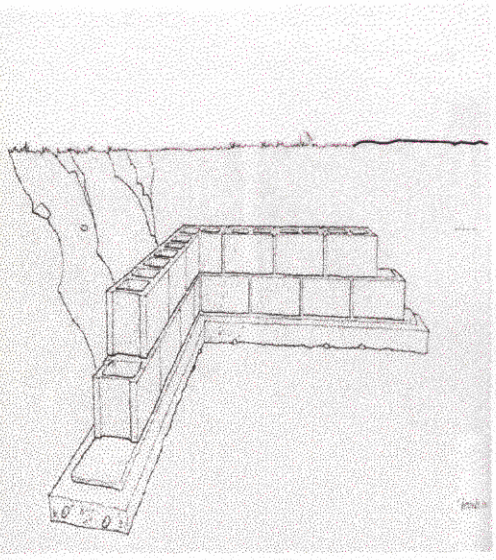
BUILD A PROTECTIVE FALLOUT SHELTER



Almost weekly reports of North Korea's famine situation, China's threats to the US about "which is more important to you-Taiwan or YOUR west coast?", and middle eastern suicide bombers, as well as recent events within our borders. ALL bring us closer to the eventual possibility of someone/some group upgrading the stakes to a nuke threat. If YOU think that somewhere, sometime soon there will be another bombing, possible larger, than you should consider making a shelter for you and your loved ones close to your home.

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Introduction

Having a permanent, ready-to-use, well supplied fallout shelter would greatly improve millions of American families' chances of surviving a nuclear or biological attack. Multi use family shelters - shelters that also are useful in peacetime - are the ones that Americans are most likely to build in normal peacetime and to maintain for years in good condition for use in a nuclear war.

The longer nuclear peace lasts, the more difficult it will be, even during a recognized crisis, to believe that the unthinkable war is about to strike us and that we should build expedient shelters and immediately take other protective actions. The lifesaving potential of permanent, ready-to-use family shelters will increase with the years. Americans who decide to build permanent shelters need better instructions than can be obtained from official sources or from most contractors. This guide brings together fallout shelter requirements, based on shelters and shelter components that have been built and tested in several states and nations. The emphasis is on permanent fallout shelters that many Americans can build for themselves. The author believes that millions of Americans can build good permanent fallout shelters or have local contractors build them - if they learn the shelter requirements outlined in the following sections of this guide and the facts about nuclear and biological weapon effects and protective measures given in preceding sections. Builders can use their skills and available local resources to construct permanent, dependable fallout shelters at affordable cost.

This guide has a basic set of plans. The plans call for using cinderblock foundation shelter with a poured concrete floor and roof. The plans may be altered to use a poured concrete foundation shelter using forms. This technique of form building is also covered in this guide. The basic plan has set dimensions but may be altered according to your situation. For example, adding an adjacent room for a diesel generator or a well. The building plans are in the back section in blueprint form. A basic understanding of reading blue prints are required. In other words how to add and subtract measurements using the English system of measurement. The plans are very easy to understand. The actual building techniques begin in the construction phase of this guide. Once the reader studies the building techniques discussed in the following sections, he or she will be able to relate to the detailed plans in the back of this guide. The author believes the reader should get a basic understanding on the planning stage. Many amenities can be added to the overall plan of your shelter. This of course depends on how much your willing to spend on the project. Local scrap yards can save you bundles on material costs. With the permission of the local construction manager, one may be able to obtain scrap building material from a large construction project.

PRE PLANNING & INFORMATION PHASE

A HIGH PROTECTION FACTOR(PF)

A permanent fallout shelter should be built - and can easily be built - to have a high enough protection factor to prevent its occupants from receiving fatal or incapacitating radiation doses, and also from receiving doses large enough to seriously worsen their risks of developing cancer in the years following an attack. Shelters with a protection factor of 40 (PF 40) meet the minimum standard of protection for public shelters throughout the United States, and permanent family fallout shelters described in official pamphlets provide at least PF 40 protection. In almost all fallout areas, PF-40 shelters would prevent occupants from receiving fatal or incapacitating radiation doses while inside these shelters. However, in areas of heavy fallout the occupants of PF-40 shelters could receive radiation doses large enough to significantly contribute to the risk of contracting cancer years later. Furthermore, the larger the dose you receive while in a shelter, the smaller the dose you can receive after you leave shelter without being incapacitated or killed by your total dose.

If you build a permanent shelter, you would be foolish to build a shelter with a PF of only 40 when additional protection is so easy to obtain. By making a shelter with a 6-inch-thick concrete roof covered by 30 inches of shielding earth, and with other easily attained design features shown in the plans in the back section, you can have a shelter with a protection factor of about 1000. (An occupant of a PF 1000 shelter will receive a radiation dose only 1/1000th as large as he would receive if he were standing outside in an open field during the same time interval.)

Radiation Basics

EMP Shielding

In 1999, eleven members of the US congressional delegation went to Moscow and met with members of the Russian Duma. They discussed ways of ending the US-NATO bombings in Yugoslavia. The Chair man of the Russian State Duma Foreign Policy Committee, Vladimir Lukin, made the following threat to the American delegation, "You have to understand that if we want to cause you a problem over this, we could. Someone, we don't know who, could send up a missile from a ship or a submarine and detonate a nuclear weapon high over the United States. The EMP [electromagnetic pulse] would take away all your capability." Electromagnetic pulse is a serious problem that every shelter builder should understand and make at least basic contingencies for. When a nuclear weapon is detonated in the high atmosphere, it produces an effect called EMP. In simplified terms, this is an electrical charge that collects on wires, cables, antennas, etc. and produces very high voltage for a fraction of a second. It is so fast that surge and lightning protectors will not stop it and it will damage any electronic equipment it travels to, even if the equipment is turned off. A basic solution is to keep sensitive equipment unplugged and stored in sealed metal containers. The sealed metal container will act as a shield against the pulse. Biological weapons may target living organisms or an environment seen as affecting the outcome of a struggle for control. These include humans, both soldiers and noncombatants, commercial crops and animals, the water supply, the soil, the air, or any combination of these. The object being, in each case, to weaken, terrify or punish the enemy to a degree which induces them to comply with the attacker's demands.

Radiological Monitoring

There are two deadly types of radiation—neutron and gamma—but for the most part, radiological monitoring involves measuring only gamma radiation. Neutron or initial radiation occurs for a few seconds in close proximity to the blast. Gamma radiation is the more deadly radioactive element found in radioactive fallout particles. Gamma radiation is the long-term (two- to six-week) problem which shelter occupants will have to contend with.

Equipment

Radiological monitoring is a two-fold activity. The first aspect involves measuring the amount of radiation received per hour, both inside and outside of a shelter. This aspect is referred to as determining radiation exposure rates and is accomplished with the use of a survey meter. The second aspect of

radiological monitoring involves measuring the total amount of radiation which people have been exposed to during a given period of time. This aspect is referred to as accumulated exposure and is measured with the use of a dosimeter and a dosimeter charger. Every shelter should have these three pieces of equipment!

Survey Meter

Radiation is an unseen, unfelt danger that can only be detected and identified with a survey meter. Survey meters are also referred to as dose rate meters and fallout meters. A survey meter is so named because it's used to scan, or "survey" an area or surface to determine the radiation exposure rate present. Survey meters measure the rate that people are being exposed to gamma radiation in terms of roentgens per hour (r/h). In short, a survey meter is somewhat like the speedometer in your car, but instead of telling you speed in miles per hour it tells radiation strength in roentgens per hour. It is kind of like a thermometer which tells you how hot the radioactivity is. Survey meters measure gamma radiation and some can detect beta radiation.

The National Academy of Sciences' Advisory Committee on Civil Defense in 1953 concluded: "The final effectiveness of a shelter depends upon the occupants of any shelter having simple, rugged, and reliable dose rate meters, [survey meters], to measure the dose rate, [rate of exposure], outside the shelter. "Most survey meters have a multiple range reading capability. In other words, they have some sort of selector knob which will change the scale to register and measure lower or higher levels of radiation exposure in roentgens per hour. For instance, an Autonnic AR model 81 survey meter has four ranges, 0 to 0.5 r/h, 0 to 5 r/h, 0 to 50 r/h and 0 to 500r/h.

If you took a reading at the 0 to 500 r/h and it hardly registered on the meter scale, you would turn the knob down to a lower scale which is in closer proximity to the exposure rate. You are not going to be able to get an accurate reading of radioactive fallout with a field strength of 4 r/h if you have the survey meter selector knob turned to the 0 to 500 r/h range. An accurate reading can only be obtained by turning to the 0 to 5 r/h range. If the field strength is stronger than the range you have selected, the needle will peg itself or run off the scale. This is an indication that you need to turn the selector knob to higher ranges until you get an accurate reading.

Rad Gun Survey Meter Outside / Inside Exposure Ratio

Radiological monitoring involves getting both inside (sheltered) and outside (unsheltered) readings of the radiation field strength in r/h with a survey meter. By making an initial survey, both sheltered and unsheltered preferably no more than 3 minutes apart, you can calculate an outside/inside exposure ratio. For instance, the unsheltered outside radiation exposure rate might be 1,000 r/h and the sheltered inside radiation exposure rate 2 r/h. You would divide the unsheltered exposure rate of 1,000 by the sheltered exposure rate of 2 and this would give you an outside/inside exposure ratio of 500. Later that evening you might take another inside or sheltered reading which registered 1.5 r/h. By using your pre-determined outside-inside exposure ratio of 500, you can determine the unsheltered exposure rate without having to subject yourself to the hazard of going outside and getting another reading. The outside unsheltered exposure rate can be fairly accurately estimated by multiplying the sheltered exposure rate of 1.5 r/h, by the outside/inside exposure ratio of 500, which would mean the unsheltered exposure rate would be 750 r/h (1.5 r/h x 500). The outside exposure rate will generally change proportionately with the inside exposure rate according to the outside/inside exposure ratio. Be advised that if you are getting sheltered exposure rate readings of over 2 r/h, you have a problem. Different parts of the shelter are apt to have different protection factors. Survey other parts of the shelter to see if there are other areas in the shelter which provide better radiation exposure protection where people can be moved to. If there is not enough room for everyone in the areas of better radiation shielding, rotate people in and out of protected areas to minimize, spread out, and balance out the overall radiation exposure rates. If you register an inside sheltered exposure rate reading of 10 r/h or more you are dealing with a potential life and death situation.

The outside/inside exposure ratio will change with time because the energy level or penetrating capability of gamma radiation changes with time. Also, rain and weather can physically shift concentrations of fallout material off the roofs of buildings and coverings over shelters and onto the ground. This rearrangement of fallout concentrations could affect the ratio for better or for worse. This is