

# NUCLEAR SURVIVAL

"Nevertheless, Zion shall escape if she observe to do all things whatsoever I have commanded her.

But if she observe not to do whatsoever I have commanded her, I will visit her according to all her works with sore affliction, with pestilence, with plague, with sword, with vengeance, with devouring fire."

-D & C 97:25-26

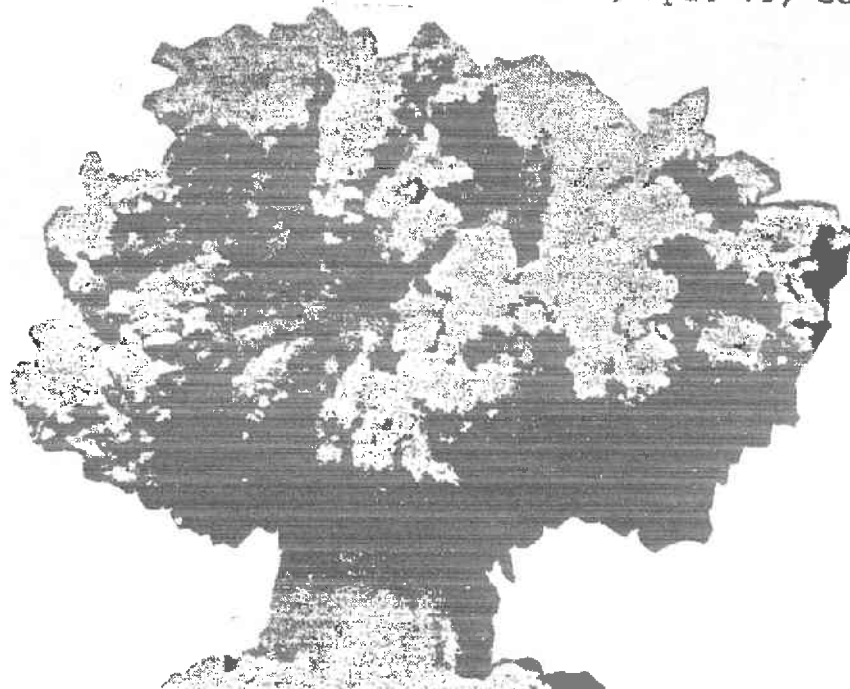
"There are some things we can and must do at once if we are to stave off a holocaust of destruction:

1. Return to worship the God of this land, who is Jesus Christ.
2. Awaken to a sense of our awful situation, because of this secret combination [of Communism] among us.
3. Do as the Lord commanded and find good and honest men to restore government to its rightful role.
4. Study the inspired Constitution and become involved in the political process."

- Pres. Ezra Taft Benson, Oct. 79, Gen. Conf.

"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."

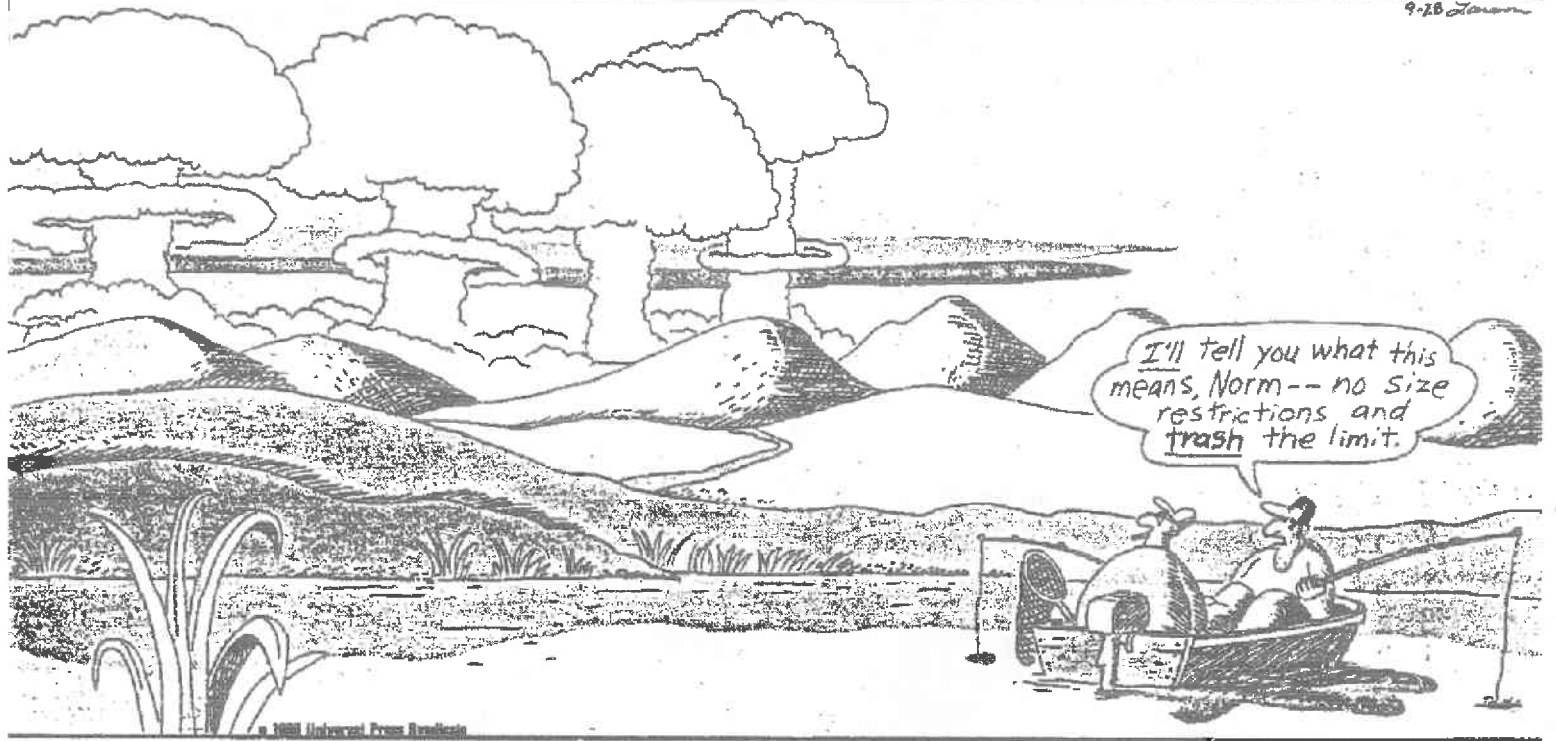
- Bruce R. McConkie, Apr. 79, Gen. Conf.



THE FAR SIDE

BY GARY LARSON

9-28 Larson



## INTRODUCTION

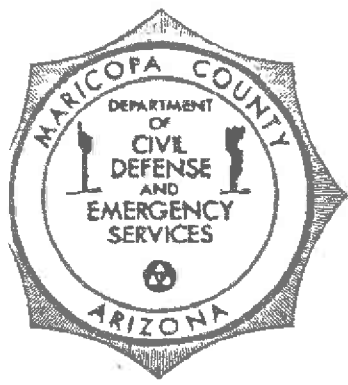
There are many myths and misconceptions about what life would be like during and after a nuclear exchange. People have often been led to believe that all life would cease or that the survivors would emerge to a permanently polluted, barren, and glowing landscape, peopled by mutants, and scavenging for survival in a stone age existence. This lie has led many people to virtually stop up their ears whenever the subject of preparing to survive a nuclear war comes up. They helplessly feel that there is nothing they can do to live thru it anyway, so why bother. Even worse, some people now are saying that if they hear of missiles being launched, they will purposely go outside and "walk toward ground zero" to die more quickly. Unfortunately these falsehoods will lead to the unnecessary suffering and death of thousands, who could have made it thru with just a little forethought and preparation.

The truth is that even in an all out nuclear exchange, experts say that 70% of the population will survive. Large portions of the country will likely be left completely uncontaminated and much of the rest will be safe after seeking shelter for only a few days. Even some of the worst areas will allow people to come out of their shelter in two weeks. Many factors will determine what areas will be safe, including: wind direction, wind speed, size of the device, ground or air burst, your proximity to a prime target and your faith and prayers. (See Apr. 79 Conf. talk by Bruce R. McConkie.) However, the nation will rebuild, plant life will return and civilization will not be lost. This is not to say life will not be difficult for awhile. People will have to get organized quickly and begin producing food to avoid having a food shortage, but this can be avoided ahead of time by storing food.

This booklet is to help you prepare for and live thru a nuclear war crisis. The first two sheets are from the Maricopa County Civil Defense pamphlet, which is to be distributed if a nuclear war looks imminent. The rest of this booklet will be useful wither you decide to evacuate or stay in the valley. The reason is high altitude winds could take the fallout to any part of the country and no place is guaranteed safe. Even if you escape to the mountains, you will need to prepare yourself a shelter. Radiation detecting equipment will be invaluable in informing you if and how long you should stay under cover. Here's hoping you'll never have to use this, but "if ye are prepared, ye shall not fear."



Bruce D. Henderson



# EMERGENCY CIVIL PREPAREDNESS INFORMATION



FOR THE CITIZENS OF:

MARICOPA COUNTY



Today, all Americans face the most serious crisis this country has known. All of our government's attempts to negotiate a peaceful settlement of the differences between the United States and our potential enemies have apparently failed. The specter of a nuclear war and an attack on this country become more and more possible. The Phoenix Metro area and parts of Maricopa County are considered to be potential targets for such an attack; other high risk areas are Tucson/Pima County and the City of Yuma/MCAS. At this time our diplomats are seeking means of avoiding such a devastating holocaust. At any time the President may declare a state of emergency. If and when this happens everyone's cooperation is required to save the lives of as many Americans as possible. REMEMBER, YOUR LIFE, THOSE OF YOUR DEPENDENTS AND THE SURVIVAL OF OUR COUNTRY ARE AT STAKE.

Plans have been made that will give the citizens of Phoenix and surrounding area several options for survival. If sufficient time is available before an attack, we can evacuate or relocate a large percent of the people who reside in the Phoenix high risk area to low risk areas of the state. To be effective, this requires maximum cooperation by the people in the risk and host areas. Failing to have the necessary time to relocate the people, our second option is the Community Shelter Program currently in existence. Should a surprise attack occur, all individuals, both in the high and low risk areas should immediately seek the best available shelter either in public fallout shelters or improved home shelters.

An order to evacuate or relocate will come from the President of the United States through the Governor of the State of Arizona. When this order comes, and it could be given on short notice, all persons should immediately respond to instructions given at that time. Both general and specific instructions on what to do, where to go, what to take, etc., are contained in this special publication. RETAIN IT, IT MAY SAVE YOUR LIFE. Our sole purpose at this time is to save lives — the lives of as many Americans as possible. Civil Preparedness planners have done everything possible to assure that there are sufficient fallout shelter spaces for everyone. Plans also have been made to provide food, goods and essential services and support to everyone — host area residents, relocates and to those key and essential workers remaining in the risk area. Pay close attention to your TV, radio and newspapers for emergency instructions. Emergency broadcast stations in your area are KTAR (620-AM) and KPNX Channel 12.

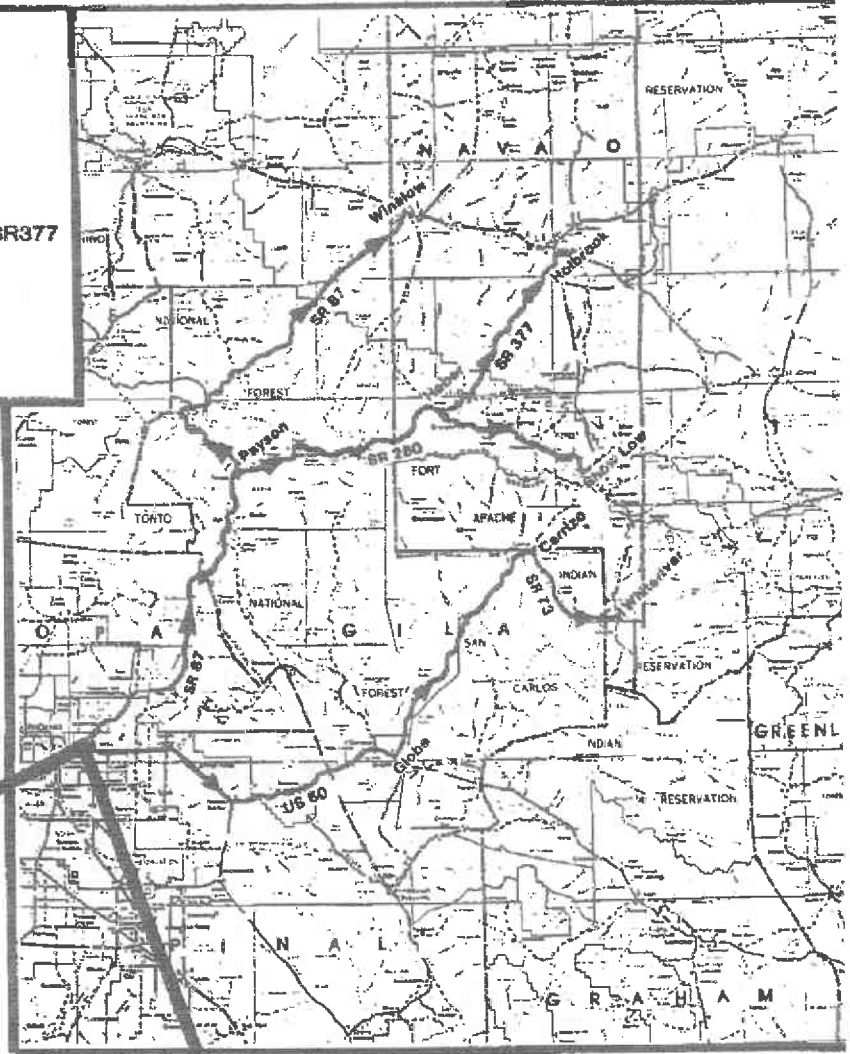
In the event of a surprise attack — when you hear the warning sirens, immediately move to the best available shelter and tune to the emergency broadcast stations for further information and instructions.

SAVE THESE INSTRUCTIONS,  
THEY MAY SAVE YOUR LIFE



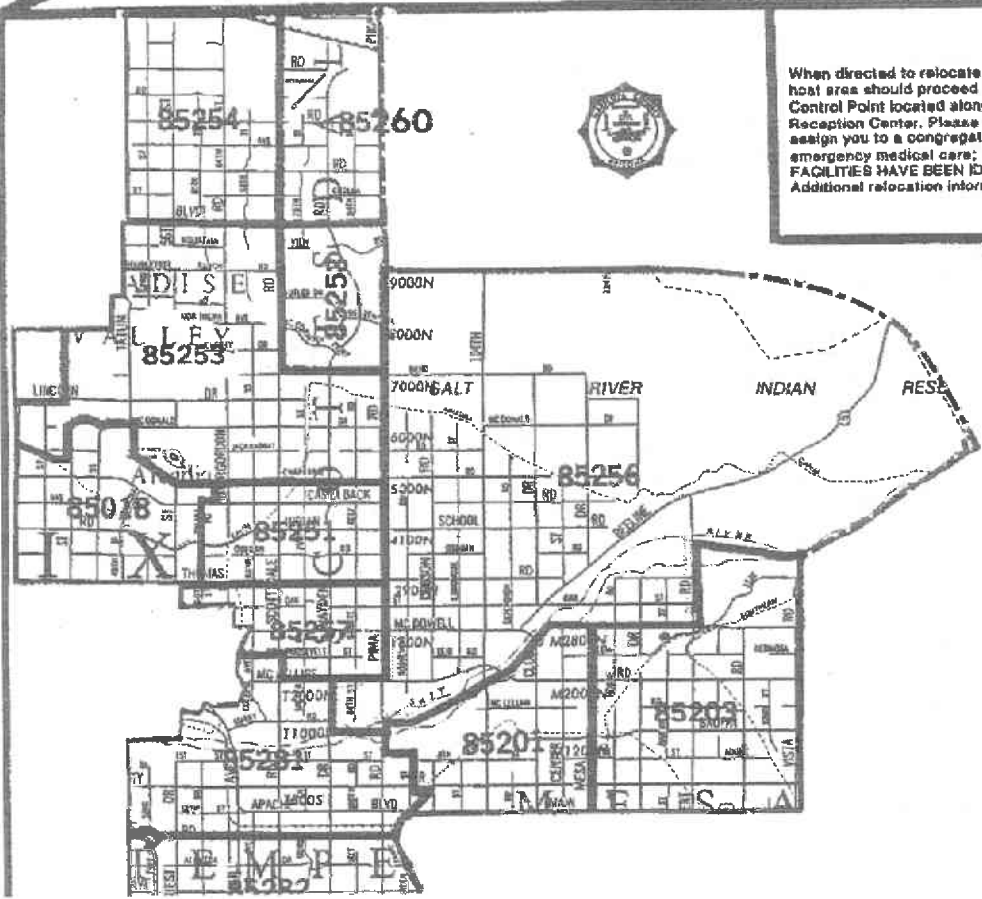
# NAVAJO COUNTY

Zip Codes	Designator	Destination	Route
203	N-1	Whiteriver	US60,SR73
201,281,282,256,257	N-2	Show Low	SR87,SR260
251,018	N-3	Holbrook	SR87,SR260,SR377
263,254,258,260	N-4	Winslow	SR87




Designator	Departs On
N-1	Day 1
N-2	Day 1
N-3	Day 2
N-4	Day 2

**TO US 60 or SR87**



**INSTRUCTIONS FOR RELOCATEES**  
 When directed to relocate, persons scheduled to move from the Phoenix risk area to the Navajo Coal heat area should proceed using relocation highways identified on the map found on THIS PAGE. At a Control Point located along these highways you will be directed to leave the route and proceed to a Reception Center. Please follow directions as closely as possible. The Reception Center staff will assign you to a congregate care facility and fallout shelter space; provide information on feeding, emergency medical care; counseling and administrative services. SUFFICIENT FALLOUT SHELTER FACILITIES HAVE BEEN IDENTIFIED FOR BOTH HOST AREA RESIDENTS AND PERSONS RELOCATED. Additional relocation information and instructions may be found on page 3.



**FOR EMERGENCY INFORMATION AND INSTRUCTIONS STAY TUNED TO THESE RADIO STATIONS**

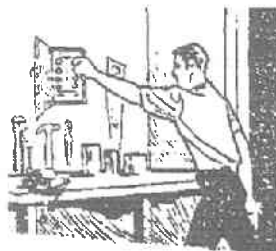
PHOENIX KTAR 620 KHz  
 MIAMI KIKO 1340 KHz  
 HOLBROOK KDJI 1270 KHz  
 FLAGSTAFF KCLS 600 KHz

## RIDING OUT A NUCLEAR BLAST AT HOME

The information here is provided for those who do not plan to flee the city if a nuclear attack appears eminent. It will also prove useful if there is a surprise first strike, in which few will have the chance to flee anyway. It assumes you are not situated next to ground-0.

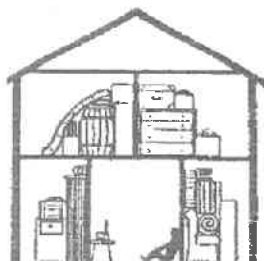
### OUTSIDE YOUR HOME:

1. Gather everything not firmly secured to make sure it can't be blown about by the wind.
2. Remove storm windows and screens and store them where they cannot be broken. (Flat on the ground, anchored)
3. Tape the entire surface of all the windows left on your home with heavy tape and cover the windows inside and out with wood panels. (Window glass will be in short supply after an attack and you want your home to livable afterward)
4. To help prevent the house exterior from burning from the thermal wave, wet it done well with a hose. If you can't cover the windows entirely, hang white material in front of them and keep them wet. (White reflects the flash but must be wet to avoid burning.)
5. Provide any livestock with as much shelter and cover as possible.
6. Dig a large pit for waste, since it might be awhile before the trash man comes around.
7. Cover over well your chimney opening, roof vents and swamp cooler to prevent radioactive fallout dust from entering your home.
8. Ground your vehicles as much as possible to protect them from EMP effects.
9. If you have natural gas- shut it off to prevent fire or explosion.
10. As the attack warning comes through- turn off your main power switch to prevent fire or accidental electrocution.



### INSIDE YOUR HOME:

1. Seal around windows and doors carefully to keep fallout dust out.
2. Fill up every bathtub, sink and empty container with water, it may be the last you'll get for awhile.
3. Unplug all electric appliances to protect them from EMP effects.
4. Place all communications equipment in a metal box (garbage can, file cabinet, stove) and ground it, again to protect them from EMP. Antennas should also be disconnected.
5. An ordinary house without a basement probably would cut the radiation dose to you in half, if you stayed on the first floor near the center of the house. If you prepared yourself a makeshift shelter there, you would improve your chances a great deal more.
6. In making an expedient shelter in a house, your goal is to pile 150 lbs. of material on every square foot of the top and sides, to give you the needed mass to stop gamma radiation.



### BASEMENT HOMES:

1. Staying in a house basement will reduce your exposure to about 1/10 the outside exposure. Sandbagging the windows will further reduce it. Basements as shelters are safe up to an overpressure of about 10 lbs. per square inch. (Upstairs is 5 lbs/ s.i.)

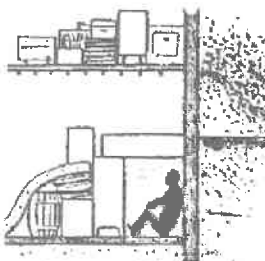
2. Place sandbags at least 3 deep over basement window grates.

3. If you arrange a basement refuge, with a mass of material around and above you, as shown you can reduce your exposure to about 1/100 the outside exposure.

4. Piling up heavy furniture in the room over the shelter location or filling up a bathtub or child's wading pool in the room over the shelter can help achieve the needed mass. Locating it under your waterbed would be excellent protection.

5. One of the best types of protection in using a basement although unpleasant is very inexpensive. It may be your only alternative if your expecting a big crowd because it allows virtually the entire basement to act as a fallout shelter. It is filling up the main floor of your home with at least a foot of dirt! It may require some expediently constructed wood supports at the mid-span. You might want to put down plastic or tarp first to protect the carpeting.

6. Consider using sand bags instead of dirt on the main floor. They would be quicker and easier to remove later as well as making less of a mess. One inch thick pieces of lead would perform in the role even better.



### IN THE SHELTER:

1. Keep air circulating in the shelter until the time of the actual flash of the detonation. The more fresh air inside the shelter, the longer you can stay "buttoned up".

2. If space allows, consider placing living plants in the shelter to help keep the air fresh.

3. If a stove is used for cooking, you must have adequate ventilation and the vent must not allow fallout in.

4. A battery operated fan and plenty of battery powered lights will make things much more bearable in a dark inclosed shelter.

5. You must have a container with a tight fitting lid to provide for sanitary needs. If possible however, dispose of sanitary wastes outside the shelter.

6. Have plenty of disposable diapers for babies, since water will be at a premium. (Some air freshener will also be greatly appreciated.)

7. Plenty of games and books should be available to keep the children occupied. If a little one has a favorite doll or security blanket, make sure its with her.

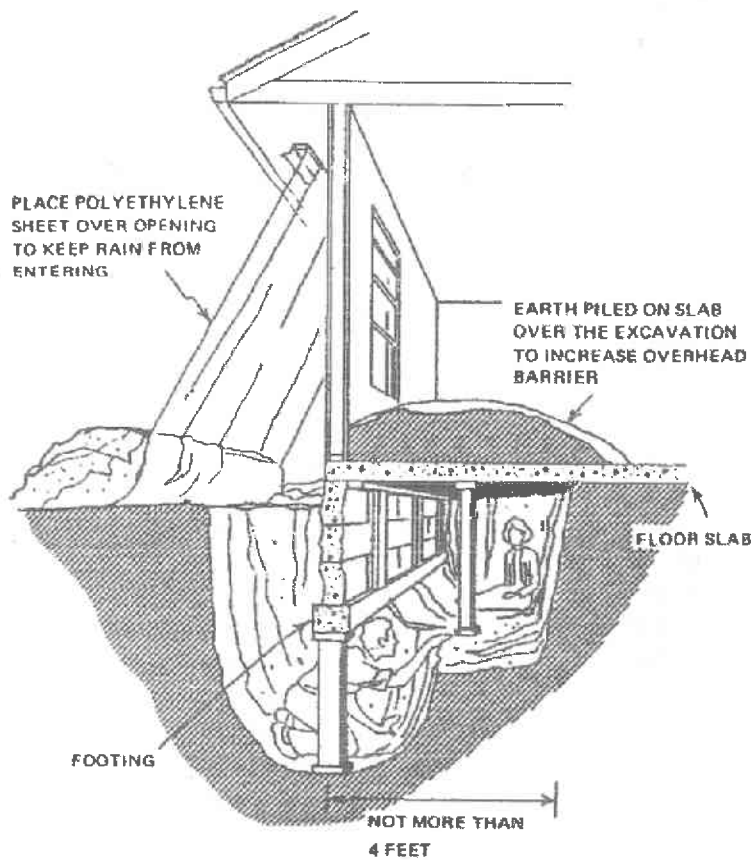
8. Keep fire extinguishers handy, but not in the shelter.

9. The actual blast may cause the floors, walls and ceiling to move violently, so in the beginning, position people away from the walls, up off the floor and heads away from the ceiling. Supplies should also be secured, so they don't fly around.



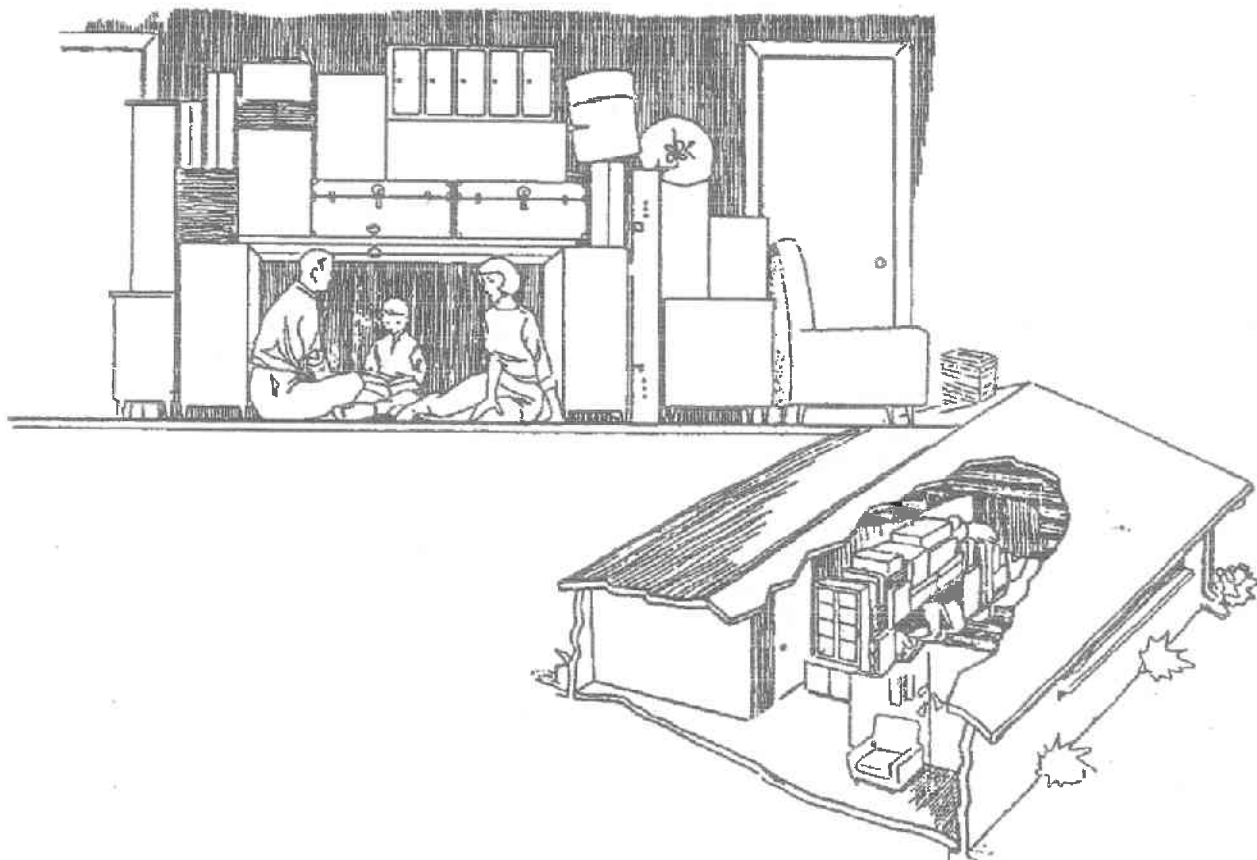


# fallout protection for homes without basements



IN ORDER TO PROVIDE EXPEDIENT FALLOUT PROTECTION TO HOMES WITHOUT BASEMENT, ONE APPROACH IS TO EXCAVATE BENEATH THE FLOOR SLAB AS DEPICTED IN THE SKETCH. BEING UNDER AN EAVE WILL, IN MANY CASES, KEEP RAINWATER OUT OF THE TRENCH AND THE SHELTER ENTRY TUNNEL. ONCE THE BOTTOM OF THE FOUNDATION WALL IS REACHED, A TUNNEL IS DUG UNDER THE FOOTING AND THE MATERIAL REMOVED FROM UNDERNEATH THE SLAB TO CREATE THE SHELTER. THE SHELTER IS OFFSET FROM THE TRENCH SO THAT THE SHELTER WALL IS NOT EXPOSED ON THE OUTSIDE. THE "HOLLOWED-OUT" SHELTER AREA CAN VARY IN SIZE, BUT IT SHOULD NOT EXTEND MORE THAN 4 FEET FROM THE FOUNDATION WALL.

IT IS EXPECTED THAT A TYPICAL SIZE FOR A 4 PERSON SHELTER MIGHT BE 4 FT. DEEP, 4 FT. HIGH, AND 6 TO 8 FT. LONG. SOME OF THE DIRT FROM THE TRENCH CAN BE PILED ON THE SLAB OVER THE SHELTER AND ALSO AGAINST ANY EXPOSURE AT THE TOP OF THE FOUNDATION WALL. ALTHOUGH THE EAVE WILL HELP TO KEEP RAIN OUT OF THE TRENCH, IT WOULD PROBABLY BE WELL TO STRETCH A SHEET OF POLYETHYLENE FROM THE ROOF TO THE OUTER EDGE OF THE DIRT PILE. THIS WOULD HELP TO ASSURE RAINWATER NOT ENTERING THE SHELTER TUNNEL.



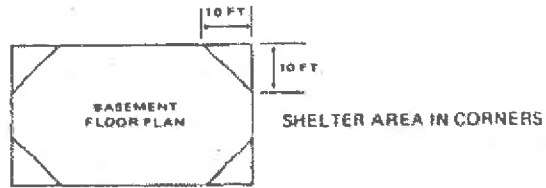
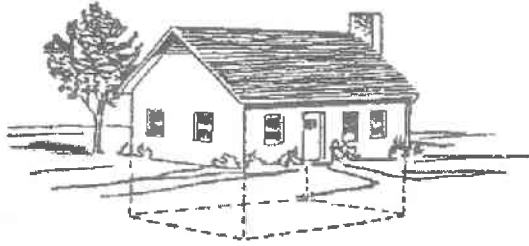
**FIGURE 26: Expedient Interior Ground-level Shelter.** A very poor kind of shelter, but it could save your life if you have nothing else. The

possible overhead and to the sides. The family in this drawing is totally exposed on two sides—don't imitate their mistake. (After *Personal*



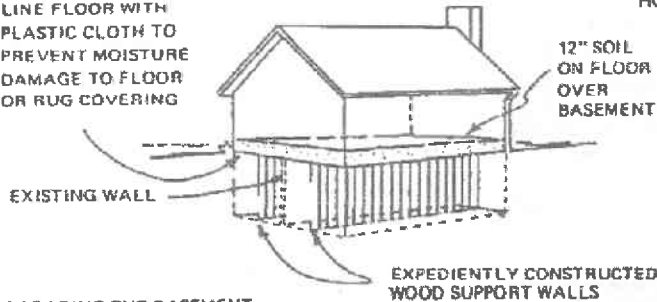
# fallout protection for homes with basements (fully belowground)

HOMES WITH BASEMENTS (COMPLETELY BELOWGROUND) ALREADY HAVE FALLOUT PROTECTION ESPECIALLY IN THE CORNERS OF THE BASEMENT.

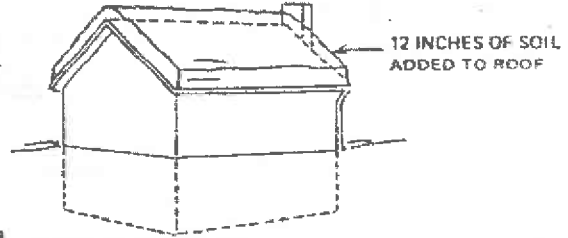


THIS PROTECTION CAN BE ENHANCED CONSIDERABLY BY FIRST EXPEDITIOUSLY CONSTRUCTING WOOD SUPPORT WALLS AT THE MID-SPAN AND THEN PLACING 12 INCHES OF EARTH OVER THE ENTIRE FLOOR COVERING THE BASEMENT AREA. PLACING EARTH ON THE ROOF OF THE HOME WILL ALSO INCREASE THE FALLOUT PROTECTION.

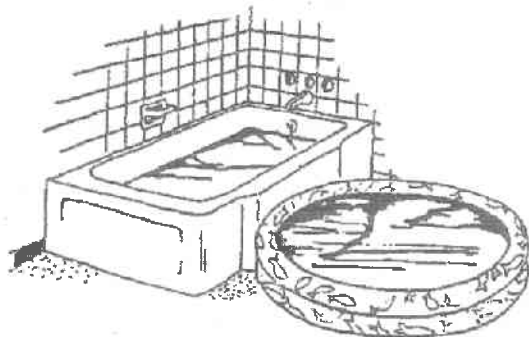
LINE FLOOR WITH PLASTIC CLOTH TO PREVENT MOISTURE DAMAGE TO FLOOR OR RUG COVERING



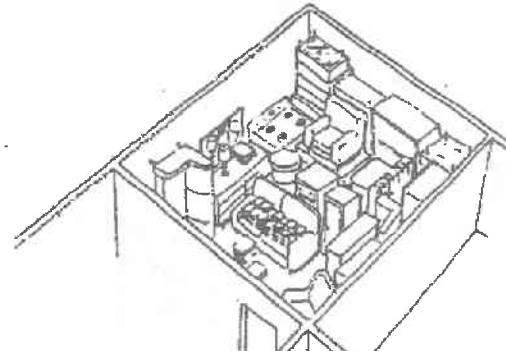
UPGRADING THE BASEMENT SHELTER PERMITS THE ENTIRE BASEMENT AREA TO BE FALLOUT PROTECTED, THUS ALLOWING THE HOMEOWNER TO SHARE THE BASEMENT WITH OTHERS.



REMEMBER: THE MORE MATERIAL YOU ADD THE GREATER THE PROTECTION. A WORD OF CAUTION: PLACING MORE THAN 12 INCHES OF EARTH ON THE ROOF WITHOUT PROVIDING ADDITIONAL SHORING MAY CAUSE JOISTS TO SAG EXCESSIVELY AND FAIL.



FILL BATHTUBS AND CHILDREN'S POOLS WITH WATER TO GIVE MASS FOR THE SHELTER BELOW AND TO PROVIDE WHEDED WATER FOR LATER ON.



IF YOU'D RATHER NOT BRING IN DIRT, CROWD ALL THE FURNITURE FROM INSIDE AND OUTSIDE THE HOUSE INTO THE ROOM ABOVE YOUR SHELTER TO PROVIDE MASS. PILE THINGS RIGHT UP ON TOP OF EACH OTHER TO THE CEILING.

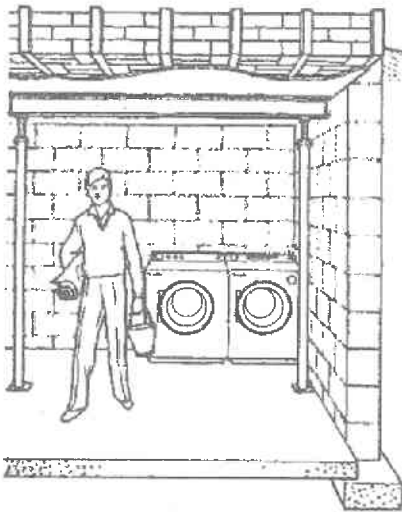


A WORKBENCH IN THE BASEMENT WILL SERVE AS A SHELTER IN A PINCE FOR ONE OR TWO. JUST LOAD UP ON TOP AND NEXT TO IT AS MUCH BULK AND MASS AS POSSIBLE.

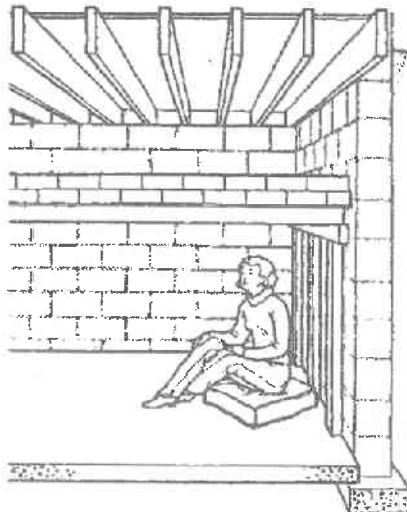


WHEN TIME IS SHORT, ANY KIND OF SHELTER WILL HELP. FILL THE DRESSER DRAWERS AND BOXES ON TOP WITH DIRT AND STACK THEM AS HIGH AS YOU CAN.

# fallout protection for homes with basements

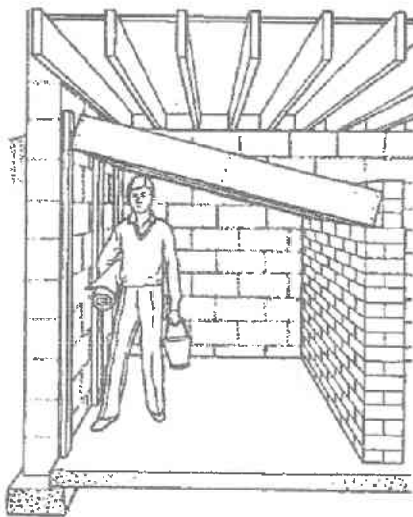
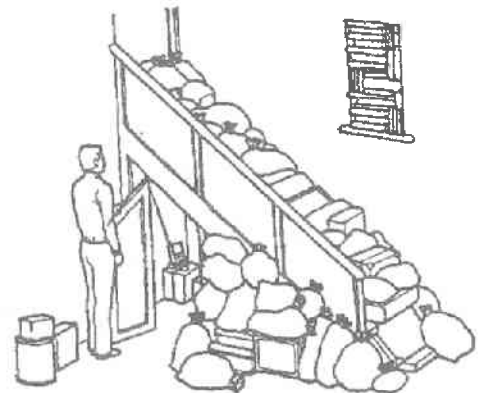


A basement shelter protects against fallout unless dust gets in through the broken windows and roof of the house. Fire and blast damage to the house could still be lethal.

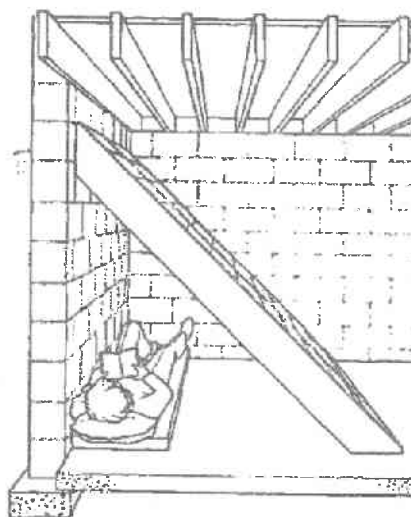


All daylight would have to be excluded and ventilation would be difficult.

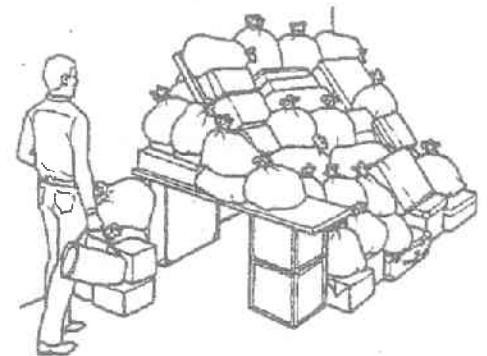
Hiding under the stairs may sound ridiculous but it could give protection against radiation if the house remained standing.



Do-it-yourself hobbyists might devise ways of increasing the overhead thickness of fallout shielding in a basement shelter: a futile gesture if rainwater washed fallout inside.

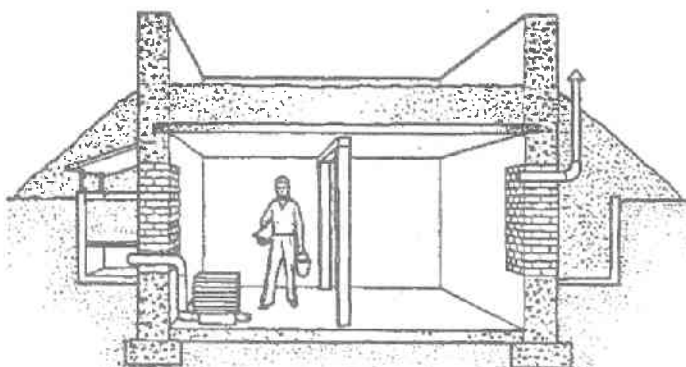


The 'lean-to' radiation shield inside the basement shelter genuinely improves a person's chances of avoiding radiation sickness.

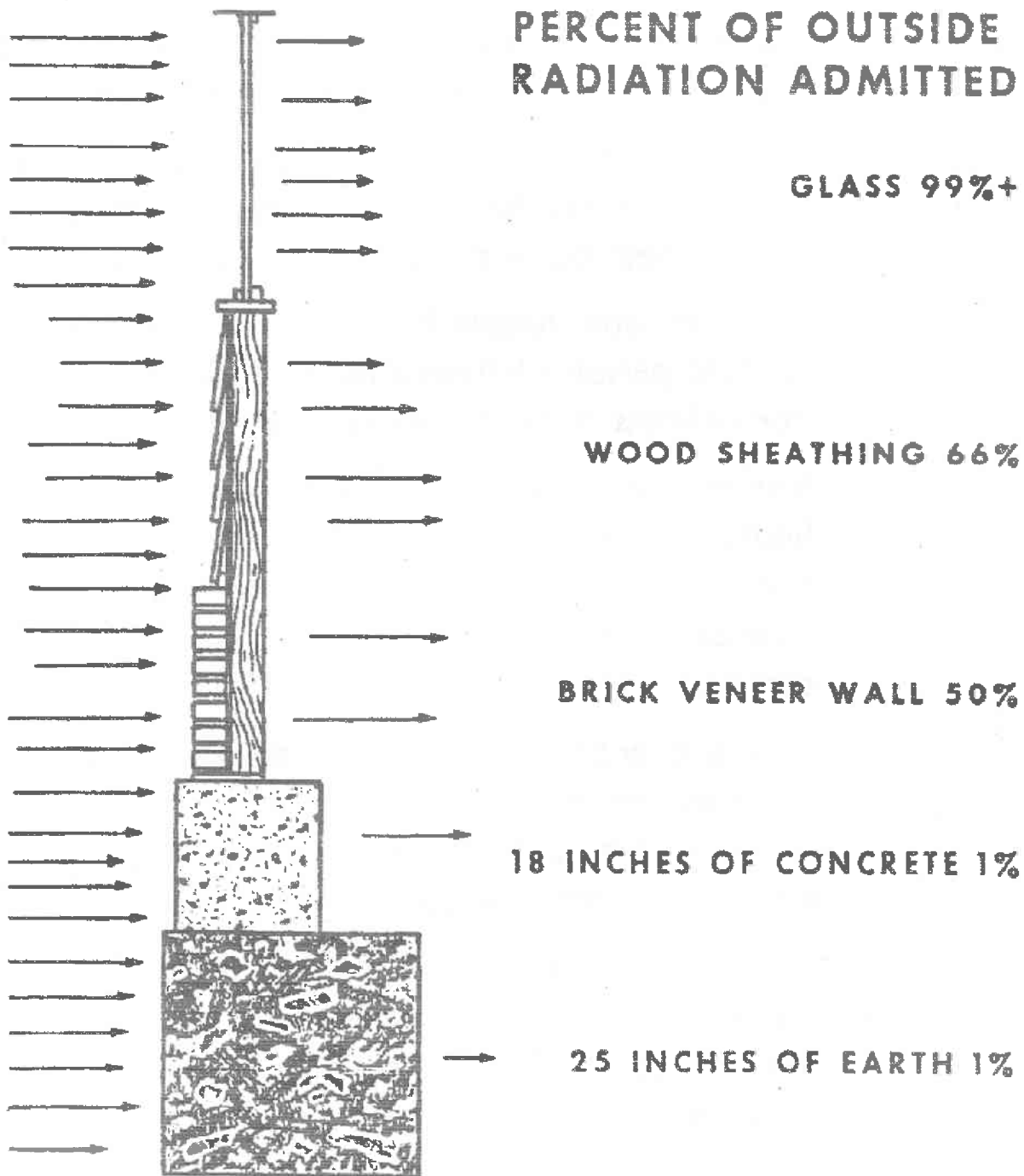


An 'inner refuge' would be necessary because few houses would give enough fallout protection even with the windows intact.

The well-prepared basement shelterer would have piled up dirt around the exterior walls of the house and on the floor of the ground floor over the basement. A hand-operated pump would draw air through a filter to refresh the putrid air, and extra beams within the basement would strengthen the roof. But how many people would do all this?



# RELATIVE PROTECTION OF VARIOUS MATERIALS



MARICOPA COUNTY DEPARTMENT OF  
CIVIL DEFENSE AND EMERGENCY SERVICES  
2035 North 52nd Street  
PHOENIX, ARIZONA 85008



## EXPECTED SHORT TERM EFFECTS RESULTING FROM EXPOSURE TO WHOLE-BODY GAMMA RADIATION

Dose (roentgens)	Effects
0 to 50	No evident effect, possibly slight blood changes
50 to 125	Vomiting and nausea for about 24 hours in 5-10% of exposed persons; fatigue with minor disability
125 to 175	Vomiting and nausea for about 24 hours in 25% of exposed persons; followed by other symptoms of radiation sickness, but with no deaths anticipated
175 to 225	Vomiting and nausea for about 24 hours in 50% of exposed persons; followed by other symptoms of radiation sickness, but with no deaths anticipated
225 to 350	Vomiting and nausea in nearly all persons in first 24 hours, followed by other symptoms of radiation sickness; approximately 20% of deaths within 2-6 weeks after exposure; convalescent period about 3 months for survivors
350 to 500	Vomiting and nausea in all persons in first 24 hours, followed by other symptoms of radiation sickness; approximately 50% of deaths within 1 month period; convalescent period about 6 months for survivors
500 to 750	Vomiting and nausea in all persons within 4 hours after exposure, followed by other symptoms of radiation sickness; up to 100% deaths; convalescent period about 6 months for survivors
750 to 1000	Vomiting and nausea in all persons within 1-2 hours; no survivors likely
Greater than 1000	Almost immediate incapacitation; all persons will be fatalities before 1 week

## FIRST AID FOR HOLOCAUST SURVIVORS

After a nuclear exchange, the chances of you being able to get in to see a doctor right away will be remote, to say the least. Thus it would be well for you to learn as much as possible about caring for your sick and injured yourself, until a doctor can be reached.

While radiation sickness is not contagious at all, a contaminated person may bring radiation particles into a shelter area, thus affecting others. Once fallout has descended, anyone entering a shelter should leave his shoes and clothing outside and should wash his hands, face, hair, and any other exposed body parts, then discard the water.

The first indication that a person has radiation contamination will be headache, nausea, dizziness and frequent vomiting. These symptoms last for short time and are followed by acute diarrhea and fatigue. The victim will not have an appetite but must be encouraged to take liquid in small frequent amounts. The illness lasts several days, depended on the age and health of the victim, after-which the person makes a rapid recovery. In the case of heavier doses however, the blood cells have been affected and their reduction in number has reduced the body's ability to fight infection. Therefore, within 15 to 20 days following "recovery", the victim becomes ill again and all the previous effects return. Along with them comes internal hemorrhaging, difficulty in breathing, bleeding ulcers in the mouth, spots under the skin, sores, fever, chill, and perhaps loss of hair. Recovery depends upon the dosage received and the general health of the patient.

First aid for radiation victims is rest, reassurance, small amounts of water given frequently, motion sickness tabs for nausea, maintain the body's electrolytes, pain relieving tabs for aches and clean surroundings.

About 15% of the damage of radiation is repaired by the body per week. If a person receives only a small or medium dose of radiation, his body will repair itself and he will get well. The same dose received over a short period of time is more damaging then if it is received over a longer period. Usually the effects of a given dose are more severe for people very young or very old. Most of those who are still alive six weeks after being exposed will live.

For beta burns received on the skin, cool and clean the area first with water, and then apply jel from the aloe vera plant. The burns should heal quickly except for the body's weakened condition. The loss of white blood cells will allow infection to set in more easily, so guard against it.

Flash blindness will occur to anyone who watches the initial detonation of a nuclear weapon. In most all cases it will be only temporary blindness. The best treatment is to cover the eyes with a clean dressing and let them rest.

Receiving 200 to 300 rads of radiation will cause sterility from 12 to 15 months and a 400 to 500 dose will cause it from 18 to 24 months.

It is important to remember that unless its overwhelmed, the body can repair itself. Your sight will return, the hair lost will grow back, the burns will heal, the sterility is temporary and the body will heal its damaged tissues.

LOE  
(over)



## NATURAL PROTECTION AGAINST NUCLEAR RADIATION

THERE IS NO MAGIC PILL THAT CAN COMPLETELY PROTECT THE BODY FROM NUCLEAR RADIATION. HOWEVER, STUDIES HAVE SHOWN THAT THERE ARE SIMPLE THINGS WE CAN DO WITH COMMON SUBSTANCES, THAT CAN PROTECT OR HELP RAPIDLY HEAL THE BODY FROM RADIATION'S MOST SERIOUS EFFECTS.

WHEN SUBJECTED TO NUCLEAR RADIATION, IT HAS BEEN FOUND THAT SOME PARTS OF THE BODY WILL ABSORB AN UNPROPORTIONALLY HIGH AMOUNT OF RADIATION IN COMPARISON TO THE REST. THE THYROID GLAND IN PARTICULAR, IF LACKING IN IODINE WILL ABSORB A GREAT DEAL OF RADIOACTIVE IODINE. THIS WILL CAUSE STUNTED GROWTH IN CHILDREN AND THYROID CANCER LATER ON.

AN EFFECTIVE PREVENTATIVE FOR THIS COMES IN AN EASY TO TAKE PILL OF POTASIIUM IODIDE. IT FILLS THE THYROID WITH IODINE AND BLOCKS RADIOACTIVE IODINE FROM ENTERING IN. IT CAN BE TAKEN ONLY 30 MINUTES BEFORE RADIATION SUBJECTION AND STILL BE EFFECTIVE. THE TYPICAL ADULT DOSE IS 130 MILLIGRAMS BUT STUDIES INDICATED THAT AS LITTLE AS 8.5 MG GIVEN TO CHILDREN FOR A FEW DAYS PROTECTED THEM FOR UP TO 6 MONTHS FROM THYROID CONTAMINATION.

SUBSTANCES IN PEANUTS, UNTOASTED SOY FLOUR AND VEGETABLES OF THE CABBAGE FAMILY, CAN COMBINE WITH IODINE AND PREVENT ITS ABSORPTION. NOTE LIKEWISE, THAT IF VITAMIN E IS DEFICIENT, ABSORPTION OF IODINE DECREASES TO 5% OF NORMAL, WHILE TAKING VITAMIN E TABLETS WILL CAUSE THE THYROID TO ABSORB TWICE AS MUCH IODINE.

A FALLOUT RADIOISOTOPE CALLED STRONTIUM-90 CAN BE BREATHED IN OR BROUGHT INTO THE BODY WITH FOOD OR WATER. ONCE IN THE BODY IT TENDS TO STAY IN THE BLOODSTREAM CAUSING CELL MUTATION AND CANCER OF THE BONES, LUNGS AND INTESTINES FOR AT LEAST 4 YEARS. SODIUM ALGINATE OR ALGIN (A NATURAL EXTRACT FROM SEA KELP) HAS BEEN FOUND TO BE 50% TO 80% EFFECTIVE IN RIDDING THE BODY OF STRONTIUM-90. FOR MAXIMUM PROTECTION, TAKE 10 GRAMS (1/3 OUNCE OR 3 TABLESPOONS) OF ALGINATE A DAY. TO RID STRONTIUM-90 FROM YOUR GASTRO-INTESTINAL TRACT, MIX WITH A THICK SOUP OR CHEW 6 TO 8 TABLETS WITH MILK 4 TIMES A DAY.

IF NO ALGINATE IS AVAILABLE, THEN PECTIN, WHICH OCCURS BOUNTIFULLY IN APPLES, CAN ALSO BIND RADIOACTIVE STRONTIUM AND CARRY IT OUT OF YOUR SYSTEM. YOU WILL NEED PLENTY OF APPLES AND MUST MASH UP 2 OR 3 AT A TIME AND TAKE THEM 3 OR 4 TIMES A DAY.

IF PECTIN IS NOT AVAILABLE, CALCIUM OR DOLOMITE (CALCIUM AND MAGNESIUM) ALSO WILL SERVE THE FUNCTION OF BINDING AND REMOVING STRONTIUM-90. CHEW UP 3 OR 4 TABLETS 4 TIMES A DAY. TAKING GENEROUS AMOUNTS OF BREWER'S YEAST IS SAID TO HELP AS WELL.

AN INTERESTING FACT IS THAT GUINEA PIGS, WHEN EXPOSED TO LETHAL DOSES OF RADIATION AND FED CLORIFILL RICH VEGETABLES SUCH AS CABBAGE AND BROCCOLI, HAD HALF THE MORTALITY RATE OF THOSE WHO WERE FED A NON-CLORIFILL DIET.

LIKEWISE, RATS TREATED WITH GINSENG AND EXPOSED TO PROLONGED RADIATION, LIVED TWICE AS LONG AS EXPECTED. THEIR BLOOD IN PARTICULAR WAS ABLE TO WITHSTAND RADIATION BETTER. (SIBERIAN AND KOREAN GINSENG)

IT IS THOUGHT THAT WHEAT GRASS, WHEN USED IN DRINKING WATER, WILL HELP SHIELD AGAINST RADIATION POISONING.



GINSENG







# These are PLANS FOR EXPEDIENT FALLOUT SHELTERS

## SAVE THESE PLANS—THEY MAY SAVE YOUR LIFE

### • GENERAL INFORMATION

WITHOUT PROTECTION, UNTOLD NUMBERS OF AMERICANS WOULD DIE NEEDLESSLY IN THE EVENT OF A NUCLEAR ATTACK. THE EXPEDIENT SHELTERS ILLUSTRATED IN THE FOLLOWING PAGES PROVIDE PROTECTION TO OCCUPANTS FROM THE DEADLY RADIATION OF RADIOACTIVE FALLOUT GENERATED BY A NUCLEAR DETONATION — THEIR USE CAN SAVE THE LIVES OF MILLIONS OF AMERICANS.

EVEN THOUGH THE ILLUSTRATED SHELTERS ARE VERY AUSTERE, THERE ARE A NUMBER OF THINGS THAT CAN BE DONE TO IMPROVE THEIR HABITABILITY AFTER THEY HAVE BEEN BUILT. WITH THE USE OF A LITTLE INGENUITY AND EFFORT, THE SHELTERS CAN BE MADE MORE COMFORTABLE. SOME OF THE THINGS THAT CAN BE DONE ARE:

- CONSTRUCT SEATS, HAMMOCKS, OR BUNKS.
- COVER THE FLOOR WITH BOARDS, FINE BOUNDS OR LOGS AND DRAPE SHEETS OR MATERIAL OVER THE EARTH WALLS.
- PROVIDE SAFE, DEPENDABLE LIGHT.
- FOR HOT WEATHER, CONSTRUCT THE EXPEDIENT AIR VENTILATION PUMPS.
- FOR COOKING, CONSTRUCT THE EXPEDIENT COOK STOVE FOR USE IN THE ENTRYWAY. IN COLD WEATHER, SEAL THE ENTRANCE AND USE THE STOVE FOR HEATING THE SHELTER AREA. BE SURE VENTILATION IS PROVIDED WHENEVER THE STOVE IS USED.
- STORE SHELTER SUPPLIES IN ENTRYWAY FOR MORE LIVING SPACE. COVER ALL OPEN CONTAINERS. RADIATION WILL NOT DAMAGE THESE SUPPLIES.

HUMANS MUST HAVE WATER AND FOOD TO LIVE. WHEN PEOPLE ARE TO LIVE IN A SHELTER FOR A WEEK OR TWO, SUFFICIENT FOOD AND SUPPLIES MUST BE PROVIDED FOR THE OCCUPANTS. THE MINIMUM NECESSITIES ARE:

- WATER — MINIMUM REQUIREMENTS (DEPENDENT UPON TEMPERATURE — LESS IN

COLD WEATHER, MORE IN WARMER) WILL BE FROM ONE QUART TO ONE GALLON PER PERSON PER DAY. STORAGE CAN BE ACCOMPLISHED BY USING DISINFECTED METAL OR PLASTIC TRASH CANS OR BOXES LINED WITH STRONG POLYETHYLENE FILM OR STRONG PLASTIC BAGS. FOR PURITY, SIGHT DROPS (ONE TEASPOON) OF A 5-5% CHLORINE SOLUTION (e.g., CLOROX) SHOULD BE MIXED INTO EACH 3 GALLONS OF WATER.

• FOOD — ALL FOOD SHOULD REQUIRE NO REFRIGERATION AND SHOULD BE BROUGHT TO THE SHELTER IN AIRTIGHT TINS OR BOTTLES. UNDER SHELTER CONDITIONS, PEOPLE WILL REQUIRE ABOUT HALF AS MUCH FOOD AS USUAL. FOODS SHOULD HAVE A HIGH NUTRITIONAL VALUE AND A MINIMAL AMOUNT OF BULK (i.e., CANNED MEATS — FRUITS — VEGETABLES, DRIED CEREALS, HARD CANDY, ETC.)

• SANITATION — A METAL CONTAINER WITH A TIGHT-FITTING LID FOR USE AS A TOILET WITH WHICH PLASTIC BAGS CAN BE USED. TOILET PAPER, SOAP, TOWELS, SANITARY ITEMS AND A QUANTITY OF STRONG PLASTIC BAGS WILL BE NEEDED.

• MEDICAL SUPPLIES — A WELL-STOCKED FIRST-AID KIT COMPARABLE TO WHAT IS USUALLY KEPT AT HOME. TAKE SPECIAL MEDICINES FOR INFANTS AND OTHERS AND A GOOD FIRST-AID HANDBOOK.

• CLOTHING AND BEDDING — SEVERAL CHANGES OF CLEAN CLOTHING, ESPECIALLY SOCKS AND UNDERCLOTHING — DEPENDENT UPON THE WEATHER, BLANKETS, PILLOWS AND SLEEPING BAGS MAY ALSO BE NEEDED.

• PORTABLE RADIO — LASTLY, BUT HARDLY LEAST IMPORTANT, A PORTABLE RADIO WITH FRESH AND EXTRA BATTERIES. RADIO STATION BROADCASTS WILL ADVISE YOU WHEN IT IS SAFE TO ABANDON THE SHELTER AND ALSO PROVIDE YOU WITH OTHER IMPORTANT EMERGENCY INFORMATION.

# EXPEDIENT FALLOUT SHELTER

## CAR-OVER-TRENCH

**GENERAL INFORMATION:** READ AND STUDY ALL INSTRUCTIONS BEFORE BEGINNING. IF A BIG STATION WAGON IS USED, SHELTER CAN BE PROVIDED FOR UP TO 6 PERSONS. LESS IF CAR IS SMALLER. THIS SHELTER CAN NOT BE BUILT IN AREAS WHERE GROUNDWATER OR ROCK IS CLOSE TO THE GROUND SURFACE. SHELTER CAN BE CONSTRUCTED BY TWO PERSONS WORKING A TOTAL OF ABOUT 8 HOURS EACH.

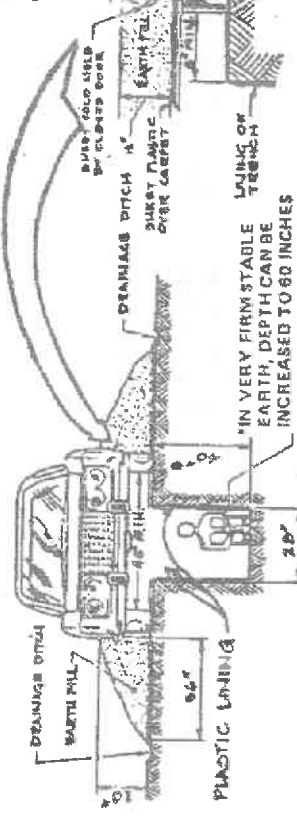
### STEP 1

SELECT A LEVEL SITE. DIG A SMALL TEST HOLE ABOUT 18 INCHES DEEP. REMOVE ALL LOOSE EARTH FROM THE BOTTOM. PUSH THE POINT OF YOUR THUMB INTO THE UNDISTURBED EARTH IN THE BOTTOM OF HOLE. IF YOU CANNOT PUSH YOUR THUMB DEEPER THAN ONE INCH, THE EARTH SHOULD BE SUITABLE FOR THIS SHELTER. IF THUMB PENETRATES DEEPER THAN ONE INCH, MOVE TO ANOTHER SITE AND REPEAT TEST. BECAUSE EARTH AT THE TESTED SITE IS NOT SUITABLE.



### STEP 2

STAKE OUT DIMENSIONS SHOWN FOR TRENCH AND ENTRYWAY. NOTE THAT THE LENGTH OF TRENCH MUST BE 4 FEET LESS THAN THE OVERALL LENGTH OF THE CAR.



TRENCH AND FILL DETAIL

### TOOLS AND MATERIALS

1. CAR: CAUTION: CAR MUST HAVE AT LEAST 44 INCHES OF WIDTH BETWEEN INSIDE WALLS OF TIRES.
2. PICK AND LONG-HANDLED SHOVEL.
3. PLASTIC SHEETING AND/OR CLOTH APPROX. 10-12 BEDSHEETS OR EQUIV. AREA OF OTHER MATERIALS WILL BE REQUIRED.
4. SANDBAGS, SACKS OR PLOWCASES, 9 REQUIRED.
5. 50 FEET OF STRONG STRING OR CORD AND A KNIFE.
6. YARDSTICK OR MEASURING TAPE.
7. WORK GLOVES FOR EACH WORKER.
8. STAKES, 4 REQUIRED.

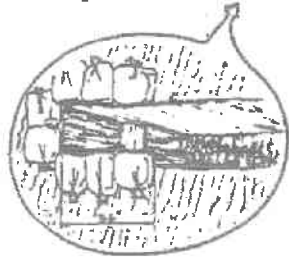
### STEP 3

EXCAVATE TRENCH AND ENTRYWAY, AS TRENCH DEPT'NS. REPEAT EARTH STABILITY TEST ON BOTTOM OF TRENCH, IF EARTH BECOMES "SOFTER" DO NOT DEEPEN TRENCH. PLACE EXCAVATED EARTH AWAY FROM TRENCH SO THAT CAR CAN BE DRIVEN OVER TRENCH.

### STEP 4

LINE TRENCH WITH PLASTIC OR CLOTH. LINING SHOULD TOUCH FLOOR OF TRENCH AND EXTEND OUTWARD TO THE LIMIT OF EARTH FILL. AFTER TRENCH IS LINED, CAREFULLY DRIVE CAR OVER TRENCH TO THE POSITION SHOWN. HAVE SOMEONE GUIDE THE DRIVER OVER THE TRENCH.

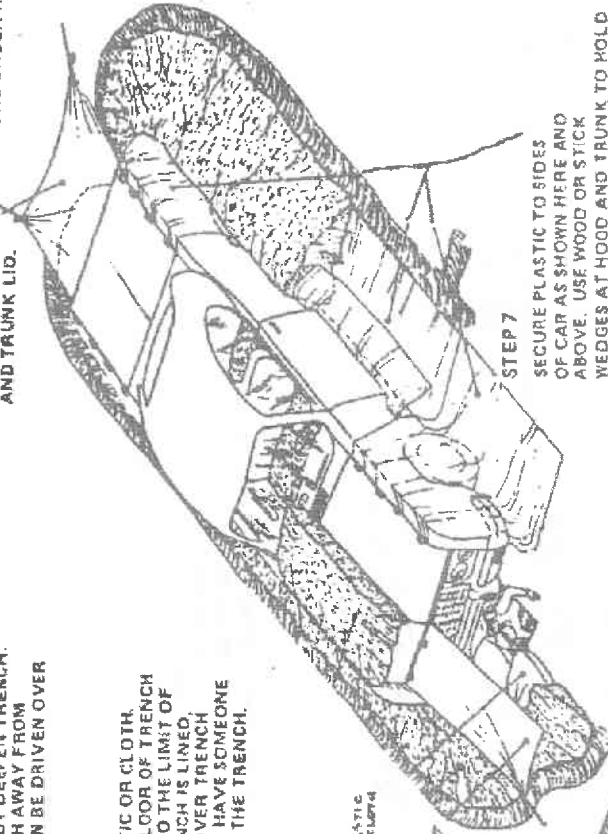
- ### STEP 5
- REMOVE ALL SEATS (IF POSSIBLE). COVER FLOOR AND TRUNK WITH PLASTIC. PLACE 1 FOOT OF EARTH FILL IN TRUNK AND ON FLOOR.



### TRENCH AND ENTRYWAY DETAIL

### STEP 6

PLACE PLASTIC COVER OVER ENTRANCE AND VENTILATION OPENINGS. SECURE UNDER HOOD AND TRUNK LID.



### STEP 7

SECURE PLASTIC TO SIDES OF CAR AS SHOWN HERE AND ABOVE. USE WOOD OR STICK WEDGES AT HOOD AND TRUNK TO HOLD PLASTIC. ALSO SECURE WITH DOOR AS SHOWN ABOVE.

### STEP 8

BANK EARTH AROUND CAR TO HEIGHT OF 20 INCHES

### STEP 9

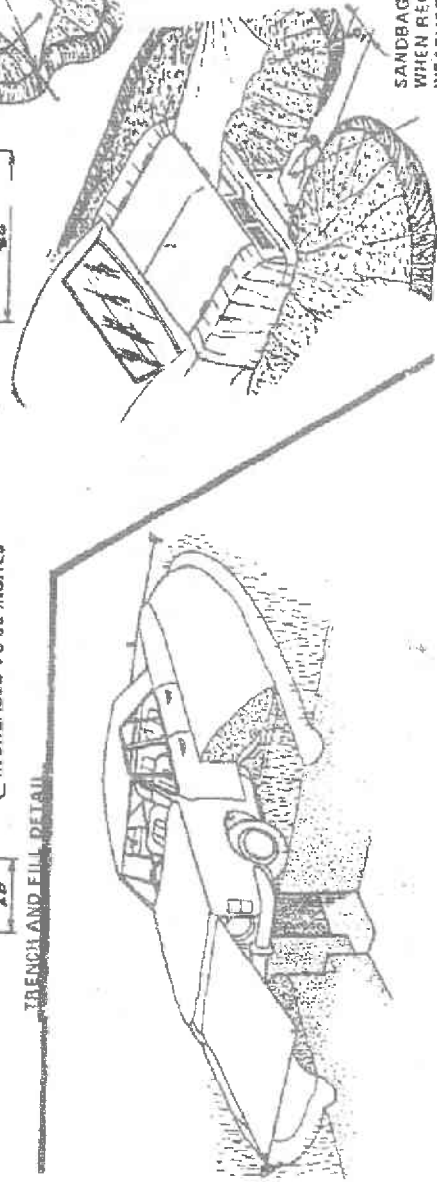
PLACE SANDBAGS AROUND ENTRANCE AND BANK EARTH AROUND THEM.

### STEP 10

PLACE 8 INCHES OF EARTH ON CAR HOOD

### STEP 11

DIG SHALLOW DRAINAGE DITCH AROUND FILL.



SANDBAG TO REDUCE AIRFLOW WHEN REQUIRED DURING COLD WEATHER

# EXPEDIENT FALLOUT SHELTER

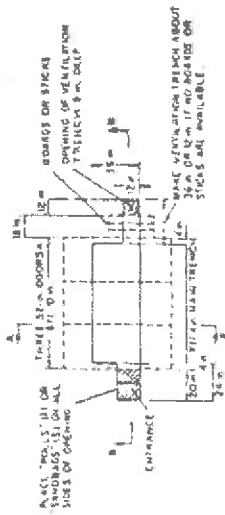
## DOOR COVERED TRENCH SHELTER

### GENERAL INFORMATION

THIS SHELTER IS DESIGNED FOR AREAS WHERE THERE IS A SHORTAGE OF SMALL TREES AND/OR BUILDING MATERIALS. THE DEPTH TO GROUND WATER AND ROCK MUST ALSO BE BELOW THE BOTTOM OF THE TRENCH. IN ADDITION, THE EARTH MUST BE SUFFICIENTLY FIRMLY AND STABLE SO THAT THE TRENCH WALLS WILL NOT COLLAPSE. THE SHELTER (3 PERSON CAPACITY) CAN BE CONSTRUCTED BY 3 PEOPLE WORKING AN APPROXIMATE TOTAL OF 12 HOURS EACH. READ AND STUDY ALL INSTRUCTIONS BEFORE BEGINNING TO BUILD.

### STEP 1

SELECT A REASONABLY LEVEL SITE. LAY OUT THE SHELTER AS ILLUSTRATED BY LAYING DOORS SIDE BY SIDE TO DETERMINE THE SHELTER LENGTH. DOOR KNOBS SHOULD BE REMOVED.



### LAYOUT FOR 3-PERSON CAPACITY

STEP 2 EXCAVATE THE SHELTER TRENCH, ENTRYWAY AND VENTILATION TRENCH AS SHOWN. PILE THE EXCAVATED EARTH AT LEAST 3 FEET BEYOND THE TRENCH LIMITS SO THAT IT WILL NOT INTERFERE WITH THE LATER PLACEMENT OF DOORS OVER THE TRENCH.

### TOOLS AND MATERIALS

1. DOORS (INTERIOR SOLID OR HOLLOW-CORE) - 1 FULL SIZE (32" MINIMUM WIDTH) FOR EACH PERSON. IF DOORS MEASURE LESS THAN 32" IN WIDTH, USE A COMBINATION OF DOORS TO PROVIDE THE MINIMUM WIDTH PER PERSON.
2. IF DOORS ARE HOLLOW-CORE-USE TWO LAYERS. PICK AN/DOR MATTACK.
3. LONG-HANDED SHOVELS AND SQUARE BLADED SHOVEL.
4. RAINPROOFING MATERIAL - (i.e., PLASTIC SHEETING, CANVAS, PLASTIC TABLE COVERS, ETC.) AT LEAST 25 SQUARE FEET PER PERSON PLUS 2 PIECES ABOUT 6 FT. BY 6 FT. FOR USE AS CANOPIES.
5. ONE BEDSHEET OR THE EQUIVALENT OF 50 SQ. FT. OF CLOTH OR PLASTIC PER PERSON TO LINE TRENCH AND MAKE EARTH-FILLED ROLLS.
6. TWO PLOWCASES PER PERSON TO USE AS SANDBAGS.
7. STRING OR CORD TO THE CANOPIES AND SANDBAGS.
8. KNIFE.
9. SEVERAL BOARDS ABOUT 3 FEET LONG.
10. MEASURING TAPE AND/OR RULER.
11. WORK GLOVES FOR EACH WORKER.
12. HAMMER AND HAND SAW.

### HOW TO MAKE AN EARTH ROLL

1. SELECT A PIECE OF CLOTH OR PLASTIC AT LEAST AS STRONG AS A NEW BED SHEET, 2 FT. WIDER THAN THE SIDE OF THE OPENING TO BE PROTECTED, AND 5 FT. IN LENGTH.

2. PLACE 2 FT. OF THE LENGTH OF THE CLOTH ON THE GROUND, AS ILLUSTRATED.

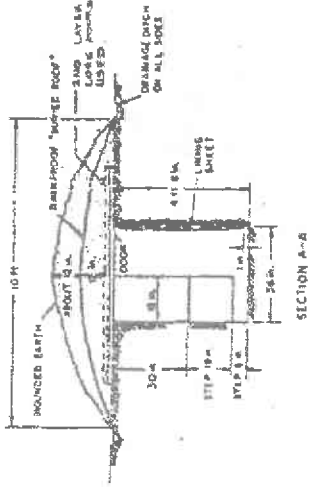
3. WHILE USING BOTH HANDS TO HOLD UP 3 FT. OF THE LENGTH OF THE CLOTH AND WHILE PRESSING AGAINST THE CLOTH WITH YOUR BODY, HAVE ANOTHER PERSON SHOVEL EARTH ONTO AND AGAINST THE CLOTH.



4. WHILE STILL PULLING ON THE CLOTH, PLACE THE UPPER PART OVER THE EARTH THAT IS ON THE LOWER PART OF THE CLOTH.

5. COVER THE UPPER EDGE OF THE CLOTH, FORMING AN EARTH-FILLED "HOOK" IN THIS EDGE.

STEP 3 IF THERE ARE ADEQUATE SHEETS OR FABRIC AVAILABLE, LINE THE TRENCH WALLS WITH THEM. THEN PLACE DOORS OVER THE TRENCH.

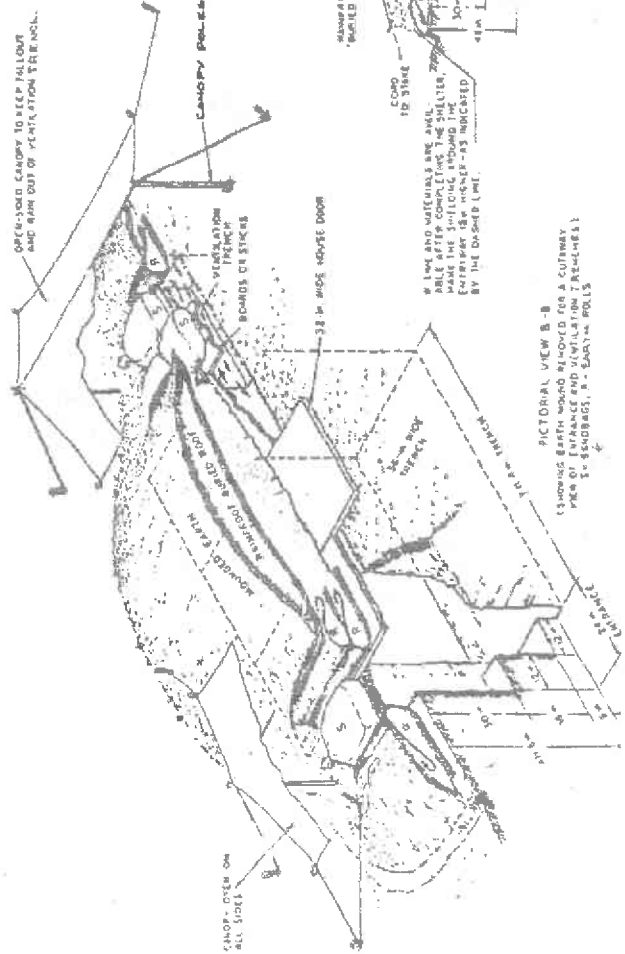


SECTION A-A

STEP 4 IN ORDER TO HOLD IN PLACE AN ADEQUATE AMOUNT OF EARTH ON TOP OF THE DOORS, CONSTRUCT EARTH "ROLLS" AROUND THE ENTRYWAY AS SHOWN. THE "ROLLS" WILL KEEP THE EARTH FILL IN PLACE. SEE HOW TO MAKE AN EARTH ROLL.

STEP 5 PLACE EARTH FILL AND THE WATERPROOFING MATERIAL OVER THE DOORS. PLACE SANDBAGS AS SHOWN ON THE ILLUSTRATIONS.

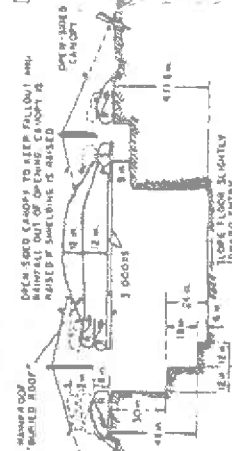
STEP 6 CONSTRUCT SHALLOW DRAINAGE DITCHES ON ALL SIDES AND PLACE CANOPIES OVER THE OPENINGS.



PICTORIAL VIEW B-B

(SHOWING EARTH WOUND REMOVED FOR A CUTAWAY VIEW OF ENTRANCE AND VENTILATION TRENCHES)

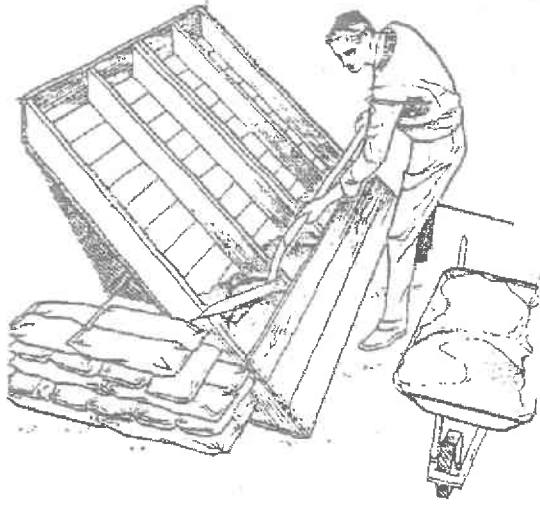
### Doors-over-trench shelter



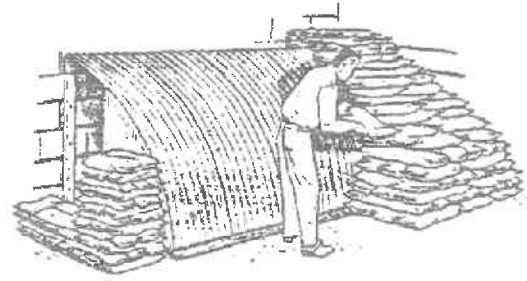
SECTION B-B



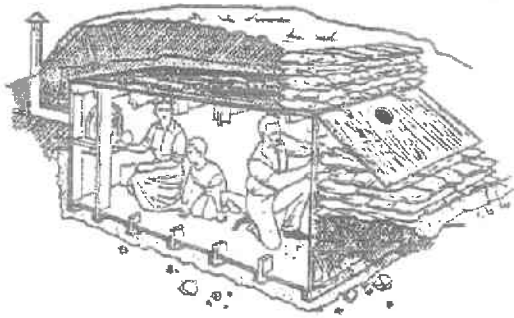
**Basement Sand-Filled  
Lumber Lean-To Shelter**



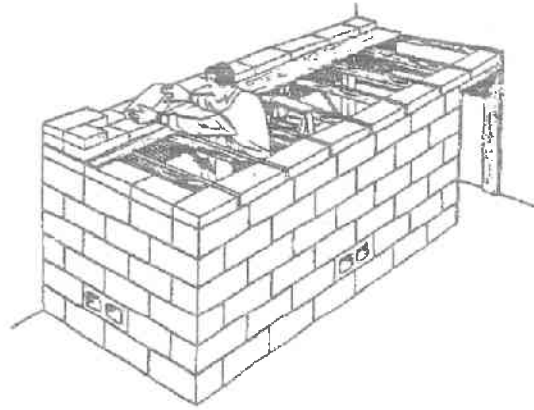
**Basement Corrugated  
Asbestos-Cement  
Lean-To Shelter**



**Outside Semimounded  
Plywood Box Shelter**



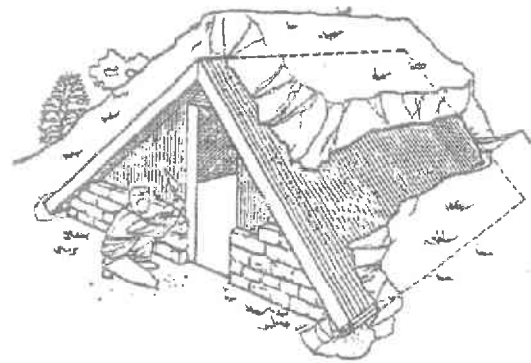
**Basement Concrete  
Block Shelter**



**Belowground Corrugated  
Steel Culvert Shelter**



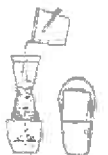
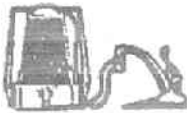
**Aboveground Earth-Covered  
Lumber A-Frame Shelter**



With a few exceptions, your shelter supply will not differ much from your year supply. So if you've got your year supply, you're almost there already.

WATER

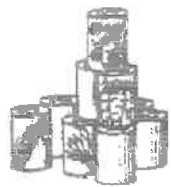
Water is even more important than food, especially here in the valley. Each person will need at least one gallon of water per day. There should be a minimum of 2 weeks worth, but a 2 months supply would be wiser, considering it'll be used to wash people down who are coming into the shelter after the fallout begins. Also good water from the tap may not be available for awhile after its over. For storing water, the new mylar bags seem to be a good way to go. But, the big 55 gallon drums do take up less space, hold more and cost less. When the the attack warning comes however, fill up every empty container in sight, including bath tubs, sinks, jars, canteens, kids wading pools, etc. A water filtering unit and purification tabs will prove invaluable when the time comes to find more water.



FOOD

Your shelter should be almost air tight, at least at first to keep the fallout dust out. Thus if you don't have a filtered ventilation system going into your shelter, then you'll have to depend on eating foods that don't require cooking. Even if you do have a vent, you can't use the white gas camping stoves because of the carbon monoxide they give off. Except for sprouting, or making cereal, the bulk grains will have to wait until after you emerge and can cook. During the time you are in the shelter, is when the canned and ready-to-eat foods will be the order of the day. Typical shelter foods would be:

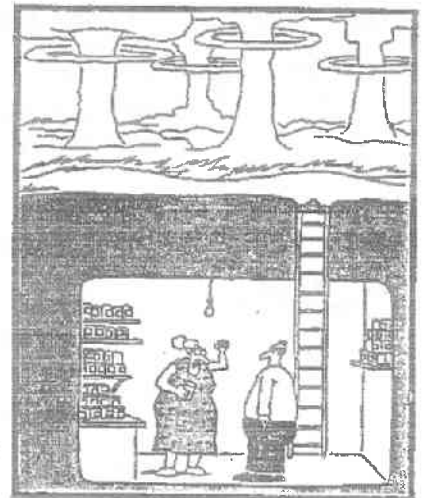
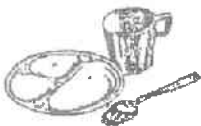
- |                             |                          |
|-----------------------------|--------------------------|
| CANNED MEATS                | NON-FAT DRY MILK         |
| CANNED TUNA                 | SPROUTS (ALFALFA, WHEAT) |
| CANNED VEGETABLES           | READY-TO-EAT CEREAL      |
| CANNED FRUITS               | PEANUT BUTTER            |
| CANNED EVAPORATED MILK      | MEAT JERKY               |
| CANNED FRUIT JUICES         | CRACKERS                 |
| DRIED FRUIT (FRUIT LEATHER) | HONEY                    |
| SPREADS FOR CRACKERS        | NUTS                     |



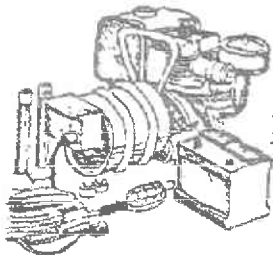
If you have a good ventilation system set up, then you can add hot meals to your fare and include:

- |                                      |           |
|--------------------------------------|-----------|
| FREEZE DRIED MEALS                   | HERB TEAS |
| DEHYDRATED MEALS                     | PANCAKES  |
| WARMED CANNED VEGETABLES             | SOUPS     |
| HOT CEREAL (OATS, WHEAT, ETC.)       |           |
| FROZEN FOODS THAWING IN YOUR FREEZER |           |

Don't forget eating utensils, a can opener, a spatula, paper plates and throw away cups. You likely won't want to waste your water washing dishes. A good hand grain grinder will be coming in handy too.



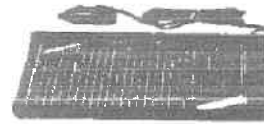
"How many times did I say it, Harold? How many times? 'Make sure that bomb shelter's got a can opener—ain't much good without a can opener,' I said."



### LIGHT

People can remain healthy for several days in total darkness. But, clearly, most tasks are much more manageable if some light is available. Light will have a calming effect particularly on children and people will tend to gather around it. Again, because of the carbon monoxide, the white gas lanterns will not be able to be used. Even kerosene lamps can cause headaches, use up oxygen, and if knocked over have disastrous results. Candles can be used only if there is nothing else but again care must be used to avoid fire and they will use up oxygen.

The best type of light would be battery powered. Coleman makes a good battery powered lantern for about \$25 and it can also be run by a car battery. Plenty of flashlights should also be on hand, along with a year supply of batteries. (They will store longer if kept in the refrigerator.) It would be well to consider storing rechargeable nickel cadmium batteries. There are mini solar panels available in town that will keep them charged for years. There are also portable solar panels that will keep your car battery continuously charged. Just set it outside and run the wires down into your shelter to the battery.



### SANITATION

This is an important matter that must be dealt with properly in the confined space of a shelter. If not, it will cause sanitary as well as psychological problems. Some sort of porta-potti or metal container should be available to use as an emergency toilet. To keep the odor down to a minimum with larger groups, each individual occasion on the john should be sealed in a plastic bag (which is lining the toilet) and then placed in a large leak proof garbage can with a tight fitting lid. Sanitation supplies should include:

- |  |                          |
|--|--------------------------|
| ONE OR TWO LARGE GARBAGE CANS W/ COVERS FOR WASTES & GARBAGE | DISINFECTANT             |
| AN EMERGENCY TOILET  | SANITARY NAPKINS         |
| PLASTIC BAGS TO LINE THE TOILET                              | DISPOSABLE DIAPERS       |
| TOILET PAPER   | PRE-MOISTENED TOWELETTES |
| WASHCLOTHS & TOWELS  | AIR FRESHENER            |
| PORTABLE SINK OR BASIN                                       |                          |

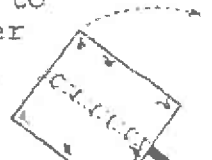
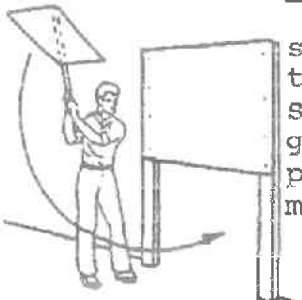
### BEDDING

Have enough to keep everyone warm and comfortable if there is no power (and later possibly no windows). Include:

- |               |                |          |      |
|---------------|----------------|----------|------|
| SLEEPING BAGS | PLASTIC SHEETS | BLANKETS | COTS |
| FOAM PADS     | CLOTH SHEETS   | PILLOWS  |      |

### VENTILATION

This may be the deciding factor as to how long you will stay in your shelter, especially if you don't have a way to tell how much radiation is outside. Things can get pretty stuffy and stinky in a small confined area with a fair sized group of people after a few days. If you weren't able to put in one of the expensive hand-crank systems, consider making a big hand powered fan out of wood beforehand.





## EQUIPMENT

There are many things that may be needed, both while in the shelter and after you emerge from it. It's likely you will have a shortage of space inside your cover so this list will be divided into things to keep inside the shelter and those to keep handy just outside.

### INSIDE THE SHELTER:

CLOTHING THAT WILL ALLOW YOU TO GO OUTSIDE FOR SHORT PERIODS (To check radiation levels and take out waste.)

A COVERING THAT WOULD BE EASY TO DECONTAMINATE SUCH AS:

A RAIN COAT PONCHO

IRRIGATION BOOTS

HEAVY RUBBER GLOVES

ISRAELI GAS MASK (at Larada's for \$7.95)

DUCT TAPE (To wrap sleeves and cuffs to go outside)

RADIATION SURVEY METER

DOSIMETER

DOSIMETER CHARGER

RADIOS (Battery powered and kept in a metal box at first to protect it from EMP effects)

WALKIE TALKIES (To communicate with those who leave and investigate around out of the shelter)

CLOTHING (As will be needed for the season)

FIRST AID SUPPLIES (All you can buy before hand including:)

SPECIAL MEDICINES REQUIRED BY FAMILY MEMBERS

THERMOMETER

GAUZE BANDAGES

TRIANGULAR BANDAGES

ADHESIVE TAPE

SPLINTER TWEEZERS

SAFETY PINS

ANTISEPTICS

SCISSORS

BAND-AIDS

RAZER BLADES

FOOD PREPARATION EQUIPMENT

FIREARMS & AMMO (To hunt food and for protection)

BATTERIES (Lots of them)

BOOKS (On Nuclear War Survival, First Aid, Disaster Preparedness, Gardening, Self-Sufficiency and your Scriptures.)

PAPER & PENCILS (To write down things heard on the radio)

GAMES (To keep the children occupied)

### OUTSIDE THE SHELTER (But close by)

FIRE EXTINGUISHER

SOLAR SHOWER (To wash off with before reentering shelter)

SHOVEL (For burying waste)

CONSTRUCTION TOOLS

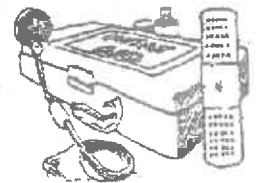
GARDENING TOOLS AND SEEDS

SURVIVAL KNIFE

SEWING SUPPLIES

MATCHES

AXE



# SHELTER FROM THE SURGE: EMP PROTECTION

## EMP- WHAT IS IT?

A nuclear explosion produces a great burst of electromagnetic energy in the radio portion of the spectrum. This is called the electromagnetic pulse or EMP. Although EMP is not directly harmful to humans, it would be a major factor in the overall impact of a nuclear attack.

Extremely high-altitude explosions produce an EMP that staggers the imagination. It is thought that a 50 to 60 megaton nuclear detonation about 311 miles up above the middle of the U.S., would blow out every unprotected communication system in the country. A strong EMP can induce a great and sudden surge of electricity to flow in any large metal object, such as a power line, a radio antenna or even an automobile body. The longer the object, the more powerful is the surge of induced current. Standing on a railroad track at that moment could be very dangerous. This current is capable of causing serious damage to radios, televisions, telephone networks, power networks and computer operations. In fact, most all devices with transistors, semi-conductors and solid state electric circuits could be burnt out.

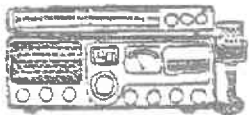
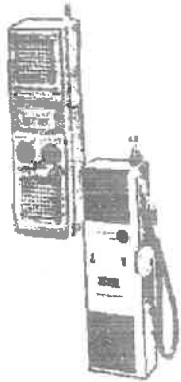
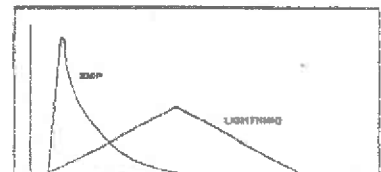
## PROTECTING YOUR COMMUNICATIONS

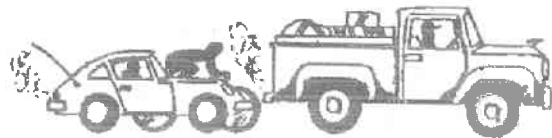
Your radio and communication systems will be vital in this kind of emergency to keep you informed of what is happening locally, in the country and around the world. Thus it is important for you to take steps to protect your system from being rendered useless in literally the blink of an eye.

The only true method for protection of your communications equipment is also the simplest. All equipment to be protected from nuclear blast EMP should be disconnected from all external wires and stored in a thoroughly sealed metal box. The boxes should have no holes through which any kind of energy can penetrate, and should have a skin of 18 to 26 gauge metal to provide magnetic shielding for the equipment inside.

Keep antennas as short as practical, preferably less than 10 inches. Longer antennas should be well grounded, as they can be expected to take the brunt of EMP effects. Disconnect them when not in use and take them away from the radio if possible. Keep all unshielded radios at least 6' away from any long piece of metal, such as pipes, metal ducts or wires found in many basements. Long metal conductors can pick up and carry large EMP surges. Because it is so fast, (the pulse has only a duration of 10-nano second), there is insufficient time for most lightning arresters to work quick enough to be of any help.

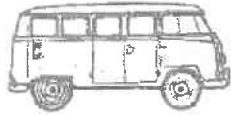
While your at it and if you have any warning, go around your house and disconnect all your televisions, stereos, VCRs, tape players, personal computers and any other high tech, solid state type electronics that you would prefer not to have ruined.





## PROTECTING YOUR VEHICLE

Having a working vehicle may be vitally important to you, particularly if you are trying to evacuate the city, either during or after the attack on the country. It may also seem prudent to leave, if after the fallout dissipates you learn that an invasion force is coming in for a visit.



Motor vehicles in recent years have had a number of electronic systems incorporated into them that will render them stationary after an EMP surge. Solid state circuitry is used in the electronic ignition system, the charging system, fuel injection, anti-lock brakes, cruise control, seat belt- starter interlock and the electric choke heater system. Even Diesels may have an electronic control system to operate glow plugs.



The logical solution to the problem of EMP proofing is to start with a vehicle produced before any such electronics were available. That means pre 1975 Fords and Chevys and pre 1973 Chryslers, when contact point distributors were used instead of electronic ones. You may even need to go back to pre 1965 cars, when generators were used instead of todays charging system of a transistorized voltage regulator and an alternator of rectifier diodes.



Your second option is to replace your current electronic distributor assembly with a contact point ignition system. (It must be one with the same spark advance characteristics as your present unit and compatible with your present engine.) You must also eliminate your solid state alternator and convert to an OEM generator type charging system with a mechanical regulator.



There are two other critical solid state systems to check for. First is the Seat Belt Starter Interlock, which is controlled by a transistorized logic module and prevents the starter motor from operating unless the seat belt are coupled. If you have it, bypass it by connecting 2 wires on its connector, but be sure it performs no other function. The other thing to check for: if your vehicle has an automatic choke, it may be equipped with an electric heater to cause the choke thermostat to open. In some cases, this heater is controlled by solid state circuitry contained in the choke thermostat unit. Consult your factory repair manual.



Your third and last option for overcoming the EMP problem is to buy replacement electronic control modules and electronic voltage regulators along with other solid states systems your car uses and when your currant systems blow just replace them with new ones. Then hope no other nuclear devises are detonated. Keep these new replacement parts in their original cardboard box, wrapped in aluminum foil and metal screen wire and placed in a metal box.



One recent bit of help may be a new "Emergency Bypass Ignition System" kit that has just come out and uses a simple 4 wire connection that is suppose to start and keep your car running after an EMP surge. (See Survival Guide Magazine, June 88, page 33)





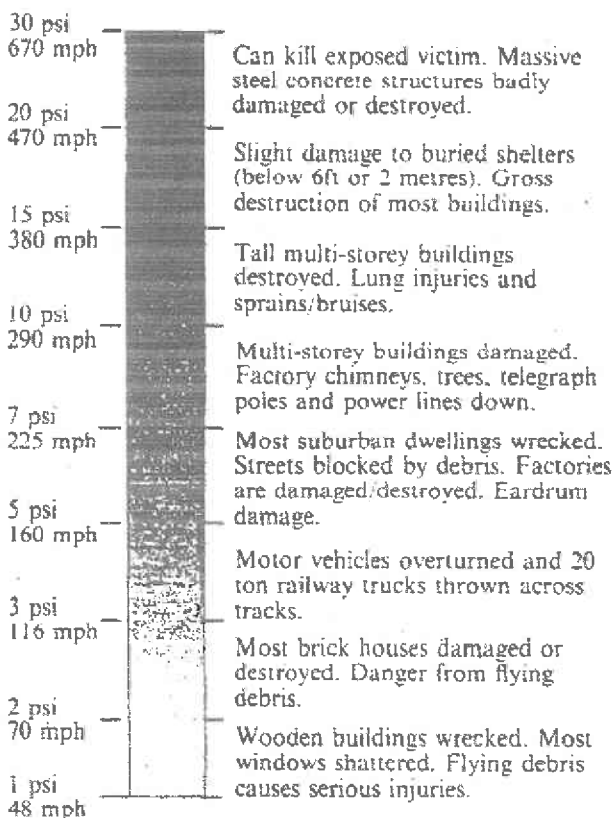
**AVERAGE CLOUD DIAMETER AND HEIGHT OF AN AIR-BURST NUCLEAR EXPLOSION**  
(Where the fireball touches the ground)

Weapon Yield	Cloud Diameter, Miles/Kilometres	Cloud Height, Miles/Kilometres
10 KT	1.9mi/3.0km	6.0mi/9.6km
100 KT	7.5mi/12.0km	7.9mi/12.7km
150 KT	8.0mi/12.8km	9.4mi/15.1km
1 MT	20.8mi/33.4km	13.6mi/21.8km
10 MT	52.0mi/83.6km	19.7mi/31.6km

**PERMISSIBLE RADIOACTIVE LEVELS FOR FOOD AND WATER**

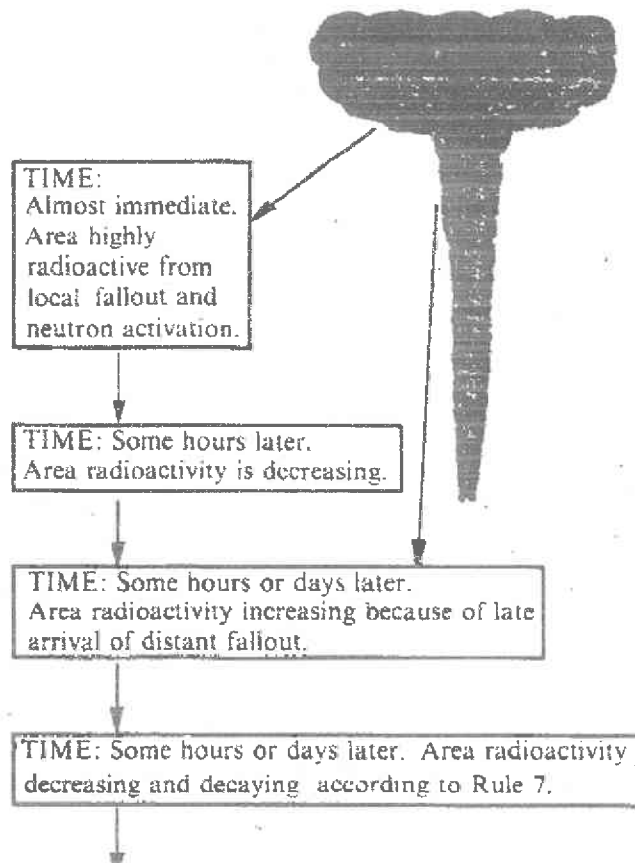
Product	Amount	Radioactivity in Millirads/Hour
Meat	Carcass	4.0
Water	Bucketful	0.9
Fish	1 lb/0.5 kg	0.4
Bread	Large Loaf	0.3
Milk	2 Pints/1 litre	0.1
Fruit and Vegetables	2 lb/1 kg	0.3
Eggs	12	0.3

The above data should not imply that survivors can consume this amount of radioactivity for long periods. Some of the contamination will contain long-lived gamma/beta isotopes which remain in the body for comparatively long periods of time whilst others, though equally powerful in their potential biological effects, pass through the system in days to weeks.



Blast 'overpressure' in pounds per square inch (psi) and wind speeds in miles per hour (mph) are only approximations for the tabulated ranges: weapon yield, detonation height, weather and terrain conditions all dictate the precise range at which a particular weapon yield will produce a specific blast effect. To convert psi into kgm cm<sup>2</sup> multiply by 0.07. For mph into

**RULE OF SEVEN LAW FOR RADIOACTIVE DECAY**



TIME: Restart clock. **RULE OF SEVEN CHART STARTS HERE**

Time	Radiation: Rads(r) or Millirads (mr) per hour (h).
30 minutes	2000 r/h
1 hour	1000 r/h
2 hours	400 r/h
3.5 hours	200 r/h
7 hours	100 r/h
14 hours	40 r/h
24 hours	20 r/h
2 days	10 r/h
4 days	4 r/h
7 days	2 r/h
14 days	1 r/h
28 days	0.4 r/h or 400 millirads/hour
50 days	less than 200 mr/h
100 days	less than 100 mr/h
200 days	less than 40 mr/h

This is obviously an idealized chart. It does however convey all the principles behind the Rule of Seven Law of radiation monitoring. The arrival of more fallout from distant explosions will often spoil these decay levels, making them higher than expected. But careful observation will enable the survivor to pin-point the underlying trend of diminishing radioactivity. Once a pattern of decay has been isolated it will be comparatively easy to calculate the probable dose levels of several weeks hence. But this rule of seven law begins to lose its accuracy after two to three months of decay time. Remember: for every sevenfold increase in time from the first measurement, the level of radioactivity falls by a factor of 10.



## RECOVERY

As soon as it safe to come out, sweep, dust and wash off all suspected fallout from the areas around your home and bury it.

The biggest problem after a nuclear attack will not be radiation but starvation. You will have to live on what you have stored or can forage until new crops are raised. You should also plan on the probability of having some company.

Canned foods buried in fallout can be picked out, completely dusted off, opened, and eaten with no harmful side effects. Packaged foods found at markets should also be safe, if again they are cleaned off well first.

Many crops such as beans, peas, tomatoes, cucumbers, pumpkins, citrus, apples, peaches, and grapes possess a thick natural outer skin covering which can be thoroughly washed and then peeled, leaving almost 100% clean fruit.

Fallout dust will lodge in ears, sheaves and leaves of cereal crops like wheat, oats, corn and barley but threshing and rejecting husks will remove most contamination.

Root crops like potatoes, beets, carrots, onions, parsnips and turnips should be among the safest, just cut off the top and peel off the outer skin before eating.

Some surface grown vegetables like lettuce, cabbage, celery, spinach and similar leaf-type crops will hold a great deal of fallout in their outer leaves. Removing these leaves and thoroughly washing the inner parts of these will remove contamination.

Fruits and vegetables having irregular or hairy skins cannot be decontaminated very easily and should probably be left alone. Examples of these would be blackberries, raspberries, strawberries, cress and cauliflowers.

Young plants are most vulnerable to radiation, while those near maturity are least. So an attack in the latter part of the growing season may not destroy all the existing crop and some will continue to grow.

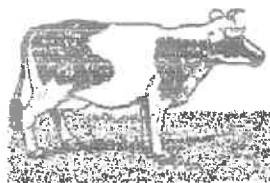
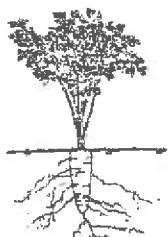
Radiation on planting fields can be substantially reduced by plowing the fallout under or scraping off the top 3 or 4 inches.

Animals are somewhat more resistant to radiation than people and will more likely have survived if kept in from the field, so they could not eat fallout along with the grass. You will have to try to feed them uncontaminated feedstocks salvaged from stores and warehouses.

Meat from animals which have died from lethal doses of radiation can be eaten if the slaughtering is performed within the first week following exposure and the animal has not eaten any fallout. Cooking meat by roasting will remove 50% of radioactive poisons.

Poultry can tolerate up to 900 rems and still recover from radiation exposure. Eggs taken from hens that have eaten contaminated feedstock can be eaten since the bulk of the hen's ingested fallout radioisotopes are secreted in the shell.

Fish will probably be okay to eat, since the water will provide them some protection, and seafood tends to reject strontium-90 and cesium-137.





## Prepare for the Days of Tribulation

President Ezra Taft Benson

Unfortunately, there has been fostered in the minds of some an expectation that when we experience hard times, when we have been unwise and extravagant with our resources and have lived beyond our means, we should look to either the Church or government to bail us out. Forgotten by some of our members is an underlying principle of the Church welfare plan that "no true Latter-day Saint will, while physically able, voluntarily shift from himself the burden of his own support" (Marion G. Romney, in Conference Report, Oct. 1973, p. 106).

One of the first principles revealed to father Adam when he was driven out of the Garden of Eden was this: "In the sweat of thy face shalt thou eat bread, till thou return unto the ground" (Gen. 3:19). All we obtain in life of a material nature comes as a product of labor and the providence of God. Work alone produces life's necessities.

In saying this, I am aware of and sympathetic to the plight of many young families who are struggling to make ends meet. They are faced with the financial burden of providing for the three great necessities of life: food, clothing, and shelter. I am also sympathetic to the situation of widows and other sisters who rear families alone. By revelation, the Lord made provision for their care and support. (See D&C 83:1-2, 4-6.)

More than ever before, we need to learn and apply the principles of economic self-reliance. We do not know when the crisis involving sickness or unemployment may affect our own circumstances. We do know that the Lord has decreed global calamities for the future and has warned and forewarned us to be prepared. For this reason the Brethren have repeatedly stressed a "back to basics" program for temporal and spiritual welfare.



## Stand Independent above All Other Creatures

Elder Bruce R. McConkie  
Of the Council of the Twelve

Stand before the Church this day and raise the warning voice. It is a prophetic voice, for I shall say only what the apostles and prophets have spoken concerning our day.

It is the voice of Jesus on the Mount of Olives, of John on the Isle of Patmos, of Joseph Smith during the mobbings and murders of Missouri. 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 shall not ever be thus. Great trials lie ahead. All of the sorrows and perils of the past are but a foretaste of what is yet to be. And we must prepare ourselves temporally and spiritually.

Our spiritual preparation consists in keeping the commandments of God, and taking the Holy Spirit for our guide, so that when this life is over we shall find rest and peace in paradise and an ultimate inheritance of glory and honor in the celestial kingdom.

Our temporal preparation consists in using the good earth in the way the Lord designed and intended so as to supply all our just wants and needs. It is his purpose to provide for his Saints for all things are his, but, he says, it must needs be done in his own way. (See D&C 104:14-18.)

Relving always on the Lord, we must become independent of the world. We must be self-reliant. Using the agency God has given us, we must work out our own economic and temporal problems.

We are here on earth to work—to work long, hard, arduous hours, to work until our backs ache and our tired muscles knot, to work all our days. This mortal probation is one in which we are to eat our bread in the sweat of our faces until we return to the dust from whence we came.

Work is the law of life; it is the ruling principle in the lives of the Saints. We cannot, while physically able, voluntarily shift the burden of our own support to others. Doles abound in evils. Industry, thrift, and self-respect are essential to salvation.

We must maintain our own health, sow our own gardens, store our own food, educate and train ourselves to handle the daily affairs of life. No one else can work out our salvation for us, either temporally or spiritually.

## Teach LDS Women Self-Sufficiency

Barbara B. Smith  
Relief Society General President



Respond obediently to the advice of our leaders regarding home production and storage, that each family may be prepared to take care of its basic needs for a minimum of one year. Latter-day Saint women should be busily engaged in growing, producing, and conserving food, within their capabilities to do so. Relief Society should help them be provident in the use of the resources available to them, however great or small these resources may be. By provident, I mean wise, frugal, prudent, making provision for the future while attending to immediate needs.