.

Probably the most critical aspect of infant care during times of emergency is the area of sanitation. Infants, by their nature, become soiled and dirty from one minute to the next (either from bodily excretions and drool or from dirt they pick up as they crawl and roll around on the floor and ground), thus providing excellent breeding grounds for disease causing bacteria which may infect not only the infant but also adults that may come in contact with them.

To help insure proper sanitation it is imperative that you store a sufficient supply of disposable diapers, disposable wipes, and plastic garbage can liners. Change infants and toddlers regularly in times of emergency and keep them clean. Dispose of the soiled diapers in the plastic garbage can liners and keep them tightly sealed when not in use to help prevent the spread of disease.

Be sure to wash your own hands regularly when working with infants (especially after each diaper change). Typhoid fever, amoebic dysentery, diarrhea, infectious hepatitis, salmonella and giardiasis are diseases that spread rapidly in times of emergency and threaten all, yet are all diseases that can easily be controlled by simply following the rules of good sanitation.

The next most important items to include in an infant kit are sanitary formula (ready to use liquid because you may not have water in times of emergency), with disposable bottle liners and extra nipples. During times of emergency you will not have the luxury of a micro wave oven in which to warm formula, nor will you have the sanitary facilities to sterilize bottles and mixing bowls for each feeding. For older infants who are eating some solid foods be sure to include some instant cereal, teething biscuits, and other suitable, easily storable foods (do not include bottled or canned foods such as fruits, vegetables and puddings because there will not be any refrigeration in an emergency and these foods will spoil very quickly once opened). Be sure to include plastic spoons, paper cups and other disposable items for food preparation. Place just enough food for one meal in plastic "zip-loc" type bags to insure their continual sanitation and to prevent contamination during meal preparation.

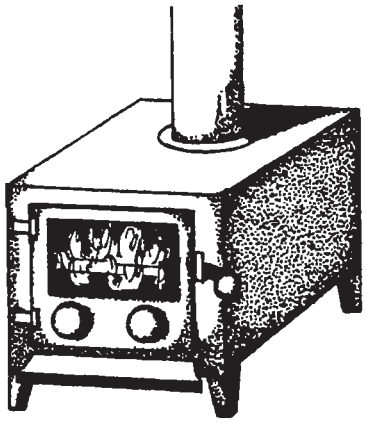
Items to include in an infant or toddler kit should include the following, keep in mind however, that this list is not exhaustive and should be adapted to your individual needs and to the likes of your child:

Backpack
Disposable Diapers (36-48 minimum)
Disposable Wipes
Plastic Garbage Can Liners
Plastic Pants
Two Changes of Clothes
Two Changes of Pajamas
Two Blankets
Infant Formula
Teething Biscuits
Instant Cereal
Other Foods (not bottled or canned)
Plastic Bottles
Disposable Bottle Liners
Extra Nipples
Plastic Spoons
Paper Cups
Bib
Pacifier
Safety Pins
Baby Powder
Baby Oil
Diaper Rash Medication
Toys

EMERGENCY HEATING, COOKING, & LIGHTING

". . .Those families will be fortunate who, in the last days, have an adequate supply of each of these particulars. . .clothes that would supply warmth during winter months when there may be shortages or lack of heating fuel. . .Wood, coal, gas, oil, kerosene, and even candles are among those items which could be reserved for fuel for warmth, cooking, and light or power. Some may be used for all of these purposes and certain ones would have to be stored and handled cautiously."

Ezra Taft Benson



During emergencies every facet of our lives becomes disrupted. Things which we normally take for granted suddenly become of major importance in sustaining our lives or in making life much more comfortable. One of the most basic of all the elements around us, and which we probably take for granted the most, is fuel. Fuel is used to keep us warm in the winter, cool in the summer, prepare our food, and light our homes. In our modern society we are used to just flipping a switch and having the lights come on. This action has become so common place in our lives that we do it automatically upon entering a dark room without even realizing we have done it. At the flip of another switch our furnace comes on to keep us warm. The constant vigilance of our furnace thermostat even makes it so convenient that we only have to turn the furnace on once at the beginning of the winter and then forget about it until the spring when we turn it off again. Cooking is just as easy; the turning of a dial on a gas range, the pressing of a button on an electric range, or the use of a microwave oven prepares our food without our having to worry about where the heat will come from.

During even a minor emergency one or all of these conveniences may be unusable. For many of us this may cause true panic. How do you keep warm when it is below freezing and the furnace is out of commission? How do you get a hot meal when stove or microwave doesn't work? Remember that in an emergency your home will probably not be the only one affected so you may not be able to simply run to the neighbors home for temporary help. Let's examine the alternatives which you can pursue now so that proper preparations can eliminate the chaos and panic which lack of planning will surely create.

HEATING

During the winter it is essential that adequate heat be provided. The human body, unlike that of animals, is not capable of producing sufficient internal heat to keep you alive when the temperature drops below about 50 degrees. Therefore you must assist the body with either insulation to retain the heat - such as blankets, coats, sleeping bags, etc. - or you must provide an outside source of heat, such as fire. Unfortunately, many of us have had no experience in proper fire building and would therefore become totally frustrated by our attempts, give up and then die of exposure and hypothermia; or we would succeed in burning the house down and then die of exposure and hypothermia.

Furthermore, we have been counseled by our Church leaders to store a years supply of fuel. This seems impossible for most of us. Five tons of coal or enough wood to last a year would completely fill our back yards, not to mention the fact that few of us have stoves in which to burn it, and the fact that many cities are passing ordinances restricting the use of coal and wood burning stoves. But what about the person who lives in a condominium or the 15th floor of a high rise apartment building in Chicago, New York, or Los Angeles? How do you store a years supply of fuel when you have no place to store it? The answers are really quite simple. With a little planning, using systematic buying, and by taking advantage of the wasted space which every home or apartment has, you can actually comply with this commandment fairly economically. With proper planning you will spend about as much on a years supply of fuel as you presently do for just one month during the most severe part of the winter. One thing must be kept in mind however, you are not trying to store enough fuel to heat your entire home or apartment to 80 degrees for the entire winter.

The object in fuel storage is to provide enough heat to keep you and your family alive if you are deprived of your normal source of heat. To accomplish this you need to plan on heating only one room or a small portion of your home. Be sure that you can seal off all the entrances to that room by closing the doors or, if there is no door in the opening, by hanging blankets where the doorway leads to another room. Reflective plastic sheeting, such as the new "Space Blankets" used by back packers, form an excellent reflective surface to keep the heat in the room. They can be purchased for $2.00 or $3.00 each and can be taped to the walls and ceiling and hung over windows and doors to form a "home within your home." Plan on heating only this small portion and you can easily store that amount of fuel in even the smallest of apartments. Be sure to insulate all windows with blankets and/or aluminum foil to keep the cold out and the heat reflected back into the room. Cover all doorways with blankets or other insulating materials to retain heat. The question now becomes what type of fuel to burn?

CHARCOAL:

Most families have a small charcoal burning cooker such as a hibachi or bar-b-que. NEVER use a charcoal burning device indoors. When charcoal burns it is a voracious consumer of oxygen and will quickly deplete the oxygen supply in your little "home within a home." Furthermore, as it burns it produces vast amounts of carbon monoxide which is a deadly poison. If you make the mistake of trying to heat your home by burning charcoal it could prove fatal to your entire family. **NEVER BURN CHARCOAL INDOORS!**

COLEMAN FUEL (White Gas):

Many families have camp stoves which burn Coleman Fuel or white gasoline. These stoves are fairly easy to use and produce a great amount of heat. However they, like charcoal, produce vast amounts of carbon monoxide. NEVER use a Coleman Fuel stove indoors. It could be a fatal mistake to your entire family.

WOOD AND COAL:

Many homes have a fireplace and wood burning stoves and inserts are becoming more and more popular. They produce a great amount of heat and are safe to use indoors when properly installed. In addition to providing warmth they also provide a great amount of emotional security. Sitting next to a crackling fire can be very comforting and reassuring. Most fireplaces however, were build for aesthetics and emotional appeal, in practical application they are very poor sources of heat when your furnace doesn't work because most of the heat goes up the chimney rather than into the room.

Wood burning stoves on the other hand, can produce great amounts of heat. They are engineered and designed for heat production rather

that esthetics. Many units are designed to double as a cooking surface and are very practical from this perspective. If you use a wood burning stove or fireplace for heating, put on a teapot of water on low heat to produce steam to humidify your home. You will feel much more comfortable (especially with the drying effect of an indoor fire) and will require less actual heat to feel warm and cozy.

If you have a fireplace or a wood/coal burning stove, you will want to store several cords of firewood. Firewood is usually sold by the cord which is a neat pile that totals 128 cubic feet. This pile is four feet wide, four feet high, and eight feet long. Some dealers sell wood by the ton. As a general rule of thumb, a standard cord of air dry dense hardwood weighs about two tons and provides as much heat as one ton of coal. Be suspicious of any alleged cord delivered in a 1/2 or 3/4 ton pick-up truck.

For best results, wood should be seasoned (dried) properly, usually at least for a year. A plastic tarp, wood planks, or other plastic or metal sheeting over the woodpile is useful in keeping the wood dry.

Firewood may be obtained inexpensively from orchards being torn down, old buildings being torn down, scrap wood from furniture mills, and even the town dump is a good source of wood.

Two kinds of coal are used for heating homes -- anthracitic is the best type (hard) and more is available in the Eastern U.S., and bituminous (soft).

Coal may be stored in a plastic-lined pit or in sheds, bags, boxes, or barrels and should be kept away from circulating air, light, and moisture.

There are two great disadvantages to heating with wood and coal in fireplaces and stoves. 1) They are very inconvenient to use on a daily basis. Most women and small children are intimidated by the prospect of having to build a fire and become frustrated in their attempts to get it lit. Then there is the problem of how to dispose of the ashes it produces. This is not a problem when the stove is only used occasionally to create a nostalgic atmosphere but it is quite a different matter when it is used as the only source of heat. Ash disposal can be a dirty and dangerous job. Many fires are caused each year by improperly disposing of ashes from wood and coal burning stoves that had a live ember still smoldering. 2) To produce enough heat to keep you warm through an entire winter you would have to store a great amount of fuel. Wood is particularly difficult for most families to store because of the space it takes up. Most backyards are not large enough to store a years supply of wood and still have room to be used for any other purpose. Wood is probably the most expensive fuel there is if you have to buy it. The BTU value of wood as a ratio to dollars spent is less than any other fuel available. Coal, though it requires less storage space for the same BTU value, still requires a lot of room for storage. Wood and coal are simply not a practical source of heat for the average family and are certainly out of the question for apartment and condominium dwellers.

KEROSENE:

Kerosene (also known as Range Oil No. 1) is the cheapest of all the storage fuels and is also very forgiving if you make a mistake. Kerosene is not explosive as is gasoline and Coleman Fuel. Kerosene stores well for long periods of time and by introducing some fuel additives it can be made to store even longer. However do not store it in metal containers for extended time periods unless they are porcelain lined because the moisture in the kerosene will rust through the container causing the kerosene to leak out. Most hardware stores and home improvement centers sell kerosene in five gallon plastic containers which store for many years. A 55 gallon drum stored in the back yard, or ten 5-Gallon plastic containers, will provide fuel enough to last an entire winter if used sparingly.

CAUTION: Storage of kerosene is governed by

local laws. In the Rockford area you may store up to 60 gallons of kerosene in a building. If you store more than this you will need a special permit. If you store kerosene indoors be sure the container will not leak (and do not store these containers in living quarters). Many plastic containers are sealed so that you must puncture the spout rather than simply unscrewing the lid. These are the best types of containers for indoor storage. Fifty-five gallons of kerosene will cost only about $230 (in late 1996). Purchase only K-1 rated kerosene.

To burn kerosene you will need a kerosene heater. There are many models and sizes to choose from but remember that you are not trying to heat your entire home. The larger the heater the more fuel you will have to store. Most families should be able to get by on a heater that produces about 9,600 BTU's of heat, though kerosene heaters are made that will produce up to 25,000 to 30,000 BTU's. If you have the storage space to store the fuel required by these larger heaters they are excellent investments, but for most families the smaller heaters are more than adequate. When selecting a kerosene heater be sure to get one that can double as a cooking surface and source of light. Then when you are forced to use it be sure to plan your meals so that they can be cooked when you are using the heater for heat rather than wasting fuel used for cooking only.

When kerosene burns it requires very little oxygen, compared to charcoal. You must crack a window about 1/4 inch to allow enough oxygen to enter the room to prevent asphyxiation. During combustion, kerosene produces carbon dioxide not carbon monoxide, therefore it is not poisonous and is safe to use indoors. To prevent possible fires you should always fill it outside. The momentary incomplete combustion during lighting and extinguishing of kerosene heaters can cause some unpleasant odors. To prevent these odors from lingering in your home always light and extinguish the heater out of doors. During normal operation a kerosene heater is practically odorless.

PROPANE:

Propane is another excellent fuel for indoor use. Like kerosene, it produces carbon dioxide as it burns and is therefore not poisonous. It does consume oxygen so be sure to crack a window when burning propane.

A gallon of propane contains 91,500 BTU's of heat. Many families have a bar-b-que set that uses propane in 5 gallon bottles. If you purchased a small 10,000 BTU propane heater and connected it to a 5 gallon bottle and used it sparingly it would last about 3 to four days depending upon the temperature outside. A larger 100 pound cylinder (which contains 23 gallons) would last for about two weeks. The small 5 gallon/20 lb. cylinders cost about $25 empty and require about $10 to fill them (in late 1996).

Propane stores indefinitely, having no known shelf life. Propane stoves and small portable heaters are very economical, simple to use and come the closest to approximating the type of convenience most of us are accustomed to using on a daily basis.

The storage of propane is also governed by local laws. In the Rockford area you may store up to 30 pounds (a little more than one five-gallon container) inside a building. If you store more than this you will need a special permit from the fire marshal.

The primary hazard in using propane is that it is heavier than air and if a leak occurs it may "pool" which can create an explosive atmosphere. Furthermore, basement natural gas heating units **CANNOT** be legally converted for Propane use. Again, the vapors are heavier than air and form "pockets." Ignition sources such as water heaters and electrical sources can cause an explosion.

COOKING

Whether an emergency should happen during winter or summer preparation and cooking of food will always require fuel. There is much greater flexibility in choosing the source of fuel for cooking than there is for heating the home. Cooking, even in the most miserable of weather, can be done out of doors and can therefore be done using fuels that could not safely be used inside. To conserve your cooking fuel storage needs always do your emergency cooking in the most efficient manner possible. Don't boil more water than you need, extinguish the fire as soon as you are finished, plan your meals ahead of time to consolidate as much cooking as possible, during the winter cook on top of your heating unit while heating your home, and cook in a pressure cooker or other fuel efficient container as much as possible.

It is even possible to cook without using fuel at all. For example: to cook dry beans you can place them inside a pressure cooker with the proper amount of water and other ingredients needed and place it on your heat source until it comes up to pressure. Then turn off the heat, remove the pressure cooker and place inside a large box filled with newspapers, blankets or other insulating materials. Leave it for two and a half hours and then open it, your meal will be done, having cooked for two and a half hours with no heat. If you don't have a large box it which to place the pressure cooker simply wrap it in several blankets and place it in the corner.

STERNO:

Sterno fuel, a jellied petroleum product, is an excellent source of fuel for inclusion in your back pack as part of your 72-Hour Kit. Sterno is very light weight and easily ignited with a match or a spark from flint and steel but it is not explosive. It is also safe for use indoors.

A Sterno stove can be purchased at any sporting goods store and will retail between $3.00 and $8.00 depending upon the model you choose. They fold up into a very small, compact unit ideal for carrying in a pack. The fuel is readily available at all sporting goods stores and many drug stores. One can of Sterno fuel, about the diameter of a can of tuna fish and twice as high, will allow you to cook six meals if used frugally.

Sterno is not without some problems. It will evaporate very easily, even when the lid is securely fastened. If you use Sterno in your 72-Hour Kit you should check it every six to eight months to insure that it has not evaporated beyond the point of usage. Because of this problem it is not a good fuel for long term storage. It is a very expensive fuel to use compared to the other fuels available but it is extremely convenient and portable.

COLEMAN FUEL (White Gas):

Coleman Fuel, or white gasoline, when used with a Coleman stove is another excellent and convenient fuel for cooking. It is not as portable nor as light weight as Sterno but produces a much greater BTU value. Like Sterno, Coleman Fuel has a tendency to evaporate even when the container is tightly sealed so it is not a good fuel for long term storage. Unlike Sterno, however, it is highly volatile, it will explode under the right conditions and should therefore never be stored in the home. Because of its highly flammable nature great care should always be exercised when lighting stoves and lanterns that use Coleman Fuel. Many serious burns have been caused by carelessness with this product. Always store Coleman Fuel in the garage or shed, out of doors.

CHARCOAL:

Charcoal is the least expensive fuel per BTU that the average family can store. Remember that it must always be used out of doors because of the vast amounts of poisonous carbon monoxide it produces. Charcoal will store for extended periods

of time if it is stored in air tight containers. It readily absorbs moisture from the surrounding air so do not store it in the paper bags it come in for more than a few months or it may be difficult to light. Transfer it to air tight metal or plastic containers and it will keep almost for ever.

Fifty or sixty dollars worth of charcoal will provide all the cooking fuel a family will need for an entire year if used sparingly. The best time to buy briquettes inexpensively is at the end of the summer. Broken or torn bags of briquettes are usually sold at a big discount. You will also want to store a small amount of charcoal lighter fluid (or kerosene). Newspapers will also provide an excellent ignition source for charcoal when used in a funnel type of lighting device.

To light charcoal using newspapers use two or three sheets, crumpled up, and a #10 tin can. Cut both ends out of the can. Punch holes every two inches around the lower edge of the can with a punch-type can opener (for opening juice cans). Set the can down so the punched holes are on the bottom. Place the crumpled newspaper in the bottom of the can and place the charcoal briquettes on top of the newspaper. Lift the can slightly and light the newspaper. Prop a small rock under the bottom edge of the can to create a good draft. The briquettes will be ready to use in about 20-30 minutes. When the coals are ready remove the chimney and place them in your cooker. Never place burning charcoal directly on concrete or cement because the heat will crack it.

To get the maximum benefit of your stored charcoal it is essential that you learn to cook by using only a few briquettes at a time instead of the heaping mounds generally used in a BBQ. Then, when you are finished cooking, extinguish the briquettes by placing them in an air tight metal container to smother them or douse them with water to put them out and then let them dry. They will then be reusable.

One of the nice things about charcoal is that you can regulate the heat you will receive from them. Each briquette will produce about 40 degrees of heat. If you are baking bread for example and need 400 degrees of heat for your oven, simply use ten briquettes.

To conserve heat and thereby get the maximum heat value from your charcoal you must learn to funnel the heat where you want it rather than letting it dissipate into the air around you. One excellent way to do this is to cook inside a cardboard oven. Sounds crazy but it works just fine. Take a cardboard box, about the size of an orange crate, and cover it with aluminum foil inside and out. Be sure that the shinny side is visible so that maximum reflectivity is achieved. Turn the box on its side so that the opening is no longer on the top but is on the side. Place some small bricks or other non-combustible material inside upon which you can rest a cookie sheet about two or three inches above the bottom of the box. Place ten burning charcoal briquettes between the bricks (if you need 400 degrees), place the cookie sheet on top of the bricks to serve as a rack or support for your cooking vessels, and then place your bread pans or what ever else you are using on top of the cookie sheet. Prop a foil covered cardboard lid over the open side, leaving a large crack for air to get in (charcoal needs a lot of air to burn) and bake your bread, cake, cookies, etc. just like you would in your regular oven. Your results will amaze you.

WOOD & COAL:

Many wood and coal burning stoves are made with a cooking surface. These are excellent to use indoors during the winter because you may already be using it to heat the home. In the summer time however, they are unbearably hot and are simply not practical cooking appliances for indoor use. If you choose to build a camp fire on the ground out of doors be sure to use caution and follow all the rules for safety. Little children, and even many adults, are not aware of the tremendous dangers that open fires may pose.

KEROSENE:

Many kerosene heaters will also double as a cooking unit. In fact it is probably a good idea to not purchase a kerosene heater that cannot be used to cook on as well. Follow the same precautions for cooking over kerosene as was discussed under the section on heating your home with kerosene.

PROPANE:

Many families have propane camp stoves. These are the most convenient and easy to use emergency cooking appliances available. They may be used indoors or out. As with other emergency fuel sources, cook with a pressure cooker whenever possible to conserve fuel.

LIGHTING:

During an emergency you may be without electric lighting. Since most of us have never had to rely upon any other form of lighting we may not be aware of other options available. Most of the alternatives require a fire or flame, so use caution. More home fires are caused by improper usage of fires used for light than for any other purpose. Especially use extra caution with children and flame. Teach them the proper safety procedures to follow under emergency conditions. And allow them to practice these skills under proper adult supervision now, rather than waiting until an emergency strikes.

CYALUME STICKS:

Cyalume sticks are the safest form of indoor lighting available but very few people even know what they are. Cyalume sticks can be purchased at most sporting goods stores for about $2.00 per stick. They are a plastic stick about four inches in length and a half inch in diameter. To activate them simply bend them until the glass tube inside them breaks, then shake the to mix the chemicals inside and it will glow a bright green light for up to eight hours. Cyalume in the only form of light that is safe to turn on inside a home after an earthquake. One of the great dangers after a serious earthquake is caused by ruptured natural gas lines. If you flip on a light switch or even turn on a flash light you run the risk of causing an explosion. Cyalume will not ignite natural gas. Cyalume sticks are so safe that a baby can even use them for a teether.

FLASH LIGHTS:

Flash lights are excellent for most types of emergencies except in situations where ruptured natural gas lines may be present. Never turn a flash light on or off if there is any possibility of ruptured gas lines. Go out side first, turn it on or off, then enter the building.

The three main problems with relying upon flash lights is that they give light to very small areas, the batteries run down fairly quickly during use, and batteries do not store well for extended time periods. Alkaline batteries store the best. If stored in a cool location and in an airtight container these batteries should be expected to store for three to five years. Many manufacturers are now printing a date on the package indicating the date through which the batteries should be good. When stored under ideal conditions the shelf life will be much longer than that indicated. Lithium batteries will store for about twice as long as alkaline batteries (about ten years).

If you use flash lights be sure to use krypton or halogen light bulbs in them because they last much longer and give off several times more light than regular flash light bulbs on the same energy consumption. Store at least two or three extra bulbs in a place where they will not be crushed or broken.

CANDLES:

Every family should have a large supply of candles, 365 candles, or one per day is not too many. The larger the better. 50-hour candles are available in both solid and liquid form. White or light colored candles burn brighter than dark candles. Tallow candles burn brighter, longer, and are fairly smoke free when compared to wax candles. Candles are a good source of light and are the least expensive of all the methods of providing light. Their lighting ability can be increased by placing an aluminum foil reflector behind them or by placing them in front of a mirror. However, candles are extremely dangerous indoors because of the high fire danger - especially around children. For this reason be sure to store several candle lanterns or broad-based candle holders. Be sure to store a goodly supply of wooden matches.

KEROSENE LAMPS:

Kerosene lamps are excellent sources of light and will burn for approximately 45 hours on a quart of fuel. They burn bright and are inexpensive to operate. The main problem with using kerosene lamps is failure to properly trim the wicks and using the wrong size chimney. Wicks should be trimmed in an arch, a "V", an "A" or straight across the top. Failure to properly trim and maintain wicks will result in smoke and poor light.

Aladdin type lamps that use a circular wick and mantle do not need trimming and produce much more light (and heat) than conventional kerosene lamps. These lamps however, produce a great amount of heat, getting up to 750° F. If placed within 36 inches of any combustible object such as wooden cabinets, walls, etc., charring can occur. Great caution should therefore be exercised to prevent accidental fires.

The higher the elevation the taller the chimney should be. Most chimneys that come with kerosene lamps are made for use at sea level. At about 4,500 feet above sea level the chimney should be about 18 to 20 inches high. If your chimney is not as tall as it should be you can improvise by wrapping aluminum foil around the top of it and extending it above the top. This will enable the light to still come out of the bottom portion and yet provide proper drawing of air for complete combustion. If the chimney is too short it will result in smoke and poor light. Be sure to store extra wicks, chimneys and mantles.

PROPANE & COLEMAN LANTERNS:

Camp lanterns burning Coleman Fuel or propane make excellent sources of light. Caution should be used in filling and lighting Coleman lanterns because the fuel is highly volatile and a flash type fire is easy to set off. Always fill them outside. Propane on the other hand is much safer. It is not as explosive and does not burn quite as hot. A double mantle lantern gives off as much light as two 100-watt light bulbs. Either propane or Coleman Fuel type lanterns are vary reliable and should be an integral part of your preparedness program. Be sure to store plenty of extra mantles and matches.

Store lots of wooden matches (1,000 - 2,000 is not too many). Also store butane cigarette lighters to light candles, lanterns and fireplaces. It would be a good idea for everyone to have a personal fire building kit with at least six different ways to start a fire.

Above all, your home and family must be protected from the ravages of fire by your actions. Study the instructions for any appliance used for heating, cooking, or lighting and understand their features as well as their limitations.

Don't go to sleep with any unvented burning device in your home. Your family might not wake up.

Whatever you store, store it **safely** and **legally.**

In an emergency, survival may cause you to make decisions that are questionable with regard to safety. Become educated to the inherent hazards of your choices and make a decision based on as much verifiable information as possible. You and your family's lives will depend on it.

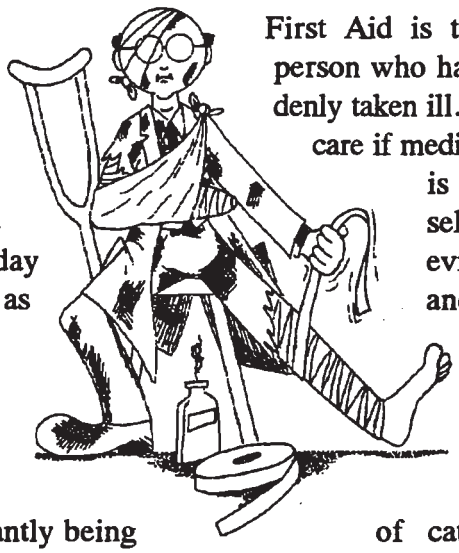
Consider carefully how you will provide fuel for your family for heating, cooking, and lighting during times of emergencies. Next to food, water, and shelter, energy is the most important item you can store.

FIRST AID KIT AND ASSISTANCE

". . .It would also be well to have on hand some basic medical supplies to last for at least a year. . ."

Ezra Taft Benson

Skills learned in a first aid course will enable one or more of your family members to minister to you and your neighbors in time of emergency. First aid knowledge greatly enhances your family's ability to be self-reliant. It is useful for everyday emergencies that plague all families as well as for disaster situations.



You are likely to encounter an emergency needing first aid attention several times during your life. Families with young children are constantly being subjected to situations in which injury may occur and your quick calm thinking and application of first aid principles may make the difference between life and death; between temporary and permanent disability; or the difference between rapid recovery and prolonged hospitalization.

Automobile accidents account for slightly more than one half of all accidental deaths occurring each year. Your knowledge of first aid could not only save a member of your immediate family but could also save the life of a total strange.

"First Aid" is a term that is very familiar to almost every person in the United States. Most individuals have been exposed to some form of first aid training during their life. This brief presentation on first aid is intended only as a form of review for those who have had some training in earlier years. For those who have not received any previous training it is recommended that either a course in first aid be taken or that you purchase a good book on first aid published by the American Red Cross or other similar organization.

First Aid is the immediate care given to a person who has been injured or has been suddenly taken ill. It includes self-help and home care if medical assistance is not available or is delayed. It includes well-selected words of encouragement, evidence of willingness to help, and promotion of confidence by demonstration of competence.

First aid training is of particular importance in time of catastrophe, when medical and hospital services are limited or delayed. Catastrophe may take the form of well-publicized disasters, such as hurricanes, floods, earthquakes, tornadoes, and fires. The concept of massive numbers of casualties has become a reality with the advent of the nuclear age. It also may take the form of a single accidental death, or life-threatening illness. Knowing what to do in an emergency helps to avoid the panic and disorganized behavior characteristic of unprepared persons at such times. Knowledge of first aid is a civic responsibility: It not only helps to save lives and prevent complications from injuries but also helps in setting up an orderly method of handling emergency problems according to their priority for treatment so that the greatest possible good may be accomplished for the greatest number of people.

FIRST AID IS EMERGENCY CARE GIVEN TO SICK OR INJURED PERSONS.

PURPOSES: 1. TO SAVE LIFE.
2. TO PREVENT FURTHER INJURY

Depending on the type of emergency, you will have to make a quick decision of what to do first and what not to do.

GENERAL FIRST AID RULES

1) Keep the victim lying down; his head level with body until you have made some assessment of the problem.

   Three exceptions to this rule:

   a) If the victim is in severe shock - place on back with legs slightly elevated.

   b) If victim is vomiting or bleeding from the mouth and is semi-conscious there is danger of victim aspirating this material, place him on his stomach with head tilted to one side and lower than feet.

   c) Shortness of breath - if victim has a chest injury or respiratory obstruction, place him in a sitting or semi-sitting position.

2) Examine the victim for hemorrhage (serious bleeding), asphyxiation (suspended breathing), and shock, all of which require immediate treatment. In fact, these are the three primary tasks of First Aid:

   a) Begin artificial respiration.

   b) Stop severe bleeding.

   c) Prevent or reduce shock.

3) Do not move the victim more than is absolutely necessary. Remove clothing only enough to determine the extent of injuries. It is preferable to rip or cut clothing to remove it (Removing in conventional manner may compound the injuries if they are severe).

4) Keep the victim reassured and as comfortable as possible.

5) If the victim's injury is extensive, it is best not to let them see it.

6) Do not touch open wounds.

7) Do not give unconscious persons any solid or liquid by mouth.

8) Do not move the victim unless necessary to move from further harm or injury. If you must move the victim do it keeping the lengthwise axis of the body straight.

9) Keep the injured person warm, but not overly hot.

Remember, by far, the greater number of injuries will require a minimum of effort on your part and a maximum of judgment and self-control to prevent doing too much.

This chapter is not intended to teach you all you need to know about first aid. Such knowledge can only be obtained by attending first aid training courses sponsored by the American Red Cross or other training organizations and/or by extensively reading and studying books on first aid. The purpose of this chapter is to acquaint you with the most basic and elementary first aid procedures that may be needed to save a life in an emergency and to suggest items to include in a family first aid kit.

In emergency situations rapid, calm, efficient efforts can minimize problems; and even in prolonged emergency situations, sticking with standard first aid care may be better than risking life-threatening procedures.

IMMEDIATE LIFESAVING MEASURES:

Most injuries can be dealt with calmly and without hurry. However, in serious life-threatening injuries certain steps must be taken immediately to preserve life. *First*, open the victim's airway and

restore his breathing and heartbeat if necessary (see Cardiopulmonary Resuscitation - CPR below). *Next*, stop any bleeding (see bleeding below) and dress and bandage wounds to prevent infection. *Third*, treat the victim for poisoning; and *Fourth*, treat him for shock.

RESPIRATORY EMERGENCIES -- ASPHYXIATION

Causes:

Blocked air passages.
Insufficient oxygen in the air.
Inability of the blood to carry oxygen.
Paralysis of the breathing center in the brain.
Compression of the body.

A person who has stopped breathing is not necessarily dead, but is in critical danger. Life is dependant upon oxygen which is breathed into the lungs and then carried by blood to every body cell. Since body cells cannot store oxygen, and since the blood can hold only a limited amount, death will surely result from continued lack of breathing (Oxygen must be provided in 3-6 minutes or damage to brain cells or death will result).

The heart may continue to beat for a time after breathing has stopped and the blood may still be circulated to the body cells. Thus, for a few minutes there is a chance to save a life, by the means of artificial respiration. Mouth-to-mouth resuscitation is the approved method for this.

MOUTH-TO-MOUTH RESUSCITATION

People may stop breathing because of electrical shock, drowning, suffocation, poisoning, physical blow to head, chest or abdomen, or any number of other causes. If you suspect an individual in not breathing act immediately because time is life.

1) Waste no time, check to see if the victim is breathing. If he appears to be unconscious tap him firmly on the shoulder and ask in a loud voice, "Are you alright?" If you get no response then immediately do the following:

2) Check mouth for foreign matter, dentures, gum, etc., clean out with your finger.

3) Tilt the head back so that the chin is pointing upward (this is the most important action you can take to enable a person to breath again, and may alone help the victim to start breathing.

4) Pinch nose closed.

5) Take a big breath and blow into the mouth, providing one breath every five seconds for adults, every three seconds for small children.

6) Watch for the chest to expand, and listen for air to come out.

7) Repeat until the victim begins to breathe on his own.

The victim's chest should rise with each breath. If the air goes to his stomach (as seen by the stomach rising instead of the chest) turn the victim onto his side and press on his abdomen to push the air out. Turning the victim to the side should prevent the inhalation of any regurgitated matter into the lungs. If the victim regurgitates, quickly clean the matter out of the victim's mouth with your finger and continue giving him artificial respiration. A drowning victim will almost always vomit as air replaces water in the lungs.

If the victim is a baby or young child, place your mouth over the nose and mouth rather than pinching the nostrils. Use puffs of air on an infant or young child rather than large breaths because their lung capacity is not as great as yours.

Artificial respiration may be given mouth-to-nose if the victim's mouth is severely injured. Also, if artificial respiration is necessary for a person with a stoma (an opening in the neck to facilitate breathing) just blow into the stoma. If the stoma is open to the mouth and nose, as some are, it may be necessary to close off the nose and mouth with a free hand while using the stoma for respiration. Do not stop giving artificial respiration until the victim can breathe for himself or until he is pronounced dead by a physician.

Check the victim's carotid pulse to see if his heart is beating by placing your index and middle fingers at the side of the Adam's apple (larynx) between the muscles of the neck and the trachea. If no pulse is detectable, begin CPR immediately. If pulse is present, continue artificial respiration but check the carotid pulse periodically to insure that his heart continues to beat.

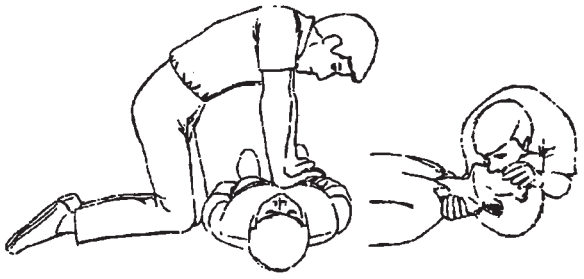
If you have never received training in proper administration of mouth to mouth resuscitation you should consider enrolling in a class taught by the American Red Cross or other qualified institution.

CPR
(Cardiopulmonary Resuscitation)

CPR is a combination of artificial respiration and artificial circulation by means of external cardiac compression. CPR is almost always used in conjunction with mouth-to-mouth resuscitation.

When the victim has no pulse (check the pulse as described above), artificial circulation must also be provided by the rescuer without delay. The victim must be on a hard surface, and his legs may be elevated eight to ten inches if this can be done without injuring him further or delaying the administration of CPR.

If you are alone, kneel by the victim's side and place the heel of your hand on the center of the chest one and one-half to two inches above the notch of the victim's sternum. Place your other hand on top of the first hand and, with arms straight and your shoulders directly above your hands, begin compressing the victim's chest one and one-half to two inches at the rate of about eighty times per minute. Keep your elbows straight and your fingers off the victim's chest; press only with the heel of your hand. Every fifteen compressions, stop and give two quick breaths (mouth-to-mouth) to provide artificial respiration, then resume compressions.



Cardiopulmonary resuscitation (CPR) is a combination of cardiac compression and artificial respiration. Both of these skills should be practiced in a first aid class.

If two rescuers are available, one should give artificial respiration while the other gives cardiac compressions. The compressions should be performed by one rescuer at a rate of sixty per minute, with a breath of artificial respiration given after every five compressions by the other rescuer. Recommended procedure is for the one doing compressions to count out loud, "One, one thousand; two, one thousand; three, one thousand; four, one thousand; five, breathe" -- at which time the other rescuer gives the victim a breath before the next compression begins. The process is continuously repeated. The compressions are given on the numbers, and hence the breath is given between compressions after every fifth one.

CPR should not be interrupted for longer than five seconds.

CPR is not easy, and it would be difficult to perform it properly after only reading about it. Instructions here are only meant to renew what has already been learned. CPR should be learned under competent supervision with hands-on

experience gained in the learning. Take a class on CPR! The life of a loved on may depend on it.

BLEEDING

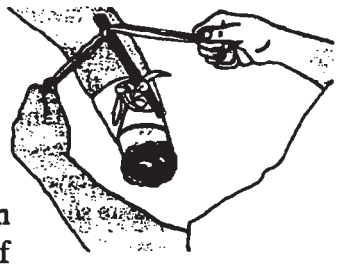
Extensive bleeding can cause death if not stopped promptly. External bleeding can be stopped by direct pressure when applied at an appropriate location on the supplying artery, or as a drastic last effort to save a life, by use of a tourniquet.

Direct pressure is the first step in controlling bleeding, and is applied by pressing a sanitary dressing directly to the wound. If there is no dressing available, use the bare hand. If blood soaks through a dressing *do not remove it;* add another dressing on top and continue the pressure.

Digital pressure to the artery supplying blood to the wounded area may be used in addition to the direct pressure if the direct pressure does not stop the bleeding. While continuing the direct pressure as described above, choose the pressure point between the heart and the wound that lies closest to the wound. There is a particular need to know the brachial and femoral artery pressure points because of the frequency of injury to arms and legs. The purpose of using a pressure point is to press the artery between the fingers of the first aider and the victim's bone, thus slowing the flow of blood to the injured area. When the pressure point is being effectively applied the first aider can almost always feel the pulse. See the diagram on the next page for the locations of pressure points. A wounded limb may also be elevated to help reduce bleeding.

A nosebleed can usually be treated effectively by having the victim sit upright in a comfortable position and then squeezing the nostrils together. The pressure should be applied equally to both sides of the nose and should be hard enough to stop bleeding out of the nostrils or down the back of the throat. Continue the pressure for ten to fifteen minutes.

A tourniquet should be used only in extreme cases when direct pressure and pressure on the appropriate pressure point have failed to stop the bleeding and the victim's life is in danger, or in the case of traumatic amputation. The use of a tourniquet will very likely result in the loss of the limb to which it is applied. Once a tourniquet has been applied it should not be removed or loosened until done by a physician.



If you do not have a specially designed tourniquet you can make one with any soft, strong, pliable material such as cloth or gauze. The band of material should be about two inches wide or wide enough so that it will remain at least one inch wide after it is tightened. A stick or other rigid material is needed to tighten the tourniquet. Place the band around the limb slightly above the wound (two to four inches). Tie a knot in the band, leaving it loose enough to put a stick into it. Insert the stick under the band and twist until just sufficient pressure to stop the bleeding is applied. Secure the end of the stick to the victim so that it will not come loose. Record the time the tourniquet was applied and seek medical assistance immediately. Again, never use a tourniquet unless life is threatened!

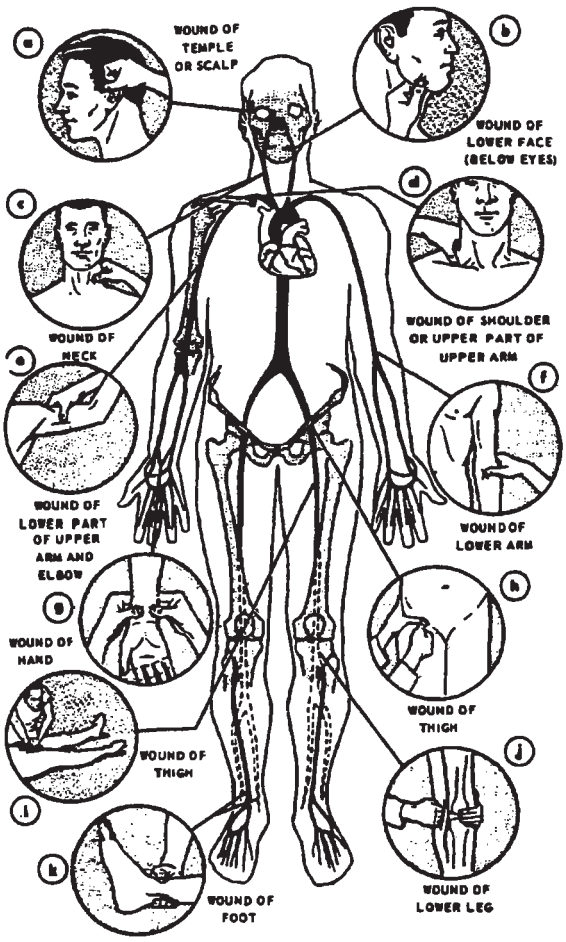
Always treat a victim of severe bleeding for shock.

1) Apply direct pressure on the wound.

2) Elevate the wounded area if an arm or leg is bleeding.

3) Apply pressure on the supplying artery of the arm or leg if steps 1 and 2 do not stop the bleeding.

4) Only as a last resort of life saving measure apply a tourniquet to stop bleeding. Once applied a tourniquet must not be loosened except by a physician.



Pressure Points for Stopping Arterial Bleeding

SHOCK

In any first aid emergency TREAT FOR SHOCK! Shock may be immediate or delayed and is a life-threatening illness that can be caused by almost any traumatic injury. Injuries involving large fluid loss such as bleeding and burns are especially prone to cause shock. Shock is a depression of the action of the nervous system and its control over body functions such as circulation and respiration and is characterized by weakness, rapid and weak pulse, paleness, and cool perspiration in the victim. The pupils of the eyes may be dilated and at the extreme the victim may also become incoherent.

Reassure and comfort the victim and have him/her lie down. Treat the causes of the shock (burn, fractures, bleeding, etc.). Maintain normal body temperature. Most shock victims begin to lose body temperature so they will need to be covered with a blanket or other warming material. However, occasionally a shock victim's body temperature may rise, in which case you will need to lower it. If no head injuries are present elevate the victim's legs. Call for emergency help.

Mild fluids may be given if medical assistance is not readily available, as may be the case in an extended emergency. A saline solution made by mixing one teaspoon of salt and one-half teaspoon of baking soda in a quart of lukewarm water may be used, having the victim drink one-half glass every 15 minutes. If abdominal injuries are present, do not give fluids. If there is any question of the victim losing consciousness, do not give fluid because the victim may regurgitate and aspirate the vomitus.

1) The symptoms of shock are:

   a) Pale, cold, clammy skin.

   b) Weak, rapid pulse.

   c) Shallow breathing.

   d) General body weakness.

2) Always treat a victim for shock by:

   a) Laying the victim down and elevate his feet slightly higher than his head.

   b) Covering him with a blanket to avoid chilling, or cool him is he develops a fever.

   c) Raise the head and shoulders if the victim has difficulty in breathing.

   d) If medical help will not be available within 30 minutes, give a lukewarm solution of salt and baking soda every 15 minutes.

Never give fluids if victim is nauseated, unconscious, has a penetrating abdominal wound, or requires surgery.

POISONING

No one wants to see someone poisoned, but it still happens over a million times a year. As a result, you should be very concerned about possible poisoning in your home, especially accidental poisoning of small children.

Suspect a poisoning when somebody suddenly becomes sick, unconscious, or behaves in an unusual manner and there is no explanation for the illness or abnormal behavior.

If you take enough of anything it can be poisonous. The most critical period of time is the first hour or two after the poisoning occurs - DO NOT DELAY SEEKING ADVICE.

DO THESE THINGS BEFORE YOU CALL SOMEONE

Remove poisons from contact with eyes, skin, or mouth.

EYES: Gently wash eyes with plenty of water (or milk) for 10 to 15 minutes with the eyelids held open. Remove contact lenses and again wash the eyes. Do not allow victim to rub the eyes.

SKIN: Wash poisons off the skin with large amounts of plain water. Then wash the skin with a detergent if it is possible. Remove and discard all contaminated clothing.

MOUTH: Look into victim's mouth and remove all tablets, powder, plants, or any other material that you find. Also examine for cuts, burns, or any unusual coloring. Wipe the mouth out with a cloth and wash thoroughly with water.

Remove victim from contact with poisonous fumes or gases.

Get the victim into fresh air. Loosen all tight-fitting clothing. If the victim is not breathing, you should start artificial respiration immediately. Do not stop until the victim is either breathing well or help arrives. Use oxygen if available. Send someone else to call for help.

If a caustic poison has been swallowed, you should dilute it by giving 1 or 2 glassfuls of milk (or water if milk is not available).

CALL FOR INFORMATION ABOUT WHAT TO DO NEXT:

CALL YOUR DOCTOR, OR CALL THE POISON CONTROL CENTER --961-2430 (Swedish American Emergency Room)

Identify yourself and your relationship to the victim.

Describe the victim by name, age, and sex.

Have the package or poison in your hand and identify exactly (as best as you can) what the victim took and how much he took.

Call for information even if you are not sure. Keep calm. You have enough time to act, but don't delay unnecessarily.

HOW TO INDUCE VOMITING

Have syrup of IPECAC available in your first aid kit to induce vomiting.

Ipecac is a plant extract that when swallowed irritates the stomach and causes vomiting. It is not harmful if taken as directed, except of course, that it will make you vomit. However, there are certain types of poisonings where it should not be

used, so call your doctor or the poison center before you use it. Ipecac may be purchased at any pharmacy. Your pharmacist can give you one ounce (30 cc) of syrup of ipecac without a prescription. All you have to do is request it. It will keep for several years stored at room temperature.

If you are instructed to use Ipecac:

Give the victim one tablespoon of Ipecac syrup followed by a glass (8 oz.) of liquid (water, juices, etc.). Then give additional liquid as tolerated. If the patient hasn't vomited within 15 or 20 minutes, give another tablespoon of Ipecac and more water.

DON'T WASTE TIME TRYING OTHER WAYS TO MAKE THE VICTIM VOMIT.

Tickling the back of the throat with your fingers, a spoon, or some other object is not very effective. Do not use salt water. It is potentially dangerous.

NEVER INDUCE VOMITING IF THE PATIENT:

Is unconscious.

Is having convulsions (fits).

Has swallowed strong caustics or corrosives.

INDUCE VOMITING ONLY IF:

You are instructed to do so by your doctor or the Poison Center; OR
If the patient has swallowed petroleum products (cleaning fluids, gasoline, lighter fluid, etc.).

NEVER INDUCE VOMITING UNTIL YOU ARE INSTRUCTED TO DO SO.

IF YOU GO TO THE HOSPITAL:

Take or send the poison container, poisonous plant, etc., with you.

Take any vomitus you collect.

Don't give substances like stimulants or drugs to the victim.

The Emergency Room is open 24 hours a day.

BURNS

1) Degrees of burns:

   a) 1st degree - skin is red and tender (as in sun burns).

   b) 2nd degree - blisters develop. Never break or open blisters.

   c) 3rd degree - deep tissue damage.

2) First aid for 1st and 2nd degree burns - exclude air by:

   a) Submerge in cold water - the best thing to do.

   b) Apply a cold pack.

   c) Cover with a thick dressing or plastic.

      1) Do not use plastic on the face.

      2) After using cold water or ice pack, cover the burn area with a thick dry sterile dressing and bandage firmly to exclude air.

3) First aid for 3rd degree burns:

   a) Apply a thick dry sterile dressing and bandage to keep out air.

   b) If large area, wrap with clean sheet or towel.

c) Keep burned hands and feet elevated and get medical help immediately.

d) Treat the same as shock victim, giving fluids as indicated and warmth if necessary.

4) First aid for chemical burns:

a) Wash chemical away with water.

b) Acid or alkali burns of the eye:

1) Wash eye thoroughly with a solution of baking soda (1 teaspoon per glass of water) in plain water for 5 minutes.

2) If the victim is lying down, turn head to side. Hold the lid open and pour from inner corner outward.

3) Have victim close the eye, place eye pad over lid, bandage and get medical help as soon as possible.

BROKEN BONES

1) Signs of a closed fracture:

a) Swelling.

b) Tenderness to touch.

c) Deformity.

d) Discoloration.

2) Treatment for closed fractures:

a) Keep broken bone ends from moving.

b) Keep adjacent joints from moving.

c) Treat for shock.

d) See Section #4 below on splinting.

3) Treatment for open fractures:

a) Do not move protruding bone ends.

b) If bleeding, control bleeding by direct pressure on wound.

c) Treat same as closed fracture after bleeding is controlled.

4) Splinting

a) Place one hand above and one hand below fracture to support it.

b) Have someone grasp end of limb and pull steadily until bone is set and splints are in place.

c) Secure the splint to the limb.

d) Treat for shock.

SPRAINS
(Injury to soft tissue around a joint)

1) Always immobilize.

2) Elevate joint.

3) Apply cold during first half hour.

4) Treat the same as a closed fracture.

HEAD INJURIES

1) Symptoms of head injuries

a) May or may not be conscious.

b) Unconsciousness may be delayed 1/2 hour

or more.

c) Bleeding from mouth, nose or ears.

d) Paralysis of one or more extremities.

e) Difference in size of pupils of the eyes.

2) First aid for head injuries.

a) No stimulants or fluids.

b) Don't raise his feet - keep victim FLAT.

c) Observe carefully for stopped breathing or blocked airway.

d) Get medical help immediately.

e) When transported - gently, lying flat.

f) Position head to side so secretions may drool from corner of mouth.

g) Loosen clothing at neck.

INTERNAL BLEEDING

Treat for shock and seek medical help. There is nothing else that you can do for them. If internal bleeding does not stop on it's own accord it must be surgically terminated.

EPILEPSY

1) Allow the victim to have the seizure.

2) Remove objects that may injure the victim during the attack.

3) Be aware of the possibility of breathing emergency.

ELECTRIC SHOCK

1) Do not touch the victim if he is still in contact with the electricity.

2) Turn off the power source or remove wires from the victim.

3) After the rescue, check immediately for stopped breathing and if he has stopped, administer artificial resuscitation.

4) Treat for shock.

PSYCHOLOGICAL CONSIDERATIONS

Catastrophic difficulties frequently bring about severe emotional reactions in the parties involved. These are often unpredictable but are normally only temporary.

If the person is not violent, the first thing to be done is to treat physical injuries. A violent person may first need to be restrained to prevent injury to himself or others. Stay calm. Comfort the person; do not criticize him but on the other hand do not be overly solicitous. Avoid expressions such as "snap out of it" or "get hold of yourself." Avoid joking. Accept the person's feelings and try to reassure him. Make things as comfortable as possible. Involve the victim in meaningful but not overly taxing activity as soon a possible to help him release tensions and forget his troubles. Be patient with the disturbed. It may take a while, but they will probably return to normal. Do not give sedatives or tranquilizers; these will only delay his adjustment to the situation.

DIARRHEA

In some cases diarrhea can be a serious malady. When it occurs, the victim should stop eating solid food and start a diet of clear fluids, such as broths, jello water, juices, and similar liquids. Milk and other dairy products should be avoided. Fluids could also include a sugared salt solution made with one and one-half tablespoons of sugar and one teaspoon of salt in a quart of water. Kaopectate

also helps. While the diarrhea continues, pay particular attention to sanitation and hygiene to prevent spread of the disease.

An expedient remedy for diarrhea is small amounts of a tea made of hardwood bark boiled in water for one to two hours. Other herb teas are also beneficial. These teas are made more effective by adding a small amount of pectin (normally used for making jelly and preserves).

- CHOKING -
THE HEIMLICH MANEUVER

The Hug of Life

Choking on food is the sixth leading cause of accidental death in the U.S.A. Over 3,000 and as many as 6,000 deaths occur each year. The usual slap on the back doesn't help very much, but Dr. Henry J. Heimlich, a thoracic surgeon from Cincinnati, has developed a treatment which is easy to administer and is quite safe if administered properly. Choking occurs when food is sucked into the windpipe instead of being swallowed. Onlookers often mistake the symptoms for those of a heart attack and administer inappropriate treatment.

The Heimlich Maneuver utilizes air that is already in the lungs. Even when we've breathed out, we still have quite a bit of air in the lungs. The Maneuver forces the diaphragm upward which forces air up through the windpipe to dislodge the obstruction.

The most important thing is to make sure the victim is choking, but the choking victim cannot talk. Therefore, if the patient is still conscious, one must quickly ask questions that can be answered by shaking or nodding the head -- but QUICKLY. The choking patient will soon collapse.

The Maneuver forces air that is in the lungs out through the windpipe, dislodging the obstruction. This can be done with the patient in the standing or sitting positions or with the patient lying on his back.

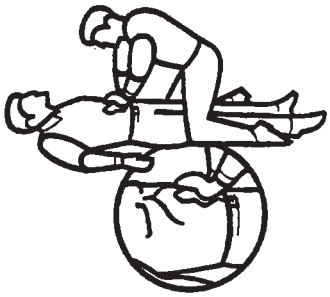
STANDING:

Stand behind the victim and make a fist. Place the thumb end of the fist against the abdomen of the victim, with the fist definitely below the rib cage, between the belly button and the rib cage, but well below the rib cage. Place the other hand over the fist and pull up and in, quickly. The force should depend on the amount required to move enough air to remove the obstruction. In order to prevent injury from using more force than is necessary, one may wish to start with minimal force and increase with each attempt. It may be necessary to repeat the Maneuver four or five times. With small children, use only the fingers to apply pressure.

SITTING:

When the victim is sitting, the chair can provide a good brace or support to perform the Maneuver, which is performed as above.

LYING DOWN:



If the victim has collapsed, or if the victim is so large that the person applying the treatment is unable to reach around the victim, the victim should be placed on the floor on his back. The person applying the treatment quickly straddles the hips of the victim, places one hand over the other and with the heels of the hands well below the rib cage (between the rib cage and the belly button) quickly pushes up and in. Remove the food quickly after it is expelled. Also, the patient

may vomit, so quickly turn him on his side after treatment.

After all, there is very little time. Death or brain damage will occur in just a few minutes. You must act fast. The victim should be examined by a physician after a choking episode and treatment.

IF ALONE

This can be administered to yourself by placing the hands as if standing behind a victim and then letting yourself fall over a soft chair or sofa.

A DISTRESS SIGNAL

Placing the hand to the throat is an almost automatic response of someone choking. This will convey the message, "I am choking." Teach this Maneuver to every member of your family so that they may react quickly to save the life of another.

FIRST AID KIT

The first aid kit as suggested below can easily be included on family outings or used for everyday problems at home. Be sure to keep it well and freshly stocked. This first aid kit is different from the one listed in the section on 72-hour survival kits, in that this one is much more comprehensive and not as portable.

The kit and first aid book should be stored together in an easy-to-reach location. The kit contents should fit the needs of your family. Filling a small tool box, fishing tackle box, or tupperware container with those things your family needs may be better than buying a preassembled kit. Some of the items you may want to consider including in your first aid kit are:

Consecrated Olive Oil
Prescription Drugs
Antibiotic ointment
Aspirin tablets (5-Grain)
Children's Aspirin
Tylenol
Children's Tylenol
Ipecac (to induce vomiting)
Motion sickness medication
Diarrhea medication (Kaopectate)
Laxative
Eye drops
Ear drops
Nasal spray
Aerosol Burn Spray
Benadryl (prescription)
Codeine cough medicine
Vaseline
Hand lotion
Iodine
Hydrogen Peroxide
Smelling salts
Table salt
Baking soda
Rubbing alcohol
Sun Screen
Water purification tablets
Soap (tincture of Green Soap)
Artificial skin spray
Chlorine bleach
Inhalation aids (Vicks, etc.)

* When buying drug items, check the expiration dates and only buy fresh supplies for longest shelf life.

DRESSINGS:

Adhesive tape, roll 2" wide
Bandage, sterile roll 2" wide
Bandage, sterile roll 4" wide
Bandages, large triangular (37 X 37 X 52)

Band aids (plastic strips)
Cotton-tipped swabs (Q-tips)
Cotton, sterile absorbent
Ace bandages
Butterfly bandages
Gauze pads (4 X 4)

OTHER NECESSARY OR USEFUL SUPPLIES:

Tweezers
Scissors
Needles, thread
Safety pins, assorted sizes
Thermometer
Sanitary napkins
Tissues
Clean sheets, torn into long strips - could serve as tourniquets or slings.
Splints, wooden 18" (Optional)
Cold pack - turns cold when opened.
Dental floss
Paper cups, 3 ounce size
Plastic spoons
Pocket knife
Space blankets
Paper and pencil
Heavy string
Snake bite kit
Matches, butane lighter
Medicine dropper(s)
Rubber gloves
Plastic sheeting
Waterproof first aid kit
Razor blades

You should also have a good book on first aid in your first aid kit such as:

First Aid Handbook such as the American National Red Cross, STANDARD FIRST AID AND PERSONAL SAFETY (Garden City, N.Y., Doubleday and Co., Inc.)

Boy Scout Handbook

Boy Scout First Aid Merit Badge Handbook

This Emergency Preparedness Handbook

All families that have children should complete an Authorization of Consent to Treatment of Minor form for each of their children and file it with their school, doctor's office, hospital, baby sitter, or other place where the child is likely to be when a personal injury may occur when the parents are not around. Include with this form a brief history of any known medical problems your child may have such as allergies to certain medications, recurring medical ailments, etc. A form, like the one at the end of this chapter, is an example of the type of information you should include.

AUTHORIZATION OF CONSENT TO TREATMENT OF MINOR

NOTE: Each child needs separate copies of this form on file at each school, doctor's office, hospital, baby sitter, family emergency file, etc. Keep a list of locations on file, in case you need to make changes. You are encouraged to reproduce as many copies of this form as necessary.

(I)(We), The undersigned, parent(s) of _____ a minor, do hereby authorize _____ as agent(s) for the undersigned to consent to an x-ray examination, anesthetic, medical or surgical diagnosis or treatment and hospital care which is deemed advisable by, and is to be rendered under the general supervision of any physician and surgeon licensed under the provisions of the Medicine Practice Act on the Medical Staff of _____ Hospital, or _____ M.D. (Family Physician)

This authorization shall remain effective until _____, 19___, unless sooner revoked in writing and delivered to said agent(s).

Dated:_____ Guardian:_____

Witness:_____ Guardian:_____

FOR PATIENT'S PROTECTION

1) ALLERGIES AND SENSITIVITIES:

Are there reactions to:		COMMENTS
Penicillin or antibiotics?	Y N	_____
Morphine, Codeine, Demurral?	Y N	_____
Novocaine or other anesthetics?	Y N	_____
Aspirin, emperin or pain remedies?	Y N	_____
Sulfa drugs?	Y N	_____
Tetanus or other serums?	Y N	_____
Adhesive tape?	Y N	_____
Iodine or methylate?	Y N	_____
Any other drug or medication?	Y N	_____
Any foods, egg, milk, chocolate?	Y N	_____

2) DRUGS TAKEN RECENTLY:

(within past six months)		
Cortisone?	Y N	_____
ACTH?	Y N	_____
Anticoagulants?	Y N	_____
Tranquilizers?	Y N	_____
Hypotensives (high blood pressure)	Y N	_____

3) Has patient ever received treatment for Asthma, Rheumatism or Rheumatic Fever? Y N _____

Comments:_____

_____

Noted by:_____M.D.

CHILDBIRTH

Childbirth is nothing to be feared. It is a very natural and normal experience and everyone of us on the face of the earth got here the same way. The advent of hospitals and medical assistance is a very modern apparition, the use of which God has not seen necessary. He has sent over 90 percent of his children to the earth without using them.

In the event that a wide spread natural disaster should strike our area there would be several expectant mothers who would go into labor either because it is time or would experience premature delivery because of the shock and trauma they have experienced in the disaster. Inasmuch as hospitals and other medical facilities would not be accessible or perhaps even be nonexistent it is necessary that a thorough understanding of the birthing process be had to insure as safe and as easy a birth as possible under the circumstances. Birth is a natural event and should not be feared, even if no medical facilities, doctors, or nurses are available. The following guidelines are intended to assist you in this natural process and will be applicable to most births. It is especially important to remember that during times of natural disaster great care should be taken to insure proper sanitary conditions are maintained during child birth.

LABOR IS DIVIDED INTO THREE STAGES:

1) First stage -- The womb contracts by itself to open and to bring the baby down to the birth canal.

2) Second state -- The mother pushes (bears down) with the contractions of the womb to help the baby through the birth canal and out into the world.

3) Third stage -- The afterbirth is expelled.

FIRST STAGE:

In this early part of labor it is often helpful for the mother to keep occupied as long as she does not get too tired. She should be patient and calm, relaxing as the contractions come and go and breathing slowly and deeply during the contractions as they become stronger. Emptying the bowels and frequent urination will help to relieve discomfort. The mother will know she is in true labor if she has regular contractions of the womb which are prolonged and become stronger and closer together. When she knows the baby is on the way, she should choose a place to have the baby that will be clean and peaceful. She should be able to lie down or sit in a leaning position (with her back well supported).

The following events occur as part of the first stage of labor and delivery.

1) The state of dilation: the first signs may be only noticeable to the mother -- dull, low backache and irregular cramping pains (contractions) in the lower abdomen. Generally during this stage a somewhat bloody mucus will be secreted from the vaginal opening.

2) As labor progresses, the contractions become stronger, last longer, and become more regular. When the contractions recur at regular 3-4 minute intervals and last from 50-60 seconds, the mother is in the latter part of the first stage.

3) The contractions will get stronger and more frequent. Occasionally the mother may make an involuntary, deep grunting moan with contractions. The delivery of the baby is now imminent. Though it may occur earlier, the bag of waters (amniotic sac) will generally rupture during this stage.

During "First Stage" those helping the mother should know how to time the contractions. This information will give them an idea as to how far into labor the mother is and how much time remains until the baby comes.

Place a hand on the mother's abdomen just above the umbilicus. As contractions begin, you will feel a hardening ball. Time the interval from the moment the uterus begins to harden until it completely relaxes. Time the intervals in minutes between the start of one contraction and the start of the next contraction. As labor progresses, this time will decrease.

Walking or standing tends to shorten labor, so if that feels comfortable to the mother let her. Also, if she becomes hungry let her eat small amounts of food, and since she will probably become very thirsty have plenty of fruit juices and/or water available.

DON'T LEAVE THE MOTHER ALONE.

Make no attempt to wipe away vaginal secretions, as this may contaminate the birth canal. The bag of water may rupture during this stage of labor and blood-tinged mucous may appear.

At the end of the first stage, the mother may feel tired, discouraged, and irritable. This is often referred to as "transition" and is the most uncomfortable part of labor and such feelings are perfectly normal. The mother may have a backache, may vomit, may feel either hot or cold (or both at the same time), she may tremble, feel panicky or scared, cry, or get very cross with her husband and birthing attendants. She may even announce that she has changed her mind and is not going through with it. At this time she needs plenty of encouragement and assurance that things are proceeding normally and that her feelings are normal.

Birth Attendants, the husband, and others present at the labor and birth should have a cheerful, calm appearance. Nervousness, panic, or distressing remarks can have an inhibiting effect on a laboring woman. Comments on how long the labor is lasting, how pale or tired the woman looks can have a terrible effect on her morale. Even talking quietly can irritate a woman having an intense contraction because it is hard to concentrate on relaxing when there is noise in the room.

Relaxation is very important. A woman's husband or labor coach should instruct her to go limp like a rag doll and breath deeply, making her tummy rise and fall. This is called abdominal breathing. Begin each contraction with a deep breath to keep the tissues (of both mom and baby) oxygenated. Observe the kind of breathing you do when you are nearly asleep and try to simulate it. Help her to relax her hands, face, legs, etc. if you see that they are tense. Tenseness in the body fights the contractions and intensifies the sensations of "pain." Relaxation helps a woman to handle the contractions easier and have a faster labor. Sometimes a woman will breathe too fast and get tingling sensations in her hands and feet. She needs to be coached to slow down her breathing. You can have her follow your breathing until the tingling goes away.

Firm hand pressure on the lower back by those attending the mother may help to relieve the backache. Alternately, the mother may prefer to lean her back against a firm surface. Deep

rhythmical breathing helps to relieve annoying symptoms. The discomfort seldom lasts for more than a dozen contractions.

When the womb is almost fully opened, the baby may enter the birth canal, and there may be a vocalized catch in the mother's breathing when she has a contraction. This will signal the onset of the second stage.

SECOND STAGE:

The contractions of the second stage are often of a different kind. They may come further apart and the mother usually feels inclined to bear down (push) with them. When she gets this feeling she should take a deep breath as each contraction comes, hold her breath and gently push. There is no hurry here. The mother should feel no need to exert great force as she pushes. She may want to push with several breaths during each contraction. After it passes, a deep sigh (cleansing breath), will help her recover her breath. She should then rest until the next contraction. She may even sleep between contractions.

The following are general instructions for the second stage of labor:

1) Be Calm! Reassure the mother and be prepared to administer first aid to both the mother and the baby (possible respiratory and cardiac resuscitation for the baby and hemorrhage control and prevention of shock for the mother).

2) Prevent onlookers from crowding around the mother.

3) Use sterile materials or the cleanest materials available. Clean towels or parts of the mother's clothing can be used. Place newspaper under the mother if it is available. If she must lie on the ground, place a blanket or other covering under her.

4) In order to prevent infection, refrain from direct contact with the vagina.

5) Prepare for the delivery by assisting the mother to lie on her back with her knees bent and separated as far apart as possible. Remove any constricting clothing or push it above her waist.

6) When the baby's head reaches the outlet of the birth canal, the top of the head will first be seen during contractions but will then become visible all the time. The mother will now feel a stretching, burning sensation. She must now no longer push during the contractions, and to avoid this, should pant (like a dog on a hot day). This will allow the baby's head to slide gently and painlessly out of the canal. If possible allow the head to emerge between contractions. This will prevent the mother's skin from tearing and will minimize trauma to the baby's head. It is important that the mother pant instead of pushing until both of the baby's shoulders have emerged.

DELIVERY OF THE BABY

As the baby is coming down the birth canal, keep the perineum red or pink by massaging with warm olive oil (if none is available simply massage the area with your hand). Any place that gets white will tear more easily so keep massaging and keep all areas red. Use olive oil on the inside too and pay special attention to the area at the bottom as that is the most common place to tear. Do this massage during a contraction when it will not be noticed or it may irritate some women.

You can support under the perineum with your hand on top of a sterile gauze pad or washcloth. Do not hold it together, just support it so the baby's head can ease out. The other hand can gently press with the fingers around the baby's head so it won't pop out too fast causing tearing. As the baby's head is born, support it with your hand so the face doesn't sit in a puddle of amniotic fluid. Gently wipe the face with a clean or sterile washcloth. Check quickly around the neck for the cord. If you feel it, just hook it with your finger and pull it around the baby's head. Check again. Some are wrapped more than once. If the cord is so tight it can not be slipped over the baby's head, just wait until the baby is born to untangle it. Most cords are long enough to permit this. If the cord is too short to permit the baby to be born, it has to be cut and clamped and the baby delivered rapidly. In this situation the baby may be in distress because the oxygen supply was cut off prematurely. With the next contraction, one of the shoulders comes and then the whole body slips quickly out. If several contractions have passed without a shoulder coming, you may have to slip two fingers in and try to find an armpit. With one or two fingers hooked under the armpit, try to rotate the shoulder counterclockwise while pulling out. Usually this does it.

As the baby's head emerges, it is usually face down. It then turns, so that the nose is turned towards the mother's thigh. Support the baby's head by cradling it in your hands. Do not pull or exert any pressure, unless as has been stated, the shoulders do not come after several contractions. For the lower shoulder (which usually comes first), support the head in an upward position. As the both shoulders emerge be prepared for the rest of the body to come quickly. Use the cleanest cloth or item available to receive the baby.

Remember the time and approximate location of the birth of the baby, so a record can be made later.

With one hand, grasp the baby at the ankles, slipping a finger between the ankles. With the other hand, support the shoulders with the thumb and middle finger around its neck and the forefinger on the head (Support but do not choke). Do not pull on the umbilical cord when picking the baby up. Raise the baby's body slightly higher than the head in order to allow mucous and other fluid to drain from its nose and mouth. BE VERY CAREFUL, as newborn babies are VERY slippery.

The baby will probably breathe and cry almost immediately. If the baby doesn't breathe spontaneously, very gently clear the mouth of mucous with your finger. Stimulate crying by gently rubbing it's back. If all this fails, give extremely gentle mouth-to-mouth resuscitation. Gently pull the lower jaw back and breathe gently with small puffs -- 20 puffs a minute. If there seems to be excess mucous, use your finger to gently clear the baby's mouth.

The mother will probably want to hold the baby. This is desirable. If the umbilical cord is long enough, let her hold the baby in her arms. If the cord is short, support the baby on the mother's abdomen and help her hold it there.

It is of benefit to the baby and makes the afterbirth come with less bleeding if the baby can be allowed to suckle at the breast as soon as it is born. The cord should not be cut until the afterbirth has completely emerged.

THIRD STAGE:

The placenta delivery or afterbirth is expelled by the womb in a period of a few minutes to several hours after the baby is born. No attempt should be

made to pull it out using the cord. Immediately following the afterbirth, there may be additional bleeding and a few blood clots. The womb should feel like a firm grapefruit just below the mother's navel. If it is soft, the baby should be encouraged to nurse, and the mother may be encouraged to gently massage the womb (others may do this for her if she feels too weak). These actions will cause the womb to contract and lessen the chances of bleeding.

If hemorrhaging occurs, do the following:

1) The uterus should be gently massaged to keep it hard.

2) The woman should lie flat, and the bottom of the bed should be elevated.

3) Put a cold pack (such as a small towel dipped in cold water and wrung out) on the lower tummy to irritate the uterus to contract.

4) Put pressure on the perineum with several sanitary napkins and the pressure of your hand.

5) Most importantly, have the baby nurse. If he won't, have the husband suck or massage the nipples. Sucking stimulates the uterus to contract.

Another problem to be alert for is shock. Symptoms of shock are vacant eyes, dilated pupils, pale and cold or clammy skin, faint and rapid pulse, shallow and irregular breathing, dizziness and vomiting. If you notice any of these symptoms, keep the woman warm, slightly elevate her feet and legs, use soft lights, and talk softly and calmly to her.

The baby has some danger of getting an infection through the cut cord, so it should not be cut until sterile conditions are available. If there is a possibility of getting medical help within a few hours, do not cut the cord but leave it and the afterbirth attached to the baby. If there will be no medical help, wait until the afterbirth is out, or at least until the cord is whitened and empty of blood. The cord should not be cut until it quits pulsating so the baby can have a transition time before he absolutely has to breath on his own. As long as the cord is pulsating, the baby is still receiving oxygen from his mother.

If the cord is long enough, the baby can be put on his mother's tummy so she can hold him and talk to him. If not, the father should touch him and talk to him. After the cord has stopped pulsating and has become limp it can be clamped or tied about one inch from the baby's tummy with a cord or sterile cloth and then cut. As the placenta separates from the uterus, the cord will appear longer. Wait for the delivery of the placenta. It will usually be about 10 minutes or longer before the placenta is delivered (though it could be a few hours). Never pull on the cord. When the placenta appears, grasp it gently and rotate it clockwise. Then tie the cord in two places -- about six inches from the baby using strips of material that has been boiled or held in a hot flame.

The placenta and attached membranes must be saved for a doctor's inspection. Leaving the cord and placenta attached to the baby is messy but safe. Save all soiled sheets, blankets, cloths, etc., for a doctor's examination. Check the amount of vaginal bleeding; a small amount (1 to 2 cups) is expected. Place sanitary pads or other sanitary material over the vaginal and perineal areas. Then cover mother and baby but do not allow them to overheat. Continue to check the baby's color and respiration. The baby should not appear blue or yellowish. When necessary, gently flick your fingers on the soles of the baby's feet; this will encourage it to cry vigorously, thus filling his lungs with oxygen and promoting the cardio-vascular system to function properly.

The mother will probably need light nourishment and will wish to rest and watch her baby. She should keep her hands away from the area surrounding the birth outlet. If uncontaminated

water is available, she may wish too wash off her thighs. She may get up and go to the bathroom or seek better shelter. All care should be taken to avoid introducing infection into the birth canal. The mother can expect some vaginal discharge for several days. This is usually reddish for the first day or so but lightens and becomes less profuse within a few days.

Stay with the mother until relieved by competent personnel. This is a relatively dangerous period for the mother, as hemorrhage and shock may occur.

Almost all emergency births are normal. The babies typically thrive and the mothers recover quickly. It is very important when assisting with an emergency delivery that you continually reassure the mother and attempt to keep her calm.

PREPARATION FOR FLOODS

In addition to the general guidance of this booklet there are certain emergency actions particularly associated with major floods. Most floods are preceded by extended periods of warning in which people living in areas most likely to be severely affected are warned to move to safer locations. In the Rockford area, the main type of flood that would affect us would be rising water levels due to extended periods of heavy rain. Generally, those members living near the Rock River or its tributaries and those members living in low lying areas of the city or county would be most affected.

PREPARATION FOR FLOODS

Following are some suggestions from Church leaders on how to be well prepared for flooding:

1) Families should discuss their plans for responding to emergencies in a family council, to be sure that all members of the family understand their responsibilities, where to meet in case of separation, what things should be moved from the house should evacuation become necessary, etc.

2) All Church members should be committed to helping one another in these difficult times. Non-members of the Church should be considered in our plans as well as members.

3) Families living in areas of flood potential should seriously consider buying flood insurance through a reputable insurance agent.

4) Families should prepare a 72 hour emergency kit that they can quickly take with them and that will cover their basic needs for three days in the event that they need to evacuate their homes suddenly.

5) Valuable records should be moved to safe places away from areas in the home where water will likely be high.

6) Food supplies should be moved off the floor and placed at as high a level as possible to avoid spoilage and contamination in the event that flood waters enter the home.

7) If waters enter the home, care should be exercised with pilot lights on furnaces and water heaters. The supply to such appliances should be turned off if flood waters are near them.

8) To avoid electrocution and fires, electrical circuits in flooded area of the home should be turned off.

9) Even though flood waters may not enter the home, basement sewers should be watched carefully, inasmuch as they often back up when sewers become filled with flood waters. Use of toilets, showers, sinks etc., should be minimized during flooding to avoid overloading sewer lines.

10) Families should be encouraged to have on hand a supply of purified water in case normal water supplies are cut off.

In addition, you may want to consider the following list of suggested preparation items from various sources.

1) Make an itemized list of personal property, including furnishings, clothing, and valuables. Photographs of your home and it's contents both inside and out are helpful. This will assist an adjuster in settling claims and will help document uninsured losses, which are tax deductible.

2) Learn the safest route from your home or place of business to high, safe ground should

you have to evacuate in a hurry.

3) Keep a portable radio, extra batteries, emergency cooking equipment, and flashlights in working order and nearby.

4) Persons who live in frequently flooded areas should keep on hand materials such as sandbags, plywood, plastic sheeting, and lumber which can be used to protect properties.

5) Keep your insurance policies and a list of personal property in a safe place, such as a safe deposit box. Know the name and location of the agent(s) who issued these policies.

6) BUY FLOOD INSURANCE. Protection against loss due to floods is not covered under a homeowner's policy. You should contact your property/casualty agent or broker about eligibility for flood insurance, which is offered through the National Flood Insurance Program (NFIP). Generally, there is a five-day waiting period for this policy to become effective, so don't wait until the last minute to apply.

7) Protect your valuables by transferring them to floors above projected flood levels and enclose them in polyethylene sacks.

If the time comes when local authorities have asked you to evacuate your home, or you feel that you should take that action on your own, consider the following additional preparation guidelines (if time permits.)

1) Turn off the main water valve to trap the maximum amount of uncontaminated water in the building.

2) Take your emergency preparedness kit which you have previously organized containing a three to seven day supply of food, water, clothing, bedding and medical supplies. This is essential because it takes three days for the Red Cross, the Church, or governmental agencies to mobilize and bring supplies into a disaster stricken area.

3) Follow the instructions and advice of your local government. If you are told to evacuate, do so promptly. If you are instructed to move to a certain location, go there - don't go anywhere else. If certain travel routes are specified or recommended, use those routes rather than trying to find shortcuts of your own. (It will help if you have previously become familiar with the routes likely to be used.) If you are told to shut off your water, gas or electric service before leaving home, do so. Also find out on the radio where emergency housing and mass feeding stations are located, in case you need to use them.

4) Secure your home before leaving. IF, AND ONLY IF, TIME PERMITS and if you have not received other instructions from the local government, you should take the following actions before leaving your home:

   a) Bring outside possessions inside the house, or tie them down securely.

   b) Board up your windows so they won't be broken by high winds, water, flying objects or debris.

   c) If flooding is likely, move furniture to the upper floor of your home. Disconnect electrical appliances and shut off electricity to the home. Also close the main gas valve at the meter.

   d) <u>Do Not</u> stack sandbags around the outside walls of your home to keep flood waters out of your basement if flood waters are expected to be greater than two feet deep around your home.

Water seeping downward through the earth (either beyond the sandbags or over them) may collect around the basement walls and under the floor, creating pressure that could crack or otherwise damage the walls or else raise the entire basement and cause it to "float" out of the ground. In most cases it is better to permit waters to flow freely into the basement. This will equalize the water pressure on the inside and outside of the basement walls and floor, and thus avoid structural damage to the foundation of the house. (Also, sandbags should not be stacked directly against the outer walls of a dwelling, since, when wet, the bags swell and may create added pressure on the structure resulting in a cracked foundation).

e) Plug or cap off all basement plumbing fixtures, showers, and drain inlets.

f) Lock house doors and windows (unless flood waters are expected to be greater than 3 feet deep in which case you should prop all doors open and open ground level windows to allow waters to flow freely through your home). Park your car in the garage or driveway, close the windows, and lock it (unless you are driving to your new temporary location.

5) Travel with Care. If you must travel during times of eminent flooding keep the following safety precautions in mind.

a) Stock the car with nonperishable foods (like canned goods), a plastic container of fresh drinking water, blankets, first aid kit, flashlights, dry clothing and any special medication needed by your family.

b) Leave early enough so as not to be marooned by flooded roads, fallen trees, and wires.

c) Keep the gas tank at least half full, since gasoline pumps will not be working if the electricity has been cut off.

d) Follow recommended routes.

e) As you travel, keep listening to the radio for additional information and instructions from the local government.

f) Watch out for areas where rivers or streams may flood suddenly.

g) Don't try to cross a stream or pool of water unless you are certain that the water will not be above the middle of your car's wheels all the way across. If you decide it is safe to drive across it, put your car in low gear and drive very slowly, to avoid splashing water into your engine and causing it to stop. Also remember that your brakes may not work well after the wheels of your car have been in deep water. Try them out a few times when you reach the other side.

h) If your car stalls in a flooded area, abandon it immediately. Flood waters can rise rapidly and sweep a car (and its occupants) away. Many deaths have resulted from attempts to move stalled vehicles.

The above mentioned steps to evacuation are to be used as guidelines only if there is sufficient time to implement them. Use caution at all times.

(Editor's Note: The material in the next section is not likely to affect us in the Rockford area. It is useful information, however, if you ever find yourself in a mountainous area, such as on vacation, etc..)

FLASH FLOODS

Flash flood waves, moving at incredible speeds, can roll boulders, tear out trees, destroy buildings and bridges, and scour out new channels. Killing walls of water can reach 10 to 20 feet high. You won't always have warning that these deadly, sudden floods are coming (example: if you are camping or hiking in narrow canyons). But you can save yourself and your family if you know what to expect and how to react.

BEFORE THE FLOOD - Know the elevation of your location in relation to nearby streams and other waterways. Make advance plans of what you will do and where you will go in a flash flood emergency.

Learn these flash flood terms used in National Weather Service Forecasts and Warnings:

1) Flash Flood - means the occurrence of a dangerous rise in water level of a stream or over a land area is expected in a few hours or less caused by heavy rain, ice jam breakup, earthquake or dam failure.

2) Flash Flood Watch - means that heavy rains occurring or expected to occur may soon cause flash flooding in certain areas and citizens should be alert to the possibility of a flood emergency which will require immediate action.

3) Flash Flood Warning - means that flash flooding is occurring or imminent on certain streams or designated areas and immediate precautions should be taken by those threatened.

WHEN A FLASH FLOOD WATCH IS ISSUED

Listen to area radio and television stations for possible Flash Flood Warnings and reports of flooding in progress from the National Weather Service and public safety agencies. Keep a battery-powered radio tuned to a local station, and follow all emergency instructions. Be prepared to move out of danger at a moment's notice. Floods are deceptive. Try to avoid flooded areas. If you are on the road, watch for flooding at highway dips, bridges, and low areas due to heavy rain not observable to you, but which may be indicated by thunder and lightning, especially in the mountains.

WHEN A FLASH FLOOD WARNING IS ISSUED

The safety of your family is the most important consideration. Since flood waters can rise very rapidly, you should be prepared to evacuate before the waters reach your location. Act quickly to save yourself. You may have only seconds. Get out of areas subject to flooding. Avoid already flooded areas. Do not attempt to cross a flowing stream on foot where water is above your knees. If driving, know the depth of water in a dip before crossing. The road may not be intact under the water. If the vehicle stalls, abandon it immediately and seek higher ground - rapidly rising water may engulf the vehicle and its occupants and sweep them away. Be especially cautious at night when it is hard to recognize flood dangers. When you are out of immediate danger, tune in area radio or television stations for additional information as conditions change and new reports are received.

AFTER THE FLASH FLOOD WATCH OR WARNING IS CANCELLED

Stay tuned to radio or television for follow-up information. Flash flooding may have ended, but general flooding may come later in headwater streams and major rivers.

FIRE

PREVENTION - DETECTION - ESCAPE

According to the Red Cross, the third leading cause of accidental death in recent years has been fire. Most of these fires have occurred in the home, which is a particularly dangerous environment. Fire is always a possible danger, and a probable secondary disaster in the event of a major earthquake or flood. It is always important that you follow safety measures for fire prevention, detection, and escape. It is doubly important after an earthquake because regular fire fighters may not be able to get to you in time. Floods and other natural disasters will also spawn a large number of fires because of electrical shorts and severed gas lines.

FIRE PREVENTION - BEFORE A FIRE

Most accidental fires can be avoided with a little care. Firemen have a saying that "a clean building seldom burns." Good housekeeping is the first line of defense against home fires. Do you practice fireproof housekeeping?

There are several steps a family can take to minimize the possibility of a fire starting in their home and to minimize the effects of a fire should one occur.

- Install fire extinguishers in danger spots.
- Make sure fire extinguishers are accessible and maintained.
- Keep a garden hose near the water faucet at all times, especially in the winter months when fire danger is greatest.
- Install adequate insulation at all heating surfaces. This is particularly important around wood and coal burning stoves.
- Repair or replace defective or inadequate electrical wiring.
- Use only the proper size fuses.
- Replace frayed electrical cords or broken plugs.
- Do not run cords under rugs or hook cords over nails.
- Keep electric outlets safely loaded (no overloads).
- Keep appliances clean and in good repair.
- Perform required maintenance on heating systems.
- Dispose of trash immediately.
- Use only non-flammable cleaning fluids.
- Keep gasoline and other flammable liquids in tightly closed metal containers.
- Do not use a combustible liquid to freshen (ie. build up or increase) a fire!
- Keep garage, basement, attic, closets, etc., free of rubbish.
- Keep the yard and garden well trimmed (no tall weeds, etc.).
- Use a fireplace screen.

- Install a spark arrestor on your chimney.

- Place curtains and drapes so that they won't blow into flames or touch hot surfaces from stoves, fireplaces, candles, etc.

- Supervise children playing near an open fire.

- Store matches in metal containers out of sight and reach of small children.

- Turn pot handles away from the edge of the stove.

- Keep important papers and documents in a fire proof box or safe.

- **INSTALL AND MAINTAIN HOME SMOKE DETECTORS.**

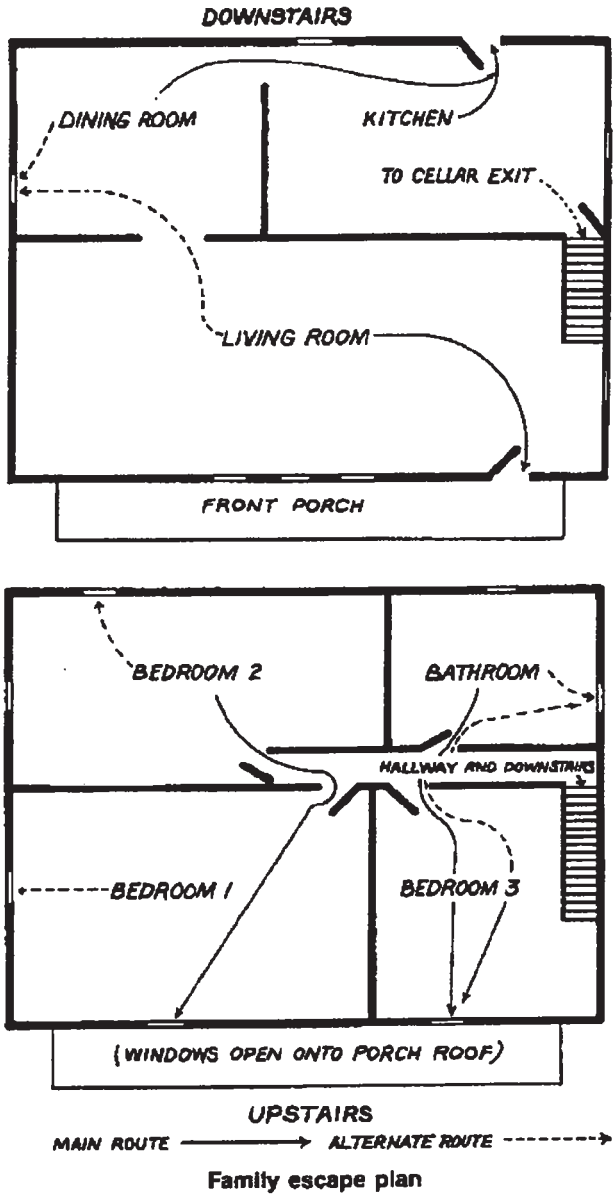
  More lives are saved each year by smoke detectors than all the other fire fighting tools and equipment combined. A home without one is only inviting trouble or tragedy.

- Instruct baby sitters in fire and other emergency procedures.

- Post emergency numbers for the fire department on ALL telephones.

- Each family should have a pre-arranged escape plan for getting out of their home in case of fire. There should be at least two exits from every room (doors or windows). At the end of this section is a piece of graph paper to assist you in drawing a family evacuation plan.

- Determine a pre-arranged meeting area that all family members should go to IMMEDIATELY when they leave the home if it is on fire. This could be a tree in the front yard, the neighbors porch, etc. This will facilitate taking a "head count" and could save the life of a would-be rescuer who returns to a burning building to search for some one who has already gotten out.



Family escape plan

FIRE DETECTION

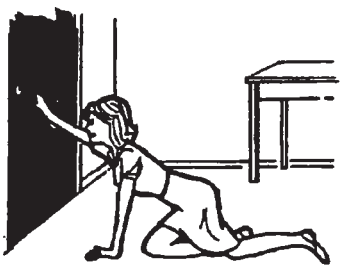
Statistics show that most fatal fires occur while the family is sleeping. Smoke and toxic gases are the killers in most home fires rather than flames. Smoke detectors (either ionization types or photo-electric detectors powered by electricity or battery) can alert your family while the fire is still small, which may mean the difference between life and death.

For minimum protection: There should be a smoke detector between the bedrooms or sleeping areas and the rest of the house, and/or a smoke detector at the head of each stairway. The amount of detection equipment needed in your home or apartment will be determined by the size and floor plan of your living space, your life style, and how much money your family is willing to spend (Your local fire department can give you assistance in planning your fire detection system).

DURING A FIRE

If you are in a burning building, above all, remain calm. More people are killed each year through foolish actions caused by panic than by actual flames. If a fire does occur, your home might be saved if you know how to fight fires, act promptly, and have on hand some basic fire fighting tools. Give detailed fire fighting duties to each able family member so that you all learn to work as an efficient team. Be sure everyone in your home understands what starts fires, how they spread, and what can be done to control them. In a major earthquake, neighbors will have to work together to keep fires from spreading. When a fire breaks out EVACUATE YOURSELF AND YOUR FAMILY MEMBERS FIRST, then call the fire department. If there is time and if you have the proper equipment to fight a fire and can do so without endangering yourself you may then begin to fight the fire the best way you can. Keep the following in mind to minimize dangers.

- Before opening interior doors feel them to see if they are hot. If hot, or warm, do not open them if there is any other means of escape.



- Before opening a door take a deep breath and hold it. Hot air on the other side of the door could sear your lungs causing instant death.

- If you must open a door, brace your shoulder against it so that you can slam it immediately if the air on the other side is hot.

- Close doors behind you to prevent drafts and to slow the fire spread.

- Crawl along the floor on your stomach because the air will be cooler and fresher there, hot air and poisonous gases will rise.

- If trapped in a burning building do not panic. Stuff drapes or clothing into cracks around the door to prevent smoke from entering your room.

- Open or break the windows at the top to let out smoke and poisonous gases.

- Open or break the window at the bottom and breathe from this point.

- If there is a telephone in the room call the fire department and report your exact location.

- If at all possible GET OUT OF THE BUILDING, FAST. Do not stop to dress, gather pets, valuables, or toys.

- ONCE OUT - STAY OUT!! Smoke and toxic gases can kill you in minutes.

Have a meeting place established outside where all members of the family will report as soon as possible. When two people reach the meeting place, one should leave to notify the fire department. The second should stay to report to the rest of the family that the caller escaped and has gone for help.

FIRE DRILLS

Include fire escape procedures in your family earthquake drill, and hold separate fire drills on other occasions. Give special consideration for the very young, handicapped and the elderly. Remember that smoke, some toxic gases, and heat rise. You can simulate fire conditions by crawling on hands and knees to the nearest wall and following it round to the door. Keep head about 18" from the floor and take short small breaths while escaping. Never stand up! Cover mouth with a cloth if possible. Teach your family not to open doors if they are hot. Keep doors and windows closed to limit rapid spreading of the fire.

When staying in a motel or hotel, the key to survival is YOU! Before making reservations ask about fire prevention measures (sprinkler system and smoke detectors). Always know two ways to exit your room and the hotel (do not use the elevator). At first sign of fire, leave as fast as possible, taking room key. If you encounter smoke, take the second exit route or return to your room, close the door and call for help. Be sure to follow the steps outlined above.

For children, a fire drill should be a wise mixture of seriousness and a game - never a scary experience. Children who have had fire drill practice at home will almost automatically do the right thing in a real emergency. Without such practice, they all too often hide under a bed or in a closet, which can mean disaster. Instruct baby sitters on what to do in case of fire.

EXTINGUISHING FIRES

Under normal conditions, it is best to call the fire department FIRST. While help is on the way, try to control the spread of the fire yourself if it is safe to do so. Always keep an open escape route between you and the fire.

Understanding fire can help a great deal in reducing fears about it. Three things must exist in order for a fire to occur. These are heat, fuel and air, sometimes represented in a triangle. If any leg of the triangle is removed, there can be no fire. Most fires can be prevented by keeping one side of the triangle away from the other two.

Examples:

* Store flammable liquids away from water heaters, furnaces, and other heat and spark sources = No heat source to cause liquids to burn.

* Store oily rags in a sealed metal container = No air source for combustion, even if container of rags heats up.

* Keep old rags, newspapers, and trash away from furnace = No source of fuel around potentially hot items like the furnace.

Most fires can be extinguished by the quickest means possible, using whatever tools are available. Remember the three basic ways to put out a fire.

1) Take away it's fuel.

2) Take away it's air (smother it).

3) Take away it's heat by cooling it with water.

SPECIAL TYPES OF FIRES REQUIRE SPECIAL METHODS:

1) Electrical Fires - Be sure to shut off the electricity first. Then put out the flames with an extinguisher, water or other fire retardant. If you can't shut off the electricity, don't use water on an electrical fire! To do so could cause electrocution to the fire fighter!

2) Oil or Grease Fires - Shut off the supply of whatever is burning. Then smother the flames with sand, earth, rugs, or other heavy materials. DO NOT use water. Foam and carbontetrachloride type extinguishers work well also. Be sure to point the fire retardant at the base of the fire where the flames meet the fuel.

3) Cooking fires - If hot cooking oil catches on fire smother the flames by putting the lid on the pot, covering it with a bread board, or dousing it with a cloud of baking soda, sand, or earth (never use flour, it can be explosive - and never use water because it will splatter the oil and spread the fire).

4) Natural Gas Fires - It is useless to fight a natural gas fire unless you first shut off the gas supply. Then use water, sand, earth, or any other material available to put out whatever is burning. This type of fire is extremely likely after an earthquake.

5) Person on Fire - If someone's clothing should catch on fire it is important to act immediately. DO NOT let the person run as this will only feed the fire and increase the burning. Get them to lay on the ground and roll over and over to smother the flames. Wrap them in a blanket if possible to help smother the flames. Immediately treat them for shock and bathe them in cool water. Get medical attention immediately.

NATURAL DISASTER

Normal fire-prevention rules are of special importance in an emergency. However, in addition to normal precautions remember that after an earthquake there is greater danger of fires due to ruptures in gas lines, short circuits in electrical wiring, and other hazardous conditions. After flooding there is increased danger of fires due to pilot lights in gas appliances and furnaces being put out by the flood waters and the resultant build-up of the gas fumes in the building. Remember also that during emergency conditions that fire departments will probably not be able to respond to the situation. Therefore you will be on your own.

ELECTRICAL FAILURE

Power outages can occur from lightning, high winds or heavy storms. Automobile accidents involving power line poles also can be responsible. Power companies may have equipment failure or an equipment failure may occur in your own home. These power outages are usually very localized in scope and seldom last long enough to be disastrous, they can nevertheless be a nuisance when you are not prepared.

More devastating power outages may be caused by earthquakes, floods, or other serious natural disaster. Electrical failure under those conditions would only complicate rescue and cleanup attempts.

Whatever the cause, the best time to prepare should be when the lights are on. The guidelines offered in this chapter should help in preparing you and your family for a power outage.

IF YOUR NEIGHBORS HAVE LIGHTS

If your neighbors have lights and you don't, check your fuse box or circuit breaker panel. Make sure your large appliances are turned to the "off" position to avoid possible damage to your electrical system.

IF YOUR FUSE BLOWS

Check the fuse box. If you have the screw-in type of fuse and the fuse window is blackened or discolored, it indicates a short circuit high current flow. Look for lamps, cords or appliances with bare wires, loose parts or other problems. NEVER place a penny or other metal object under a fuse to complete the circuit when you don't have a spare replacement fuse. These objects do not melt or "blow" when they overheat as fuses do and may result in an electrical fire that will destroy your home.

Cartridge-type fuses show no visual evidence that they have blown (They can be checked with an instrument called an ohmmeter. your electrician can advise you about how to use it). If the blown circuit can be identified, change the fuse for the circuit that is not operating. Be sure the fuse has the correct rating.

If the fuse has blown because of an overloaded circuit, shift some lamps or appliances to another circuit. **WARNING**: Do not install a larger fuse to fix the problem, as this is often the cause of electrical fires.

IF YOU HAVE A CIRCUIT BREAKER

When overloaded, the circuit breaker will snap to the "off" or half-open position. this will help you locate which circuit breaker has tripped.

If the main breaker has tripped, turn off as many lights and appliances as possible. Then move the circuit breaker handle completely to the "off" position and then to the "on" position.

If a branch circuit has tripped, unplug all lamps, cords or appliances. Move the circuit breaker handle completely to the "off" position and then to the "on" position. If the circuit breaker stays in the "on" position, turn on lights and plug in appliances, one by one, to see if one trips the breaker. This will indicate whether the circuit breaker tripped because of a faulty light or appliance or an overloaded circuit. Make appropriate adjustments in your home's electrical load.

If you are unable to locate your problem, call an electrician.

WHEN YOU KNOW A BLACKOUT IS COMING

In the event of a pre-planned power outage for repairs or maintenance, ComEd will advise you. If so, don't be caught unprepared. Here is a list of things that you may check to be sure you are prepared:

1) Review all directions on how to use camp stoves, lanterns and catalytic heaters safely.

2) Turn refrigerator and freezer to maximum "cold" setting so that the food will be as cold as possible when the outage begins.

3) Fuel-up and test cooking and heating equipment outside the house or in a well-ventilated area to minimize the possibility of fire due to possible spills of flammable liquid.

4) If local supplies and laws permit, fill bathtub or large containers with water in the event your water pump is affected by the blackout. Remember that toilets can be flushed after you have poured a bucketful of water in the tank.

5) If it is winter, bring blankets and/or sleeping bags out of storage before the outage occurs.

6) If your range is electric, make soup or a hot drink and store in a thermos to free your camp stove or other appliances and equipment for cooking the next meal.

7) When a lengthy blackout begins, unplug refrigerator, freezer and pumps. Turn the furnace thermostat to the lowest possible setting or central air conditioning thermostat to the highest possible setting. Also disengage the circuit breaker or remove the fuse controlling your appliances with the exception of one or two light switches. When power returns, plug in or turn on appliances one at a time. After 10 or 15 minutes, reset thermostats to normal settings and restore power to water heater.

A POWER OUTAGE MEANS A FREEZER CRISIS

One of the worst problems that comes with a power outage is food thawing in your freezer. here are some hints that will assure maximum protection of foods while your power is out.

KEEP THE FREEZER DOOR CLOSED!

Open your freezer only to take food out or to add dry ice. Try to determine how long power will be out. Length of time food will keep depends on:

1) Amount of food in the freezer. A full freezer will stay cold many hours longer than a freezer partially full.

2) Type of food within. A freezer of baked goods will thaw faster than a freezer full of meat.

3) The temperature of the food. The colder the food, the longer it will stay frozen.

4) The freezer itself. A well insulated freezer will keep food cold much longer. Remember that built-up ice works against your freezer (acting as insulation), so keep your freezer defrosted.

A full freezer will keep food cold safely for 48 hours. A half-full freezer will keep food cold safely for 24 hours.

If you have access to dry ice, place 25 to 50 pounds of it on tip of cardboard and then on top of the food. This will keep the freezer cold for two additional days.

If your power goes out in the wintertime, place foods in secure containers and place them in the snow. You may also freeze containers of water

outside and put them in the refrigerator to keep the food stored there colder.

When your power is turned back on, examine your frozen food. It may be refrozen safely if it still contains ice crystals or is 40° or colder, as long as it hasn't been at this temperature longer than one or two days. Use refrozen foods as quickly as possible.

Examine your meat closely for off-colors. "If in doubt, throw it out." Other thawed foods may be cooked according to directions and then re-frozen.

Your refrigerator gets warm quickly, so use perishable foods as soon as possible.

TIPS TO REMEMBER

When power outages appear to be lengthy, turn off or unplug all appliances, including water heaters if they are electric. Leave cords visible to remind yourself to plug them back in. When power is restored, plug them in one-by-one. This helps prevent an overload on the power system and a second blackout from immediately recurring. It also helps protect your appliances and equipment from damage since the current, when initially restored, may be unstable resulting in power surges and spikes.

DO NOT use the telephone to get information. Listen to the radio for official information and instructions (you must plan ahead and obtain a battery powered radio).

If you drain your hot water heater to prevent freezing, trip appropriate circuit breaker or remove necessary fuse to disconnect the heater. Your heating element will burn out if the heating element is turned on when the tank is drained.

Take inventory of water-collecting spots in your home, such as pumps, water heater, supply lines, boilers, hobby equipment, etc. Also list traps in drains or tubs, sinks, commodes, washing machines, and dishwashers. If an extended outage occurs during winter, drain these if possible. If it is not possible to drain traps or sumps, add antifreeze solution to prevent freezing (Antifreeze is poisonous and should not be added to any water supply or source that will be used for drinking).

If your home floods during a power outage, have a qualified serviceman check the motors in your freezer, furnace, dehumidifier, and any other appliances that were possibly water-damaged.

Remember to conserve water when an outage hits because city water pumps will not be working.

If electrical power should fail in the winter, steps should be taken to keep warm. All furnaces, even natural gas ones, are controlled by an electric thermostat and will not function during a power failure. For this reason it would be wise for every family to obtain an alternate source of heat. Either a wood burning stove or kerosene heater.

Check the owner's manual for procedures on how to use an automatic garage door opener when the power is off, or call a home builder or service dealer in your area.

Have wiring checked by a qualified electrician. As homes add more and more electrical appliances, the power load increases.

Always have a flashlight in an easily accessible place.

Have extra fuses of the right size and type on hand.

Have an electrician label your fuses or circuit breakers to identify which circuits (and loads) each one supplies.

When a power outage occurs, report immediately any wires that are down or flashes of light to the Utility company. Keep all people and pets away from the area.

Be patient! Energy must first be restored to police, fire departments and hospitals before it can be restored to residential areas.

HOME GENERATORS

You may choose to buy a home generator. These are usually very expensive, but may be worth the investment if you feel so inclined. In the home, generators should not be connected directly into circuits normally serviced by the Utility company unless a transfer switch approved by the company is properly installed. Failure to do so may result in the electrocution of servicemen working to restore power out on the main line as your home generated electricity backs up down the line to the point where the men are working.

WINTER STORMS

Keep posted on weather conditions. Use your radio, television and newspapers to keep informed of current weather conditions and forecasts in your area. Even a few hours warning of a storm may enable you to avoid being caught outside in it, or at least be prepared to cope with it. You should understand the terms commonly used in weather forecasts of winter storms:

BLIZZARD - A blizzard is the most dangerous of all winter storms. It combines cold air, heavy snow, and strong winds that blow the snow about and may reduce visibility to only a few yards or feet. A blizzard warning is issued when the Weather Bureau expects considerable snow, winds of 35 miles an hour or more, and temperatures of 20 degrees Fahrenheit or lower. A severe blizzard warning means that a very heavy snowfall is expected, with winds of at least 45 miles an hour and temperatures of 10 degrees or lower. Wind chill factors would of course make the effective temperature much lower.

HEAVY SNOW WARNING - A heavy snow warning usually means an expected snowfall of 4 inches or more in a 12-hour period, or 6 inches or more in a 24-hour period. Warnings of snow flurries, snow squalls, or blowing and drifting snow are important mainly because visibility may be reduced and roads may become slippery or blocked.

FREEZING RAIN OR FREEZING DRIZZLE - This forecast is made when expected rain is likely to freeze as soon as it strikes the ground, putting a coating of ice or glaze on roads and everything else that is exposed. If a substantial layer of ice is expected to accumulate from the freezing rain, an ICE STORM is forecast.

SLEET - Sleet is small particles of ice, usually mixed with rain. If enough sleet accumulates on the ground, it will make the roads slippery.

Travel only if necessary. Avoid all unnecessary trips. If you must travel, use public transportation if possible. However, if you are forced to use your automobile for a trip of any distance, take these precautions:

1) Call the Highway Patrol to learn the road conditions along the route you plan to travel. In Winnebago County call 962-7051.

2) Make sure your car is in good operating condition, properly serviced, and equipped with chains or snow tires.

3) Take another person with you if possible.

4) Make sure someone knows where you are going, your approximate schedule, and your estimated time of arrival at your destination.

5) Have emergency "winter storm supplies" in your car, such as a container of sand, shovel, windshield scraper, tow chain or rope, extra gasoline, and a flashlight. It is also good to have with you heavy gloves or mittens, overshoes, extra woolen socks, and winter headgear to cover your head and face.

6) Travel by daylight and use major highways if you can. Keep the car radio turned on for weather information and advice.

7) Drive with all possible caution. Don't try to save time by traveling faster than road and weather conditions permit.

8) Don't be daring or foolhardy. Stop, turn back, or seek help if conditions threaten that may test your ability or endurance, rather than risk being stalled, lost or isolated. If you are caught in a blizzard, seek refuge immediately.

9) If you get stranded in cold weather or snowbound, stay with your car. It's your best

shelter. Run your engine and heater only ten minutes or so every hour. You will stay warm enough, and you will be conserving gas in case you are stuck for a long time. When running your engine, keep your window cracked for air (on the opposite side of the car from which the wind is blowing). Most importantly, make sure the tail pipe is not covered with snow. Check it often. If it is covered, deadly exhaust fumes could back up into your car. Turn on your dome light occasionally at night so you can see how other passengers are holding up. also, put out a distress flare or colored balloons or flags so you will be more easily seen.

KEEP CALM IF YOU GET IN TROUBLE

If your car breaks down during a storm, or if you become stalled or lost, don't panic. Think the problem through, decide what's the safest and best thing to do, and then do it slowly and carefully. If you are on a well-traveled road, show a trouble signal. Set your directional blinkers to flashing, raise the hood of your car, or hang a cloth from the radio aerial or car window. Then stay in your car and wait for help to arrive. If you run the engine to keep warm, remember to open a window enough to provide ventilation and to protect you from carbon monoxide poisoning.

Regardless of where you are, if there is no house or other source of help in sight, do not leave your car to search for assistance, as you may become confused and get lost. This could be disastrous during a winter storm because exhaustion, hypothermia and death can come quickly.

AVOID OVER EXERTION

Every winter many unnecessary deaths occur because people, especially older persons (but younger ones as well) engage in more strenuous physical activity than their bodies can stand. Cold weather itself, without any physical exertion, puts an extra strain on your heart. If you add to this physical exercise, especially exercise that you are not accustomed to, such as shoveling snow, pushing an automobile, or even walking fast or far, you are risking a heart attack, a stroke, or other damage to your body. In winter weather, and especially in winter storms, be aware of this danger and avoid overexertion.

HYPOTHERMIA

Although the bulk of the information in this chapter is designed to help people who are camping, hunting, or involved in outdoor winter recreation, it is just as applicable to anyone caught in a winter storm if their car becomes stranded or if a disaster such as a sever earthquake in the winter should leave them exposed to the elements.

COLD KILLS IN TWO DISTINCT STEPS

Step One: Exposure and Exhaustion --

The moment your body begins to lose heat faster than it produces it, you are undergoing exposure. Two things happen:

1) You voluntarily exercise to stay warm.

2) Your body makes involuntary adjustments (such as shivering) to preserve normal temperature in the vital organs.

Either response drains your energy reserves. The only way to stop the drain is to reduce the degree of exposure. The time to prevent hypothermia is during the period of exposure and gradual exhaustion.

Step Two: Hypothermia --

If exposure continues until your energy reserves are exhausted:

1) Cold reaches the brain depriving you of judgement and reasoning power. You will not realize this is happening.

2) You will lose control of your hands (they will become numb and you will not be able to grasp or hold onto things).

This is hypothermia. Your internal temperature is sliding downward. Without treatment, this slide leads to stupor, collapse and death.

One of the most common types of hypothermia deaths is drowning while swimming in lakes and rivers. The swimmer is usually not aware of just how cold the water is. He tries to swim too far and the cold of the water zaps his energy, lowers his body temperature, he develops cramps and drowns. Swimming in lakes and rivers is not at all like swimming in heated swimming pools. Even on a hot summer day the water may be dangerously cold. Use extreme caution, especially when swimming in high mountain lakes or rivers or in reservoirs fed by melted snow.

Duck hunters and other sportsmen who hunt or fish from boats in Fall and Winter must use extra caution. If they fall into the lake or river they may not even have a chance to save themselves because the shock to the body's nervous system from being suddenly plunged into ice cold water can instantly cripple and drown them before they even know what happened.

YOUR FIRST LINE OF DEFENSE: Avoid Exposure -

1) **STAY DRY:** When clothes get wet, they lose about 90% of their insulating value. Wool loses less; cotton, down, and synthetics lose more.

2) **BEWARE OF THE WIND:** A slight breeze carries heat away from bare skin much faster than still air. Wind drives cold air under and through clothing. Wind refrigerates wet clothes by evaporating moisture from the surface. Wind multiplies the problems of staying dry.

3) **UNDERSTAND COLD:** Most hypothermia cases develop in air temperatures between 30 and 50 degrees. Most outdoorsmen simply can't believe such temperatures can be dangerous. They fatally underestimate the danger of being wet at such temperatures. 50 degree water is unbearably cold. The cold that kills is COLD WATER running down neck and legs, COLD WATER held against the body by sopping clothes, COLD WATER flushing body heat from the surface of the clothes.

   Don't ask, "How cold is the air?" ask instead "How cold is the water against my body?"

4) **USE YOUR CLOTHES:** Put on rain gear before you get wet. Put on wool clothes before you start shivering.

YOUR SECOND LINE OF DEFENSE: Terminate Exposure -

If you cannot stay dry and warm under existing weather conditions, using the clothes you have with you, terminate exposure.

1) Be brave enough to give up reaching the peak or getting the fish or whatever you had in mind.

2) Get out of the wind and rain. Build a fire. Concentrate on making your camp or bivouac as secure and comfortable as possible.

Never ignore shivering. Persistent or violent shivering is clear warning that you are on the verge of hypothermia. MAKE CAMP! Forestall exhaustion. Make camp while you still have a reserve of energy. Allow for the fact that exposure

greatly reduces your normal endurance.

You may think you are doing fine when in fact your exercising is the only thing preventing your going into hypothermia. If exhaustion forces you to stop, however briefly:

1) Your rate of body heat production instantly drops by 50% or more.

2) Violent, incapacitating shivering may begin immediately.

3) You may slip into hypothermia in a matter of minutes.

Appoint a foul-weather leader. Make the best protected member of your party responsible for calling a halt before the least protected member becomes exhausted or goes into violent shivering.

YOUR THIRD LINE OF DEFENSE: Detect Hypothermia -

If your party is exposed to wind, cold, and wet, THINK HYPOTHERMIA. Watch yourself and others for symptoms.

1) Uncontrollable fits of shivering.

2) Vague, slow, slurred speech.

3) Memory lapses. Incoherence.

4) Immobile, fumbling hands.

5) Frequent stumbling. Lurching gait.

6) Drowsiness (in this state to sleep is to die).

7) Apparent exhaustion. Inability to get up after a rest.

YOUR FOURTH AND LAST LINE OF DEFENSE: Treatment -

The victim may deny he's in trouble. Believe the symptoms, not the patient. Even mild symptoms demand immediate, drastic treatment.

1) Get the victim out of the wind and rain.

2) Strip off ALL wet clothes.

3) If the patient is only mildly impaired:

   a) Give him warm drinks.

   b) Get him into dry clothes and warm sleeping bag. Well wrapped, warm (not hot) rocks or canteens will hasten recovery.

4) If the patient is semi-conscious or worse:

   a) Try to keep him awake. Give warm drinks.

   b) Leave him stripped. Put him in a sleeping bag with another person (also stripped). If you have a double bag, put the victim between two warmth donors. Skin to skin contact is the most effective treatment at this point.

5) Build a fire to warm the camp.

THINK HYPOTHERMIA

If you are outdoors for recreation, you presumably do not intend to jeopardize your life. Hypothermia may be a new word to you but it's the ONLY word that describes the rapid, progressive mental and physical collapse accompanying the chilling of the inner core of the human body. Hypothermia is caused by exposure

to cold, aggravated by wet, wind and exhaustion. It is the #1 killer of outdoor recreationists.

1) Take heed of hypothermia weather.

2) Watch carefully for warning symptoms.

3) Choose equipment with hypothermia in mind.

4) Think hypothermia.

NOTES ON EQUIPMENT

Choose rain clothes that are waterproof against wind driven rain and which cover the head, neck, body and legs. Polyurethane coated nylon is best. The coatings won't last forever. Inspect carefully and test under a cold shower before you leave home. Ponchos are poor protection in wind.

Take woolen clothing for hypothermia weather: 2-piece woolen underwear or long wool pants and sweater or shirt. Include a knit cap that can protect neck and chin. Cotton underwear is worse than useless when wet.

A stormproof tent gives best shelter. Take plastic sheeting and nylon twine for rigging additional foul weather shelter.

Carry trail food...nuts, jerky and candy...and keep nibbling during hypothermia weather.

Take a gas stove or a plumbers candle, flammable paste or other reliable fire starter.

Don't wait for an emergency. Use these items to avoid or minimize exposure.

WIND CHILL

Wind chill makes cold weather colder. This table will help you second-guess winter temperatures.

Equivalent Temperature (Fahrenheit)

Calm	35	30	25	20	15	10	5	0	-5	-10	-15	-20
5	33	27	21	16	12	7	1	-6	-11	-15	-20	-26
10	21	16	9	2	-2	-9	-15	-22	-27	-31	-38	-45
15	16	11	1	-6	-11	-18	-25	-33	-40	-45	-51	-60
20	12	3	-4	-9	-17	-24	-32	-40	-46	-52	-60	-68
25	7	0	-7	-15	-22	-29	-37	-45	-52	-58	-67	-75
30	5	-2	-11	-18	-26	-33	-41	-49	-56	-63	-70	-78

Read right and down from calm-air line. for example, a calm-air temperature of zero degrees Fahrenheit has an equivalent cooling effect of minus 40 degrees Fahrenheit at a wind speed of 20 miles per hour.

*If your clothes are wet you should deduct 20 degrees from the above temperature values.

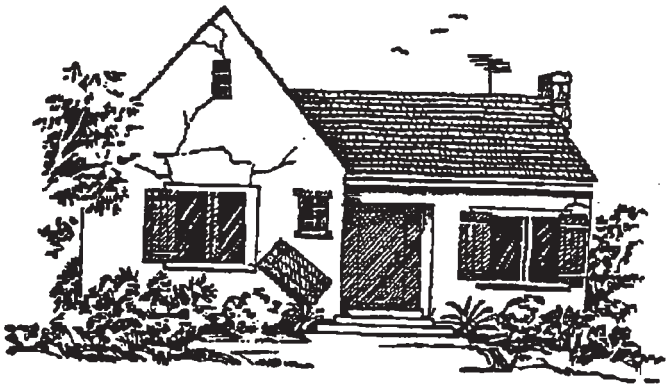
EARTHQUAKE SAFETY & SURVIVAL

And there shall also be heard of wars, rumors of wars, and earthquakes in divers places.

Mormon 8:30

And thus, with . . . earthquake, and the thunder of heaven, and the fierce and vivid lightning also, shall the inhabitants of the earth be made to feel the wrath, and indignation, and chastening hand of an Almighty God, until the consumption decreed hath made a full end of all nations;

D&C 87:6



An earthquake is a sudden slipping or displacement of a portion of the earth's crust, accompanied and followed by a series of vibrations. This crust displacement usually occurs along fault lines. The actual movement is most often much smaller than is popularly imagined. The earth may move only a few feet even in a severe earthquake. The damage is caused by the vibrations which are set up by the sudden movement. These shock waves travel outward at speeds of several miles per second and can shake certain types of buildings so rapidly that they collapse.

Earthquakes are unpredictable and strike without warning. They may range in intensity from slight tremors to great shocks and may last from a few seconds to as long as five minutes. They could come in a series over a period of several days or months.

The actual movement of the ground in an earthquake is seldom the direct cause of injury or death. Most casualties result from falling objects and debris or collapsing structures. Wood frame houses generally do much better at withstanding earthquake damage than any other type of construction.

Severe earthquakes may cause loss of life, many injuries, property damage, disruption of business, transportation and communications as well as damage to gas and power lines, sewers and water mains. Quakes may also trigger landslides and generate huge ocean waves, each of which can cause great chaos.

Although earthquakes are very rare in our area we should still take the necessary precautions to become prepared! Families should practice Earthquake Drills periodically to acquaint all family members with the proper procedures to follow in case a real earthquake strikes.

BEFORE AN EARTHQUAKE OCCURS:

1) How to prepare your home --

   a) Check your home for earthquake hazards.

   b) Bolt down or provide other strong support for water heaters and other gas appliances (clothes dryers, fire place lighters, gas refrigerators and stoves, etc.). Fire damage can result from

broken gas lines and appliance connections. Use flexible connections whenever possible.

c) Place large and heavy objects on the lower shelves. Securely fasten shelves to the walls.

d) Brace or anchor high or top heavy objects.

e) In new construction and alterations or additions, follow building codes to minimize earthquake hazards. Sites for construction should be selected and engineered to reduce the hazard of damage from an earthquake.

2) How to Prepare as an Individual --

Think about what you should do if an earthquake strikes when you are at home, driving your car, at work, in a store, a public hall, a theater, or a stadium, visiting friends or involved in any of your other regular activities. Your planning will enable you to act calmly and constructively in an emergency.

3) How to Prepare Your Family --

a) Hold occasional home earthquake drills to provide your family with the knowledge to avoid injury and panic during an earthquake.

b) Teach responsible members of your family how to turn off electricity, gas, and water valves and mains (See illustrations on the next few pages). Check with your local utilities companies if you cannot find the shut off points or if you have difficulty in determining how to turn them off.

c) Provide for responsible members of your family to receive basic first aid instruction because medical facilities may be overloaded immediately after a severe earthquake. Call your local Red Cross or civil defense director for information about classes.

d) Keep a flashlight and a batter powered radio in the home, ready for use at all times, In even a minor earthquake electrical service would probably be interrupted.

e) Keep immunizations up-to-date for all family members, especially D-T shots (Diphtheria-Tetanus).

f) Conduct CALM family discussions about earthquakes and other possible disasters. DO NOT TELL FRIGHTENING STORIES ABOUT DISASTERS.

g) The following section contains a list of responsibilities to assign family members in preparation for an earthquake. Review this list, modify it to your family needs, make the assignments and follow through on them.

FAMILY MEMBER RESPONSIBILITIES

This is a suggested check list of preparedness tasks. It allows you to indicate which family members are responsible for the following items -- write the name of the family member responsible for each item on the line to the right. You should adapt the list to fit your situation.

In Case of Emergency Evacuation

- Assemble car and office mini-survival kits. _____
- Select sturdy shoes and place in accessible locations. _____
- Assemble special personal needs, (e.g. important medicine, infant supplies, or special foods). _____
- Duplicate and store an extra set of car keys. If eye glasses are a necessity, keep an extra pair on hand. _____
- Be sure that enough flashlights and a battery radio are available and working, with spare fresh batteries on hand. _____
- Check water, food and first-aid supplies every six months. _____
- Learn how to turn off all utilities at main control points and secure house. _____
- Check house for hazardous furniture arrangements (bed under window, etc.). _____
- Secure furniture and other objects for greater stability. _____
- Rearrange shelves with heaviest objects on the bottom. _____

- Check the area around your home for possible hazards during a quake (insecure block wall, overhanging tree branches etc.). _____

- Take photographs of valuable items as a record for insurance claims. _____

- Practice preparedness plans every 3-6 months. Assign dates. _____

- Compile an up-to-date first aid kit including first aid book. _____

- Take training in first aid and CPR. _____

- Keep family immunizations current. _____

- Have signed medical release for family members on file with family doctors and area hospitals. _____

- Appoint a family fire marshall to search home, yard and surrounding area for fire hazards and check regularly. _____

- Provide for safe storage of vital records. _____

- Provide sanitation supplies. _____

- Store drinking water for 72-hours in easily transportable containers. _____

- Store an additional 20 gallons of water per family member (and sufficient for pets). _____

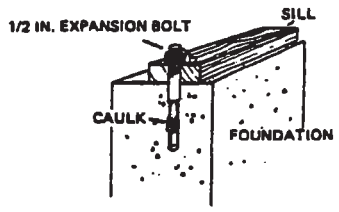
- Store water purification supplies for clarifying and disinfecting 1,500 to 2,000 gallons of polluted water. _____

- Prepare a 72-hour survival food supply. _____

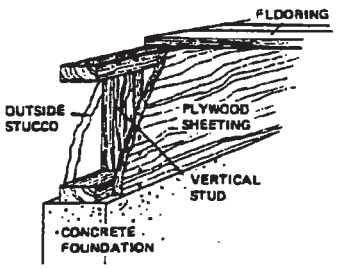
- Set up an area for food storage and fill it with at least a 2-week food supply. _____

STRUCTURAL STABILITY OF YOUR HOME

If your home is of conventional wood frame construction (including stucco) it will probably be relatively resistant to earthquake damage, particularly if it is a single story.



Check for foundation bolts. If your home or building was constructed before 1940 it probably does not have bolts securing the wood frame structure to the concrete foundation. These older homes can be strengthened by adding expansion bolts at the foundation.



Determine if the vertical studs that extend from the foundation up to the first floor are exposed on the inside. This construction method produces a weak link in the house structure and is particularly dangerous in multi-story buildings. Nail plywood sheeting onto the vertical studs to strengthen the walls.

Consult a structural engineer for advice if you have any of the following conditions:

Brick foundation (especially houses built prior to 1906).

Brick houses, brick or stone veneers on wood frame houses, and brick higher than the waist.

High chimneys which may need replacing, removal or bracing.

Large window areas on exterior walls, particularly on two or more story homes.

Split-level house with room over the garage.

The walls at the back of the garage and around the garage should be made of plywood.

Unusual, dramatic architecture, particularly on steep slopes.

Foundations beneath mobile homes need to be reinforced and the undercarriage of the home tied securely to the foundation. If not, the mobile home will be thrown off its foundation even during small tremors.

Double wide mobile homes should be tied together. As the two units are of different weight, they will react differently and tend to pull apart in the event of an earthquake.

DURING AN EARTHQUAKE

Safety rule Number One in this or any other emergency situation is: REMAIN CALM!! Gather Your Kit and Don't Panic or Run!

Sound usually precedes earthquake motion by a split second. If you have developed the correct earthquake responses in your mind before a quake, this split second is enough time to activate your automatic reactions - you will do the right things, if you have prepared and practiced.

If you can stay cool, you will be better able to assess your situation. An earthquake is really a marvel, unless you are standing under a tottering wall. The rolling motion and roaring noises may terrify you, but unless something falls on you, the sensations probably won't hurt you.

The earth does not yawn open, swallow down whole neighborhoods, or even houses, and slam shut again!

Try talking yourself through the violent motion phase. Count to 50 slowly or talk out loud about how scared you are. Others may take courage and follow your reasoned restraint.

Think through the consequences of ANY action you plan to take.

1) IF YOU ARE INSIDE A BUILDING, STAY THERE.

   A) Take cover under a heavy desk, or dive under a sturdy table, or under a bed.

   B) Stand in a strong interior doorway.

   C) Brace yourself in an inside corner away from windows.

   D) Move to an inner wall or hallway (a door frame or the structural frame or inner core of a building are its strongest points, and least likely to collapse. They will also break the impact of any falling objects).

   E) Choose shelter which will provide an air space, if it collapses. If your furniture-shelter moves, stay under it and follow it around the room.

   F) Stay away from tall bookcases, high shelves, china cabinets, and other furniture which might slide or topple.

   G) Stay away from windows, sliding and shower doors, mirrors, chimneys. The rocking motion can shatter glass and topple masonry.

   H) Grab anything handy (coat, blanket, newspapers, cardboard box, etc.) to shield your head and face from falling debris and splintering glass. If nothing else is available cup your hands over your face for protection.

   I) Remain under protective cover till the tremor is over. The greatest damage and hence danger from falling debris is caused in the first few seconds.

   J) Do Not Rush Outside. Stairways may be broken and exits jammed with people. Power for elevators may go out and leave you stranded. If you are in a crowded place such as a theater, athletic stadium, or store, do not rush for the exits as hundreds of others may be doing the same thing. You would have a much greater chance of being injured by the pushing and trampling of a panic stricken crowd than you would by remaining where you are.

   K) The greatest danger from falling debris is just outside doorways and close to outer walls. If you must leave a building, choose your exit as carefully as possible.

2) IF YOU ARE OUTSIDE, STAY THERE.

   A) Move away from high buildings, walls, power poles, lamp posts.

   B) Do not run through streets.

   C) Go to an open area and stay there face down on the ground, covering your head and face.

   D) Do not attempt to enter a building until well after the tremor subsides.

   E) The possibility of encountering fallen live electrical wires is great after an earthquake or even after a wind storm. Never assume downed power lines are dead - or YOU may be. People, metal, and damp objects are good electrical conductors. To avoid shock and serious burns, stay well back. A wrong move in trying to rescue someone else could kill you. You should know these safety procedures:

      1) If you are on foot, make a wide path around the wires.

      2) If you are in your car and live wires

have fallen across the car, remain where you are. Your car is usually well insulated, and unless you touch charged metal, will protect you from the electricity. The best advice for most situations is to remain in your car until help arrives.

3) When trying to rescue someone who is in contact with live wires always use a wooden pole or other non-conductive material to touch them.

3) IF YOU ARE IN A MOVING CAR, STOP IT.

A) Pull off the road and stop as quickly as safety permits in the best available space.

B) Do Not Stop on a highway overpass or bridge, or where buildings can topple down on top of you.

C) Stay in your car! A car is an excellent shock absorber and will jiggle fearsomely on its springs during an earthquake, but it's a fairly safe "cocoon" from which to assess your situation. Remain there until the tremor ends.

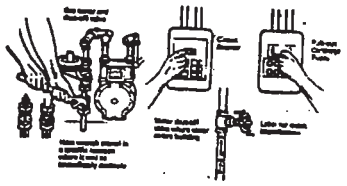
D) When you drive on, watch for hazards created by the earthquake such as fallen or falling objects, downed electric wires, and broken or undermined roadways.

AFTER AN EARTHQUAKE:

1) DON'T' PANIC! REMAIN CALM. Stop and take time to think. Wait until all motion has stopped. do not run downstairs or outdoors. Be prepared for possible additional aftershock.

2) Check for injuries in your family and neighborhood. Do not attempt to move seriously injured persons unless they are in immediate danger of further injury.

3) Check for fires or fire hazards.



4) Check utility lines and appliances for damage. If any leaks exist (check by applying a soapy solution to the gas pipes with a pain brush and look for bubbles), shut off the main gas valve. Shut off electrical power if there is damage to your house wiring. Report damage to the appropriate companies and follow their instructions. DO NOT use matches, lighters, or open-flame appliances until you are sure no gas leaks exist. DO NOT operate electrical switches or appliances if gas leaks are suspected. This creates sparks which can ignite gas from broken lines. After an earthquake of any size whatever, ASSUME that the gas lines have been broken until you have verified otherwise.

5) DO NOT touch downed power lines or objects touched by any downed power lines.

6) DO NOT use your telephone except for genuine emergency calls. Turn on your battery powered radio to the Emergency Broadcast System for the latest information and instructions (Even a mild earthquake will knock out electrical power).

7) Immediately clean up spilled medicines, drugs, and other potentially harmful materials.

8) If the earthquake is of any magnitude at all, causing wide spread destruction and injury, take all injured to the emergency medical facilities at the Rockford Ward Meetinghouse.

9) After a very severe earthquake, rescue parties will be organized along priesthood quorums under the direction of the Bishop and/or quorum leaders.

10) After an earthquake, school children living

within walking distance will be sent home from school. If roads are very damaged it is unlikely that those living further away could be bussed home. Such students would likely be kept at school until picked up by parents.

11) If water is off, emergency water may be obtained from water heaters, toilet tanks, melted ice cubes, and canned vegetables and fruits.

12) Confine frightened pets so they won't run away or hurt themselves in aftershocks.

13) Check to see that sewage lines are intact before permitting continued flushing of toilets.

14) Do not drink tap water or allow flushing of toilets if there is a noticeable decrease in water pressure, churning, discoloration, unusual odor, cloudiness or sediment in the water. All of these are signs of contamination.

15) Do not eat or drink anything from open containers near shattered glass. Liquids may be strained through a clean handkerchief or cloth if danger of glass contamination exists.

16) If the power is off, check your freezer and plan meals to use foods which will spoil most quickly.

17) Use outdoor charcoal broiler for emergency cooking. Do Not bring charcoal burners into the home as they will use the oxygen and emit deadly carbon monoxide gas.

18) Do not go without food or water for long periods. Food is a vital factor in maintaining your morale and strength during a disaster. Your ability to cope will be essential.

19) Tend further to injured or trapped persons. Try to get help if necessary. If a person is trapped and you can free him without injury to yourself, remove debris piece by piece starting with the top of the pile.

20) Take routine medications, especially heart or diabetic patients.

21) Watch out for other possible dangers which may follow an earthquake such as fire, flood, landslide, or tidal-wave (Tsunamis).

22) Do not drive unless absolutely necessary, then drive with caution. Keep the streets clear for emergency vehicles.

23) Inspect your house carefully for structural damage. Open exit doors - they sometimes jam. The initial quake may damage the structure and an aftershock would shake down wobbly walls. Undetected chimney damage is an extreme fire hazard. Approach chimneys with caution. loose bricks and rocks could collapse. Do not occupy your house until you are sure it is structurally sound.

24) Check closets and storage shelf areas. Open closet and cupboard doors carefully and watch for objects falling from shelves.

25) Use extreme caution when entering or working in damaged or weakened buildings - they may collapse without warning.

26) If needed, protect surfaces of valuable furniture against aftershock damage by laying down thick newspapers topped with cardboard, plywood, or blankets.

27) Be aware of the need to secure your home if windows are broken.

28) Remind family members to practice strict sanitation and keep fingers out of mouths. With limited water and increased health hazards, the possibility of infection is high.

29) Stay home, if you are at home when the

earthquake hits. Do not go out sightseeing. Stay away from waterfront areas where a Tsunami (tidal-wave) could strike. If you go into damaged areas without being requested to do so you could be arrested for getting in the way of disaster operations, or suspected as a looter.

30) If you are at school, report to your teacher for instructions.

31) Be prepared for "aftershocks" - they are weaker than the main shock but can cause additional damage and psychological trauma. Stay with small children. They fear separation from parents during times of extreme stress.

32) When possible, notify your Family Contact about your well-being. When communications return to normal, notify other worried friends and relatives.

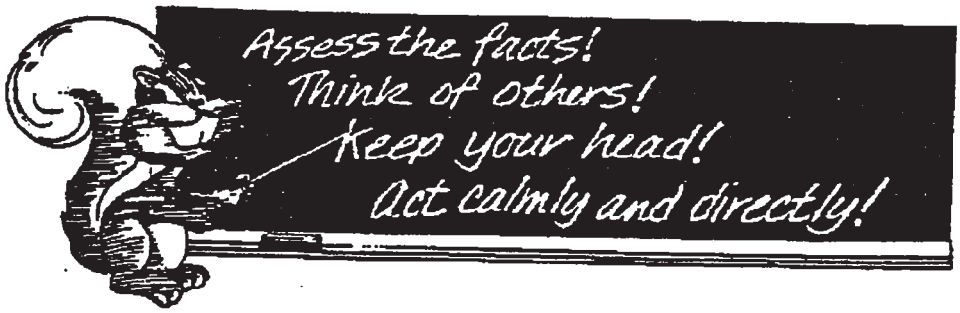
33) DO NOT SPREAD RUMORS. They often do great harm after disasters.

34) Prepare for possible evacuation. Gather the 72-hour kit you have previously assembled. If your house and utilities are badly damaged, you may be living in your backyard or other neighborhood location for a few days.

35) If you must evacuate, leave a message in a predetermined place for other family members. Describe your intended route and destination.

There are no perfect rules which can eliminate all danger from an earthquake however, damage and injury can be greatly minimized by following these practical suggestions.

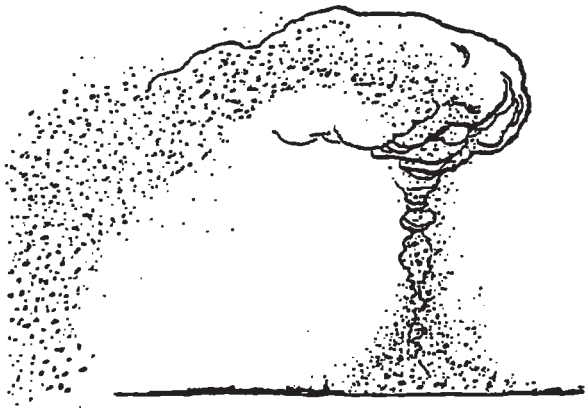
REMEMBER, IN AN EMERGENCY SITUATION:



THERM0/NUCLEAR ATTACK

"It may be, for instance, that nothing except the power of faith and the authority of the priesthood can save individuals and congregations from the atomic holocausts that surely shall be."

Bruce R. McConkie



Understanding how nuclear weapons work, the dangers associated with them, military strategies of probable enemies, and how to protect yourself and family from the effects of nuclear detonation are very complex topics which could never be adequately addressed in a booklet like this one. The purpose of this chapter therefore, is to teach you some of the most fundamental basics of preparation for and what to do after an attack. Those desiring to learn more about this subject are referred to other books that deal with this topic. The best of these books is "Nuclear War Survival Skills" by Cresson H. Kearny.

A nuclear attack against the United States would take a high toll of lives. But our losses would be much less if people were prepared to meet the emergency. You can give yourself and your family a much better chance of surviving and recovering from a nuclear attack if you will take time now to:

1) Understand the dangers you would face in an attack.

2) Make your own preparations for an attack.

3) Learn what actions you should take if attacked.

This chapter is not intended to minimize the affects of nuclear war, nor to give you the false hope that it is something which, should it develop, you and your family could easily survive. Nevertheless it is hoped that after reading this chapter you will not feel overwhelmed by the direful consequences of nuclear war. As horrible and nightmarish as it would be it is possible to survive a nuclear war and experience no long term affects. Read carefully how to prepare for such a war and what steps you should take if you should become a victim of such an exchange. This, of all the various disasters listed in this book, is the one that would require the most faith in God to endure without becoming cynical or embittered.

TYPES OF ATTACK

There are two primary purposes of detonating nuclear weapons; 1) to destroy people (i.e., the opposing army and civilian support personnel), 2) to destroy retaliatory forces such as hardened silos and other equipment. The type of detonation used, and thus the impact upon civilians living relatively nearby or several hundred miles away, will depend upon the type of target and the purpose for detonation.

Nuclear bombs may be exploded at ground level, at low altitudes (under 10,000 feet), or at very high altitudes (over 100,000 feet). Different targets require different methods of exploding a weapon to maximize damage to them.

HIGH ALTITUDE BURSTS - EMP

High altitude air bursts (over 100,000 feet) cause very little ground damage or nuclear radiation.

They are however, extremely effective in destroying radios, televisions, communications and computerized equipment. Virtually any electronic device which relies on solid state construction or semiconductor rectifiers, including automobiles with electronic ignition, will likely be destroyed by such an air burst. This is because the detonation creates an electromagnetic pulse (EMP) in the frequency range of micro waves and radio waves which induces electrical current to flow through conductors such as wires, cars and pipes. The surge of electrical current thus created, though lasting only a few thousandths of a second, spike sufficiently high to "fry" the fragile circuitry components of such devices. This EMP electrical spike is so short in duration, and detonated so high that it does not affect us in any other way. Unless you just happened to be looking up in the sky at that moment and saw a momentary flash of light you would have no idea that the explosion had occurred. If you should see such a burst, never look directly at it because it can cause blindness even from distances of up to 200 miles.

It has been estimated that electrical services and communications could be damaged or disrupted in the entire United States by the High Altitude detonation of a single large nuclear weapon over the geographic center of the country. It is therefore likely that a "first strike" against our country would probably begin with an unexpected "surprise" high altitude detonation to create an EMP surge sufficient to cripple communications, destroy computer defense systems, and eliminate radar tracking facilities. This would effectively leave the entire country open to attack with no ability to defend itself or to retaliate. Understanding this danger the military obviously has back up equipment stored in properly protected facilities ready to be brought on line but this takes time in a war where seconds count.

As a private citizen, should you ever experience a power failure, immediately check your telephone and battery powered radio. If they do not work try your car. If it does not work and other cars on the road have mysteriously stopped you will know that an enemy has just detonated a high altitude nuclear device and that the resulting EMP has destroyed our communications system. DO NOT DELAY! Take immediate action to protect yourself and your family from the bombs that could fall in your area within 30 minutes to a few hours and to shield yourself and your family from the radioactive fallout that could fall in your area from a few hours to a few days depending upon where you live, how far you are from likely targets, and the direction and speed of prevailing winds. See the section entitled "SHELTER" for instruction on what to do to prepare.

LOW ALTITUDE BURSTS

Low altitude bursts (2,000 - 10,000 feet) are generally used to destroy people and "soft" targets such as above ground military bases and industrial complexes. These bursts generally produce severe damage from heat, blast, and initial radiation levels but do not produce significant levels of radioactive fallout. Therefore, if you survive the initial blast you will probably live through the entire ordeal with no long term affects if you take a few simple precautions. Low altitude air bursts are generally localized in their destructive ability but are totally destructive in that area. Their affects are:

BLAST

The detonation of a nuclear weapon produces a powerful shockwave which travels at a high rate of speed in all directions from the blast zone. This wave has two destructive components. The extremely rapid expansion that occurs in a blast causes compression of atmospheric air for many miles around and is called *overpressure*, measured in pounds per square inch (PSI). One PSI Overpressure may be thought of a being one pound per square inch above the normal atmospheric pressure for your area or altitude.

Overpressure exerts force on surfaces and will

crush hollow objects such as cars and buildings. An overpressure of just 0.5 PSI, which can break windows and cause other damage in residential areas, could occur at a distance of twenty miles from a one-megaton blast. An overpressure of about 4.5 PSI is enough to flatten the average single-family dwelling. This amount of pressure can occur at a distance of approximately five miles from a one-megaton, or ten miles from a ten-megaton blast.

The second component of a nuclear shock wave is called *dynamic pressure* and is characterized by a high wind which may reach speeds of one-hundred miles per hour at a distance of six miles from an air burst one-megaton blast, which is sufficient to knock over a person standing up.

After the shock wave passes the pressure falls until an underpressure, like a vacuum, develops and a reverse wind blows back towards the explosion. This reverse wind and vacuum will also cause damage but is not as severe nor destructive as the initial shock wave.

HEAT

At the time of detonation the intense flash of rapidly expanding fireball can start fires miles away. The extreme heat of the detonation vaporizes everything nearby. It has been estimated that the temperature directly below the nuclear blasts in Japan in World War I was approximately $6,500^0$ F. and nearly $3,000^0$ F. about one mile away. Temperatures will be raised by several hundred degrees even many miles away. The nuclear bombs used today are many times larger than those used in World War II. The intense heat released in these explosions will last from nine to twenty seconds. You must be protected from this severe heat blast if you expect to survive it and do so without severe burns over major portions of your body.

RADIOACTIVITY - RADIATION

Nuclear radiation is produced at the time of the explosion and is harmful as it initially travels outward from the point of the explosion (initial or prompt radiation) and as it emanates from particles which have become radioactive through the processes of detonation (residual radiation or fallout). Air bursts produce very little radioactive fallout.

Initial radiation generally does not last more than a minute or two after detonation. Even though it is very lethal it does not travel far from the blast zone. In order to be close enough to receive a fatal dosage of initial radiation you would have to be close enough to ground zero that the heat and blast affects would be much more life threatening than the radiation. The only exception to this is the neutron bomb but at present neutron bombs are of small scale construction and few in numbers and thus do not constitute a threat to civilian communities.

BLINDING LIGHT

Never look at the light or fireball of a nuclear explosion. It is as bright as the sun, but being closer is much more intense. Looking directly at the light, even momentarily, can cause permanent blindness. The light is so intense that even if not looked at directly it can cause temporary blindness which may last for a few hours or even a few days. Retinal spot burns, which are permanent eye injury but which may not be severely debilitating, can occur at distances up to two hundred miles from the detonation.

GROUND BURSTS

Ground burst nuclear attacks are used specifically to destroy underground hardened silos and command centers. They destroy about half as much area as an air burst of the same size, however, they vaporize millions of tons of soil, rock, concrete and anything else at ground zero (including the hardened silo or other target). This

vaporized and molten material is sucked up into the characteristic mushroom cloud and is impregnated with "residual" radiation and falls to the earth as radioactive dust and sand called "fallout."

UNDERSTAND THE HAZARDS OF NUCLEAR ATTACK

A) The main hazard of nuclear attack are blast, heat, fire and fallout radiation.

B) You may be able to protect yourself against blast and heat by getting inside a shelter or taking cover before the nuclear explosions occur. Hopefully our early warning system would give us a 45 minute advance warning. Should this be all the warning time we are given go immediately to an approved fallout shelter, taking your emergency preparedness kit with you. If you do not know where a shelter is or if you are unable to get to one quickly, then go directly to your basement. Get under a table or other heavy object for further protection from falling objects should the home collapse.

   1) Do Not attempt to evacuate the area. Thousands of people trying to get onto the freeway within 15 or 20 minutes would only congest the system. Accidents would occur and traffic would grind to a total standstill. This would leave thousands of people out in the open, unprotected at the moment of the blast.

C) It is possible - but extremely unlikely - that your first warning of an enemy attack might be the flash of a nuclear explosion in the sky some distance away (perhaps 50 miles or more). If there should be a nuclear flash - especially if you are out doors and feel warmth at the same time - take cover INSTANTLY (within one or two seconds), in the best place you can find by dropping to the ground, jumping into a ditch, behind a building, tree or other object. If there is no protection readily available don't take time to look for cover. Drop to the ground immediately and curl up tightly. Cover as many exposed parts of the body as possible - head, face, neck, arms, legs, etc. By getting inside or under something within a few seconds, you might avoid being seriously burned by the heat or injured by the blast wave of the explosion. If the explosion were some distance away (50-100 miles), you might have 5 to 10 seconds before being seriously injured by the heat and perhaps 30 seconds before the blast wave arrived. Never look at the flash of an explosion or the nuclear fireball.

D) Once the heat and blast effects have been dissipated, continue on to a fallout shelter. Depending upon your distance from the flash you may have 30 minutes to two hours before radiation fallout begins to occur.

E) The most dangerous period is the first 24 hours after fallout arrives. Within 48 hours it would be fairly safe to venture out for short periods of time and after 72 hours almost all radiation would be gone.

THE RULE OF SEVEN

The total decrease in radiation intensity following the explosion of a fission type bomb is generally described by the *rule of seven.* This rule states that the rate of decay of the radiation from the materials which compose the bomb is such that it's intensity will decrease to 1/10th its value for every 7 times the time (measures in hours since detonation). For example, if the radiation intensity is 100 at 1 hour after detonation then it would be 10 (1/10th of 100) at 7 times 1 hour, or seven hours. At 49 hours after detonation (7 times 7 hours, or about 2 days) the radiation would be about 1 (1/10th of 10), at about two weeks (7 times 2 days) the radiation would further decrease to about 0.1 or 1/1000th, of the original value of 100. Because of this decay rate most individuals, except those living within a

few miles of ground zero, would be able to leave their shelter within about 72 hours following a single blast. If there are multiple blasts occurring over a few days or weeks however, such as would be expected in a major nuclear exchange, the time needed to remain in the shelter could be much longer.

It is very important that you understand that nuclear weapons, as destructive as they are, are not to be feared as the totally destructive demons as they are usually portrayed. If you survive the initial blast, you will probably survive the entire ordeal if you take a few simple precautions in the hours and days following detonation. These precautions may seem tedious and you may become bored stiff remaining in your shelter, in such confined quarters in the dark for such an extended time period, but if you do so you shouldn't experience any ill affects from the entire experience. Obviously the primary thing you can do to insure safety during this crisis is to trust in God, develop a strong spiritual level of preparedness and then to develop a strong emotional/mental outlook keeping a positive mind set throughout the entire ordeal.

THE EXPLOSION

When an atomic or hydrogen weapon explodes close to the ground, thousands of tons of earth, building materials, rocks, and other forms of matter are pulverized and drawn high into the air, forming a mushroom cloud.

The contents of this atomic cloud are highly radioactive. The larger particles fall to the ground quickly. The smaller ones are carried down wind and fall more slowly, hour after hour, some times for several days or weeks, in a pattern that may extend several hundred miles. THIS IS FALLOUT.

In the event of a nuclear attack, you may be confronted with three basic types of radiation. These are ALPHA, BETA, AND GAMMA radiation waves which present very different harmful effects because of the difference in their physical makeup. Be familiar with each of them and how to protect yourself against the harmful affects of each. They are to be respected but not feared.

ALPHA PARTICLES OR RADIATION

An alpha particle consists of a fast moving helium atom nucleus. It dissipates its energy very quickly in any type of material and will travel about two inches in air. In solid materials, the range is but a few thousandths of an inch. Because of the short range and the fact that most of the body is covered with clothing, the danger to the body from external alpha radiation is in most cases negligible.

The alpha particle, however, is EXTREMELY INJURIOUS once the particle gains admittance in to the body through ingestion, inhalation or getting into the blood stream through a wound or break in the skin.

Protective measures should include removal of any clothing that is thought to be contaminated with alpha particles and a thorough washing with soap and water. To sum it up, treat alpha radiation as you would infectious germs.

BETA PARTICLES OR RADIATION

Beta particles are high speed electrons 1/7500th the size of alpha particles. They have energy enough to travel several hundred times farther in matter than will an alpha particle.

Beta radiation can be stopped by a few millimeters of aluminum whereas alpha can be stopped by a piece of paper.

Protective measures should be taken to prevent any internal ingestion or external exposure to the beta

radiation. Soap and water are again very effective in removing the beta particles. Shielding can also be erected around an individual in the form of almost anything solid with a few feet of air space between the individual and the radiation.

GAMMA RAYS OR RADIATION

Gamma radiation consists of rays similar to sunlight and are very penetrating. By far this form of radiation is the most feared and most difficult to protect yourself from. Several inches of lead is required to stop Gamma rays. They can also be stopped by 18-24 inches of concrete or 3-4 feet of dirt.

Again use soap and water to remove any immediate particles that may be emitting the rays and take cover in a well shielded area.

GENERAL PRECAUTIONS

1) Take cover in an underground shelter, basement, culvert, mine, tunnel, inner hallway, etc.

2) Remove any known contaminated clothing.

3) Wash thoroughly with soap and water, particularly the hair on your head and in your nose.

4) If the source of radiation is known (where blast was, etc.), and travel is possible, travel in the opposite direction and go up wind from the known source of radiation.

5) Remain in protective shelter for approximately 3 days, allowing yourself only very limited exposure to contaminated areas.

6) Remember radiation cannot be seen, felt, or smelled, or detected in any way by your five senses.

7) Highly dangerous amounts of fallout (not radiation) are visible. They look like particles of sand or salt. However the radiation which they emit is not visible.

8) There is little danger that adults could inhale or swallow enough fallout particles to hurt them. Small children, however, could be injured by drinking contaminated water.

9) A person exposed to fallout radiation does not become radioactive. Radiation sickness is not contagious; one person cannot "catch it" from another person.

RADIATION SICKNESS

Radiation sickness is not contagious. You simply cannot catch it by giving medical or first aid assistance to someone who has been exposed to atomic fallout. Depending upon the amount of radiation an individual is exposed to and the length of time of the exposure the symptoms will vary greatly.

An acute whole body exposure to a 100 - 200 rem radiation dose would result in illness but would rarely be fatal. Illness consists of fatigue, discomfort, nausea, and probably vomiting during the first day or so. This is followed by a "latent period" of about two weeks or so after which some symptoms may reappear. During the latent period changes in the blood and blood forming tissues occur that are harmful, and it may take months for the body to correct and heal itself but it will do so in time. First aid treatment for this level of exposure is to keep the person calm, emotionally reassured that they will be fine and give them plenty of liquids. Then take extra precautions that they do not injure themselves in any way that would cause a secondary infection.

Probably the most important consideration in radiation exposure is the damage it inflicts on the blood forming organs of the body, particularly a

reduction in the number of white blood cells. This means that through a person may not be greatly incapacitated by the radiation dose but may become extremely susceptible to infection. In other words you might live through the radiation exposure only to die afterwards by a simple infection caused by a splinter, blister, or common cold. For this reason it is imperative that extra precautions of safety and sanitation be followed after exposure to radiation. After a few months the body will heal itself and again regain its infection fighting capacity.. If an individual is exposed to about 300 rems or more of radiation their hair may also begin to fall out after two to three weeks. This too heals itself and with time hair growth returns to normal.

larger radiation doses, up to 1,000 rems will produce other symptoms. Bleeding into various organs of the body and under the skin are common. These begin appearing two or three weeks after exposure or earlier in some individuals. Spontaneous bleeding from the mouth, intestinal tract, and kidneys (blood in urine) occur. At these dosage rates medical care, including the administration of antibiotics, is essential. The critical period in this exposure range is four to six weeks, after which healing begins. Death is almost certain to occur from a thousand rem acute exposure within two months.

Exposure in the range of 5,000 rems has rapid effects on the central nervous system. Symptoms include respiratory distress, incapacitation, and stupor. Death is almost certain to occur within a few hours to a week after exposure.

No known medicine is active against radiation sickness itself. Exposure weakens the body and makes it more susceptible to infections and disease. These, of course, may be treated by various medications and procedures which help ward off infections and strengthen the body and its immune system. Radiation sickness preys first on the weak. The very young, the very old, and the ill or injured are generally most susceptible.

FOOD AND WATER

From many studies, the Federal Government has determined that most remaining food supplies would be safe for use after an attack. Since radiation passing through food does not contaminate it, the only danger would be the actual swallowing of fallout particles that happened to be on the food itself (or on the can or package containing the food), and these could be wiped or washed off. Reaping, thrashing, canning and other processing would prevent any dangerous quantities of fallout particles from getting into processed foods.

Water systems might be affected somewhat by radioactive fallout, but the risk would be small. Water stored in covered containers and water in covered wells, such as we have in Rockford, would not be contaminated after an attack because the fallout particles could not get into the water. Even if the containers were not covered (such as buckets or bath tubs filled with emergency supplies of water) as long as they were indoors, it is highly unlikely that fallout particles would get into them.

Exposed water sources might contain fallout particles but if the water is allowed to stand overnight these particles will settle to the bottom of the container. They can also be strained out by use of very fine straining material. Distillation and reverse osmosis filtration will also remove them from the water supply leaving the water safe to drink (See chapter 7 for filtering materials and instructions).

The danger of people receiving harmful doses of fallout radiation through food, water, or milk is very small. People suffering from extreme hunger or thirst should not be denied these necessities after an attack, even if the only available supplies might contain fallout particles or other radioactive substances.

POTASSIUM IODIDE

Medical science is continually researching ways to minimize the affects of nuclear exposure. At present many of those who survive the heat and blast waves of the explosion can expect delayed reactions in the form of cancer which may not develop for several years.

Radiation can cause many different types of cancer. Blood cancers, such as leukemia, and thyroid gland cancer form a large majority of all radiation induced cancers. There is considerable evidence indicating that Potassium Iodide tablets may give protection against thyroid cancer. When Potassium Iodide is present in the blood stream it is absorbed by the Thyroid Gland. This in turn, prevents future absorption by the thyroid of radioactive iodine and other charged elements which are present in nuclear fallout. Two 130 milligram tablets per day for 14 days seem to be quite adequate in accomplishing this.

Within 24 hours of taking the first tablet immunity is established. Potassium Iodide is fairly inexpensive, costing $4.00 to $5.00 per 100 tablet bottle (when it is available), and has a shelf life of about three years. Unfortunately the Food and Drug Administration (FDA), has removed this product from the over-the-counter market. Their reasoning for doing so is that like all drugs and medications, if it is abused or taken over a long period of time it may cause dangerous side affects. If nuclear war is threatening the Public Health Department will distribute Potassium Iodide tablets to individuals living in areas where there is the most danger of radiation from fallout.

Though Potassium Iodide is apparently effective in reducing the incidence of thyroid gland cancer following exposure to radio active fallout it has absolutely no affect in preventing the many other forms of cancer which radiation may cause. Hopefully we will never have to endure the awful experience of nuclear war but if we do it is hoped that the Lord will reveal to medical science other cancer preventing agents. Till then, we must rely directly upon the protecting arm of God through His Priesthood. As Elder Bruce R. McConkie expressed.

> *It may be, for instance, that nothing except the power of faith and the authority of the priesthood can save individuals and congregations from the (affects of the) atomic holocausts that surely shall be.*
>
> Bruce R. McConkie
> Ensign May 1979, p. 92-93

SHELTER

As stated before, it is unlikely that you would have no advance warning of the possibility of a nuclear attack and in all probability will have 24 to 48 hours advance warning because of building international tension or even declaration of war. When such warning is given then you may want to seriously consider building a shelter similar to the one described in the next section.

However, if the first indication you have that a nuclear attack is underway is when you see the brilliant flash of a nuclear explosion or see the characteristic mushroom cloud forming on the horizon, seek shelter **immediately**! You will have only two to six seconds to take cover as best you can by dropping into a ditch, getting behind a tree, crawling under a table, etc. If no shelter is apparent do not waste time looking for one. Drop to the ground with your back to the blast and curl up as best you can covering your face and hands. After the heat wave and shock wave have past you then immediately seek other shelter.

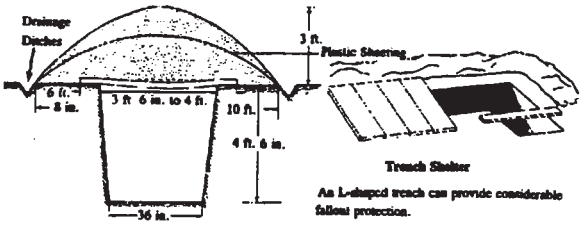
In building a shelter at the time of need, the object is to place as much shielding material around you as possible in the time available. Many materials around the house could be fashioned into a makeshift shelter to provide adequate protection: clothing, mattresses, appliances, doors (taken off

their hinges), tables, books, magazines, bedding boards, rugs, earth, furniture, sand, firewood, luggage, containers of water and wheat or other food storage, boxes, bricks, rocks, snow, benches, tools, automobiles, etc. With some preplanning and preparation, a shelter could be constructed quite quickly. Even lying on the floor of a basement next to an outside buried wall could provide substantial protection. The important thing to remember is that you will need about three feet of solid material between you and the radiation. Remember also, however, that most items around the house are not solid, they have a lot of air space in them. A mattress, for example, may be 8 or 9 inches thick but it is mainly air space. There may be only 1/4th to 1/2 inch of actual shielding material in a mattress and even that is laden with air spaces between the fibers and threads. Therefore, if at all possible, get 3 to 4 feet of dirt and/or concrete between you and the radiation, otherwise it may take ten to twelve feet or more of other material to be as effective.

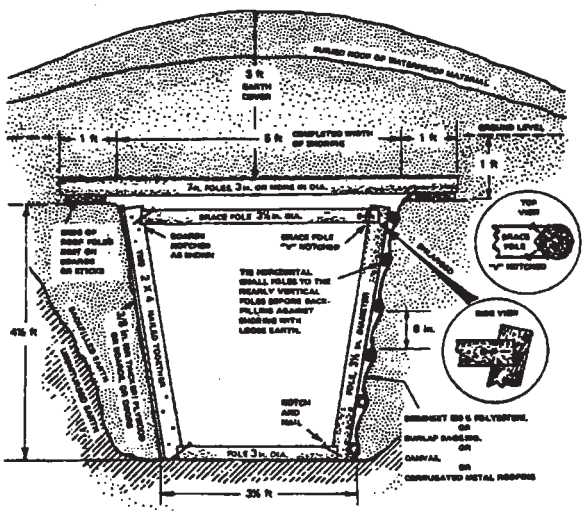
The best shelters are underground with at least 3 feet of dirt over the roof. Two people can construct such an expedient shelter in 24 to 36 hours with no previous experience or special tools other than a pick and shovel.

BUILDING AN EXPEDIENT SHELTER

If it should become apparent that nuclear war is likely within the next 48 - 72 hours immediately begin construction of a make-shift expedient fallout shelter by digging a trench in your backyard measuring 3 1/2 feet wide by 4 feet deep and 16 to 20 feet in length. At each end dig another trench (entrance and ventilation shafts), at right angles to the main trench accept they should be only 2 1/2 feet wide and about 6 feet in length. Cover the trenches with doors that have been taken off their hinges, poles, table tops, anything that is sturdy and can support weight. Cover these with plastic sheeting to keep out moisture and prevent dirt from crumbling into the shelter. Then bury the entire structure under three to four feet of dirt, forming a dome or arch covering over the trench so that the arch extends 2-3 feet beyond each edge of the trench for the entire length.



The shelter pictured above is a very simple shelter to dig. It is rather small but would be sufficient to provide protection for your and your family. If you would like to make your shelter a little more comfortable, since you may need to remain in up for up to two weeks, you can greatly expand the size and do several things to your shelter that would make living in it much more comfortable. The diagram below shows how to make a shelter that would not be nearly so claustrophobic and would allow for the addition of convenience items to make shelter life more bearable.



The important thing to remember when building an improvised, expedient shelter is that you have a minimum of three feet of dirt above you and all around you. The roof should be domed or arched to add structural stability to the shelter and the

walls should be somewhat slanted to help prevent the walls from caving in on you.

These few paragraphs on shelter building are not intended to answer all your questions about shelters but are designed to let you know that it is not that difficult to protect yourself. If you just follow the simple patterns shown here you will do alright. However, for those who would like to know much more about shelter building and other aspects of nuclear survival get and read the book "NUCLEAR WAR SURVIVAL SKILLS" by Cresson H. Kearny. It is available at most stores that sell emergency preparedness supplies or can be checked out of the local library. In addition to describing in greater detail how to build expedient shelters, Mr. Kearny also tells how to build a radiation meter with materials you have around the house, how to build improvised furniture to make shelter life more tolerable, and many other aspects of surviving a nuclear war.

OTHER HOME FALLOUT SHELTERS

The U.S. government has prepared several plans for building home fallout shelters. These plans are for building shelters that are build ahead of time and are integrated into the design of your home so as to be both functional during time of need and yet utilitarian and non-interfering during normal times. For free copies of these plans write to:

U.S. Army AG Publications Center
Civil Preparedness Section
2800 Eastern Blvd. (Middle River)
Baltimore, Maryland 21220

Order your plans using the full names listed below:

1) Ceiling Modification Plan A.

2) Alternate Ceiling Modification Plan B.

3) Permanent Concrete Block or Brick Shelter Plan C.

4) Preplanned Snack Bar Shelter Plan D.

5) Preplanned Tilt-up Storage Unit Plan E.

6) Outside Concrete Shelter Plan H-12-1.

7) Above-ground Fallout Shelter Plan H-12-2.

CONCLUSION

And I saw a new heaven and a new earth: for the first heaven and the first earth were passed away; and there was no more sea.

Revelation 21:1

Bishop Gary A. Barnes of the Bonneville, Utah 1st Ward shares this message and counsel:

"The Lord has revealed to us in great detail exactly what He intends to do prior to the ushering in of the millennium. He has told us in scripture both old and modern of the earthquakes, tidal waves, famines, tornados, pestilences, plagues, destructions, social upheavals, and cosmic interplay that will wrack the earth from north to south, from east to west, causing it to reel to and fro on it's axis like a drunken man, and threaten the very existence of the human family. He has told us that the wicked shall slay the wicked in senseless inhumane wars and then describes in graphic detail the effects of nuclear holocaust, which His prophets have declared shall be.

He has specifically stated that these desolations will eventually be poured out upon all nations.

The promised destructions are not conditional -- they must come or the millennium cannot begin. They must come -- not because He delights in the destruction of His children but because He knows with perfect understanding the desires and intent of he who was cast out of heaven for rebellion and who has usurpingly established himself as the "god of this world," and the desires of designing men who serve him. These destructions must come -- so that the earth may be swept clean of all wickedness and be prepared to receive Him who's right it is to sit upon the throne and who will govern it 1,000 years.

He has specified the time parameters in which it must all be accomplished; prior to the opening of the seventh seal. He has further declared through His prophets that our calendar is correct and that the appointed time is rapidly closing within which all must transpire. And declared that it shall be in an instant suddenly -- as a whirlwind. He has given us signs and warnings; has counseled us on how to prepare; and commanded us to watch and be ready.

There is absolutely nothing we can do to prevent or forestall these promised destructions. The Lord God Almighty has decreed that they shall be. He has opened the portals of heaven and sent forth the angels of destruction to commence the work of cleansing the earth and the inhabitants thereof. Well might we try to dethrone God himself as to think for one minute that our actions can alter the decrees or time tables of heaven.

For us there is but one course to pursue: to obey His commands and prepare -- prepare temporally as He has instructed and to prepare spiritually that we may return to Him clean and worthy regardless of the time or manner in which He calls us home.

HOW TO PREPARE

1) Repent -- Get your spiritual house in order. See your Bishop if necessary.

2) Begin building your ark of storage and preparedness NOW!!!

a) Wheat (Buy and Store a TON of it).
b) Honey or sugar.
c) Dried Milk.
d) Cooking Oil.
e) Salt.
f) Water.

3) Continue to work on your storage, revise it, expand it, use and rotate it, get used to it.

4) Plan to help others by storing two, three, five or seven years supply to be a savior on Mt. Zion for those who were prevented by circumstances from doing so.

5) Organize your 72-Hour Survival Kits.

Prepare now while there is yet a harvest time because the end of food production and distribution systems will come in an instant suddenly -- as a whirlwind.

6) Lay in store not only food but all items that you would need to live for a minimum period of one year, including clothing, fuel, medicines and anything else that you would need.

7) Do not go into debt but plan to build your storage systematically within the limitations of your budget.

8) Store a year's supply of garden seeds.

9) Where does the money come from? (Vaughn J. Featherstone April Conference, 1976).

a) 20%-50% of your Christmas, birthdays, anniversaries etc. Buy your wife a ton of wheat for your wedding anniversary and she will know you really do love her.

b) Make or repair clothing and spend the money saved on storage items.

c) Cut the amount of money spent on recreation by 50%. We live in a society of constant entertainment.

d) Do not take an expensive family vacation but use that money to build your storage program.

e) Sell or trade boats, snowmobiles, campers, or other luxury items and use the proceeds for storage.

f) Watch advertised specials and buy extra amounts of good products.

g) Change the mix of your family's diet. Get your proteins from sources less expensive than meat. Cut out cookies, ice cream, candy, junk food, convenience foods, magazines etc. and use the money saved to buy storage items.

h) Eat out less often. Restaurants and fast food establishments are very expensive. Pocket the money and build your reserve.

10) Children, remind your parents continually that they need to make the establishment of a family storage reserve of one year's supply a greater priority in your family budget. Even volunteer to give up some of your luxuries and entertainment to help.

Brothers and sisters, the Lord has pled with us and has instructed and commanded us on how to prepare. He has blessed us with sufficient time to prepare and with the wherewithal to do it. It is up to us now to apply ourselves and take advantage of His most bounteous blessings to build our survival ark; or if we choose, we may exercise our agency and continue to ignore His instructions until it is everlastingly too late and our doom is sealed. May we thrust in the sickle while the harvest is still possible I humbly pray in the name of Jesus Christ, Amen."

We add our testimony to those expressed in this book. You have our prayers as you do your part to prepare yourself and your family.

Rockford 1st Ward Bishopric and
Ward Welfare Committee