AMERICAN INSTITUTE for RESEARCH
PENINSULA OFFICE
8 West 41st Avenue, San Mateo California . . . Fireside 1-9297

# OPERATIONAL CAPABILITIES OF COMMUNITY FALLOUT SHELTER SYSTEMS

## A WORKBOOK FOR USE BY LOCAL CIVIL DEFENSE OFFICIALS

Mary B. Willis

AIR-C98-4/63-RP

Prepared by
AMERICAN INSTITUTE FOR RESEARCH
Peninsula Office
San Mateo, California

Under Contract No. OCD-OS-62-170

Prepared for
OFFICE OF CIVIL DEFENSE
Department of Defense
Washington 25, D. C.

April 1963

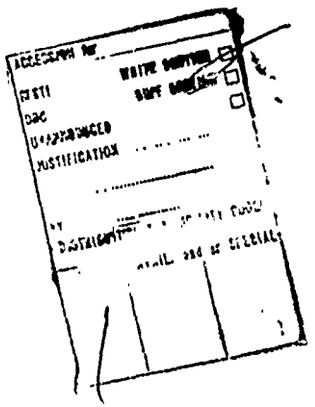


This Final Report and its accompanying working documents, the Evaluation Instrument, Instruction Manual for the Evaluation Instrument, and Workbook for Use by Local Civil Defense Officials, have been reviewed in the Office of Civil Defense and approved for publication and limited distribution for purposes of OCD research, shelter planning, and guidance material development. Contents of these documents do not necessarily reflect the views and policies of the Office of Civil Defense.

Qualified requestors may obtain copies of this report from the Defense Documents Center.

~~Foreign announcement and dissemination of this report by DDC is not authorized.~~

~~Not releasable to OTS.~~



NOTICE:

The contents of this document reflects material in the civil defense literature and in OCD standards cited in the Final Report for Contract No. OCD-OS-62-170: Operational Capabilities of Community Fallout Shelter Systems. Because of the dynamic nature of CD research, much of the information contained herein is subject to change. This document should, therefore, be treated as a working draft representing a proposed approach to providing guidance in the development of community shelter systems.

TABLE OF CONTENTS

# OPERATIONAL CAPABILITIES OF COMMUNITY FALLOUT SHELTER SYSTEMS
(A workbook for use by community civil defense officials)

INSTRUCTIONS:

A great deal of research has been done recently on how to plan and operate fallout shelters. To make the results of this research easily available to you, so that you can decide how much of it is applicable in your community and to each of your individual shelters, we have prepared this workbook.

Some of these pages (those that deal with making out tables) will be in one or two columns, but most of them will be in three. In the wide column at the left of the three-column pages, we are summarizing the opinions of experts on various topics relating to shelters. In the middle column, their recommendations are briefly restated so that you can decide what your community shelter program ought to do in regard to the point raised. In this middle column, cross out anything that you do not agree with, or that you think would not be practical or wise for your community.

The middle column of the three-column pages will contain the decisions that you make for the shelter system of your community. But some of these may not apply to certain shelters, or will have to be changed somewhat before they can apply. For this reason we have put a narrow column at the right of the page, headed "Modifications for Shelter No. ____", so that the management of each shelter (who should have their own copy of the workbook, with the decisions made for all the shelters of the community) can write down any changes that ought to be made in any decision, as it applies to that particular shelter. For example, you may have decided, in the middle column, that shelters in your community should have facilities for carrying on the education of school children. But one of your shelters may be located in the basement of an old people's home, and have barely enough room for the inmates. In that case, there will be no need to provide for the education of school children, as far as that particular shelter is concerned. So the management of the old-people's-home shelter would note this in the column at the right that is headed "Modifications for Shelter No. _____." Then the decision to provide for the continuing education of school children would not apply to that shelter.

We realize that following all the suggestions made by the experts would bankrupt the average community. Also, there are some things that would be desirable and that would not add much to cost if you are building new shelters, but that might be expensive out of all proportion to their value if you are using existing structures as shelters. Remember, if a suggestion in the middle column seems impractical for your community, cross it out or change it. This workbook is a device to help you make decisions, by bringing to your attention some of the points on which decisions are needed. It does not tell you what decisions to make, because decisions that would be wise and practical for one community might not be for another.

Sometimes, too, you will find blanks where numbers are to be filled in. Knowing just what quantities of people and things you are planning for will help to make your plans definite.

GENERAL

In planning a shelter system for your community, the first thing is to decide what kind of shelter system you need.

This will depend partly on how near you are to probable targets. Military installations and important industrial areas are probable targets. Large cities may or may not be, according to what kind of war the enemy plans to carry on.

Next, consider the direction in which the wind usually blows - - the "prevailing winds." Is the target upwind from you, downwind from you, or to one side? An upwind target of course is the most dangerous, because then the fallout will blow in your direction, and will get there faster, and will have more strength when it gets there.

TARGETS NEAREST TO OUR AREA

| Name of Target | Kind of Target | High or Low Priority. (Likelihood of being attacked) | Distance | Is it upwind or downwind from you, or to one side? |
|---|---|---|---|---|
| | | | | |

Considering these factors will help you decide what kind of shelter system you need. Shelters can protect against blast, against heat, and against fallout. The ones protecting against blast and heat are the most expensive. Of course they protect from fallout, too.

A fallout shelter will probably be adequate if you are at a considerable distance from a probable target area and if the shelters are not under combustible buildings, forests, or anything else that might burn and cause great heat in the shelter. If you decide to have a shelter that protects just against fallout, and not against heat or blast, you are gambling that no bomb will fall near you, and that the only danger will be from radiation and from fallout particles borne on the winds or settling down out of the sky. But in some parts of the country, far from probable targets, this is a fairly safe gamble. And fallout shelters are much less expensive to construct than shelters that will protect against heat and blast. Of course, even in such an area, some of your shelters may need protection from heat, if they are under buildings or forests that might catch fire.

If your shelters are to protect against blast, decide how much blast they are to protect against. Blast is measured in pounds per square inch - - the amount of pressure that the blast brings to bear on something in its way.

To plan for the care of casualties, and to know how many people you will have who are capable of work, you will need to make an estimate of the number of casualties you are likely to have. By "casualty" we mean a person who is killed or is so disabled by injury, sickness, etc. that he cannot work. In deciding how many casualties your community may have, take into account its nearness to targets and the general kind of building construction. There will be more casualties in areas where there are light wooden buildings than where there are heavy masonry buildings, unless the bombs fall very near so that the masonry buildings are knocked down by blast.

Decisions for Community Shelter System

Our shelters will be designed to protect against _____

or

Most of our shelters will be designed to protect against fallout only, but those located at _____ will also protect against heat, and those located at _____ will protect against both blast and heat.

If our shelters are to protect against blast, the amount of blast they will protect against is _____ pounds per square inch (psi).

In this community, the number of physical casualties caused by nuclear bombing of the nearest probable targets is expected to be about _____.

Modifications for Shelter No. _____

Shelter No. _____ will protect against _____

Shelter No. _____ will protect against _____ lbs. per square inch of blast.

In the district served by this shelter, the number of physical casualties from bombing will be about _____.

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| It is necessary to consider not only the damage that might be caused by atomic bombing, but that which could be caused by chemical agents, such as poison gas, or biological agents such as diseases deliberately spread by the enemy. Of course, you can make only a very rough estimate of these, but still they should be taken into account. | The probable number of casualties resulting from chemical agents is about _____. | The number from chemical agents will be about _____. |
| | The probable number of casualt es resulting from biological agents is about _____. | The number from biological agents will be about _____. |
| | The total number of physical casualties will be about _____. (Add up the three figures above.) | The total number of physical casualties will be about _____. |
| Psychiatric as well as physical casualties must be considered. It is hard to tell how many of these there will be, but in past wars it was found that fewer people go to pieces or have nervous breakdowns under bombing than would be expected. The rule of thumb for this is to count on one psychiatric casualty for every four physical casualties. | There will be about _____ psychiatric casualties (1/4 of the number above). | The number of psychiatric casualties will be about _____. |
| | The total number of both physical and psychiatric casualties will be about _____. | In the district served by this shelter, the total number of both physical and psychiatric casualties will be about _____. |
| In most city areas it will be better for people to go to the shelters on foot, but in rural areas the shelters may be so far from their houses that they have to come by car. One thing that needs to be considered is whether they may be cut off from the shelters by streams of traffic. In areas without an adequate shelter system, people are likely to take their cars and try to drive to a safer area. This may mean that it will be impossible to cross the stream of traffic, or even to go in the direction opposite to the one in which the fleeing cars are going. In the cities, people going to the shelters on foot may be unable to cross the streams of traffic. | Highway patterns will be studied to determine whether people on their way to shelters will be cut off from them by heavy traffic caused by evacuation of danger areas. | |
| It may be possible to re-route through traffic in such a way that access to shelters will not be interfered with. | If this is likely, the possibility of rerouting through traffic will be considered. | |

This is something that should be taken into account in planning new highway construction and street improvements. It may be possible to plan these in such a way that access to the shelters will be easier.

The local government can do a good deal to encourage the building of shelter facilities in private buildings. Often a shelter area can be built into a new apartment house, for example, at much less cost than that of a separate shelter.

But sometimes local laws discourage the building of such shelters at private expense. Sometimes building codes are such as to make the inclusion of shelters in the basements of existing buildings very expensive. You may want to examine your local building codes to see whether they would discourage private building of shelters.

Zoning ordinances, too, sometimes prevent the building of shelters by preventing construction of the kind of building that could be used as a dual-purpose shelter in case of attack. (A dual-purpose shelter is one that is used for ordinary purposes of business, education, government, etc. in peacetime, but can be used as a shelter in time of war.) It might be possible to get some dual-purpose shelters in areas that need them by relaxing the zoning laws a little in the case of firms that are willing to put up buildings that could be used as shelters in case of need. Many of our residential areas, for example, have no building that could be used as a shelter, and this situation is made more serious by the fact that many mothers are at home with their children and have no transportation during the day.

You may want to examine the local tax laws to see whether they discourage the building of shelters. If having a shelter as part of his property is going to raise his taxes, a builder or house owner is discouraged from constructing it. Since the local government can collect no taxes on shelters that are not built, it would probably lose very little by deciding that shelters should be exempted from taxation.

Decisions for Community Shelter System

In planning highway construction and street improvements, the necessity of easy access to shelters will be considered.

Local building codes will be examined to see if they discourage inclusion of shelter space in existing buildings.

Local zoning ordinances will be examined to determine their effect on the building of structures that could be used as dual-purpose shelters.

Local tax laws will be examined to see whether they place too much tax burden on anyone who builds a shelter.

Modifications for Shelter No. _____

It takes some time to get a good shelter system established and in working order, especially in a large community that has a great many people to be sheltered. For this reason, it may be desirable to provide interim, or temporary, shelter facilities to use if attack should come before the regular shelter system is usable.

Such interim facilities might save a great many lives. When you remember that the average ranch-house has a protective factor of only 2 -- that is, a person in it would get half the radiation he would outside -- you can see that places that government inspectors have rated as having protective factors of even 20 or 30 would be much safer, because in them people would get only 1/20 or 1/30 of the radiation that they would outside.

Temporary shelters of this kind would not be stocked by the Office of Civil Defense unless they had a protective factor of 40. But it costs very little to store some water in them, and people can get along a few days without food if they have to. The most important thing is to locate them, mark them, and put water in them, so that in case of a sudden attack people would know where to go. Of course, if you can put food and medical supplies in them too, that would be even better.

Decisions for Community Shelter System

Interim (temporary) shelter facilities will be provided until the regular shelter system is in working order.

These will have as high a protection factor as possible.

Water will be placed in the temporary shelters.
Food will be placed in the temporary shelters.
Medical supplies will be placed in the temporary shelters.

They will be clearly marked and signs will be put up showing their location.

Modifications for Shelter No. _____

## THE OPERATIONAL PLAN

Some of the decisions you make while filling out this workbook can be the basis of your operational plan--that is, your plan for operating the shelters in your community. Having such a plan written out makes it easier to train your shelter staff, and helps to clarify your thinking on shelter problems. And it will be extremely useful in actual shelter occupancy, when it can serve as an instruction manual on how to operate the shelter.

An operational plan has to be written with enough detail to provide shelter officials with specific guidance in making decisions, but it must not be so complete as to be inflexible. As a writer on the subject has said,

" . . . the expectation that responsible people must make all the relevant decisions and preparations before the crisis is unreasonable; all the possibilities cannot be anticipated. Planning an organizational structure for dealing with the problems that arise will, in many cases, be more important than a pre-existent solution."

For example, much will depend on how near the bombs fall, and how long they keep on falling. A very detailed plan built on the idea of a 14-day shelter stay would have to be greatly modified if additional bombs fell on the 14th day.

On the other hand, we have to face the possibility that the people who have had civil defense training as shelter managers, etc., may not reach the shelters. In this case the inexperienced persons who have to take charge of the shelter may be greatly in need of the guidance that a good operational plan can provide.

Another way in which an operational plan can be useful is by providing the shelter staff with written, or preferably printed, authority for backing up their less popular decisions. For example, if it is shelter policy to take privately-owned blankets away from people who have brought them into the shelter if they are badly needed for the sick, it may be helpful to have the fact written down so that the passage concerning it can be shown to a protesting blanket-owner.

| Decisions for Community Shelter System | Modifications for Shelter No. ____ |
|---|---|
| An operational plan (a guide for shelter operation) will be written. | |
| The operational plan will be detailed enough to give guidance in making decisions, but not so detailed as to be inflexible. | |
| The plan will be such as to provide guidance to inexperienced persons who may have to serve as shelter managers and shelter staff in the absence of regularly trained personnel. | |
| The plan will be written in such a way as to provide the shelter staff with the authority necessary to carry out unpopular measures. | |

As a basis for the operational plan, decide on the goals or objectives of your community's civil defense system. Do you intend to provide for shelterees on a basis of austerity (with minimum comforts), on a reasonably comfortable basis, or on a comfortable basis? What are the goals you hope to attain through the shelter system? Some suggested goals that you may want to consider are listed at the right. Add any others that you think are desirable and attainable.

Decisions for Community Shelter System

Shelterees will be provided for on a basis of (mark one answer):
1. Minimum comfort (austerity)
2. Reasonable comfort
3. Comfort

Our goals are:
A. To bring all the shelterees through the shelter period alive.
B. To maintain them in good health so that they will be able to work on leaving the shelter.
C. To train them in the techniques of post-nuclear survival.
D. To plan for the rebuilding of the community.

In case of an attack the shelter system will be assuming many of the functions of government. In fact, it will be assuming much more control over the lives and actions of its occupants than a government in a democratic country normally assumes. Some of the shelterees may object to this. To prevent any difficulty of this kind, during the shelter period or afterward, it would be well to have official authority from the local government for carrying out your operational plan. This authority should be in writing or print and copies or facsimiles of it should be placed in each shelter. It is best to post them conspicuously on the wall.

Authority for carrying out the operational plan in case of attack will be secured from the local government.

Copies of this authority will be posted in every shelter.

After you have made out your operational plan, you will want to get it into the hands of the people who may need to use it. But since it will be a very long and bulky document, distributing all of it to everyone would be laborious and expensive.

One way to get around this is to have the provisions that apply to just a few people -- for example, the part of the plan that applies to Communications personnel -- given only to these people. There is no reason why the Health and Sanitation people or the Food Service people should have copies of the rules governing Communications

The operational plan will contain a first section made up of general provisions that apply to all personnel.
Attached to this will be annexes or appendices containing instructions for the various services and for particular officials.

Modifications for Shelter No. ____

In Shelter No, _____ shelterees will be provided for on a basis of:
1. Minimum comfort (austerity)
2. Reasonable comfort
3. Comfort

| Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|

personnel. In fact, for a member of the shelter staff to have a great deal of material that did not apply to him would only make it harder for him to find the rules and instructions that did apply to him. On the other hand, everyone on the staff needs to know the broad outlines of the shelter plan.

To take care of this, you can have the first part of the operational plan include the things that all members of the shelter staff need to know, and then have later parts (annexes or appendices) to contain the information and instructions that will be needed for only a few people. That is, there might be one annex for Communications personnel, one for Food Service Personnel, and so on. So you will probably want to circulate the general provisions of the operational plan to everyone, while a single annex or appendix covering his own line of work is also given to each staff member. This annex or appendix will provide him with the detailed instructions that he needs in his own work.

Thus, Communications personnel would get a copy of the general provisions of the operational plan, and a special annex or appendix containing the particular rules and instructions applying to Communications. They would not get copies of the special rules or regulations pertaining to the Maintenance personnel, the Radiological team, etc.

Each individual on the staff will get a copy of the general provisions, and also a copy of the particular annex or appendix that applies to him.

So, in addition to the part of the operational plan that contains material relating to everyone, there will be annexes or appendices, one for each service or element of the shelter organization.

After you have made your operational plan, it would be a good thing to check it to make sure that it is consistent with the level of supplies available in the shelters, and with the layout of the individual shelters. For example, it is no use to say that mentally disturbed persons are to be isolated in a separate room if the shelter has no separate room, or to say that certain types of announcement should be made by loud-speaker if there are no loud speakers.

After the operational plan is finished it will be gone over to make sure that it is consistent with the supplies available in the shelters and with the kind of shelters that exist.

No matter how good your operational plan is, changes will have to be made in it from time to time. Conditions in your community may change, or new military developments may make different kinds of protection necessary. Changes in community attitude may make a difference in the kind of shelter system that you plan to have.

It is best to have a definite schedule for reviewing the operational plan and making any changes that are necessary. Otherwise parts of it may be out of date at the time an attack comes.

When changes are made in the operational plan, there needs to be a definite system for distribution of information regarding them. If some persons know of the changes and others do not, it will lead to confusion and people are likely to be working at cross-purposes.

Care should be taken that any changes in the plan are made known to all the people who would be affected by them. It is best to have some definite system for doing this and to require that receipt of the information be acknowledged.

All phases of the operational plan should be proof-tested. Some proof-testing can be done even without shelters, by having a simulated attack, as the Army does in its war games. Certain rooms can be used as simulated shelters.

After the proof testing has been done, it is necessary to have some sort of system for applying the lessons learned in the testing and for making the necessary revisions in the operational plan. One way is to have an observer on duty in each room where the testing is going on, taking notes of all the difficulties that arise. You can then hold a meeting after the testing and discuss these difficulties and the best way of avoiding them in the future. The necessary changes in the operational plan should be made immediately.

| Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|
| The operational plan will be reviewed and necessary changes made at intervals of every _____. | |
| The next review of the operational plan will be made on the following date: _____. | |
| A well-defined plan will be developed for distributing information about changes in the operational plan. | |
| All persons affected by changes in the plan will be informed of them and will acknowledge receipt and understanding of the information. | |
| The operational plan will be proof-tested, using simulated shelters if necessary. | |
| A system of administrative machinery will be set up to revise the operational plan on the basis of the results of the testing. | |

PLAN-COMMUNITY COMPATIBILITY

The type of shelters you provide may or may not be compatible with the needs of your community, which depend on its location in relation to target areas. The cost of the type of shelter that is really needed may be so great that the community is unwilling to pay it. But this does not mean that if you cannot have the type of shelter that is really needed in your community, there is no use in having any at all. You may be in a prime target area, so that if the target were attacked, blast shelters would be necessary. But you do not know that the target will be attacked. The enemy war plan may provide for knocking out only a certain percentage of that type of target. Or the enemy may decide to spare the cities, either to use them as hostages or to burden the United States with the responsibility of feeding them after its production and transportation systems are destroyed.

If your area is not attacked but nearby areas are, fallout shelters may enable the people of your community to survive. Without them, they would live through the attack itself and then die slowly and painfully of radiation sickness. So, even if you cannot afford to provide the blast shelters that your community really needs, it is still worth while to have fallout shelters, on the chance that you may not be directly attacked.

One of the first things to decide is how many people you are going to have to shelter. This may not be the same as the number of people that live in your district, but estimating the number that live in the district is a good way to start. You can do this by taking the most recent census count and estimating about what change has probably taken place in the population since then. Or you may have some better and more recent count of population available. Standard metropolitan statistical areas and some other areas have block statistics in published form. If these are not available, you can make a block survey to determine how many people are in each block during the day and during the night. Local civic organizations may cooperate in making these surveys, each taking a certain number of blocks to make a count on. An easier way, though not as accurate, is to ask the mailman to make an estimate.

Decisions for Community Shelter System

The shelters of this community {will / will not} be of the type recognized as being needed.

Modifications for Shelter No. _____

The population density of the community will be estimated in the following manner:

Write your estimate of the present population in the blank at the right.

In estimating the number of people who are likely to need shelter in your district, it is necessary to take into account the fact that different numbers of people are likely to be in the district at different hours of the day. This is known as the diurnal (daily) fluctuation in population. For example, in a residential suburb there are many more people at night than in the daytime, because the fathers are at home. In the business district of a city, however, there are many more people in the daytime than at night.

Since no one knows at what time of the day or night an attack may come, it is best to assume that it will be at the time when the number of people in the district is greatest. So this number should be included in the number of people that must be sheltered, regardless of what the census figures say about the number of people actually living in the district.

A rough rule-of-thumb is that the total population when the greatest number of people are in the district is 1.3 times the number of people that live there. Of course, if your district is in the business area of a large city, this way of estimating its real population would give a figure much too small, because very few people would be actually living there. Or if it was a residential suburb, the figure you got by this method might be too large, because while the fathers are gone during the day, their official place of residence is in the suburb. Make as good an estimate as you can, taking all the local conditions into account, and write your estimate in the blank in the sentence at the right.

Decisions for Community Shelter System

The population of this civil defense district is about _____people.

The peak population (largest number of people) in this district at any one time, in peacetime, is about _____.

Modifications for Shelter No. _____

The population of the area served by Shelter No._____ is about _____people.

In this shelter district the period of greatest population is:

The largest number of people in the area served by Shelter No. _____ at any one time, in peacetime, is about _____.

Write your estimate of the present population in the blank at the right.

In estimating the number of people who are likely to need shelter in your district, it is necessary to take into account the fact that different numbers of people are likely to be in the district at different hours of the day. This is known as the diurnal (daily) fluctuation in population. For example, in a residential suburb there are many more people at night than in the daytime, because the fathers are at home. In the business district of a city, however, there are many more people in the daytime than at night.

Since no one knows at what time of the day or night an attack may come, it is best to assume that it will be at the time when the number of people in the district is greatest. So this number should be included in the number of people that must be sheltered, regardless of what the census figures say about the number of people actually living in the district.

A rough rule-of-thumb is that the total population when the greatest number of people are in the district is 1.3 times the number of people that live there. Of course, if your district is in the business area of a large city, this way of estimating its real population would give a figure much too small, because very few people would be actually living there. Or if it was a residential suburb, the figure you got by this method might be too large, because while the fathers are gone during the day, their official place of residence is in the suburb. Make as good an estimate as you can, taking all the local conditions into account, and write your estimate in the blank in the sentence at the right.

Decisions for Community Shelter System

The population of this civil defense district is about _____people.

The peak population (largest number of people) in this district at any one time, in peacetime, is about _____.

Modifications for Shelter No. _____

The population of the area served by Shelter No. _____ is about _____people.

In this shelter district the period of greatest population is:

The largest number of people in the area served by Shelter No. _____ at any one time, in peacetime, is about _____.

Even after you have taken account of the diurnal fluctuation in population - the fact that there may be many more people in the district at one time of day than another -- you still cannot be sure how many people your shelter space may have to accommodate. If there is political unrest and fear of war for a while before it actually starts, there will be a good deal of population change. Families will be sent from the cities to visit parents and grandparents in the small towns. Or the government may decide to evacuate women, children, and other non-working persons from the target areas. The cities will tend to lose population and the small towns and rural areas will tend to gain it.

If a missile attack is feared, the occupants of cars fleeing the target areas are likely to stop at the nearest town when they are unable to get more gasoline, or when the threat of attack is imminent.

Even in ordinary times, there would be a certain number of transients who would have to be added to the shelter population. In a community near a freeway this number could be very considerable. You can get an idea of how large it would be in normal times by counting the number of cars and car occupants going past or through your community in 15 minutes (the expected warning time.)

This number of transients should be added to the peak population of the district to determine the minimum number of people for whom shelter should be provided.

Another possibility is that hostilities may break out at a time when the neighborhood contains many extra people for some special reason, such as a fair or a football game. There is no way that you can accurately estimate how many extra people, who ordinarily would not be in the district at all, may be there at the time it is necessary to take shelter. But you can keep the possibility in mind, see that your shelters are not so crowded that some extra people cannot

Decisions for Community Shelter System

Modifications for Shelter No. _____

If there is a threat of war, our area is likely to {gain / lose} population.

The possibility that the community may contain refugees from other areas will be borne in mind.

Transients will be sheltered. The number of transients going through or passing this community every 15 minutes is about _____ persons.

The peak population of the community plus the number of transients going through it or passing every 15 minutes totals _____ persons.

The possibility that the community may contain numbers of ordinary visitors at the time of the attack will be borne in mind.

| | Decisions for Community Shelter System | Modifications for Shelter No. ____ |
|---|---|---|
| be squeezed in, and locate shielded areas, with a lower protection factor, to which they can be directed if necessary. This problem will be dealt with more fully later on. | | |
| In deciding how large your shelters are to be, you will want to take into account the relative density of population in the different parts of your district. Parts of your civil defense district may be thickly populated and others only sparsely populated. At the same time, you have to keep in mind the distance that people can come in the short warning time that may be available. Probably you will decide to have larger shelters in the densely populated areas and smaller shelters in the sparsely populated areas. Just having fewer shelters in the sparsely populated areas might mean that some people would have to travel too far to get to the shelter. | In determining the size of the shelters, account will be taken of the population density of the various parts of the civil defense district, and also of the distance that people can travel in a limited warning time. | The part of the civil defense district in which Shelter No. ____ is located is (compared to the rest of the district)<br>1. Sparsely populated.<br>2. Populated about as thickly as the average.<br>3. Densely populated. |
| Then, too, the relation of shelter size to manageability has to be considered. Too large a shelter is hard to manage because the shelter manager has too much to keep in mind and cannot know all the people in it. Too small a shelter may be hard to manage, too, because when there are only a few people in the shelter, not all the needed skills may be represented. There may not be anyone who understands machinery well enough to repair the ventilating equipment when it breaks down, or anyone with experience in nursing the sick. The Office of Civil Defense recommends that community shelters hold at least 50 occupants, although group shelters may hold as few as ten. | The relationship between shelter size and manageability will be kept in mind, and an effort made to have shelters neither too large nor too small. Community shelters will hold at least 50 people; group shelters at least 10. | Shelter No. _____ will have a normal capacity of _____ people. |
| Every person in the community should be provided for. Not to do so would be inhumane and also dangerous, since there might be fighting for a chance to get into the shelter. | Every person in the community will be provided for. | Every person in the shelter district will be provided for. |
| A later section of this workbook (the one on Space-Volume Requirements, p. 156), will tell you how to figure out whether you have enough shelter space for everyone. | | |

Another thing that needs to be decided is:
For how many days will shelter be provided? The period usually mentioned by the planners is 14 days. But even providing shelter for three days might save many lives, because the radiation level falls rapidly after an attack. The government requires that the shelters it approves be capable of providing shelter for at least three days of continuous occupancy.

How long your people are likely to have to stay in the shelters depends in large part on whether the enemy continues to send missiles, and on how many he drops, but it also depends on how near you are to a likely target area. If your area is not likely to get much radiation, then the period of shelter occupancy may be short. But it will make planning easier if you decide on a definite period for which shelter is to be provided, and then remember that it may have to be for longer than that.

Decisions for Community Shelter System

Shelter will be provided for _____ days.

Modifications for Shelter No. _____

Shelter No. _____ will provide shelter for _____ days.

## POPULATION INDOCTRINATION AND TRAINING

Even when you have a shelter system, it will not be fully effective unless the public knows how to use it. They must know what to do when a certain warning signal sounds, where the shelters are and how to get to them, what to bring with them, what shelter life is going to be like, and what their own responsibilities are going to be during the shelter period. Indoctrination and training sessions are a good way of giving them this information.

Since an attack might come without warning, it is essential for the people to know what to do to protect themselves until they can get to the shelters.

They need to know how to locate the best-shielded parts of their houses, and how the shielding can be improved in an emergency.

They need to be told again and again not to look toward a bright flash in the sky. To do so can cause blindness, because the light will burn the retina of the eye.

They need to be told to get behind something when the flash comes -- getting behind almost anything may prevent serious burns.

They need to know that they should wrap themselves in something on the way to the shelter, so that the fallout will settle on it and not on their skin, hair, and clothing. Whatever they wrap themselves in should be thrown aside before they enter the shelter.

They should be told where the shelters and shielded areas available in the community are located, and told to take note of the location of the one nearest their homes and the one nearest the place where they work.

Decisions for Community Shelter System

Indoctrination and training sessions for the general population will be conducted.

Modifications for Shelter No. _____

The people of the community will be instructed to

1. Locate the best-shielded part of their homes.
2. Improve its shielding.
3. Avoid looking at a bright flash.
4. Get behind something when the flash comes.
5. Wrap themselves in something to protect against fallout on the way to the shelter, and discard it when they reach the shelter door.
6. Locate the shelter or shielded area near their homes and near their place of work.

The prospective occupants of the shelters will need to be told what to bring with them when they come to the shelter. What they ought to bring will depend mainly on what supplies and equipment the shelter already has. For example, if there are blankets enough in the shelters to provide everyone with as much warmth as will be needed in that climate, there is no point in telling them to bring blankets. But if the shelters only meet minimum requirements, which means that they have no blankets at all for the average shelteree, then bringing blankets might be very desirable.

One thing that it is very important to have the shelterees bring in to the shelters with them is any individual medicine that they find it necessary to take, such as insulin. Such medicines are likely to be perishable and it would be difficult for the officials stocking the shelters to know how much of each will be needed. Also, they may be too expensive for some civil defense districts to afford.

Special foods for people who need them should be brought into the shelters by the individuals requiring them, though in selecting the shelter food supply an effort can be made to select some foods that can be eaten by people in poor health.

Extra clothing is highly desirable, especially if the shelters are not providing extra clothing to take the place of clothing that has to be thrown away because of radiological contamination on the way to the shelter. Also, lack of bathing facilities in the average shelter makes change of underclothing particularly necessary.

For infants, mothers should be urged to bring an adequate supply of disposable diapers and baby food, with nursing bottles and nipples. The shelters may have some of these, but it is impossible to know beforehand how many infants there will be, since the community may be full of refugees from the target areas. Exhaustion of infants' supplies would create a difficult situation, which can be avoided if each mother will bring whatever is needed for her own baby.

For adults, books and other recreational materials will be useful. Having children of school age bring their schoolbooks with them may prove to be a valuable morale factor, in providing them with a sense of continuity and sustained responsibility, and in making it easier to start school classes for them as part of the shelter routine.

Decisions for Community Shelter System

Modifications for Shelter No. _____

Below is a list of things that it may be desirable to have the shelterees bring with them to the shelters. Cross out those that you think are not necessary. Add any that are not mentioned which you think shelterees should be urged to bring.

Shelterees will be asked to bring the following with them to the shelter:

1. Blankets.
2. Food for shelterees - _____ days' supply.
3. Food for infants - _____ days' supply.
4. Disposable diapers for infants.
5. Baby powder.
6. Nursing bottles and nipples for infants.
7. Special medicines for persons requiring them.
8. Hypodermics, needles, etc., for persons requiring them.
9. Special foods for persons requiring them.
10. Toothbrushes, combs, and similar necessities of personal hygiene.
11. Change of clothing.
12. Reading matter.
13. Schoolbooks for school children.
14. Games.
15. Battery or transistor radios.
16. Flashlights.
17. Deodorants.
18. Sanitary napkins.
19. Waterless skin cleansers.
20. Tissues.

In addition to indoctrination and training sessions, which may not reach all the people, the newspapers are a good way of letting prospective shelterees know what they are expected to bring with them when they come to the shelters, but other ways may also be available in your community. Or you could distribute mimeographed sheets to each household listing the things that ought to be brought.

In shelters where you know pretty well who the occupants are going to be, you can sometimes let them store their things in the shelters ahead of time. For example, in the shelter at the Stanford Research Institute at Palo Alto, each family has a footlocker in the shelter in which it can store extra food, clothing, reading matter, and so on. This might also be possible in a small rural shelter, or shelters in residential communities, factories, or office buildings. Of course, not all shelters will have room to let each family store a footlocker or its equivalent.

Depending on the type of population that the shelters are expected to hold, you may or may not want to inspect the items stored in them by prospective shelterees, to make sure that weapons, drugs of a criminal nature, black market supplies of tobacco, etc., are not being stored.

In addition to being told what they may bring with them to the shelters, prospective shelterees should also be informed of what things they may <u>not</u> bring with them to the shelters.

Most of the literature on the subject says that weapons should not be allowed in the shelters. Certainly they should not be allowed in the possession of private persons in the shelters. But the decision as to whether they can be brought to the shelters at all is one that will depend on local circumstances. If you expect lawless and disorganized social conditions to prevail in the period after the attack, you may want to let the shelterees bring weapons but hand them over to the shelter managers for safe keeping when they

<u>Decisions for Community Shelter System</u>

Prospective shelterees will be told what they are expected to bring with them to the shelter by the following means:

If space permits, prospective shelterees (will / will not) be allowed to store needed items in the shelters beforehand.

Items stored by private persons (will / will not) be inspected by shelter authorities during the period of storage.

Prospective shelterees will be informed of what things they may <u>not</u> bring to the shelters.

Weapons (may / may not) be brought to the shelters. Any weapons brought will be turned over to the shelter managers.

<u>Modifications for Shelter No. _____</u>

In Shelter _____, prospective shelterees (will / will not) be allowed to store needed items in the shelter beforehand.

Items stored by private persons in Shelter _____ (will / will not) be inspected by shelter authorities during the period of storage.

reach the shelters. This is a decision that must be made on your own best judgment of local circumstances and the conditions likely to prevail in your area after an attack.

Unless the shelter is unusually large for the number of people expected, it will probably be impossible to allow people to bring their pets to the shelters with them. Except in communities where nearly all the people are fond of pets, their presence in the shelters might be a cause of dispute. However, it should be noted that in England during World War II, the rules against pets in shelters had to be relaxed because so many people were staying outside with their dogs. And in some American communities, knowing that pets were excluded might turn the opinion of the community against public shelters.

If you decide not to allow animals in the shelter, you may want to make an exception in the case of guide dogs for the blind, since being deprived of their guide dogs may make blind persons a burden on society in the post-shelter period.

Whatever your decision is in this regard, the public should be told of it. If pets are not allowed, public knowledge of this will enable pet-owners to make other provisions for their pets and prevent distressing and time-consuming scenes at the shelter entrance.

If pets are not to be allowed in shelters, the local humane societies, such as the S.P.C.A., should be informed of this and asked to help owners plan suitable provision for their pets in the event of attack.

Unless a shelter is unusually spacious for the number of shelterees expected, it will probably be necessary to prohibit people from bringing large bulky objects, such as perambulators or bundles of valuable household goods, with them into the shelters. Again, the public should be informed of this.

Decisions for Community Shelter System

Pets {will / will not} be allowed in the shelters.

Guide dogs for the blind {will / will not} be allowed in the shelters.

The public will be informed of whatever decision is made regarding animals in shelters.

If pets are not to be allowed in shelters, the local humane societies will be informed and asked to help owners make other plans for them.

Large bulky objects {will / will not} be allowed in the shelters.
The public will be informed of this.

Modifications for Shelter No. _____

Pets {will / will not} be allowed in Shelter No. _____

Large bulky objects {will / will not} be allowed in Shelter No. _____.

Liquor should not be allowed in the shelters, except under lock and key. Drunken shelterees might become serious disciplinary problems. However, you could allow shelterees to bring liquor to the shelters to be turned over to the shelter managers for safe-keeping and placed with the other medical supplies.

Shelterees (will / will not) be allowed to bring liquor to the shelters. Any liquor brought will be turned over to the shelter manager and kept locked up.

After you have decided what civil defense instruction the people should be given, it is necessary to decide what means will be used to get the information across to them. Local newspapers are one good channel. The local radio and television stations are others.

Instruction on civil defense will be given to the public through

1. Newspapers.
2. Radio.
3. Television.
4. Local organizations such as PTA, Lions' Club, fraternal organizations, church groups, etc.

Feedback will be requested.

One way to get civil defense information across to the public is to ask local organizations such as the PTA, women's clubs, service organizations, and so on to announce it in their meetings. This not only provides them with interesting material for discussions, but the discussions may provide you with valuable feedback. Difficulties and solutions may be pointed out that you had not thought of. By asking for such feedback, at the time you give the civil defense information to the organizations, you both make it more likely that close attention will be paid to the material, and open the way for getting valuable ideas in return.

A vigorous program of civil defense publicity and promotion should be carried on in support of the shelter system, so that the people will be aware of what facilities exist for their protection in case of an attack. Press releases can be sent to the local newspapers. Civil Defense staff members can be available for giving talks and leading discussions.

A civil defense publicity program will be carried on on a continuing basis.

If possible, civil defense should be taught in the schools. In this way the needed information would be brought to nearly every family. If this cannot be done, it may at least be possible to get first aid taught in the schools, and to see to it that radiological self-defense is part of the first-aid course.

The teaching of civil defense in the schools will be urged and all possible cooperation will be given. If civil defense cannot be taught in the schools, an attempt will be made to see that first aid is taught, and that the principles of radiological defense are included in it.

Modifications for Shelter No. _____

As soon as at least one shelter is actually fitted up, training and occupancy drills can be held. This will serve three purposes:

1. It will give valuable training to the people taking part in it.
2. It will help make civil defense work known to the public.
3. It will give you information on what difficulties would be encountered in the event of genuine shelter occupancy, so that solutions may be found.

If such occupancy experiments are held, it might be well to have various community groups send participants. In this way knowledge of the requirements of shelter life will be spread throughout the community.

In these training programs, as many people as possible should participate in the assigned tasks, both to give the experiment greater realism and to provide them with valuable experience.

Habitability tests are necessary to see whether the shelters can really be lived in. If possible, these tests should include as many people as would really be present in the shelter in case of an attack, since dealing with crowdedness is one of the tasks of shelter management.

Often the training and occupancy drills and the habitability tests can be combined.

Decisions for Community Shelter System

Training and occupancy drills will be held in which the participants experience actual shelter living.

Local groups will be asked to send participants to such drills.

In these drills as many of the people as possible will participate in assigned tasks.

Habitability tests will be held in various types of actual shelters, under crowded conditions.

Modifications for Shelter No. _____

SHELTER ASSIGNMENTS

It is important to have some sort of shelter for every person in the community. Providing shelter for part of the population and not for the rest will work only if large numbers of persons are killed in the attack, before they can get to the shelters. Otherwise it might lead to the outbreak of civil strife. And the people in many shelters will be dependent on an outside air supply which could be cut off by stuffing the air intake. Even if some of the refuges provided for the public have protection factors of less than the recommended value, their existence will do much to prevent the outbreak of violence in a struggle for shelter space.

A decision will have to be made on whether, in case of an attack, each person is to go to the shelter nearest him, or whether each person is to be assigned to a specific shelter. The argument in favor of the first method is that it is hard to tell where people are going to be at any given time. Mothers may be out shopping and teen-agers may be almost anywhere. The argument in favor of the second method is that it makes shelter planning, stocking, and staffing much easier if you can know just what people and how many people will be in the shelter.

The Office of Civil Defense says that people should be assigned to specific shelters only if there is shelter space with a protection factor of 40 or better to take care of all the inhabitants of the area, plus allowances for transients.

If people are assigned to specific shelters, it will usually be necessary to have two different assignments for working people - one if the attack occurs when they are at home; another if it occurs when they are at work. Of course this would not be true in the country or in very small towns where people's homes and places of work are close together.

Such shelter assignments will have to be gone over periodically to make sure that people have not moved or changed their places of work. If they have, reassigning them may be necessary.

Decisions for Community Shelter System

Shelter space will be made available for every resident of the community.

In this civil defense district, shelterees will be told to go to (mark one)

1. Whatever shelter is nearest them.
2. A specific shelter to which they will be assigned.

People will be assigned to specific shelters only if adequate shelter space, with a protection factor of 40, for all, including transients, is available.

If the assignment system is used, two assignments will, if necessary, be made for working people, one for a daytime and the other for a night-time or weekend attack.

Assignments will be reviewed and updated every _____.

Modifications for Shelter No. _____

In this shelter district, shelterees (will / will not) be definitely assigned to this shelter.

Also, each assignment should be checked to make certain that the people could get to the shelter in time.

The estimate of the amount of warning time we will have available to us changes from time to time -- always downward. It also differs according to the part of the country we live in. If you are far from a target area it may take some time for fallout to reach you.

It is necessary to re-examine, from time to time, the figures as to how much warning time you will have, to make sure that people will still have time to get to the shelters.

It has been suggested that the question of who should occupy which shelter should not be left to chance, because a shelter might work better if it were based on already existing groups, such as department stores, business and professional offices, public transportation and maintenance crews, etc. These existing groups can each provide a nucleus for shelter occupancy and organization. It is said that particularly in residential areas, shelter assignments should follow neighborhood groupings as much as possible. One reason for this is that it lessens the possibility of infection - people have usually built up an immunity to the bacterial strains that have been around them for some time. But when new strains are brought in by strangers they are likely to get sick, because they have no immunity to the new bacterial strains. The effect of this is seen in recruits' training camps, where boys from all over the country are brought together. They have a very high sickness rate because they have no resistance against unfamiliar bacterial strains.

Decisions for Community Shelter System

Assignments will be checked to make sure people can reach the shelters in the estimated time available before fallout arrives.

In this community, the maximum travel time anyone will need to get to the shelters is _____. The maximum distance people will come on foot is _____ and by car is _____. (If travel time and maximum distance will differ for different parts of the community, make a note of this.)

At present, the amount of warning time this community can expect is _____. Shelters will be so located that all persons can reach shelter in the estimated warning time.

In this community, shelter organization {will / will not} be based, as far as possible, on already existing groupings of people.

Shelter assignments in residential areas {will / will not} follow neighborhood groupings as far as possible.

Modifications for Shelter No. _____

In this shelter district, the maximum travel time needed to get to the shelter is _____. The maximum distance people will come on foot is _____, and by car is _____.

Shelter organization in Shelter No. _____ {will / will not} be based on an already existing grouping of people.

Whether or not you intend to assign all occupants to specific shelters, you will probably want to give specific shelter assignments to those persons who have been designated and trained to manage or to provide skilled services in the various shelters - that is, to the shelter manager and his deputies or alternates, and the leading personnel of such services as Communications, Health, etc. Otherwise you might have a shelter with no one who could operate the radiological equipment, or one with no medical care of any kind.

One important matter that should be decided -- and that is highly controversial -- is the question of what is to be done with school children when there is warning that an attack may occur. Are they to be sent home or are they to stay at the school?

Some schools have a policy of sending the children home under these circumstances, in the care of teachers and with older children leading the younger ones. They feel that the children are better off with their own parents, and that having them away might cause undue anxiety in the parents. Also most schools have poor facilities for sheltering the children in case of an attack.

The drawbacks to this plan are:

1. The children may not have time to get home. Fifteen minutes of warning is the most we can count on. If a missile fell while they were making their way home on foot they might be blinded and severely burned. On the streets they would have no protection whatever.

2. The parents may not be at home when the children get there. The father will probably be at work; the mother may be at work or shopping.

Decisions for Community Shelter System

Assignments to specific shelters will be made for the following personnel:

1. Shelter managers, their deputies and alternates.
2. Radiological personnel.
3. Maintenance and equipment engineers.
4. Medical personnel.
5. Communications personnel.
6. Education and training personnel.

(List any others that you think should be specifically assigned.)

Modifications for Shelter No. _____

Whether or not you intend to assign all occupants to specific shelters, you will probably want to give specific shelter assignments to those persons who have been designated and trained to manage or to provide skilled services in the various shelters - that is, to the shelter manager and his deputies or alternates, and the leading personnel of such services as Communications, Health, etc. Otherwise you might have a shelter with no one who could operate the radiological equipment, or one with no medical care of any kind.

One important matter that should be decided -- and that is highly controversial -- is the question of what is to be done with school children when there is warning that an attack may occur. Are they to be sent home or are they to stay at the school?

Some schools have a policy of sending the children home under these circumstances, in the care of teachers and with older children leading the younger ones. They feel that the children are better off with their own parents, and that having them away might cause undue anxiety in the parents. Also most schools have poor facilities for sheltering the children in case of an attack.

The drawbacks to this plan are:

1. The children may not have time to get home. Fifteen minutes of warning is the most we can count on. If a missile fell while they were making their way home on foot they might be blinded and severely burned. On the streets they would have no protection whatever.

2. The parents may not be at home when the children get there. The father will probably be at work; the mother may be at work or shopping.

Decisions for Community Shelter System

Assignments to specific shelters will be made for the following personnel:

1. Shelter managers, their deputies and alternates.
2. Radiological personnel.
3. Maintenance and equipment engineers.
4. Medical personnel.
5. Communications personnel.
6. Education and training personnel.

(List any others that you think should be specifically assigned.)

Modifications for Shelter No. _____

3. Excessive motor traffic as cars try to escape the cities and reach safe areas of the countryside will probably make taking the children home by bus impossible. It may also make it hard for them to get across the streets.

4. If the parents do not know where the children are - if they think they may be on the streets en route home - they will try to find them and this will add to the confusion and endanger the parents.

5. If the warning time is used to take the children home, they may still be some distance from a shelter.

Taking all these factors - and the opinion and preferences of the community - into account, a definite decision should be made as to whether school children are to be kept at school or sent home when an attack is thought to be imminent.

Whatever decision is made, the parents should be informed of it.

If the decision is to send the children home, the school should be helped to plan for it. Teachers and older children who will be in charge of the little convoys to each neighborhood need to be trained in what can be done if the attack occurs while they are en route - getting behind trees, not looking at the flash, etc. What children should be in which group should be worked out beforehand, on the basis of their home addresses. A decision should be made as to what is to be done with a child if no one is at home when he gets there.

If the decision is to keep the children at school, plans will have to be made for sheltering them there. Plans will have to be made for this anyhow, because even if the decision is to send them home if possible, sending them home may not be possible. A civil defense official should aid the principal in selecting the part of

Decisions for Community Shelter System

In this community, when an attack is imminent, the school children will be (mark one)
1. Kept at school.
2. Sent home if it seems there is time for it.

Modifications for Shelter No. _____

The parents will be informed of this decision.

If the decision is to send the children home, the school will be helped to
1. Train teachers and older children who will be in charge of the home-going groups.
2. Work out the composition of the home-going groups.
3. Decide what is to be done with children when no family member is at home.

Plans will be made for sheltering the children if the decision is to keep them at school, or if sending them home proves to be impossible. The schools will be assisted in

the school that would be best to use as a shelter, and deciding how the shielding of this area could be improved.

This area should then be stocked with needed supplies, particularly water.

If the school shelter is not eligible for federal assistance, perhaps the Parent-Teachers Association would help in providing needed supplies and in fitting up the shelter so that it would be habitable.

The schools should be strongly encouraged to hold drills for the teachers and children, so that they will know just what to do in the event of an attack. If they are to be sent home, they should know which group they are to join and who is to lead it. They should know what to do if an attack occurs while they are on the way home. They should also be drilled in going to the school's shelter area if sending them home proves to be impossible.

Decisions for Community Shelter System

1. Finding the best area to use as a shelter.
2. Improving its shielding.
3. Getting it stocked and fitted up as as a shelter.

If necessary, the assistance of the Parent-Teachers Association or other community organizations will be requested in stocking and fitting up the school shelters.

Schools will be encouraged to hold drills for teachers and pupils in which they will rehearse the actions they will take in case of an attack.
If the plan is to send the children home, they will be trained in joining the proper group and in what to do if an attack occurs en route.
Whatever the plan is, all children will be drilled in going to the school's shelter area.

Modifications for Shelter No. _____

SHELTER MANAGEMENT (Pre-Emergency): LEGAL STATUS

We have already mentioned that the operational plan itself should be given legal status by having it approved by the local government. The special position of the shelter manager should be given legal status in the same way, by having the local government recognize his position and define the amount of authority he is to have.

This should be put in printed, official form, along with a list of the shelter manager's responsibilities, and posted in a prominent place within each shelter. This will help in dealing with people who refuse to abide by shelter rules, and will make all the shelterees more ready to follow orders.

The administrative machinery for the entire shelter system should be defined and legally approved, so that each shelter officer knows what he can do and what he must do, according to the law. The conditions under which this administrative machinery should be set up, and the steps to be taken in implementing it, should be outlined.

Decisions for Community Shelter System

The legal status of the shelter manager and the extent of his authority will be approved by the local government.

A statement of the legal status and authority of the shelter manager, as defined by local government, will be printed and posted in each shelter, along with a list of his responsibilities.

A description of the administrative machinery of the shelter system, making clear the powers and duties of each official, will be written and approved by local government. The conditions and steps for implementing it will be outlined.

Modifications for Shelter No. _____

SHELTER MANAGEMENT (Pre-Emergency): PERSONNEL

One of the first things to decide about the management of a shelter is whether or not you are going to name some particular person as shelter manager ahead of time and train him for the job.

A shelter manager has difficult and demanding duties. These are heaviest at the very first - during the period of blast and heavy fallout, when the shelter organization must be set up and the terrified and possibly grief-stricken occupants must be quieted and set to work. There is no time for on-the-job training, and no one to provide it.

Most of the experts in the civil-defense field strongly advocate having a shelter manager who is selected and trained beforehand; who knows exactly what his duties will be. This kind of manager is called a "designated leader" - one who is designated or appointed beforehand. One or two of the groups carrying out research in the shelter field prefer to have an "emergent leader" - the kind of leader that often emerges in time of need in a dangerous situation.

An experiment comparing the two types of shelter manager - the designated leader and the emergent leader - indicated that the designated-leader system worked best. The reasons seemed to be not only that he knew just what ought to be done, but that he was able to give orders with more decision and authority.

If a designated leader is to be used, time will be required for his training. So it is best to decide now whether you plan to assign designated leaders as shelter managers, or wait for emergent leaders at the time of crisis.

If you plan to have designated and trained shelter managers, the selection of suitable persons for the job will be one of the most important duties of the civil defense organization.

Decisions for Community Shelter System

A "designated leader" (will / will not) be assigned as shelter manager for each shelter.

Modifications for Shelter No. _____

You could begin by drawing up a definite set of criteria to guide you in the selection of shelter management personnel. For the position of shelter manager, which carries a good deal of authority, you may want to recruit persons who already are in positions of leadership in the community. This will increase the shelterees' respect for them and make management easier. Also, such men are likely to have already had a good deal of experience in management. At the right, list other criteria that you think should be used in choosing shelter managers.

Unfortunately, many of the people with the highest qualifications for the position of shelter manager are already too deeply involved in their work and in other activities to be willing or able to take on additional duty. It may be necessary to make some compromise on qualifications for this reason.

The Office of Civil Defense recommends that several managers be assigned to each shelter so that each shelter will contain at least one person trained in the duties of shelter management in case the regular manager is unable to reach the shelter.

All of these managers, and their staffs, should be made known to the public, through the newspapers and by posting their names and pictures on the walls of the shelter to which they are assigned. This will help them in establishing their authority, and will protect the public against impostors who may try to pass themselves off as shelter managers. This identification should include a statement of their responsibilities, duties, and the amount of authority they possess.

Records should be kept on all shelter management personnel, so that it will be easier to know which ones to promote and select for more difficult duties. A policy of promotion which recognizes ability and effort will contribute greatly to the morale of civil defense volunteers.

Decisions for Community Shelter System

Persons chosen for the position of shelter manager should, if possible, meet the following criteria:

1. Are already community leaders.
2. Have experience in management.
3.
4.
5.

Etc.

_____ managers will be trained for each shelter.

Each shelter manager will be identified to the public by newspaper releases and by posting his name, his picture, and a statement of his responsibilities, duties, and authority on the wall of the shelter to which he is assigned. Other members of the management staff will also be made known to the public, and their duties and responsibilities specified.

Personnel records will be kept on shelter management personnel.

Modifications for Shelter No. _____

The management structure of the shelter system needs to be thoroughly proof-tested. This can be done in the course of the occupancy or habitability tests. In this way you can see whether the management team works together smoothly, and whether everyone knows just what he is supposed to do and to whom he is supposed to report.

Decisions for Community Shelter System

The management structure of the shelter system will be tested through all phases of operation.

Modifications for Shelter No. _____

SHELTER MANAGEMENT (Pre-Emergency): DOCUMENTATION

Regardless of whether you have decided to depend on an emergent manager (a natural leader who emerges from among the other shelterees) or whether you intend to have previously designated (assigned) and trained shelter managers, a complete set of operating procedures and management guides should be developed and placed in each shelter. It is possible that none of your trained shelter managers would be able to reach a shelter, and an emergent manager would have to be used after all.

These manuals will provide guidelines for carrying on the normal routine of the shelters, and also instructions on how to deal with all predictable emergencies, such as what to do if additional missiles fall just as the shelterees are about to emerge from the shelters.

It will make things considerably easier for the shelter manager and his staff if regulations that are necessary to shelter living but that are likely to be unpopular, such as water discipline, schedules, quiet hours, etc., be written beforehand and included in the shelter operating procedures. This transfers the blame for such restrictions to authorities other than the shelter manager, and makes him only the person by whom they are transmitted, not the person who made them.

Job descriptions for every position in the shelter management system should be written out beforehand and placed in the shelters. Even if you have pre-trained staff members, some of them may not get there. Also, you have probably planned to have some jobs filled by election or appointment after the people have reached the shelters. A definite outline of each position in the management

Decisions for Community Shelter System

A complete set of operating procedures and management guidance manuals will be developed and placed in each shelter.

These will provide instructions for the normal running of the shelters and for all predictable emergencies.

Regulations concerning
1. Water discipline
2. Food discipline
3. Sanitation
4. Schedules
5. Quiet hours
6. Rationing
7. Profanity
8. Provocative language
9. Gambling
10. Petting

will be written out beforehand, with the authority ordering them, and included in the shelter operating procedures placed in the shelters.

Job descriptions for every position in the shelter management system, and a statement of the job's place in the shelter management structure, will be written out and placed in each shelter.

Modifications for Shelter No. _____

structure will make it easier to decide which persons should be elected or appointed to which job. It will also contribute greatly to effective action by people who are new in their jobs.

SHELTER MANAGEMENT (Pre-Emergency): TRAINING

Ideally, all the people on the shelter staffs should be thoroughly trained ahead of time, but if this is impossible, thorough formal training should at least be given to shelter managers and to radiological monitors - the people who use the radiological instruments and determine the amount of radiation there is, work out from tables and charts the rate at which radiation is likely to decline, and decide what additional radiation can be taken by people who have already been exposed to varying amounts of it. The shelter managers should be pretrained because their jobs are demanding and important; the radiological monitors should be pretrained because their jobs are highly technical and require a very specialized kind of technical knowledge. In general, civilian life does not have jobs equivalent to either of these.

Of course another very demanding job is that of medical officer. But the training of physicians is usually done through medical channels, not through civil defense channels. Some medical societies and organizations have been giving their members training in the principles of mass medical care, treatment of radiological and gas casualties, defense against biological warfare, etc. If your local physicians have not received such training, the need for it should be pointed out to the appropriate persons in the local medical world.

Hospitals and appropriate medical organizations should be urged and encouraged to put on special advanced training programs to train medical aides. In a nuclear emergency, medical personnel will probably have to function at a much higher level than the one represented by their status in peacetime. Nurses, for example, will be doing the work of doctors. Medical aides may be doing the work of registered nurses or even of interns.

For the jobs that are not too highly technical it is a good thing to have the shelter management staff cross-trained. That is, each person can learn some other staff member's job in addition to his own. Then, if the Food Service people are unable to get to the

Decisions for Community Shelter System

Formal and intensive training will be given at least to the shelter-managers and the radiological monitors.

Training of local physicians in the principles of mass medical care, treatment of radiological and gas casualties, and defense against biological warfare will be urged.

Special advanced training programs will be established by hospitals and appropriate medical organizations to train medical aides and upgrade the training of all kinds of medical personnel.

Members of each shelter-management staff will be cross-trained so they can substitute if necessary for people in other departments.

Modifications for Shelter No. _____

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| shelter, some of the Recreation people or the Sanitation people can take over and fill the Food Service jobs. | | |
| Some of this cross-training is even possible for technical jobs -- for example, some of the health personnel can learn radiological defense, or some of the maintenance people can learn communications. | | |
| After the people holding various positions on the shelter staff have received their training separately, integrating them into a smoothly working staff will be the work of the shelter manager. It is very desirable for the officials of each shelter to get used to working as a team. | The shelter manager will train the other shelter officials in working together as an integrated team. | |
| Because people forget, and because conditions change so that new information has to be made available, short refresher courses should be provided to maintain proficiency in shelter officials. These will also serve the purpose of holding your shelter organizations together and letting you know immediately when any gaps occur in it, because of individuals' moving away, etc. | Short refresher courses will be given to maintain proficiency in shelter personnel. | |
| Realistic drills should be held at regular intervals to test the degree to which the shelter management personnel are ready to meet a nuclear emergency. These not only help in training, but will point up things that need to be corrected in the operational plan. | Realistic drills will be held every _____ for the shelter management staffs. | |

SHELTER STOCKING - - Food

The first thing to decide in regard to food stocking is whether or not you intend to stock your shelters with food. A shelter receiving federal assistance has to be stocked with food. But if you are not taking part in the federal program, or if some of your shelters cannot meet its requirements for other reasons, then the question of whether food is to be stocked in the shelter is a matter of local decision.

Probably most people - in fact, nearly all adults - would survive even if they had to go without food for two weeks. Going without food is not nearly so serious as going without water. On the other hand, some babies would die. Also, while people could, in general, stand two weeks without food, we have no assurance that the stay in the shelter will last only two weeks. That is the period that the experts usually mention, because one has to have some sort of definite basis to plan on, and because if the attack happens and is over, two weeks will allow time for the radiation to die down to a fairly safe level. But how long the shelter stay will actually be depends on the way the war goes. The missiles may keep on falling, or a new round of them may fall when the two-week shelter period is nearly up. And the people who had lived for two weeks without food might not live for four.

Lack of food in the shelters would soon create a severe management problem because hungry people would want to leave to get food before the radiation level was safe.

Communities that do not plan to put food in their shelters should tell people to bring their own food with them. The trouble with this is that some people will arrive without food, and the problem will be raised of whether to confiscate the food that has been brought and issue it for general consumption. If your decision is not to place food in the shelters, every possible means of publicity should be used to let the people know that they must bring their own food with them. In a time of national emergency, they should be advised to have a container packed with food and standing ready, so that it can be snatched up quickly. They should also be

Decisions for Community Shelter System

Food {will / will not} be stocked in all shelters.

It {will / will not} be stocked in the shielded areas to which overflow shelterees are to be sent.

If food is not to be stocked in the shelters, the public will be informed of this and told to bring their own food with them to the shelter. Advice will be given on the kind of food best suited for the purpose.

Modifications for Shelter No. _____

Food {will / will not} be stocked in Shelter No. _____.

told what kind of food to bring. If the shelters have enough water, it would be better for them to bring food of a dry or concentrated kind, instead of such things as canned goods that contain a good deal of water.

If food is not to be stored in the shelters, you may want to consider letting families store their own food there ahead of time. In some communities this might be a practical method - for example, in residential communities made up of people who are accustomed to forethought and to whom the expense is not important. In any community, if even a few people take advantage of the opportunity to put food in the shelters, the presence of a little food might save lives that would otherwise be lost. If you let people store their own food in the shelters, tell them what kind of food would be best to store, and howlarge a container of it they will be allowed to have.

If the shelters are not officially stocked with food for general use, you will have a situation in which some of the shelterees possess food and some do not. It would be better to make the decision ahead of time as to what should be done in such a situation, so that it can be written into the shelter rules. This will help the shelter manager enforce the official decision. Two courses of action are possible:

1. Shelterees with food can be allowed to keep it, except that if infants or other persons are so much in need of food as to endanger life, enough food will be taken from the owners to feed the persons who are greatly in need.
2. If it appears that the shelter stay will be so long that starvation will occur, privately owned food will be taken over by the shelter manager and rationed. All food will be placed in a common stock under the control of the shelter manager, and rationed to all the shelterees, or to those most in need of it.

Either course is likely to cause objections from some shelterees - in the first case from the foodless ones, in the second case from



Decisions for Community Shelter System

Shelterees (will / will not) be allowed to store their own food in the shelters ahead of time. If they are permitted to do so, they will be told what kind to bring and how large a box of it they may store. In the average shelter this will be a box containing not more than _____ cubic feet.

If publicly owned food is not stored in the shelter, privately owned food will be (mark one)

1. Left in the possession of its owners unless great need for it arises.
2. Taken over by the shelter manager and rationed to all the shelterees or to those most in need of it.

Modifications for Shelter No. _____

Shelterees (will / will not) be allowed to store their own food in Shelter No. _____ ahead of time. If they are permitted to do so they will be told what kind to bring and that it must be in a box containing not more than _____ cubic feet.

the provident ones who have brought or stored their own food. Making the decision now, and writing it into the rules, will make it easier to enforce.

If you have decided that the shelters will be stocked with publicly owned food, the next decision is, for how long a period of shelter stay is food to be provided? Federally stocked shelters must have food for 14 days, but, as we have already commented, there is no knowing what the period of shelter stay will be. It might be only a few days; it might be a few weeks. We have no way of knowing. But for planning purposes, some period of time must be fixed upon as the period for which food will be provided. (The answer to this may be different for different shelters. For example, if the shelter is in the basement of a supermarket, people will be able to go up and get food for it without exposing themselves to a great deal of radiation.)

On page 42 is a table to fill out, to find the number of daily rations needed for each shelter.

Next, if you are stocking the shelters with food, decide how much food per day you want to stock for each person for each day. According to the Encyclopedia Britannica, a man doing sedentary work needs 2400 calories a day; a woman doing sedentary work needs 2000 a day. Adolescents need more than adults. Old people need the same amount as younger people. Federally-assisted shelters are stocked with bulgur wheat wafers that will provide a total of 10,000 calories per person. Of course, you can provide more than this if you want to. Or, if you do not have federally-assisted shelters, you can provide less than this. A 2,000 calory-a-day diet is near normal. 1800 calories a day is an austerity diet. 1,500 calories a day is a survival diet - although, as we have said, most people would survive for two weeks even if they had no food at all. However, mere survival is not the only consideration. We want people not only to survive but to emerge from the shelter capable of doing the strenuous work that will be needed to rebuild a civilized world.

## Decisions for Community Shelter System

If the shelters are to be stocked with publicly owned food, it will be sufficient to last for a period of _____.

The food stocked will be enough to provide each person with an average of _____ calories a day.

## Modifications for Shelter No. _____

Shelter _____ will be stocked with food to last a period of _____ days.

Of course, if you have federally-approved shelters, much of your food stocking program will be solved, because you will be eligible to receive government supplies and equipment. The government food ration is to consist largely of bulgur-wheat wafers. However, you will probably want to provide some additional foods for variety and to meet special needs. For example, although the bulgur-wheat wafers can be eaten cold just as they come from the carton, they can be made into something resembling a regular meal by crumbling them, moistening them with hot water, and putting some kind of hot sauce onto them. So you will probably want to stock materials for making the hot sauces. Also, you will want to stock special foods for infants and invalids. You may want to stock coffee (preferably instant coffee), and tea for their psychological effect, though they should be used sparingly if water is limited, because of their diuretic effect (causing the body to lose water.)

If you do not have federally-approved shelters (or if you have some that are and some that are not) you will have to plan the entire shelter diet.

Qualities that researchers have decided are important for shelter foods are listed below:

1. Foods should be selected that will keep well - have a long shelf life. An attack may not occur for years, or it may never occur. And replacing foods that keep poorly every year or two would add greatly to the cost of the shelter program. The foods chosen should be such as will still be edible after they have been stored (on the shelf) for five to ten years.

2. The foods chosen should be such as will keep well in the environmental conditions of the particular shelter that they are to be stored in. For example, if a shelter freezes in winter you will want to avoid liquid or semi-liquid foods stored in glass jars. If it is very damp, you will not want things that have a tendency to mould.

Decisions for Community Shelter System

Foods stocked will include:

1. Wheat wafers.
2. Material for making hot sauces.
3. Food for infants and invalids.
4. Coffee and tea.

The foods that are selected for the shelters will be foods that

1. have a shelf life of 5 to 10 years.

2. will keep well in the environmental conditions (heat or cold, dampness, etc.) of the particular shelter in which they are stored.

Modifications for Shelter No. _____

Shelter No. _____ will have to have foods that will withstand _____ _____.

3. In nearly all communities, the foods chosen should be inexpensive. Choosing high-cost foods may lead to an inadequate stocking of the shelters. It is better to have enough cheap food than to have less-than-enough high-quality food.

4. The basic foodstuff chosen should be one that can be combined in many ways with inexpensive flavor adjuncts to lend variety to the diet. (As, the bulgur-wheat wafers that can be crumbled, moistened, and covered with heated sauces of different kinds.)

5. The foods selected should be widely available - the kind that you can buy on the open market. If not, the special production required should be simple and cheap.

6. Bulky foods should not be chosen. There are two reasons for this. First, bulky foods would take up too much of the limited room of the shelter. Second, they would make too much human waste that the chemical toilets would have to take care of.

7. Foods should be chosen that do not need cooking, even though cooking would make them taste better. For example, the bulgur wheat wafers can be eaten cold and dry if necessary. But rice would be a bad choice, although it is cheap, concentrated, and keeps well, because rice would have to be cooked, and this would make the shelter hot and steamy. Also, something might happen to the power supply or the fuel supply so that no cooking could be done. And in the period just after the attack, when the shelter may be crowded with extra people who will later leave, there may not be room to do any cooking.

8. The foods should be palatable, or at least acceptable, to the majority of the shelter population. This is not very important from the standpoint of health, because people will eat when they are hungry enough, whatever the food is. But good food has a psychological value at a time when many of the shelterees will be feeling anxious and depressed.

| Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|
| 3. are inexpensive. | |
| 4. can be given a variety of flavors. | |
| 5. are easily available, or else simple and cheap to produce. | |
| 6. are not bulky. | |
| 7. do not have to be cooked. | |
| 8. are palatable, or at least acceptable, to most people. | |

9. The foods chosen should reflect local preferences. Local shelters should be given a choice of foods so as to provide for regional and religious food traditions. For example, in an area with a large Jewish population you would avoid having foods containing pork, or would provide substitutes so that people opposed to the eating of pork would not have to do so.

10. Foods should be selected with the problem of dishwashing in mind. For example, non-fat dry milk and similar products should not be used unless there is a good place to wash dishes and enough water to wash them in, because utensils in which they have been mixed are hard to clean.

11. The foods chosen should not have a high protein content, except in shelters with plenty of water. We are accustomed to thinking of proteins as being good for us, but most of us do not know that too much protein without enough water may damage the kidneys.

12. Foods should be chosen that are simple to prepare. Cooking is difficult under crowded conditions and with the simple heating equipment that is likely to be available.

13. They should be packaged in such a way that they will cause only a small volume of trash. The trash will probably have to be kept in the shelter until the worst of the radiation is over and it can be thrown outside. In a crowded shelter, large bags or boxes of tin cans would get in the way.

14. They should include items that will be usable for feeding infants, the sick, and the aged. Some materials for this may be included in the medical supplies, but it is difficult to know how much will be needed. If the supplies edible by infants and sick and aged persons are not needed by them, they can always be eaten by other shelterees, so no waste will be involved. There should be a minimum backup supply of a

Decisions for Community Shelter System

9. take regional and religious food preferences into consideration.

10. will not make dishes hard to clean if there is a limited water supply.

11. are not high in protein content if the water supply is limited.

12. are simple to prepare.

13. produce little trash.

14. some of which can be eaten by babies, old people, and the sick. A minimum backup supply of a general formula for babies will be included.

Modifications for Shelter No. _____

general formula for babies, even though their mothers have been told to bring baby food with them when they come to the shelter.

15. Foods should be such as do not require good teeth. In an experiment using reformatory boys as shelterees, it was found that a peanut-bar ration was unacceptable because it required too much chewing. This factor will be most important in the poorer districts where the people have been unable to afford dental work.

Now note the number of daily rations that should be stocked in each shelter. (A daily ration is the food for one person for one day.) This will be the number of days that you are providing food for, times the number of people you expect to have in each shelter for that number of days, plus the number of extra people that you may have to jam into the shelter for the period of emergency times the number of days that they are to be allowed to stay. You can find the total number of rations needed quite easily by filling out the table on page 42.

When a shelter is located in a building where large inventories of food are kept, such as a hotel or restaurant, the presence of this food can be taken into account in stocking the shelter, since search parties could leave the shelter to get it without much danger after a day or two.

Decisions for Community Shelter System

15. people with poor teeth can eat.

The total number of daily rations needed for the shelters of this community is _____ . (Take from table on page 42.)

Foods stored in other parts of the building where the shelter is located will be taken into account in stocking the shelter.

Modifications for Shelter No. _____

Shelter _____ will need a total of _____ daily rations. (Take from table on page 42.)

| 1 | NUMBER OF DAILY RATIONS NEEDED FOR EACH SHELTER OR SHIELDED AREA | | | | | | |
|---|---|---|---|---|---|---|---|
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Name and Location of Shelter or Shielded Area | Number of Regular Occupants | Number of Days Regular Occupants Likely to Stay | Number of Daily Rations Needed for Regular Occupants (Col.2times Col.3) | Number of Extra Occupants Shelter Can Take in Emergency | Number of Days Extra Occupants Will Stay | Number of Daily Rations Needed for Extra Occupants (Col. 5 times Col. 6) | Total Number of Daily Rations Needed for Shelter or Shielded Area to Last Through Period of Occupancy (Col. 4 plus Col. 7) |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | Total for the Community: (get by adding above figures) |

SHELTER STOCKING: Medical

You will need to decide whether medical supplies are to be stocked in the shelters and the shielded areas. Medical supplies are furnished by the government for federally-approved shelters, but in order to provide protection for all your population you may have had to use some space for shelters that can not quite meet federal standards.

If you are near a target area, where people may come to the shelters burned and bleeding, having medical supplies will be very important. It is less important, though desirable, in areas where only fallout is expected.

Decisions for Community Shelter System

Medical supplies {will / will not} be stocked in the shelters.

They {will / will not} be stocked in interim shelters.

They {will / will not} be stocked in shielded areas.

Modifications for Shelter No. _____

At the right is a list of the medical supplies that the government furnishes for federally-approved shelters. If yours are not approved, you may still want to use this list as a guide in deciding what medical supplies are to be stocked. In this case you can change the list in any way that you want to.

To complete the table at the right, (which you will not need to do if all your shelters are to be federally stocked and you do not plan to put medical supplies in your shielded areas), estimate how much of each item will be needed for each 100 persons. You can do this very roughly by doubling the amount in Kit A.

Then, when you know what quantity of each item is needed for each 100 persons, you can figure out what quantity will be needed for all the shelters of the community and for each individual shelter.

Contents of Medical Kits Furnished by Department of Defense

| Medication | Unit Issue | Quantity | | Amount Needed per 100 persons | Amount Needed for Shelter No. |
|---|---|---|---|---|---|
| | | Kit A (for 50-65 persons) | Kit C (for 300-325 persons) | | |
| Acetylsalicylic Acid, Tablets USP, 5 gr., 500's (Aspirin) | Bottle | 1 | | | |
| Acetylsalicylic Acid, Tablets USP, 5 gr., 1000's (Aspirin) | Bottle | | 3 | | |
| Cascara Sagrada Ext., Tablets (Laxative) N.F., 4 gr., 100's | Bottle | 1 | 6 | | |
| Eugenol, USP, 1 oz. (Toothache Remedy) | Bottle | 1 | 1 | | |
| Eye, Ear and Nose Drops, 1/2 oz. | Bottle | 3 | 18 | | |
| Isopropyl Alcohol, N.F., 1 Qt. (dilute for rubbing alcohol | Can | 1 | 6 | | |
| Kaolin and Pectin Mixture, 1 Pt. (Diarrhea Medicine) | Bottle | 1 | 6 | | |
| *Penicillin G, Tablets, USP, 250,000 Units, 100's | Bottle | 2 | 12 | | |
| Petrolatum, White, USP, 1 lb. (Petroleum Jelly) | Can | 1 | 3 | | |
| *Phenobarbital Tablets, USP 1/2 gr., 500's | Bottle | 1 | | | |
| *Phenobarbital Tablets, USP 1/2 gr., 1000's | Bottle | | 3 | | |
| Soap, Surgical, 1-3/4 oz., with 2% Hexachlorophene (substitute for antiseptic solution) | Cake | 6 | 36 | | |
| Sodium Bicarbonate, 1 lb. (Baking Soda) | Can | 1 | 2 | | |
| Sodium Chloride, USP, 1 lb (Table Salt) | Bottle | 1 | 2 | | |
| *Sulfadiazine Tablets, 7-1/2 gr., 500's | Bottle | 1 | | | |

| Medication | Unit Issue | Quantity Kit A | Quantity Kit C | Amount Needed per 100 Persons | Amount Needed for Shelter No. |
|---|---|---|---|---|---|
| *Sulfadiazine Tablets, 7-1/2 gr., 1000's | Bottle | | 3 | | |
| Tablets, Water Purification, Iodine, 50's | Bottle | 2 | 12 | | |
| DRESSINGS | | | | | |
| Bandage, Gauze, Roller 2" x 6 yd., 12's | Package | 1 | 6 | | |
| Bandage, Muslin, Triangular 37 x 37 x 52" | Each | 1 | 6 | | |
| Cotton, Purified, 1 lb | Package | 1 | 3 | | |
| Pads, Gauze Surgical, 4 x 4" , 200's | Package | 1 | 6 | | |
| OTHER | | | | | |
| Applicator, Wood, Cotton Tipped end, 1/2 x 6", 100's | Package | 1 | 6 | | |
| Depressor, Tongue, Wood, 100's | Box | 1 | 3 | | |
| Forceps, Splinter, Tweezer 3-1/2" | Each | 1 | 1 | | |
| Pin, Safety, 1-1/2", 12's | Package | 3 | 12 | | |
| Scissors, Pocket, Straight 4", Double Blunt | Each | 1 | 3 | | |
| Syringe, Fountain, Plastic and attachment | Each | 1 | 1 | | |
| Thermometer, Human, Clinical, Oral, stubby bulb, with case | Each | 1 | 4 | | |
| FAMILY GUIDE - EMERGENCY HEALTH CARE | Each | 1 | 3 | | |
| FALLOUT SHELTER MEDICAL KIT INSTRUCTIONS | Each | 1 | 3 | | |

*Use limited to allied professional workers

There may be other things that you will want to add to this list. One of them is enteric formula - an easily-digested food for people with acute digestive disturbances. While you have probably told people who need special diets to bring a supply with them when they come to the shelter, you may have people needing special diets that did not need them before. Too much hard radiation is likely to cause nausea and diarrhea. And yet these people need adequate nourishment in order to survive. For this reason it is recommended that each shelter be provided with a minimum back-up supply of an all-purpose enteric formula.

The doctor on your civil defense staff can tell you just what preparation is needed for this purpose, and about how much of it should be stocked for every 100 shelter occupants, on the basis of the length of shelter stay that you are providing for.

Another thing likely to be needed in the shelters is laxatives. Shelter-occupancy tests have pointed up a definite need for these. The stress of the situation, lack of exercise, concentrated foods, and the use of toilets of an unfamiliar type are likely to cause constipation. Again, the doctor on your staff can advise as to the kind and amount of laxatives needed, or you can derive this from the list of federally-stocked medicines above.

It is heat, rather than cold, that is likely to be a problem in shelters. The body heat of the occupants may raise the temperature dangerously, especially in summer. This will be a particular problem in emergency shelters that do not have proper ventilating equipment. For this reason it might be well to keep extra supplies of salt or salt tablets on hand to aid in preventing heat exhaustion and heat stroke if temperatures become very high. But this should be done only if water is plentiful. The doctor on your staff can advise you on the amount needed, and on whether salt should be used for this purpose.

The diet chosen for shelter occupants is selected to maintain life, and does not attempt to provide all needed food elements. But pregnant and lactating women, very young children, the aged, and

| Decision for Community Shelter System | Modifications for Shelter No. _____. |
|---|---|
| A back-up supply of all purpose enteric formula will be provided. | |
| The enteric formula used will be _____. The amount to be provided for each 100 shelter occupants is _____. | The amount of enteric formula to be provided for Shelter No. _____ is _____. |
| for the entire community is _____. | |
| The type of laxative to be supplied is _____. The amount needed for each 100 shelter occupants, on the basis of the length of stay anticipated, is _____. The amount to be provided for the entire community is _____. | The amount of laxatives needed for Shelter No. _____ is _____. |
| If water is plentiful and the staff physician recommends it, extra salt will be stocked as a protection against heat. The salt will be in the form of (mark one)<br>1. Ordinary table salt.<br>2. Salt tablets.<br>The amount needed per 100 shelter occupants is _____.<br>The amount needed for the entire community is _____. | The amount of extra salt for Shelter No. _____ is _____. |
| Extra supplies of vitamins will be stocked. The type of vitamins to be stocked is _____. | |

some of the physically ill may need extra vitamins. Again, the doctor on your staff can advise you on the kind and amount needed.

In case some of the shelterees are hysterical or mentally disturbed, tranquilizers should be stocked, both to save them mental suffering and to keep them from creating an unhealthy emotional climate for the other shelterees.

General use of tranquilizers in a disaster situation would be unwise, since by making people quieter and happier tranquilizers lessen their ability to grapple with an unpleasant life situation and find solutions to it.

The medical officer on your staff can advise you on this, and should be asked to fill in the blanks in the column at the right.

The kind of medical supplies to be placed in each shelter will depend partly on the kind of medical personnel that you expect to have on duty there. For example, if no doctor or veterinarian is to be on duty in a shelter, it is not much use putting surgical instruments there. But in a large shelter with several doctors assigned to it, equipment for emergency operations or amputations might be very useful.

Also, the kind and amount of medical supplies stocked in the shelters will depend on the types and numbers of casualties to be expected. For example, if you are near a target area you can expect cases of burns and wounds, so there should be extra medical supplies of the kind that are useful for burns and wounds. But if only fallout is expected, you will not need so much in the way of medical supplies.

| Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|
| The amount of vitamins to be stocked for each 100 shelter occupants is _____. | The amount of vitamins to be stocked for Shelter No. _____ is _____. |
| The amount needed for the entire community is _____. | |
| Tranquilizers {will / will not} be stocked. | |
| The kind of tranquilizer chosen will be _____. | |
| The amount of this tranquilizer that will probably be needed for every 100 shelterees is _____. | The amount of this tranquilizer that will be needed for Shelter No. _____ is _____. |
| The amount needed for the community shelter system is _____. | |
| The kinds of medical supplies stocked in the shelters will be appropriate for the kind of medical personnel expected to be on duty. | In Shelter No. _____, the medical personnel expected to be present are: |
| The kind and amount of medical supplies stocked will be suitable for the number and type of casualties expected. In this locality the type of casualty is likely to be: | |
| The percentage of persons physically sick or wounded is likely to be about _____%. | |

In case of a sudden and violent attack it is possible that no medically trained personnel will be able to reach a certain shelter. For this reason the government is providing a medical self-help manual for the shelterees to use in determining the best treatment for the sick and injured. The name of this manual is The Family Guide to Emergency Health Care. There is also a Fallout Shelter Medical Kit Instructions. If a shelter is a federally stocked one, make sure that it has this manual. For shelters that are not federally stocked, you will probably want to provide either this manual or some similar one.

Decisions for Community Shelter System

A medical manual will be placed in each shelter, to enable the shelterees to look up instructions on first aid and emergency medical care.

Modifications for Shelter No. _____

SHELTER STOCKING - Other

Of all the things to be stocked in the shelters, water is the most important. People can live a long time without food, but only a few days at the most without water. Fortunately, it is also the cheapest thing that has to be stocked in the shelters. The only cost is for its containers.

Unless the water supply comes from a well within the shelter area, you should not depend on the regular water supply for shelter use. Even without a direct hit, the water-mains may be broken by earth movement. And if the water comes from an open reservoir it may be contaminated by radioactive dust.

The water that is needed in the shelters should be stored in the shelters, or so near that it can be gotten safely.

The minimum requirement for drinking water is half a gallon (half a gallon is 2 quarts) per person per day. Any amount beyond that will allow a little for dishwashing and personal hygiene. The government provides water-containers for stocking 14 quarts per person in the shelters it approves. Since this will be inadequate for a stay of over seven days, containers for the additional water have to be provided locally.

In column 8 of the table on page 42, you have already worked out the number of daily rations of food that will be needed for the entire period of expected shelter stay. The same number of daily rations of water will be needed.

Multiply this number by the number of quarts of water to be provided per person per day. This will give you the total amount of water that needs to be stored, in quarts. To get this amount in gallons divide the amount in quarts by 4, since a gallon contains four quarts.

Decisions for Community Shelter System

The shelters will be stocked with water.
The interim shelters will be stocked with water.
The shielded areas will be stocked with water.

We will not depend on the public water supply.

The water needed will be stored in the shelters or so near them that it can be gotten safely.

The amount of water stored will be _____ quarts per person per day, or _____ quarts per person for the expected period of shelter stay.

The number of daily rations of water needed for this community, for the entire period of shelter stay that is expected, is _____.

The total amount of water to be stored in the shelters of this community is _____ quarts, or _____ gallons.

Modifications for Shelter No. _____

The number of daily rations of water needed for Shelter No. _____ is _____.

The total amount of water to be stored in Shelter No. _____ is _____ quarts, or _____ gallons.

Since the government provides containers, in approved shelters, for stocking 1¼ quarts, or 3⅓ gallons, per person, you can find the amount of water you will have in government-provided water containers if you multiply the number of persons for whom the government is supplying provisions by 3⅓.

So the community will have to provide water-containers for the water needed beyond what the government is providing containers for. To do this, subtract the number of gallons to be stored in government containers (which you have just worked out) from the total number of gallons needed (which you worked out just before that.) Remember to subtract gallons from gallons.

As people enter the shelters, they should be examined by radiological monitors to see whether they have radiological contamination (fallout) on themselves or on their clothes, if the shelters have the personnel and equipment for doing this. Those whose clothing is found to be contaminated will have to take it off, because the radioactive particles on it will continue to give off radiation.

Some people will have brought extra clothes with them, but if the attack has been sudden, the chances are that many will not. It would be very desirable to provide clothing for the people whose clothing has to be thrown away because of contamination, especially if the attack occurs in the winter when some shelters will be cold.

If you plan to provide clothing, you can do it in one of three ways:

1. Appeal to the general public for contributions.
2. Ask women's groups, church groups, etc., to collect it.
3. Buy it.

Or you may be able to think of some other way to get clothing for this purpose.

Decisions for Community Shelter System

In this community, the government is providing water-containers to hold _____ gallons of water.

In addition to the water in the government's water-containers, this community will have to provide water-containers to hold _____ additional gallons of water.

Incoming personnel will be examined for radiological contamination as they enter the shelter and contaminated clothing removed.

Extra clothing {will / will not} be provided to replace the contaminated clothing that is discarded.

Clothing will be provided by the following means:

Modifications for Shelter No. _____

For Shelter No. _____, the government is providing water-containers to hold _____ gallons of water.

In addition to the water in the government's water-containers, Shelter No. _____ will need containers to hold _____ additional gallons of water.

If you decide to provide clothing, write down how many outfits you intend to provide for each 100 shelterees. Less extra clothing will be needed in places far from the probable target areas than in places near them.

Another thing that will be needed in every shelter is plenty of writing-paper and pencils.

For one thing, all radio broadcasts should be monitored and important items heard over the radio written down.

For another, you will want to keep a record of all reports of damage in the vicinity, to help in making plans for post-shelter living.

Also, the occupants may want to write letters to friends or relatives at a distance.

Paper will be needed for keeping duty rosters and similar records of assignment to specific responsibilities.

And, since classes should be established for the children in the shelter, as a means of quieting them and providing a secure routine, paper will be needed for school work. It will also be needed for the adults' training sessions, in which they are given instructions in shelter living and post-shelter survival.

Maps of the world, of the United States, and of the State, will be of interest to the shelterees as the war news comes in on the radio, and will be of use in post-shelter planning.

Decisions for Community Shelter System

For every 100 shelter occupants,
_____ outfits of men's clothing will be provided.
_____ outfits of women's clothing will be provided.
_____ outfits of children's clothing will be provided.

For the entire community the number of outfits of extra clothing needed will be
Men's _____
Women's _____
Children's _____

(A ream of paper is 500 sheets.)

How many reams of paper will be provided for every 100 shelter occupants?_____

The total number of reams of paper needed for this community is _____.

How many pencils will be provided for each 100 shelter occupants?_____

The total number of pencils needed for this community is _____.

A map of the world, one of the United States, and one of the State will be placed in each shelter.

Modifications for Shelter No. _____

For Shelter No. _____
_____ outfits of men's clothing will be provided.
_____ outfits of women's clothing will be provided.
_____ outfits of children's clothing will be provided.

In Shelter No. _____, the number of reams of paper needed is _____.

In Shelter No. _____, the number of pencils needed is _____.

SHELTER DESIGN - Blast Protection

Even if shelters are intended to provide protection from fall-out instead of from blast, it is a good thing to have as much blast protection as you can afford. A missile intended for a target at some distance might go off course, fall short, or overshoot and strike your locality instead.

One way that blast protection can sometimes be provided without cost is by taking advantage of hills between you and the target area. If there is a hill, or even a slight rise of ground, between you and the place where the missile strikes, much less blast and radiation will reach you. Of course, the most important thing is to have the shelters where people can get to them easily. But if you can do that and also have a hill, or a rise of ground, between them and the places where the missiles are likely to strike, you will be getting considerable protection without extra cost.

A cheap way of providing protection against both blast and radiation is to build baffles or barriers in front of the shelter doors. Radiation and blast tend to travel in a straight line, so a baffle in front of the shelter door will keep them from directly entering the shelter. A baffle will break the force of the blast, just as it would break the force of the wind. To turn blast a baffle has to be very strong. Heaped-up earth makes a good baffle.

For below-ground shelters, you can get a baffle effect by having right-angled turns in the entrance passageways, since both blast and radiation have difficulty turning corners. Barriers can also be used for this.

Where the shelter doors are vertical and would be hit by reflected pressure in case of blast, revetments (facings or retaining walls of stone or concrete) can be used to strengthen the door-opening areas.

Decisions for Community Shelter System

Some degree of blast protection {will / will not} be aimed for.

When possible, the shelters will be located with a rise of ground between them and the target area.

Baffles will be built in front of the shelter doors.

Right-angled turns or barriers will be built in the entrance passageways to underground shelters.

Revetments will be constructed to strengthen shelter doors that may be subject to reflected pressures.

Modifications for Shelter No. _____

It is important to see that a shelter's equipment is as resistant to blast as the rest of the shelter is. Vent pipes, doors, storage tanks, ductwork, and other blast-sensitive equipment should be designed to perform satisfactorily at the same overpressure range as the rest of the shelter. Otherwise the blast could enter the shelters by way of their weakest points.

Decisions for Community Shelter System

Vent pipes, doors, storage tanks, ducts, and other equipment will be designed to withstand the same pressure as the rest of the shelters.

Modifications for Shelter No. _____

In case of blast, there is danger that pressure may build up in a shelter, causing great damage to personnel and equipment. This can be prevented by the installation of [illegible] in the various shelter openings. The occupants of a shelter should not be subjected to more than five pounds per square inch overpressure--that is, 5 pounds per square inch more pressure than they normally receive. (All of us receive considerable pressure all the time from the atmosphere.)

In shelters offering resistance to blast, openings to the atmosphere will be provided with devices to prevent a build-up of pressure within the shelter so that its occupants do not receive more than 5 pounds per square inch of extra pressure.

Shelter No. _____ {will / will not} have its openings provided with devices to prevent the build-up of too much overpressure.

If a shelter is blast-resistant and has entrances to existing buildings, it should be provided with closures that will protect it from heat and poisonous gases if the buildings it is connected with catch fire. Otherwise a shelter in the basement of an apartment house, for example, might roast its occupants, or suffocate them, when the apartment house burned. This is especially important in city shelters, where an entire city may be burning.

Blast-resistant shelters that connect with existing buildings will have closures to keep heat and poisonous gases out of the shelters if the buildings burn.

Shelters should be free of loosely-supported fixtures that might become flying debris in the event of shock. Loose storage shelves, false ceilings, or hanging light-fixtures could cause serious injuries. All such fixtures should be fastened tightly to the wall, and the wall and ceilings should be such that blast will not loosen them.

Shelters expecting blast will have no loosely-supported fixtures or false ceilings.

The piping for water and fuel tanks between a shelter and the surface should be designed to withstand some earth displacement without breaking. A close hit by a missile might cause an earthquake effect.

In blast shelters, the shield doors should be doors that can be operated by hand if necessary. Otherwise failure of the power system or of the mechanism for opening and closing the door might, if the door would not open, leave the shelterees outside in a time of danger. If it would not shut, they would be able to get in but would be unprotected from the blast. Doors that will open by hand are always under human control.

Decision for Community Shelter System

Piping between shelter and surface will be designed to withstand some earth movement.

The closing mechanism of shield doors will be such that it can be operated by hand.

Modifications for Shelter No. _____

SHELTER DESIGN - Radiation Protection

For a structure, room, or space to meet the government requirements for a fallout shelter it must have a protection factor of at least 40 - that is, a person in it would get only 1/40 as much radiation as he would outside. Areas of this kind will be your primary shelter space.

However, if secondary shelter space is needed, additional space can be marked and called "shielded areas." Government requirements describe a shielded area as a structure, room, or space having a protection factor of less than 40 but at least 20. For example, in a certain county 69 buildings were found that were adequate for use as fallout shelters. These 69 buildings would shelter 38,440 persons, if all of their owners were willing to let them be used for that purpose. But the county's population is about 500,000. Therefore, f the 12/13 of the population that could not be sheltered in the primary shelter space are to be cared for in a sudden crisis, the use of secondary shelter space, with a protective factor of more than 20 but less than 40, will be necessary.

Though these are the government requirements for primary shelter space and shielded areas, it is worth remembering that a space with a protection factor of only 8 or 10 might save the lives of people whose homes had a protection factor of only 2. The important thing is to get your people to the safest place you can. It may not be safe enough, but then again it may. In a place with a protection factor of ten you will get only a fifth of the radiation that you would in a place with a protection factor of 2. This could very easily make the difference between life and death, since 2 is the protection factor of the average ranch-house home.

In calculating a shelter's protective factor, you have to take into account the radiation dose that the occupants will get by way of the entrance ways, ventilation ducts, and other openings. There may be a leakage of radiation into the shelter, just as there is leakage of cold air into a closed room in wintertime, through the cracks in the doors, the keyhole, etc.

Decisions for Community Shelter System

Government-approved fallout shelters (primary shelter space) will have a protection factor of 40.

If secondary shelter space (shielded area) is needed and provided, it will have a protection factor of at least 20.

If no space is available that meets government requirements for either shelters or shielded areas, any place that offers considerably better protection than homes will be used as a shelter.

In calculating the protective factor of a fallout shelter or shielded area, the amount of radiation the occupants will get through doors, ventilation ducts, and other openings will be considered.

Modifications for Shelter No. _____

Sometimes you can improve the protection factor of a shelter area or shielded area by arranging the interior contents, such as desks and filing cabinets, so as to give further protection against radiation. Books and magazines, for example, give very good radiation protection.

Decisions for Community Shelter System

Plans will be made for rearranging the furnishings and other contents of shelters and shielded areas so as to increase the factor of protection.

Modifications for Shelter No. _____

The contents of Shelter No. _____ will be rearranged in the following way to increase the factor of protection:

SHELTER DESIGN Other

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| It is best for shelters to be on a site that people can get to from a public street or some other land belonging to the public. If the occupants of a shelter had to go through private property to get to it, the private property might be closed off in some way so that there would be delay in getting to the shelter. Of course, this may not be possible in some shelters, such as those located in office buildings. | If possible, shelters will be accessible from a public street or other publicly owned land. | Shelter No. _____ (will / will not be accessible from a public street or other publicly owned land. |
| Shelters should be located so that the vents or openings leading into them will not be covered by burning rubble in case of a firestorm. If the vents through which air is drawn were covered with burning rubble, poisonous gases instead of air would be drawn into the shelter. | Shelters will be located so that their vents and openings will not be covered with burning rubble. | |
| Shelters should have provision for locking up weapons and liquor that have been confiscated from the shelterees, drugs that might be a temptation to drug addicts, etc. If better facilities are not available footlockers with padlocks can be provided. | Provision will be made for locking up weapons and dangerous materials. | In Shelter No. _____ dangerous materials will be locked up in _____. |
| If space permits, it is desirable to make provision for the storing of personal property in such a way that each shelteree has a small area he can call his own. Small drawers or lockers that can be locked have considerable psychological as well as practical value. Many shelterees will have brought jewelry, bonds, and other valuable belongings with them, and carrying these on their persons while they do their assigned work in the shelter will be hampering. Since charges of theft would be very bad for shelter morale, the provision of locker space can be justified as contributing to morale and discipline. | If space permits, provision will be made for giving lockable storage space to each shelteree. | In Shelter No. _____ lockable storage space (will / will not be provided for each shelteree. |
| Some provision should be made for seating arrangements, including backrests. Shelter occupancy tests have shown that there is very little to do in a fallout shelter except sit or lie down. Absence of chairs, or any substitute for them, caused considerable discomfort. Also, when people have some place to sit it is easier to hold classes that will prepare the shelterees for post-shelter living and teach them how to deal with the hazards of radiation. | Seats with backrests will be provided. | |

| | Decisions for Community Shelter System | Modifications for Shelter No. ____ |
|---|---|---|
| Shelters should have separate rooms if possible, shut off from each other by either regular or improvised partitions. This will enable the people who have to sleep to do so undisturbed, without the entire shelter population having to keep quiet. (Even if shift sleeping is not used, the guards, radio monitors, etc., who have been on duty during the night will have to sleep while the rest of the shelterees are awake.) It will also provide a certain amount of privacy for women and for families, and make it possible to isolate the sick. This last will be particularly important if contagious diseases occur. If there are no built-in partitions, improvised partitions should be put up if materials for them are available. | The shelters will have separate rooms if possible.<br><br>If they are not already divided into rooms, improvised partitions will be put up if materials are available. | |
| A shelter's interior design should be flexible so that its layout can be changed if necessary. For example, there might be a great many more sick and injured people than the shelter's sick bay (hospital area) could accommodate. In this case, it would be very useful to be able to move some of the partitions so that an additional room for use as an auxiliary sick bay could be created. | The interior design of shelters will be flexible so that it can be changed if necessary. | |
| In building new shelters, the columns or other structural parts of a shelter should be planned in modules (standard units of measurement, such as a certain number of feet) so that the blocks of bunks can be laid out efficiently. Otherwise bunks may not quite fit into the space in which they are to be put. | In new shelters, module planning will be used to make possible more efficient use of space. | |
| In planning the layout of each shelter, there should be provision for routing of internal traffic. For example, the bunks should be placed so that people can get into them and out of them without disturbing other sleepers. There need to be aisles so that people can move from one part of the shelter to another, and these aisles need to be placed so that they will not disturb important activities, such as food preparation or radiological monitoring. | In planning the layout of each shelter, provision will be made for efficient routing of internal traffic. | |

A shelter should be built so that water will not condense on its walls and floor. Humidity is a problem in any shelter, because of the moisture given off by human bodies. And humidity makes the heat seem worse.

In building new shelters, or in fitting up existing space as shelter space, year-round weather conditions must be considered. Crowded shelters in the summer-time tend to get uncomfortably hot, but some shelter-occupancy experiments have proved that shelterees can get uncomfortably cold in the winter-time even in California.

In designing shelters, provision must be made for rapid entrance in case of sudden attack, and for rapid egress (exit) in case of such emergencies as fire. The rule worked out by shelter planners is that there should be at least one unit of access and egress for each 200 shelter occupants. A "unit of access or egress" is a width 22 inches wide, because it takes an opening this wide for a file of people to go through.

A door 44 inches wide would allow two files of people to go through at the same time, so it would be <u>two</u> units of access or egress.

But no single opening for access or egress should be less than 24 inches wide, because you might have some very large people or objects that had to be gotten through.

<u>Decisions for Community Shelter System</u>

Shelters will be designed to prevent water condensation on walls and ceilings.

Year-round weather conditions in this area will be kept in mind.

All doorways, passageways, or exits of the shelters will be at least 24 inches wide.

At least 22 inches of entrance-or-exit space will be provided for each 200 shelter occupants.

<u>Modifications for Shelter No. _____</u>

For Shelter No. _____, _____ inches of door space will be provided.

A shelter should be built so that water will not condense on its walls and floor. Humidity is a problem in any shelter, because of the moisture given off by human bodies. And humidity makes the heat seem worse.

In building new shelters, or in fitting up existing space as shelter space, year-round weather conditions must be considered. Crowded shelters in the summer-time tend to get uncomfortably hot, but some shelter-occupancy experiments have proved that shelterees can get uncomfortably cold in the winter-time even in California.

In designing shelters, provision must be made for rapid entrance in case of sudden attack, and for rapid egress (exit) in case of such emergencies as fire. The rule worked out by shelter planners is that there should be at least one unit of access and egress for each 200 shelter occupants. A "unit of access or egress" is a width 22 inches wide, because it takes an opening this wide for a file of people to go through.

A door 44 inches wide would allow two files of people to go through at the same time, so it would be <u>two</u> units of access or egress.

But no single opening for access or egress should be less than 24 inches wide, because you might have some very large people or objects that had to be gotten through.

| Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|
| Shelters will be designed to prevent water condensation on walls and ceilings. | |
| Year-round weather conditions in this area will be kept in mind. | |
| All doorways, passageways, or exits of the shelters will be at least 24 inches wide. | For Shelter No. _____, _____ inches of door space will be provided. |
| At least 22 inches of entrance-or-exit space will be provided for each 200 shelter occupants. | |

SHELTER UTILIZATION PLAN

A shelter utilization plan should be drawn up and placed in each shelter, so that it will be available and immediately usable in case of an emergency. This plan should be individually made for each shelter (though of course you can make a general plan first and then adapt it for each individual shelter.) Conditions will be different in every shelter, and the operational plan will be too general to cover all of them exactly and accurately. However, the entries that you will have made in the column to the right in this workbook will be a help in making your shelter utilization plans.

The shelter utilization plan should contain:

1. An "immediate action program" to be followed by the first persons entering the shelter. This program should be posted conspicuously, so that even frightened and excited people will be sure to see it. There is no assurance that the first persons entering the shelter will be persons with civil defence training, so this immediate action program must be very clearly written. The immediate action program should contain exact instructions for opening the shelter, for directing people as they come in (to the farthest part of th shelter first, to decrease congestion), removing unneeded objects, starting the ventilation system, getting the chemical toilets into operation, etc.

2. A detailed map of the shelter, with plans for the utilization of space. This map of the shelter should show exactly where every important piece of equipment is located, where the controls are, etc. It should describe them well enough so that the first occupants of the shelter will have no trouble finding them, and so that they will not have to wonder what a certain object or piece of equipment is when they see it. This map can be labelled "Locator Chart; a Diagram to Show the Location of Utilities and Disaster Supplies in This Fallout Shelter." On it you will want to label such things as the sump, hot water tank, steam boilers, pressure tank, fuel oil tank, disaster supplies, etc. Symbols, explained in a legend on the chart, can be used to indicate water closets, urinals, showers, drinking fountains, wash basins, gas valves, water valves, and

Decisions for Community Shelter System

A shelter utilization plan, applying specifically to the individual shelter, will be drawn up and placed in each shelter.

It will contain the following:

1. An "immediate action" program, written very clearly and posted conspicuously in each shelter, to give the first persons who arrive instructions or opening the shelter and getting it into operation.

2. A detailed map of the shelter, called a locator chart. On this, large features such as fuel-oil tanks will be labelled. Small features such as showers will be indicated by symbols, and the symbols explained in a legend on the chart itself. The chart will show by dotted lines where other equipment is to be placed. The various areas on the chart will be labelled with the use to which they are to be put - Food Preparation Area, etc.

Modifications for Shelter No. _____

electric switches. In dotted lines on this chart you can show the location planned for equipment that is not yet set up, like rows of bunks. Label the various parts of the chart to show what use is planned for different parts of the shelter, as Sick Bay, Shelter Manager's Office, etc.

3. An inventory of the basic supplies and equipment in the shelter, giving amounts and location, as: "Detergent. 28 1-1/2 lb. cartons. Food Preparation Area."

4. If all the supplies and equipment needed are not already in the shelter, this list should contain instructions on how and where to obtain them.

5. Maps of the community, showing control centers, community shelters, shielded areas, and location of essential emergency resources. Knowing where other community shelters and shielded areas are located will be very important if the shelter becomes too full to hold any more people and some of them have to be directed elsewhere. It will also be important when the time comes for the extra people who have been crowded into the shelter, to get them past the period of greatest danger, to be evacuated to other shelters or shielded areas so as to relieve unlivable congestion.

Knowing the location of other resources is important in case the shelter supplies run out. In this event it would be necessary, after the radiation had gone down, to send out search parties to bring in supplies. The map should show the location of warehouses, supermarkets, drug stores, water sources, and other places from which badly needed supplies could be gotten. Knowing where they are so that the searchers can go directly to them will keep down the amount of radiation they will receive on the expedition.

6. A statement of any special hazards to which the shelter is subject, and what can be done about them. For example, if the shelter may be flooded, the shelterees would be told this and told how to use the sump pump.

Decisions for Community Shelter System

3. An inventory of basic supplies and equipment in the shelter, giving amounts and location.

4. Instructions as to where to get materials not in shelter.

5. Maps of the community showing control centers, community shelters, shielded areas, and places where additional supplies can be gotten.

6. Statement of special hazards and the means of meeting them.

Modifications for Shelter No. _____

The special hazards of Shelter No. _____ are:

7. The location of the emergency exits, where they lead to, and how to operate them. (Some emergency exits depend on such devices as a trapdoor in the ceiling that can be let down so as to dump the shielding sand or earth on the floor of the shelter, thus opening the exit route.)

8. Radiological information regarding the shelter. This would include information on how to improve the protection factor of the shelter. Particularly in a dual-purpose shelter, it may be possible to move furnishings already in the shelter to places where they will help cut down the amount of radiation entering. Also, additional sealing may be possible. The radiological information should include a statement as to which are the "hot" parts of the shelter, radiologically speaking, and which are the "cool" ones. The occupants can then use the hot areas for such things as storage, and assign personnel to the cool areas.

9. A statement of the capacity of the shelter. This should give its area in square feet, its volume, its air supply in number of cubic feet of fresh air per minute, the number of people who can be accommodated in it for two weeks, and the number of people who can be gotten into it for the emergency period of greatest danger.

10. A description of the boundaries of the shelter area. This will be much more necessary in some shelters than others. For example, in a large basement area, part of the basement might have columns close enough together to support the roof, in case the building overhead burned or was demolished, and part of it might not. Knowing which parts of a large room of this kind are safe could be very important.

| Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|
| 7. Location and description of emergency exits and instructions for using them. | |
| 8. Radiological information in regard to the shelter, including instructions as to how to increase the protection against radiation and information as to which parts are "hot" and which are "cool" in regard to radiation. | |
| 9. A statement of the air supply, size, and capacity of the shelter. | The number of square feet in Shelter No. _____ is _____.<br>The number of cubic feet is _____.<br>The number of cubic feet of fresh air coming in each minute is _____.<br>The number of people it can hold for two weeks is _____.<br>The number of people it can hold for a period such as two days is _____. |
| 10. A statement of the boundaries of the shelter area. | |

| | Decisions for Community Shelter System | Modifications for Shelter No. ____ |
|---|---|---|
| 11. Instructions on what to do if the previously chosen and trained shelter management personnel are unable to get to the shelter, or if they are sick or hurt so as to be incapacitated. This would include instructions for selecting management personnel and for setting up the procedures by which the shelter is to be run. | 11. Instructions for electing officials and setting up a shelter management system if the designated management personnel are not present or are incapacitated. | |
| 12. The shelter utilization plan should make it very clear what the powers and duties of the shelter manager are. This will be particularly necessary if an inexperienced person has just been chosen for the post. But even if a trained shelter manager is present, having a statement of his duties, responsibility, and authority written out in the shelter utilization plan will lead to better discipline and cooperation. | 12. The duties, responsibility, and authority of the shelter manager. | |
| 13. The objectives of shelter management. Knowing just what they are working toward will enable the shelter occupants to see the discomforts and inconveniences of shelter life in their proper perspective. These general objectives should be broken down into smaller and more specific ones, so that the shelterees can sometimes have the encouraging realization that they have fulfilled an objective. | 13. A detailed statement of the objectives of shelter management. | |
| 14. An organizational chart with the names of the key staff members (if they are chosen beforehand), and of their substitutes. It should lay out the lines of succession - that is, it should tell who is to take over each key staff member's duties if he is unable to reach the shelter or is incapacitated. | 14. An organizational chart, with a statement of the lines of succession. | |
| 15. Job descriptions, telling the duties and authority of each staff member. | 15. Job descriptions for all staff jobs. | |
| 16. General directives to furnish guidance in coping with possible emergencies. For example, what are the conditions under which the shelter should be evacuated? If it is evacuated, where are the shelterees to be taken? What is to be done if water begins rising on the shelter floor? How are violent persons to be dealt with? It is easier for you to think out the answers to these problems ahead | 16. Directives to furnish guidance in various kinds of emergency. | |

of time, when there is plenty of time to consider them, than it would be for an inexperienced shelter manager in a time of crisis.

17. Statements of what is to be done by specific units or persons under specific sets of circumstances. These should refer to persons by their official titles, not by their names, since the persons who have been planned to take over various duties may not get to the shelter. That is, the shelter utilization plan would list the actions to be taken by the head of the Food Service, not those to be taken by Mrs. Blank, who is to be head of the Food Service. For example, there should be a statement of what is to be done by the head of the Food Service in case the shelter is so crowded that ordinary methods of preparing and serving food can not be used.

Decisions for Community Shelter System

17. Statements of what is to be done by specific units or persons (by title, not by name) under specific sets of circumstances.

Modifications for Shelter No. _____

PERIODIC MAINTENANCE - Food

It is not enough just to stock the shelters with food; there also has to be a plan for surveillance. "Surveillance" means, literally, "looking over," -- keeping an eye on. You have to keep an eye on the food stocks to make sure that they are still there, and to make sure that they do not deteriorate and become unusable.

To make sure that they are still there is not much of a problem in a structure that was built to be a shelter and is used for nothing else. Locking the shelter itself protects the food from theft. But in a dual-purpose shelter there has to be some way of locking up the food without locking up the shelter itself. This can be done by keeping it in a locked room or in locked master containers - boxes, drums, or cans so large that they are not likely to be carried away.

Food stocks have to be protected against moisture. Packaged food, such as the government's bulgur-wheat wafers, is likely to get soggy and mould in a damp environment. Canned food is damaged by moisture that encourages corrosion in the metal of which the cans are made. The best way to protect food against moisture is by mechanical dehumidification - air conditioning that removes the moisture from the air. If this is impossible because of the expense, then food can be kept in sealed rooms or sealed master containers, in the same way that a housewife puts crackers into a tin to keep them crisp.

Inventories should be kept on the stocks of food. Copies of these inventories should be kept in the shelters, so the shelter manager can know immediately how much food is on hand and institute immediate rationing if there is too little. These inventories must be kept up to date - for example, if you hold a shelter occupancy test, the food consumed during the test must be taken off the inventory. Otherwise the shelter manager might be given misleading information on the food supply.

Decisions for Community Shelter System

A food surveillance" program will be developed for the community shelter system.

In dual-purpose shelters, food will be stored in locked rooms or locked master containers.

Food will be protected against moisture by (Mark one)

1. Mechanical dehumidification
2. Keeping it in sealed rooms or sealed master containers

Inventories will be maintained on food and a copy of the inventory kept in each shelter. These inventories will be kept up to date. Keeping the food inventory will be the responsibility of the

_____.

Modifications for Shelter No. _____

In Shelter No. _____, food will be stored in _____.

In Shelter No. _____, food will be protected against moisture by _____ _____ _____ _____.

Since some food will deteriorate and become unusable, and some will be used up in shelter occupancy tests, you need to have a definite system for getting food to replace it. This should be budgeted as part of the expenses of the civil defense system, and getting new food stocks when necessary should be the responsibility of some particular official.

Checking on the presence of the food stocks and on how well they are keeping should be the responsibility of specially assigned persons - an inspection staff. There are two reasons for this - first, things are more likely to get donewhen they are someone's particular job. Second, food surveillance is a rather technical procedure and having certain persons assigned to the job makes it possible to train them in proper methods of surveillance.

A program of food surveillance should be outlined, including a sampling plan manual telling just how the food stocks are to be sampled and examined. This should be clear enough so that even unskilled people could do the necessary surveillance, if necessary.

Food surveillance will be easier and cheaper if there are not too many different kinds of foods in the shelter ration, since one or two samples will have to be taken of each kind of food. Sampling too many kinds of food would both take a good deal of the inspector's time and make necessary the waste and replacement of the samples themselves.

Another thing that will simplify food surveillance is writing, on each can or package of food, the date on which it should be removed from the shelter. In this way the inspector will know which foods are so old that deterioration from age may have taken place, and can sample only the older foods.

The food can be stored and stockpiles arranged in such a way as to make surveillance easier. For example, you would not put all of one kind of food, or of the food gotten at a certain time, in the bottom of a container or on the back of a shelf, so that you would have to move other foods to get at it for sampling.

Decisions for Community Shelter System

Modifications for Shelter No. _____

The civil defense official responsible for getting replacement food stocks will be the _____. This food will be paid for by the following means:

An inspection staff will be selected and trained for the food surveillance program.

A program of food surveillance and a sampling plan manual will be prepared, telling when and how the food stocks are to be examined.

The shelter ration will contain only a limited number of different foods, in order to make surveillance easier.

Each can or package of food will be marked with the date on which it should be removed from the shelter.

Foods will be stored and stockpiles arranged so that samples of each food placed in the shelter at a certain time can be gotten at easily.

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| The food stocks should be arranged so that the foods with the highest rate of turnover are the most accessible. This will make it possible to check on whether they need to be replaced, and also make them easier to get at when you need to use them. | Foods will be stored so that those with the highest turnover are easiest to get at. | |
| Shelter food storage space should be designed and the stockpiles arranged in such a way that it is easy to get at the food when it is needed to feed the shelter population, and so that it can be easily inventoried and sampled. For example, leaving all foods in their original cartons and piling the cartons on top of each other in a closet might be economical of space, but it would make them much harder to get at than they would be if they were kept on shelves. | Shelter food storage space will be designed and stockpiles arranged so as to make ration selection, inspection and inventory as easy as possible. | |
| Foods that keep well and foods that keep poorly should not be packed in the same container. If they were, it would make the sampling procedure more difficult, since the container would soon have to be opened to check the foods that kept poorly. Foods with the same "shelf life" (keeping ability) should be stored together. | Food items of different keeping quality will not be stored in the same container. | |
| Every large container should be marked with a label telling what is in it, so that you will know whether just taking a sample from the top is enough. | Containers will be labelled with the names of the foods they contain. | |

PERIODIC MAINTENANCE - Medical Supplies

Medical supplies require careful surveillance for two reasons. First, they are particularly likely to be stolen or damaged by addicts in search of drugs. Second, many drugs do not keep well.

If possible, personnel with a background in pharmacy should be chosen to carry out the medical supplies surveillance program. If no pharmacists are available, other people with some related scientific knowledge should be chosen, such as science teachers, nurses, etc. They should work under a doctor's direction.

The surveillance of medical supplies should be done at regular intervals. If it is done only when someone thinks of it, or when someone has time for it, it is likely not to be done. It should also be done according to regular, written-out procedures. Your medical officer will be able to help you in working out these procedures. It will speed up the process of surveillance if you put these procedures in checklist form, so that the person doing the surveillance of medical supplies can go down the page and check off each operation as he finishes it.

It is very important to protect medical supplies against pilfering and vandalism. The frequency with which drug stores are broken into by drug addicts is an indication of the danger to drugs stored in a shelter. This danger will exist not only in the storage period, but also during the period of shelter occupancy. It will be necessary to have storage facilities for drugs that can be securely locked and that, when the shelter is occupied, will ensure that only the proper persons have access to them.

It is necessary to protect drug supplies from deterioration as far as possible. Humidity, high temperatures, freezing or extreme fluctuation of temperature may all be injurious. Some drugs keep very well under such environmental conditions; others very poorly. Anything that helps control humidity and temperature will help control deterioration of medical supplies.

Decisions for Community Shelter System

A surveillance program will be developed for the medical supplies in the shelters.

This surveillance program will be carried on by people with pharmaceutical backgrounds, under the direction of a physician.

Surveillance of the medicalsupplies will be done every _____. A standard set of procedures will be drawn up in checklist form.

Drug supplies will be stored in places that can be locked and that will offer security both during the storage period and when the shelter is in operation.

The shelters will be kept cool, dry, and at a fairly even temperature to prevent drug deterioration.

Modifications for Shelter No. _____

| | Decisions for Community Shelter System | Modifications for Shelter No. ____ |
|---|---|---|
| Even so, some very desirable materials, such as vaccines, will deteriorate. If possible, such drugs should be stored on a rotating basis, so that when a supply of a rapidly-deteriorating drug begins to get old it can be taken out and used, and replaced with new drugs. This is the same principle that the grocer uses when he puts the new bread at the back of the shelf and the old bread at the front so that it will be sold first. | Drugs likely to deteriorate will be stored on a rotating basis wherever possible. | |
| The people who are assigned to the Food Service should be given the same health examinations as regular food handlers, to make sure that they will not transmit disease to the other occupants of the shelter. | Members of the Food Service will be given the health examinations legally required of food handlers. | |
| They should be instructed to inform the civil defense office if they develop any health condition that would make it unwise for them to serve as food handlers. | They will inform their superiors in the civil defense organization if any health condition develops that would prevent their working at their assigned jobs. | |

PERIODIC MAINTENACE - Water

In some shelters the water tanks are made so that a little water runs into them all the time (from the public water supply), and a little water runs out of them all the time. In this way the water in the tanks is automatically kept fresh. But if you do not have this kind of arrangement a schedule should be set up for changing the water at definite intervals, both to keep it fresh and to replace what has evaporated. This task should be assigned to some particular official.

In tanks where there is no water turnover, the water should be slightly over-chlorinated to prevent algae from growing init. Otherwise a green scum may form which will make the water unpleasant to drink.

Whatever kind of water tanks or containers are used, they should be checked at intervals to make certain that the water is there. They might have sprung a leak, or the input pipes might be blocked, or they might be allowing too much water to disappear by evaporation. People can drink stale water or water covered with algae if they have to, but finding some of the water-tanks empty would be a danger to survival. Checking them to make sure of this should be the responsibility of some particular official.

Just as with food, a shelter should contain a statement of how much water is stored there. This will enable the shelter manager to figure out how much he can allow each person per day. It can be kept along with the food inventory.

Decisions for Community Shelter System

In shelters that do not have continuous turnover of water, the water in the water storage tanks will be changed every _____. Seeing that this is done will be the responsibility of the _____.

Water kept in isolated tanks will be slightly over-chlorinated to inhibit growth of algae.

The water tanks or containers will be checked every _____ to make sure that they contain the water they are supposed to contain. Any necessary refilling will be done. Doing this will be the responsibility of the _____.

A statement of how much water is stored in a shelter will be placed in the shelter along with the food inventory.

Modifications for Shelter No. _____

In Shelter No. _____ the water will be kept fresh by _____.

PERIODIC MAINTENANCE - Equipment

To protect a shelter's contents, there must be ways of keeping vandals and intruders out when it is not in use. Otherwise the stores are likely to be broken into and the equipment damaged. Unless a shelter is in a place where it is under observation, such as the basement of a department store or a room in an office building, the safest thing is to keep it locked.

Supplies of spare parts, etc., should be placed in storage areas that can be locked or, when the shelter is in use, guarded. Batteries in particular are likely to be stolen.

Humidity is a danger to machinery as well as to food. Temperature is important to machinery chiefly because it affects the dew-point - if the machinery is cold, moisture is more likely to gather on it and cause rust and corrosion.

The shelters themselves with their equipment, furnishings, fixtures and woodwork should be cleaned periodically. At longer intervals, they will need to be repainted.

Maintenance schedules should be set up for the equipment and facilities needed to keep the shelters operating. These should show how often they are to be inspected, cleaned, oiled, etc. Of course these maintenance schedules will not be the same for all the equipment. Different pieces of equipment and different facilities will need attention at different intervals.

Decisions for Community Shelter System

Shelters will be keptlocked or guarded during the standby period.

Supplies will be stored in areas that can be locked at all times and guarded when the shelter is in use.

Temperature and moisture will be controlled to prevent the deterioration of shelter equipment.

The shelters and their contents will be cleaned every _____. They will be painted every _____. Seeing that this is done will be the responsibility of:

Maintenance schedules, suited to their individual requirements, will be set up for the

1. generators
2. blowers
3. roof ventilators
4. shield doors
5. ramps
6. water systems
7. fuel systems
8. lighting systems

(Add any others that you feel should be added.)

Modifications for Shelter No. _____

During the standby period security will be provided for Shelter No. _____ by _____.

In Shelter No. _____ temperature will be controlled by _____. Moisture will be controlled by _____.

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| The maintenance schedules are more likely to be adhered to if a regular maintenance staff is appointed and charged with the duty of performing the necessary periodic maintenance during the stand-by period when the shelters are not in use. | A maintenance staff will be assigned to perform periodic maintenance on a regular schedule. | |
| All shelter equipment should be proof tested as soon as it arrives, or is installed, by the people who are to use it. If it is just left in its cartons, it may keep very well that way, but<br>1. it will not be ready to use instantly in case of attack;<br>2. parts of it may be missing or defective;<br>3. the people who are supposed to use it may not know how to use it. | All equipment will be proof tested on arrival or installation by the persons who are to use it, to make sure that it works. | |
| The power equipment should be test-operated (tried out) at regular intervals. This is particularly important in a shelter that may be so crowded that it would not have air enough for its occupants unless air were brought in from outside by ventilation. In such a shelter, if the power equipment would not work, the occupants might die for lack of oxygen. This, too, should be the duty of some particular official. | The power equipment will be test-operated every _____ by the _____. | |
| Another very important item is the radiological monitoring equipment. If it worked badly, the occupants might think it was safe to leave the shelter when it was really very dangerous. Or they might stay in the shelter and starve when it was safe to go out. The Office of Civil Defense recommends that the radiological monitoring equipment be checked every month, and that any necessary repairs be made. | The radiological monitoring equipment will be checked every month, and any needed repairs made. | |
| Fresh batteries should be placed in the instruments once a year. | New batteries will be put in the instruments once a year. | |
| Once a year also, the monitoring instruments should be recalibrated to make sure that they are reading right.<br>The annual calibration of the monitoring instruments should be scheduled in such a way that no more than one survey meter at a time | Monitoring instruments will be recalibrated once a year. Not more than one survey meter at a time will be taken from the larger shelters. | |

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| is taken from the larger shelters, in case an attack should occur while the instruments were all out being calibrated. | | |
| It is particularly important that the personnel responsible for inspecting and maintaining the radiological monitoring equipment, and the warning and communications systems, be well qualified in their respective areas. These are highly technical fields that cannot be learned just by studying manuals. | Particular attention will be given to getting technically trained personnel to do the inspection and maintenance work on radiological monitoring equipment, warning systems, and communications systems. | |
| Maintenance manuals and instructions on how to operate should be procured or, if necessary, written, for each piece of equipment in the shelters. These should be placed in each shelter so that they will be available if inexperienced personnel have to maintain or operate the equipment. They should be written as simply as possible. To realize the need for this, we can remember that if a shelter is located in a residential area and the attack comes in the daytime, the shelter machinery may have to be kept going by a group of housewives. Don't be afraid to use pictures and diagrams in your manuals. Even if they are crudely drawn, they will be a help. And remember to include a picture of the equipment that has labels for all the parts that are likely to have to be manipulated, and all parts that are mentioned in the manual. | Each shelter will contain manuals telling how to maintain and operate each piece of equipment. These will be simply and clearly written, and will include labelled diagrams whenever necessary.<br><br>Obtaining or writing these manuals will be the responsibility of: | |
| It is a good idea, too, to put labels and brief instructions near the controls of the equipment itself. For example, "Emergency exit. To use, release hook and let sand pour on floor." | Where necessary, labels and directions will be put on or near the equipment. | |
| Since breakdown of equipment might occur while a shelter is in operation, spare parts for the shelter equipment should be available in the shelters themselves. This is particularly important for the equipment that may be necessary to maintain life, such as the ventilation equipment. | Spare parts for shelter equipment will be placed in the shelters. | |
| It is important to be sure that the civil defense communications system is workable. The private wire networks from Air Defense Control Centers to civil defense key points should be tested frequently by the personnel who are to operate the Communications system. | Private wire telephone networks from Air Defense Control Centers to civil defense key points will be tested at least every _____ by the Communications personnel. | |

Insect and rodent control is an essential element of maintenance. If there are insects and rodents in the shelters they are likely to get into the food supplies. And when the shelters are occupied there is danger that they may carry disease. Getting rid of them after the shelters are occupied could be hazardous because the poisonous materials needed to kill them might affect the health of the occupants.

Fire would be a catastrophe in a shelter during the period when radiological conditions outside were such that it could not safely be evacuated. For this reason the inspectors from the local fire department should be asked to examine the shelters and their fire-fighting equipment at regular intervals. They may be able to point out hazards that can be remedied or guarded against, and they can determine whether the fire-fighting equipment is usable under shelter conditions.

Decisions for Community Shelter System

Insect and rodent control measures will be carried out. This will be the responsibility of the _____.
Insects will be controlled in the following manner:

Rodents will be controlled in the following manner:

Inspectors from the local fire department will be asked to examine each shelter and its fire-fighting equipment every _____ _____.

Modifications for Shelter No. _____

POST-SHELTER PLANNING (Pre-Emergency): Food and Water.

Much of the planning for the post-shelter period will have to take place in the shelters, because it will not be until after the attack that the planners can know how much damage has been done and what conditions they are likely to face when the shelter period is over. But some of the planning for post-shelter living should be done before the attack, when better materials and facilities are available, and when you can get around in the community to make investigations.

Plans for the post-shelter period will have to assume massive destruction and the probable necessity of strict control procedures, which will include rationing of food and possibly of water. For this reason, guidelines should be developed in peacetime for a food and water distributing scheme for the post-shelter period. Having something of this sort in writing will help to enforce rationing regulations that may be unpopular.

For a rationing system to be effective, the food and water in the community should be under the control of the local government. Otherwise you might have very little food to issue, and might be issuing food to people who already had enough food. You may want to decide now on whether all food stocks,and stocks of drinkable water if such water is scarce, are to be taken over by the local government. Having such a decision written into the disaster plan will make it easier to enforce.

Most communities have large amounts of food stored by private business in grocery stores, restaurants, warehouses, etc. A list should be kept (and kept current) of the location, size, and type of these stocks of food. Having this will give the planners some idea of how much food there usually is in the community, so that they will know how much rationing will have to be imposed. It also will make it possible for them to put armed guards over the food stocks to prevent looting, as soon as the population leaves the shelter.

Decisions for Community Shelter System

As much planning for the post-shelter period as possible will be done before the emergency.

In peacetime, plans will be developed and authorized for a food and water rationing system that may be needed in the post-shelter period.

Stocks of food {will / will not} be taken over by the local government if it appears that rationing will be necessary.

If drinkable water is in short supply, stocks of such water {will / will not} be taken over by the local government.

A list will be kept, and kept up to date, of the location and content of any large stocks of food in the community. Keeping this will be the responsibility of:

Modifications for Shelter No. _____

In the shelter district of Shelter No. _____, large stocks of food are located at _____.

A list should be kept of the location and type of sources of water that would be drinkable after a nuclear emergency. Radiation does not, in itself, make water dangerous to drink. But if the water gets fallout particles in it, then it is dangerous to drink, because the fallout particles will go on giving off radiation after they have entered the body. So until the fallout particles have had a chance to settle out of the water, or until they have been removed from it in some other way, only water that has been covered over is safe to drink.

These lists of stocks of food and water, along with lists of drugs, etc., should be kept in the shelter system control center, and in one other strategically located shelter in case the control centers are destroyed. They are the basis for post-shelter planning, and their destruction would make accurate planning difficult.

Since the stored water will soon be used up, provision must be made for decontaminating the community water supply as early as possible in the post-shelter period. If the amount of soluble fallout material can be gotten down to the 1% level or lower, the water will probably be safe to drink. A coagulation process is effective if the fallout material is colloidal or can be absorbed by colloids. The ion-exchange system is even more effective. It should be remembered that boiling has no effect on fallout. It kills germs and bacteria, but leaves fallout particles as dangerous as before.

Besides being purified of radiological contamination, the water must be purified of disease-bearing organisms. Such diseases as typhoid, which can be carried by water, will be a menace under post-attack conditions.

Decontamination and purification should be done on the central water supply, before the water reaches the individual family. There are always some families who would neglect attending to it, and their carelessness might cause an epidemic that would extend to the rest of the community.

Decisions for Community Shelter System

A list will be made of sources of water that will not be contaminated by fallout. Keeping this will be the responsibility of:

Lists of food, water sources, drugs, etc. will be kept in the shelter system control center and one other shelter.

Provision will be made for decontaminating the community water supply, so that there will be less than 1% of fallout material dissolved in it. This will be done by the following method:

The water will also be purified so as to be free of disease-bearing organisms. This will be done by the following method:

Decontamination and purification of water will be done by the community, not by the individual family.

Modifications for Shelter No. _____

The sources of safe water in the shelter district of Shelter No. _____ are:

POST-SHELTER PLANNING (Pre-Emergency): Medical Supplies and Procedures

Planning for the medical care of the community in the post-shelter period needs to be done in peacetime, because the pace of nuclear war is such that there will be little time for it once hostilities have begun. This planning should cover both supplies and procedures.

There will need to be centers for first aid, emergency feeding, and similar welfare activities, to take care of the people as they emerge from the shelters. Sites for these -- and alternative sites, in case the ones originally chosen are destroyed -- should be decided on in peacetime.

Personnel for staffing these disaster facilities will need to be chosen and organized, so that they can go into action immediately, at the time when the need for them is greatest. To lessen the need for training, you may want to plan on staffing them with people who have already had experience in the kind of work that you are assigning them to do in the post-shelter period.

One of the first steps in pre-emergency medical planning for the post-shelter period is to list all the available medical personnel. This inventory should not be confined to doctors and nurses, but should include all personnel with <u>any</u> form of medical training. Besides doctors and nurses there are veterinarians, chiropractors, dentists, midwives, people with Army training as medical corpsmen, and people who have graduated from Red Cross first-aid classes. It should not be confined to people who are now working in a medical job, but should include retired physicians, retired and married nurses, etc.

It is probable that an emergency medical service will have to be set up in the post-shelter period, to deal with the effects of the attack and to control the spread of disease. The responsibility for setting up the emergency medical service should be assigned before the emergency occurs.

<u>Decisions for Community Shelter System</u>

The medical supplies and procedures needed in the post-shelter period will be planned for in peacetime.

Sites will be chosen for first aid, emergency feeding, and other welfare centers. Alternative sites will be selected in case these are destroyed.

Personnel for staffing them will be chosen and organized.

A list will be made of all the personnel in the community who have had <u>any</u> kind of medical training, and of their qualifications.

Responsibility will be assigned in the pre-emergency period for the direction of emergency medical service in the post-shelter period. This will be the responsibility of _____.

<u>Modifications for Shelter No.</u> _____

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| An inventory should be made of the medical equipment and supplies available in the community, and the places where these can be found. Some of the places may be destroyed and others may not, and knowing how much is in which place will enable the planners to know, during the shelter period, just what supplies they can count on having still available. This inventory should be kept up to date. | An inventory will be made, and kept current, of all the medical supplies and equipment available in the community and their location. | |
| These lists, like the lists of food and of water sources, should be kept in the control center and one other shelter, so that if the control center is destroyed they will still be available. | Copies of these inventories will be kept in the control center and in one other shelter. | |
| Stockpiles of medical supplies and equipment should be located in places that will be safe and that can be gotten at easily when the population emerges from the shelters. The transportation system may have been so damaged by the attack that new supplies cannot be brought into the community, and it is possible that disease may be very prevalent due to radiation sickness, malnutrition, and impure food and water. And there is always the possibility of biological warfare. These supplies should include an adequate amount of immunizing agents such as vaccines to prevent epidemic, so that immunization programs can be carried on in the post-shelter period. | Medical equipment and supplies, including the following immunizing agents, will be stockpiled at strategic locations: | The stockpiles of medical equipment and supplies in the shelter district of Shelter No. _____ are located at: _____. |
| One thing that can be done in peacetime to lessen the danger that each individual will have to face in case of war is to carry on, in time of peace, a continuous community-wide program of inoculation and vaccination against preventable diseases. | | |
| The post-shelter period is likely to be a difficult one from the standpoint of health. If water mains and sewers are broken it will be easy for epidemics to get started. Rats and mice, which carry disease, are likely to survive nuclear war better than humans, because they can stand more radiation, because the places where they live are less likely to be destroyed by blast or penetrated by radiation than the places where we live, and because they are to some extent able to detect radiation and avoid it. Exposure to radiation greatly lessens the body's ability to resist disease, and added to this is the possibility that we may be weakened because of food scarcity. | Members of the community will be immunized against contagious and infectious diseases before the attack, on a continuous basis. | |

Most of us have had various vaccinations and inoculations, but as you know the effect of these wears off in time. It is for this reason that members of the armed forces are regularly given "booster shots."

The success of polio drives at which polio shots or oral doses are given at low prices seems to indicate that the public is willing to undergo preventive treatments when the price is low and when doing so is represented as a duty both to oneself and to the community.

If you decide that it would be best to protect the people of the community against disease in the post-attack period by carrying on an immunization drive in peacetime, the necessity for such a drive should be discussed with local medical men.

Even if pre-shelter and in-shelter immunization programs are carried out, there will still be need for an immunization program in the post-shelter period. Many of the people in your community may have resisted, evaded, or neglected getting immunized. Also, your community may contain large numbers of evacuees from other communities that have had inadequate immunization programs.

We have no way of knowing what conditions will be after the people emerge from the shelters. It may be impossible to buy or order the materials needed for immunization. For this reason you may want to stockpile them ahead of time, for use in the post-shelter period.

Decisions for Community Shelter System

This will be done by carrying on immunization drives at which immunization is offered to the public at low prices. The possibility of this will be discussed with local medical men.

An immunization program will be carried on in the post-shelter period.

The vaccines and other immunizing materials needed for this will be stockpiled.

Modifications for Shelter No. _____

However, some of these materials do not keep well. Ask your medical officer which ones he thinks ought to be stockpiled for post-shelter use, and in what amount. In doing this, he will want to take into account the number of people in the community who will already have been immunized by that time, and will not need further immunization.

| Diseases to be Protected Against by Post-Shelter Immunization | Type of Immunizing Agent Needed | Amount of Immunizing Agent to be Stocked for Post-Shelter Immunization Program in This Community | Approximate Cost |
|---|---|---|---|
| | | | |

To feed information to the locator service set up to enable people to find out what has happened to their relatives and friends, a medical records system for casualties should be set up. This will be necessary not only to give information to the locator service but to serve as a legal record in case of later claims, property disputes, insurance payments, etc.

In addition to providing for the medical care of the physically sick and injured, provision must be made for the care of psychiatric casualties. This should take account of the fact that mental patients may have been evacuated to your community from hospitals in worse-damaged areas, so as to make room in the mental hospitals for the physically injured. Mental hospitals are one of our best sources of hospital space for a time of general disaster, but using them as hospitals for the physically sick and injured will make it necessary for other provision to be made for their inmates.

While burial of the dead may have to be hastily done, identification of the bodies should be made whenever it is reasonably possible, and a record kept of where the burial was made.

In this the assistance of your local undertakers, some of whom may have had experience in the Graves Registration Service of the armed forces, can be requested. The advice of the police, who are officially responsible in the case of violent death or the deaths of unknown persons, should also be asked.

Decisions for Community Shelter System

A medical records system for casualties will be set up.

This will be the responsibility of the _____.

Provision will be made for the care of psychiatric casualties and of evacuated mental patients.

The number of psychiatric patients in this community in the post-shelter period will be about _____. (See estimate on page 4 and add number expected to be brought in from outside.)

A system of identification of the dead and a system of graves registration will be worked out.

Assistance of the police and local undertakers will be requested in working out these systems.

Modifications for Shelter No. _____

POST-SHELTER PLANNING (Pre-Emergency): Government

Plans need to be developed for safeguarding the community's vital records - birth certificates, etc. If there is not room in the shelters for them a safe and fireproof place should be found aboveground. Their bulk could be greatly reduced by microfilming. If this is done, having copies made of them, and storing the microfilm in one place and the records themselves in another would increase their chance of survival.

A strong effective government will be badly needed in the period following a nuclear disaster. For this reason a master plan for perpetuating the local governmental structure should be set up. Since many of the important local officials may have been killed, the people who are to succeed them in office should be named beforehand, so that there will be no gap in governmental effectiveness.

In a disaster period, the various governmental departments and agencies will have to take on many additional duties, some of them unfamiliar. These functions should be thought out beforehand and authorization obtained for them, so that there will be no question of what they are to do, or of their right to do it.

Some governmental services will be needed immediately in the post-shelter period because of the emergency conditions likely to exist at that time. These are such services as the police, fire, and welfare departments. If the police were not on duty, looting would probably begin as soon as people left the shelters. Fires may still be burning as a result of the firestorm. And large numbers of hungry and homeless people may be needing welfare assistance.

It may be necessary to set up a much stronger local government than exists in peacetime. In an emergency human rights must be put far above property rights, but the individual in turn must temporarily surrender some of his rights to ensure the survival of the group. To lessen objection to an emergency government, it might be well to provide by law, ahead of time, for setting up such a government under certain specified conditions.

Decisions for Community Shelter System

The community's vital records will be identified and safe storage provided.

Copies of them (will / will not) be stored in a separate place. These copies will be reproduced by:

A plan for perpetuating the local government will be developed and lines of succession laid out.

The post-attack functions of all government departments and agencies will be defined, authorized, and documented.

Such government agencies as police, fire, and welfare, which are particularly needed to cope with emergency conditions, will resume operation immediately after emergence from the shelters.

If it is not already on the statute books, enabling legislation will be passed to make possible the setting up of an emergency government under specified conditions.

Modifications for Shelter No. _____

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| It is possible that there may be state or local laws that would prevent the setting up of such an emergency government for the recovery period. The local and state laws should be reviewed to see whether this is the case. | Local and state laws will be reviewed to see whether existing legislation would prevent setting up a recovery-period governmental structure. | |
| The setting up of emergency governments can be a dangerous procedure, because the emergency government may be unwilling to give up its power when the proper time comes. For that reason, to make sure of keeping our democratic form of government, any legislation providing for setting up an emergency government should also contain provisions for ending it when the emergency is over. The law should state under exactly what conditions the emergency government is to be terminated, and how the changeover to normal government is to be made (by holding of free elections, etc.) | Any legislation enabling emergency government to be set up will also specify the conditions and the means of ending it. | |
| One of the powers often assumed by emergency governments is that of assigning people to the jobs where they are most needed. Many of our peacetime occupations will be far from essential in the post-attack recovery period. For example, the personnel of jewelry shops and poodle-clipping salons will probably be reassigned to other occupations. To know what occupations the jeweler and the poodle-clipper should be assigned to, one would have to know something about their backgrounds and their other skills. The jeweler may have grown up on a farm; the poodle-clipper may have built most of his own house and patio. Knowing this, the official in charge of reassignment could assign one of them to agriculture and the other to making damaged dwellings habitable. | A manpower allocation agency will be established for the purpose of assembling background and skills information and to act as a controlling agency for the assignment of personnel to recovery operations. | |
| One decision that ought to be made ahead of time is whether or not a person can be assigned to the job where he is most needed, whether he wants to take it or not. Compulsory labor is contrary to the American tradition, but we also have a tradition that in times of scarcity "he who does not work shall not eat." Whether or not there is compulsory labor will probably depend on the seriousness of the situation. But since it may be necessary, you may want to include it in your post-shelter planning, since having provisions of it in the written plan may make it easier to enforce. This decision should also state whether or not compulsory labor is to apply to women as well as men. | In case of need, individuals {will / will not} be required to work at whatever jobs they are assigned to by the manpower allocation agency.<br>This rule {will / will not} include women. | |

Since adolescents can work almost as well as adults when they are sufficiently motivated, you may want to consider whether or not they are to be included in a compulsory labor plan in a period of emergency.

Organizations to deal with the post-shelter programs of emergency feeding, first aid, and other welfare services all need to be set up in the pre-emergency period, so that they will be able to go into action immediately as soon as the period of shelter occupancy is over. The places in which these programs are to be carried on should be chosen in advance, with nearness to supplies and nearness to need as some of the deciding factors.

Decisions for Community Shelter System

It will apply to boys at and over the age of _____ and to girls at and over the age of _____.

Emergency feeding, first aid, and other welfare services will be planned, organizations for them set up, and sites for their activities chosen, in the pre-shelter period.

Modifications for Shelter No. _____

POST-SHELTER PLANNING (Pre-Emergency): Other

The question will arise of just when the shelter period will end and the post-shelter period begin. This may differ from shelter to shelter. A very crowded shelter, or one in which the immediate surroundings are not badly contaminated, may allow its occupants to emerge earlier than neighboring shelters do. A decision needs to be made, however, as to who is to decide when the occupants are to emerge from the shelter. This will probably be the officials of the control shelter, acting on information given them by the shelter manager and his radiological monitors. Of course, if communications do not exist between the control center and the individual shelter, the decision will have to be made by the shelter manager.

Authorities are agreed that it should not be left to the individual occupants to decide, since some of them may be unable to realize the presence of a danger that they cannot see.

Guidelines will be drawn up stating the conditions under which leaving the shelters is advisable and how it is to be done.

A chief concern of nearly everyone in the post-shelter period will be to find out which of his friends and relatives have survived. Also, the officials in charge of reconstruction activities will need to know which workers have survived and which have not. The chances are that many people whose homes were demolished will be living at new addresses. Consequently a locator service will have to be established to tell inquirers who was killed, who is sick or injured and where they are being cared for, and where other persons displaced by the disaster can be found.

It will be most convenient if all this information is obtainable at the same place, so that people will not have to go from one place to another in search of news of their family and friends.

Decisions for Community Shelter System

In this community, the decision as to when the occupants are to emerge from a shelter will normally be made by the _____.

Guidelines will be drawn up to aid in determining when and how to leave the shelters.

A single place of inquiry will be planned, at which friends, relatives, and officials can learn the identity of persons killed and the location of persons sick, injured, or displaced.

In this community, this place of inquiry will be located at _____.
If this place has been destroyed it will be located at _____.

Modifications for Shelter No. _____

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| Probably the first major task of the reconstruction period will be decontamination. Buildings and streets will have to be washed; the top layer of soil may have to be removed. Doing this will require street-cleaning equipment, bulldozers, tractors, plows and scrapers, etc. To know just where this equipment is when it is needed, a listing should be maintained of all the equipment of this type in the community, who owns it, and where it is normally kept. At the time it is needed, telephone wires may be down and searching expeditions through the not-yet-decontaminated streets may be dangerous. Knowing just what equipment is available and where it is will enable the work of decontamination to get started safely and promptly. | A list will be prepared and maintained of available tools, machinery, etc., necessary for carrying out decontamination activities.<br><br>This list will be up-dated every _____ _____. Keeping it will be the responsibility of the _____. | |
| A copy of this decontaminating-equipment list should be kept in the shelter control center, both to prevent its being destroyed in the attack and to enable the civil-defense authorities to start planning the decontamination program during the shelter period. It is very important to have clear and adequate instructions on decontamination procedures placed in each shelter, since decontamination will begin in the shelter area itself. | It will be kept in the shelter control center, along with instructions on decontamination procedures. | |
| If many of the dwellings in the community have been demolished, some place will have to be found for their former inhabitants to live. In some communities public buildings, stores, etc., can be adapted for this purpose. In others it will be necessary to move the homeless persons in with the ones whose homes are still habitable, or to reassign everyone to such space as is available. Since these latter solutions may be unpopular, having them written into the official plan may be desirable since it will make them easier to enforce. | Public buildings, stores, etc., that can be used for emergency housing will be listed in descriptive lists. Provision will be made for the identification of habitable living quarters and for a means of assigning them to survivors on the basis of need. | |
| The problem of finding suitable homes for survivors will be made easier if restoring public utilities and services is given a high priority. This will also be important in preventing disease. Gas, electricity, water and sewage systems should be restored to operation as early as possible. | High priority will be given to restoring the gas, electricity, water, and sewage systems, and to reinstating public services. | |

| | Modifications for Shelter No. _____ |
|---|---|
| In the allocation of manpower, priority should be given to those industries in the community that are vital to recovery. What those industries will be is impossible to tell ahead of time. It will depend not only on what damage is done in your community, but on what damage is done in nearby communities and in the country in general. But it may be of use to have the principle laid down. | Decisions for Community Shelter System<br>Manpower will be allocated first to those industries and occupations that can contribute most to the recovery of the community and the nation. |
| The existing system of garbage and refuse disposal may not work during the post-shelter period. Streets may be blocked so that garbage trucks will not get through, or fuel for the trucks may be too scarce to allow its use for any but the most essential purposes. In small communities refuse can be buried or burned by the individual householder, but in cities some community method of dealing with it will be necessary. Plans should be worked out for methods to be used under varying circumstances. | If the regular system of garbage and refuse collection, storage, and disposal is impossible, the following system will be used: _____<br>_____<br>_____ |
| If the attack is severe and help is not available from outside the community, it will probably be necessary to requisition privately owned facilities, equipment and supplies of all kinds, for the good of the community in general. If this is done, it should be done in such a way that the owner will later be paid for what has been taken. A system of receipts can be prepared so that payment for whatever has been taken can be given to the owner when order is restored. Also, having a system of receipts in use will prevent confiscation by unauthorized persons posing as government representatives. The best plan would be to have official-looking, readily-identifiable receipts printed in advance, since handwritten receipts could easily be forged. | When privately-owned facilities, equipment and supplies are requisitioned for the use of the community, receipts will be given, and what is taken will later be paid for.<br>Receipt forms will be printed ahead of time. |

COORDINATION

Decisions for Community Shelter System

Modifications for Shelter No. _____

The community shelter system should not be an isolated organization, but part of the federal and state shelter systems, and closely connected with local government.

The basic objectives of the community planning efforts will need to be checked to see whether they are in line with state and federal civil defense plans. For example, there may be plans to use your community as an evacuation objective for refugees from some nearby city. Or there may be plans to set up an emergency hospital there, or a grain storage depot. Any of these would affect your own plans. On the other hand, there may be elements of your own civil defense situation that will need to enter into the plans of the state and federal civil defense authorities, because of their effect on other communities.

The civil defense plans of the community will be coordinated with those of the state and federal governments.

This mutual consulting can be particularly helpful when it goes on between local civil defense officials and their counterparts - the people in the same kind of position - at the state level. For example, the health officer of your civil defense organization can find out from the state civil defense health officer what stockpiling of vaccines is being done, and whether there are any plans for mass inoculation during the pre-attack period. Your radiological defense personnel can get new information, as it is developed, on how to test the water supply, and on how to give greater protection to the decontamination crews.

Officials of the local civil defense system will consult with people in the same kind of position on the state level in regard to their own particular fields of civil defense.

The shelter space made available by the federal marking and stocking programs is intended to be a part of the community shelter system. By taking advantage of the federal aid that is available, a community can do a good deal to cut down the cost of a community shelter system. This will be particularly helpful in regard to items needed in great quantity, such as foodstuffs, and expensive items such as radiological monitoring instruments.

Space marked and stocked by the federal government will be integrated into the community shelter system. Full advantage will be taken of all forms of federal aid to improve the community's shelter system.

In the present state of development of the nation's shelter system, the best shelter systems in existence are those set up by private industry. Most of these plan to open their doors to out-

Shelters established by private industries ({will / will not} be integrated into the community

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| siders as far as this can be done without endangering their own people. Since these industrial shelters will take a considerable burden off the publicly operated shelters (and in many places are the only shelters available) it has been recommended that they be integrated into the community shelter system. | shelter system. | |
| Then, too, there needs to be coordination between all the shelters of an area, both for mutual support and for the gathering of needed information. In the period just after the attack, some shelters may have had to accept so many people that they are hopelessly overcrowded. If other shelters have less than capacity, coordination between the shelters can make possible the transfer of occupants from overcrowded shelters to other shelters that are able to take them in. Very sick or badly injured patients may be transferred to nearby shelters where better medical care is available. Scarce managerial or technical personnel may be moved to shelters in need of them. | A framework will be developed for coordination between shelters, looking toward exchange of survival and radiological information, transfer of personnel, and post-shelter planning. | |
| Coordination between the shelters will make it possible for them to report to each other on what personnel have survived and reached the shelters, thus allaying the anxiety of many of the occupants as to the safety of friends and relatives. | | |
| Exchange of radiological information among the various shelters can enable the management of each one to get a better picture of what the total situation of the community is, and to make a better prediction as to when to leave the shelter. They can make plans for decontamination and reconstruction, and plan the first tasks to be done after leaving the shelters. | | |
| Much of the planning will be done by the local government, facilities for which should be provided as part of the shelter system Much better planning can be done if the officials of the local government are together in the same shelter (if they can get there safely) with all the needed documents and information at hand. | Shelter facilities will be provided so that the local government can continue functioning as a unit during the shelter period. | |

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| The local government departments, such as Fire, Police, Health, Welfare and Public Works can be very useful in mobilizing community resources in support of the shelter management. | The extent to which community resources, acting through local government departments, can be used to support the shelter program will be ascertained. | |
| The local Fire Department can aid in planning, staffing, and training shelter personnel in fire protection and emergency escape. It can advise as to what kind of fire extinguishers are safe for use in shelters. It can carry on inspections to make sure that shelter machinery and electrical equipment do not constitute a fire hazard. | The local Fire Department will be asked for help in<br>1. Staffing the shelters.<br>2. Training shelter personnel.<br>3. Advising on fire protection.<br>4. Advising on emergency escape.<br>5. Carrying out fire inspections. | |
| The local Police Department can help advise on maintaining order in the shelters. It can help staff the shelters and provide training for shelter personnel. It can advise shelter managers as to what disciplinary action they can take if need arises. It can help make plans for keeping order and preventing hoarding and looting in the post-shelter period. | The local Police Department will be asked for help in<br>1. Maintaining order in the shelters.<br>2. Staffing the shelters.<br>3. Training shelter personnel.<br>4. Advising shelter managers.<br>5. Making plans for keeping order in the post-shelter period. | |
| The Health Department can aid in planning, staffing, and training personnel in health, hygiene, and sanitation. It can suggest necessary precautions to be taken against biological warfare. It can advise on rationing and water supply, and determine what steps can be taken in the dangerous post-shelter period to prevent disease and epidemic. | The local Health Department will be asked for help in<br>1. Staffing the shelters.<br>2. Training shelter personnel.<br>3. Protecting against biological warfare.<br>4. Advising on rationing and water supply.<br>5. Preventing disease and epidemic in the shelter and post-shelter periods. | |
| The Welfare Department is experienced in dealing with people of the kind that most of us will be in case of attack - the homeless, the hungry, and the disabled. It can be of assistance in staffing the shelters and in training shelter personnel, but its greatest | The local Welfare Department will be asked for help in<br>1. Staffing shelters.<br>2. Training shelter personnel. | |

usefulness will probably come in the post-shelter period. At this time it can help in carrying on programs of emergency feeding, providing sleeping facilities, registration and information, care of children, the aged, and the handicapped, and general social services. It can help in the care of refugees and help manage the evacuation of severely contaminated areas.

The Public Works Department can be asked for help in staffing the shelters and in training shelter personnel in supply, maintenance, and engineering. It can inspect the physical facilities of the shelters to make sure that they are workable and safe. It can help make plans for the post-shelter period, when utilities and public services such as water supply, the sewage system, and the electrical system are in need of repair and possibly of complete rebuilding.

Sometimes communities enter into a sort of buddy system, or mutual assistance pact, with nearby communities. In this system, two communities coordinate their civil defense programs by agreeing to come to one another's aid if necessary. In this way, if one of the communities is badly hit and the other is not, the relatively uninjured community comes to the aid of the one that is badly hit, bringing supplies and work teams to deal with the emergency and to help with recovery. Since a nuclear missile could devastate a large area, this buddy community need not be one that is adjacent, because then the missile would be likely to injure both communities equally. But it should be near enough so that aid can be brought if transportation is badly disrupted.

Even if the buddy system is not used, arrangements can be made with neighboring communities for the exchange of manpower, materials, and information. Mutual advice of this kind can be very helpful in the setting up of a shelter system, and cooperation that is established during the planning period will make mutual assistance easier in the post-attack period.

Decisions for Community Shelter System

3. Carrying out mass feeding.
4. Billeting.
5. Registration and information.
6. Care of children, the aged, and the handicapped.
7. Care of refugees.
8. Directing evacuation.

The local Public Works Department will be asked for help in
1. Staffing the shelters.
2. Training shelter personnel.
3. Inspecting shelters and shelter equipment.
4. Making plans for the rehabilitation of public works in the post-shelter period.

This community (will / will not) enter into a mutual assistance agreement with a nearby community. If it does do so the "buddy" community will be _____.

Arrangements will be made with neighboring communities for the exchange of manpower, materials, and information on civil defense.

Modifications for Shelter No. _____

WARNING SYSTEM

Every community, no matter how small, needs to have a warning system. This system may vary from the ringing of church bells in a small village to the siren system of a large city. But the type of warning to be used should be planned and its meaning understood by the people.

The purpose of a warning system is to alert every individual in the community to take appropriate action on a given signal. The traditional sound of alarm was the violent ringing of a bell - the church bell or the fire bell. This alerted everyone, but for a modern warning system, it would not be enough. The warning system must not only alert people; it must tell them what to do. They need to know whether they are to gather up the most needed articles hurriedly and rush for the shelter, or whether they may have half an hour or so to make preparations. The rush-for-the-shelter signal is called the red alert; the stand-by-for-further-warning signal is called the yellow alert. The all-clear signal is called the white alert. Thus the warning system not only has to be a sound that will attract everyone's attention, but it must come in at least three different forms or signals to tell them what to do.

The warning system must be one that will alert people under all conditions, day or night, and indoors as well as outdoors. Alerting them indoors is difficult, since a distant siren that might be audible on the street may not be heard in the interior of a well-insulated house, or in a factory where machinery is running, or in a kitchen full of noisy children.

One method of warning is by radio - the CONELRAD system and announcements over radio and TV stations. Unfortunately, these operate only when the radio or TV set is on. Devices have been developed which can be plugged in and left in, and which will ring at any time that an alarm is to be transmitted. These have the advantage of working indoors and at any hour; they can transmit an alert in the middle of the night when radio and TV are not being used. But they are not yet in general use and will be too expensive

Decisions for Community Shelter System

The community will have a civil defense warning system.

The warning system will be such as to alert every person in the community and tell him what action he is to take. There will be separate signals for the yellow alert, the red alert, and the white alert.

It will alert people during the night as well as during the day, and indoors as well as outdoors.

The principal method of alerting the public will not be by radio.

In this community, the principal system for warning the population at large will be:

Modifications for Shelter No. _____

| | Decisions for Community Shelter System | Modifications for Shelter No. ____ |
|---|---|---|
| for every household to be equipped with them. | | |
| However, some method other than radio must be the primary method of alerting the public. There is too much chance that they may not have their radio or TV turned on. | | |
| To make sure that the warning system works and is efficient, it should be tested from time to time on a non-scheduled basis. These tests should be tests not only of the machinery, but of the human beings who are part of the warning system. Human failure in the warning system can be as disastrous as mechanical failure. | The warning system, including the people who operate it, will be given surprise tests from time to time to make sure that the system is functioning. | |
| The warning signal for air or nuclear attack should be one that is never used for any other purpose -- even testing. If it is used to give notice of fires, or of victory in football games, or for any purpose at all except warning of attack, there will be a good deal of time lost when the warning sounds because people will be trying to find out what it means. | The warning signal of attack will never be used for any other purpose, even testing. | |
| The test signal used to test the warning system should be one that is noticeably different from the real attack warning. | | |
| Since there is danger that the telephone lines may be busy at the time that they are most needed, a certain number of telephones should be specifically assigned for civil defense warning. These should be given first priority when telephone traffic is heavy, so that there will be no delay in getting the warning through. | Telephones will be specifically assigned for civil defense warning and calls on them will be given preferential treatment. | |
| If the private wire telephone networks from Air Defense Control Centers to civil defense key points were out of order, there might be considerable delay before the warning could be gotten through by other means. To prevent this they should be equipped with trouble-indicating devices, that will give notice immediately if they are out of order. | Private wire telephone networks from Air Defense Control Centers to civil defense key points will be equipped with trouble-indicating devices. The kind of device to be used is: | |
| Since a nuclear attack, or simultaneous sabotage, might knock out the power systems, emergency power supplies should be available at vital points to keep the warning and communications systems running. | Emergency power supplies for the warning and communications channels will be available at vital points. In this community, these vital points are: | |

There are some individuals in the community whose assistance is so essential to the civil defense effort that alerts should be transmitted to them individually in order that they will be immediately available to provide leadership and services in the event of an attack. These include, beside the civil defense officials, key personnel in radio and television, industry, public utilities, hospitals, and local government.

This will probably be done by telephone call.

Decisions for Community Shelter System

Alerts will be individually transmitted to key personnel in civil defense, radio, TV, industry, public utilities, hospitals, and local government.

The individuals in this community who are to be specially warned are:

Notification will be by telephone. Notifying them will be the responsibility of:

Modifications for Shelter No. _____

INGRESS

The problem of getting shelterees from their homes to the shelters is one that would be, under ordinary conditions, too slight to mention. But in a time of crisis the streets are likely to be full of speeding cars attempting to evacuate the danger area. It is for this reason that city shelters are supposed to be within a short walking distance of the people who are to occupy them. It may be impossible, by car, to enter the stream of traffic, to cut across it, or to go against it. It may also be very difficult on foot. With this possibility in mind, the best access routes to the shelters should be worked out ahead of time, so that people on their way to the shelters will have to cross as little traffic as possible. Full advantage should be taken of any overpasses or underpasses that would enable pedestrians to cross traffic safely. If there are none and if traffic is likely to be a dangerous hazard, it may be possible to work out underground routes, through cellars or culverts, that would enable people to get to the shelters. The best solution, of course, is to have people go to shelters so located that they will not have to cross dangerous traffic to get there.

In planning access routes, the year-round weather conditions for the area should be kept in mind.

Once you have decided on these routes, it is necessary to let the people know what they are. They should be plainly marked and attention called to their location through newspaper articles and by other means.

It may be necessary to make changes in the routing of traffic during a nuclear emergency. Evacuation traffic may be re-routed so that it will not interfere with access to shelters. For example, all traffic may be routed by the truck route through town, or by other streets that will not block access to shelters.

If traffic routes are to be changed in an emergency, the necessary detour signs should be prepared ahead of time and kept in a place where they can be gotten at quickly. This should be near the place where they will be used.

Decisions for Community Shelter System

Safe access routes to the shelters will be worked out, taking into account all possible traffic and weather conditions.

These routes will be plainly marked and publicized.

Traffic {will / will not} be re-routed in a nuclear emergency.

Detour signs for re-routing traffic will be kept ready for immediate use near the places where they will be needed.

Modifications for Shelter No. _____

The safest access routes to Shelter No. _____ are:

Detour signs for re-routing traffic near Shelter No. _____ will be kept in the following place:

Any changes that are to be made in traffic routing plans in an emergency should be announced and publicized. Knowing what changes are to be made will prevent confusion and will enable people on necessary defense errands to take advantage of the routes that have been made more usable by the shifting of heavy traffic to other routes.

Shelterees should be told what routes to take to the shelters, as changes in traffic plans made because of the emergency might make the routes they would normally tend to take dangerous to them.

To help people on necessary civil-defense errands get to their destinations, a system of passes may be necessary, to enable them to use streets that are otherwise closed off and to get through police lines. These should be prepared and signed ahead of time. It will be best for them to be in the possession of the people who are to use them, so that there will be no delay made necessary by procuring them.

If the streets or roads by which the population is to move to shelter become impassable for any reason (as when water-mains are dug up or streets are being resurfaced) the fact should be announced and alternate routes recommended.

Specific assignments should be made within the local governmental departments as to who will direct the movement of the population to shelter and move supplies to safer areas or to points of need. If any of the shelters are not completely stocked ahead of time, supplies will have to be moved into them during this period. So that these actions can be performed without delay, the individuals who are to be responsible for them should be assigned their tasks before the emergency occurs.

Decisions for Community Shelter System

Changes in traffic routing plans will be thoroughly publicized.

Shelterees will be told what routes to take to their shelters.

Passes will be prepared for civil-defense personnel. These passes will be given to them ahead of time, to be kept in their wallets ready for use.

Information regarding change in the condition of access streets or routes leading to the shelters will be publicized immediately to all concerned and alternate routes will be recommended.

The local governmental department responsible for directing the population to shelter will be the _____.

Supplies will be moved to safer areas or to places where they are needed by _____

_____

_____.

Individuals will be specifically assigned to these tasks before the emergency period.

Modifications for Shelter No. _____

It will be necessary to control traffic in the areas around the shelters, so that it will not interfere with the movement of population and supplies into them. It will also be necessary to see to it that vehicles are not parked near the entrance to the shelters. If this were done, it would make movement into the shelters slower and more difficult, and perhaps make it impossible for invalids to be brought to the shelter door by car. What is even more serious, the cars parked near the shelter entrances might catch fire in a firestorm following the missile blast, and the heat from their burning gasoline would add to the effect of the firestorm on the personnel in the shelters. Controlling traffic in the areas around the shelters and seeing to it that vehicles are not parked near the shelter entrances will probably be the work of the police and fire departments.

Decisions for Community Shelter System

Traffic in the areas around the shelters will be controlled. This will be the responsibility of the _____ Department.

Cars will not be parked within _____ feet of shelter entrances.

Enforcing this rule will be the responsibility of the _____ Department.

Modifications for Shelter No. _____

The shelters should be kept ready for immediate use. This requires that they be reasonably clear of objects that will not be needed when the shelter is occupied. In dual-purpose shelters the equipment that has nothing to do with shelter needs should cover not over 6% of the floor space. Of course, some of the equipment belonging to the other user may be usable in the shelter - as, for example, seats or tables.

Not over 6% of the floor space of dual-purpose shelters will be covered with non-shelter equipment.

Shelters will have to be kept locked until the emergency occurs, to prevent looting and vandalism. But it is very important that they be open when they are needed. The best way to do this is to have a large number of keys to each shelter, and to have each of them in the hands of some responsible person who can get to the shelter quickly. Having only a few keys to each shelter might result in its being locked when it was badly needed, if the key-holders were killed or unable to get to the shelter.

The number of keys provided for each shelter will be _____. Keys will be given to:

1. School authorities near the shelters (if the schools do not have their own shelters.)
2. The police.
3. Several responsible householders living near each shelter.
4. Shelter officers.

The keys to Shelter No. _____ will be given to (list names or job titles of persons who are to have keys).

The people holding keys should go to the shelters to open them as soon as <u>any</u> alert - either red or yellow - is sounded.

Keyholders will proceed to the shelters on <u>either</u> the red or the yellow alert.

Though it is necessary for the shelters to be kept locked, if they are blast-resistant the blast doors should be left in an open position at all times to allow ready access when the use of the shelters becomes necessary.

Blast doors, if any, will be left open when the shelters are not in use.

Specific procedures should be worked out for the first people who get to the shelter. These should be posted in the shelter where they will be seen by the first arrivals.

A list of the actions to be taken by the first arrivals will be posted in each shelter.

The people who get to a shelter first should (if it is a dual-purpose shelter) throw out of it all equipment that would be of no use for shelter purposes. Such equipment should be moved to a place where it will not block entrance to the shelter.

The first arrivals will remove all unneeded equipment from dual-purpose shelters, in such a way that entrance to the shelter will not be blocked.

Two of the first arrivals should then be appointed to stand at the door and direct the incoming occupants and keep the entrance way clear. People should be directed to the areas farthest from the entrances, so as to fill the shelter as quickly as possible. Invalids and sick people should be directed to the sick bay. These persons on duty at the door should make sure, as far as they can without impeding the flow of persons into the shelter, that prohibited articles and bulky articles are not brought into the shelter. One of them should keep count of the number of persons entering, so that they will know when the shelter has reached its emergency capacity.

Two persons will be appointed to direct incoming occupants to the areas farthest from the door. Invalids and the sick will be directed to the sick bay. As far as they can without slowing down the flow of persons into the shelter, they will check for prohibited and bulky articles that are not to be brought into the shelter. One of them will count the shelterees as they enter.

On page 164 of this workbook you will calculate how many people could safely occupy each shelter for a limited period of time under extreme conditions of emergency. This number should be posted just inside the door of each shelter, so that the doorkeepers will know when the emergency capacity of the shelter has been reached.

The number of persons who can be sheltered on an emergency basis will be posted inside the door of each shelter.

The number of persons that Shelter No. _____ can shelter on an emergency basis is _____.

We now come to a question that no one likes to think of. But it is a question that needs to be decided ahead of time, one way or the other, lest an already difficult situation be made worse by indecision and conflict at the shelter doors. This is: When a shelter is already filled to its emergency capacity, are the doors to be

Decisions for Community Shelter System

Modifications for Shelter No. _____

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| barred to anyone coming later? If a shelter depends on artificial ventilation to provide air to the occupants, having too many people in it may mean that everyone dies. On the other hand, serious moral problems will be raised when the persons arriving after the emergency capacity of a shelter is reached include children or the friends or relatives of persons already in the shelter. No easy solution is possible for this dilemma, and perhaps no good solution is possible. But some decision must be reached, one way or the other, to prevent the situation from being worse than necessary. | Persons arriving after the shelter has been filled to its emergency capacity (will / will not) be barred from entering. | |
| If your decision is to deny entrance to anyone arriving after the emergency capacity of a shelter is reached, you should decide what is the most helpful advice you can give to the persons who cannot be admitted. If they live nearby, returning to their homes may be the best plan. It should be remembered, however, that the average ranch-house has a protection factor of only 2, compared to 40 required for fallout shelters or 20 for shielded areas. So, unless they live in a place that provides good protection, it may be better to direct them to a shielded area nearby. The moral burden of denying them entrance to the shelter will be lessened if you can tell them exactly where to go. The shielded areas near each shelter should be located and instructions on how to get to them should be posted just inside the shelter door. | Persons who cannot be admitted to the shelters will be directed to the nearest shielded areas.<br><br>Instructions on how to reach these areas will be posted inside the shelter door. | Persons who cannot be admitted to Shelter No. ____ will be directed to go to _____ _____. |
| If your decision is to bar the doors of a shelter after its emergency capacity has been reached, responsibility for deciding when to do this should be definitely assigned. It is generally recommended that this decision should be made by the shelter manager. | The shelter manager will decide when the shelter is to be barred to further arrivals. | |
| The people who know what must be done to make a shelter as safe as possible after the occupants have entered may not be able to get to the shelters. So complete directions for buttoning up (closing) the shelter should be written out and posted in the shelters, so that the people who have gotten there will know what to do. These instructions should include information on where to put most of the people, so that they will be as safe as possible from heat and blast, and instructions on securing loose articles so that blast will not make them fly across the room and hurt someone. | Instructions for accomplishing the button-up procedures (including personnel placement and securing loose articles) will be posted in each shelter. | |

To find out how much warning time is needed, you will need to know the maximum loading time (time it takes for everyone to pass into the shelter) for each of the shelters in your community, because this time will have to be added on to the time it takes people to get to the shelter. Otherwise the missile might strike or the fallout arrive while people were lined up waiting to get into the shelter.

Decisions for Community Shelter System

The maximum time needed for loading each shelter will be ascertained by experiment. This will be added to the time needed for getting to the shelter to see how much warning time is needed.

Modifications for Shelter No. _____

The time needed for loading Shelter No. _____ is _____ minutes and _____ seconds.

The time needed for getting to the shelter from the edges of the shelter district is _____ minutes and _____ seconds.

The total time needed for walking to the shelter from the edge of the shelter district and loading it is _____ minutes and _____ seconds.

At or near the time of the alert, the public should again be informed of what things may and may not be brought into the shelters, and of what necessities they ought to bring with them. This last is especially necessary if an attack occurs before the shelters are fully stocked and equipped.

The public will be informed or reminded of what things it should bring to the shelters, and of what things may not be brought.

RADIOLOGICAL DEFENSE: Instrumentation

Adequate radiological defense requires a good deal in the way of instruments, because you have to be able to tell what is radioactive and what is not, and, if a thing is radioactive, to measure just how radioactive it is. Because radiological instruments are so necessary for this, the government is providing them for the federally approved shelters. But they are so important that all shelters should have them, even if they have to be purchased.

Equipment will be needed in each shelter for monitoring the radioactivity of the air - dosimeters, Geiger counters, and ion chambers.

Keeping track of the radiation levels and dosage inside the shelter will enable shelter management to know how well the shelter is serving its protective function. If the shelter or its surroundings are damaged, monitoring will tell whether it is safe for the occupants to stay there. And since different parts of the shelter are likely to have different radiation readings, knowing which parts are "hot" and which are "cool" will enable the staff to use them for suitable purposes.

It will be useful to know not only what the amount of radiation in the shelter is, but what the amount of radiation outside the shelter is, since it is this that will determine when it is safe to leave the shelter.

The portable radiation scanning devices and other monitoring devices may have to be used by people who have not had much radiological training. Instructions for their use should be placed with them so that personnel with a minimum of training can operate them successfully. Such a situation may exist if the radiological monitors cannot get to the shelter. And if search parties are sent out carrying the portable radiation scanning devices, they will need to know how to use them in order to know what areas are safe to enter and how soon they must return to avoid excessive radiation.

| Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|
| Radiation monitoring instruments - equipment for measuring the radioactivity of the air and other substances - will be provided for each shelter. These will include instruments for measuring cumulative dosage. | |
| Radiation levels and dosage within the shelter will be monitored. | |
| Each shelter will have a monitoring system for continuous reading of radiation intensity in the above-ground vicinity. | |
| Instructions for operating all the radiation monitoring devices furnished will be placed with the instruments. | |

RADIOLOGICAL DEFENSE - Personnel

Having radiological equipment is of little use unless you have people who are able to use it, to interpret the readings of the instruments, and to advise on the action that should be taken on the basis of them. Of all the shelter staff with the possible exception of the shelter managers, it is most important for the radiological monitors to be selected and trained ahead of time. Because of the possibility that some of the monitors may not reach the shelters, more than one monitor should be trained for each shelter. If the shelter holds 500 people or more, it is recommended that five monitors be trained. For a shelter of 300 people or less, two should be trained. For shelters of 300 to 500 there should be three or four trained radiological monitors.

Highly trained radiological personnel will be needed in the community control center, where reports on radioactivity from the various shelters are put together and conclusions drawn on radiological conditions in the community as a whole and in its various parts. These conclusions will often be used as a basis for action. For example, if a shelter has run out of water and wants to send a search party to get some from an indoor swimming pool a mile away, the control center would be able to tell them how much radioactivity they would encounter in getting there.

The key personnel responsible for radiological defense activities will require extensive training, unless they are already skilled in highly related activities. Many lives may depend on their knowing their job and making the right judgments. Because of the amount of training and study required, these key personnel should be named as soon as possible.

Also, some of the potential shelterees should be trained to assist in radiological defense. If this is done, there will be someone in the shelter who can operate the instruments, even if the highly trained monitors are unable to get there, and there will be someone who can spell the regular monitor off in keeping the night watches. And in the post-shelter period, when the shelter population may break up into small groups or disperse to single-family

Decisions for Community Shelter System

Radiological monitors for each shelter will be trained ahead of time in the following numbers:
- For shelters of 300 persons or less, two monitors.
- For shelters of 300 to 500, three or four monitors.
- For shelters of 500 people or more, five monitors.

Highly trained radiological personnel will be provided for the control center.

Extensive training will be provided for key radiological personnel. These personnel will be assigned as soon as possible.

Some of the people who will occupy the shelters will be trained to assist in the radiological monitoring.

Modifications for Shelter No. _____

The number of radiological monitors to be provided for Shelter No. _____ is _____.

homes, having a number of people trained in the use of radiological instruments will be a protection to them and to the people around them. Also, considerable use of radiological instruments will be necessary to carry out the process of decontaminating the community area without exposing the workers to dangerous amounts of radiation.

These radiological trainees can be people with scientific or engineering training. Gifted adolescents should not be overlooked in selecting persons for such training. A bright high-school boy who wants to be a nuclear physicist would be an excellent prospect for the job of radiological assistant.

Once the radiological personnel are trained, periodic exercises will keep them ready to put their training into operation. These exercises will also give them team training to get the radiological personnel of each shelter used to working together, and to get the control center radiological personnel used to coordinating information from the various shelters and coming to useful conclusions on the basis of it.

Decisions for Community Shelter System

The people to be trained for this will be persons with scientific or engineering training or aptitude. Gifted high-school students will be considered.

Periodic exercises will be carried out to develop and maintain operational readiness in the radiological defense teams.

Modifications for Shelter No. _____.

| RADIOLOGICAL DEFENSE: Radiation Protection | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| The job of radiological monitor is a difficult one and the personnel assigned to it may not be thoroughly trained by the time the attack comes. In addition, there is much material that a monitor needs to use, such as tables of figures, charts, etc., which he could not possibly remember no matter how well trained he was. All these charts and instructions should be stocked in the shelters. | Manuals containing charts and instructions for determining radiation levels, dose rates, dosage, etc., will be placed in each shelter. | |
| The radiological data forwarded from the individual shelters to the central control facility will be more useful if they are in the same format and if the readings are taken at the same time. Charts and instruction manuals should be available in each shelter telling the radiological monitors how and when to report such information to the control center. | Charts and instruction manuals will be placed in the shelters for putting radiation data into usable form for forwarding to the central control facility. | |
| Radiation shine on the access passageways can be reduced by providing the entrance openings with barriers, so that the shelterees will receive less radiation as they enter the shelters. | Shelter entrance openings will be provided with barriers. | |
| The dosage received within the shelters by the shelterees will be lessened if the amount of radiation in different parts of the shelters is measured and taken into account in deciding on the purposes for which the various parts of the shelters are to be used. The parts with the highest protection factor can be used for personnel; those with the lowest for supply, storage, and waste. | The parts of the shelter with the lowest protection factor will be used for storage and issue of food and supplies and temporary storage of human and other waste. | |
| The area of the shelter in which decontamination of incoming personnel is carried out should be shielded so that radiation from the skin, hair, and clothing of the radiologically contaminated incoming personnel will not reach the rest of the shelter. | The decontamination area will be shielded to protect the shelter living area from radiation. | |
| Unless the air coming into the shelter is filtered, radioactive fallout may enter along with it. However, the filters themselves may become a danger after they have caught and collected a considerable amount of fallout material, because this material will give off radiation and create radiation "hot spots" in the shelter interior. This can be prevented by shielding the filters in the ventilation system, so that radiation from the fallout collected in them will not add to the radioactivity in the shelter. | Incoming air will be filtered. The filters in the ventilation system will be shielded. | |

Protective respiratory devices (masks) should be available for people who have to work in areas where there are high concentrations of radioactive dust. The amount of radioactive material that can be taken into the body by breathing is much less than the amount that can be taken in by eating and drinking. But air that contains fallout particles should not be directly inhaled without a protective respiratory device, such as a dust-filter respirator, until the radiological monitoring shows that the air is free from radioactive contamination.

By monitoring the dosage (the total amount of radiation received) in the shelter, it will be possible to tell how much more radiation each individual can safely receive. This will help in the assignment of parties to work outside the shelter and will help decide when the shelter can be vacated.

Definite procedures should be developed in regard to work parties, who will leave the shelter for short periods of time to get necessary supplies or to start the work of decontamination so that there will be a safe place for the other shelterees to go when the shelter is vacated.

When they can go out and how long they can stay out will depend on several factors, such as the radioactivity of the air, the amount of fallout underfoot, the adequacy of the protective clothing available, the amount of radiation that each man has already had, and so on. It may also depend on other, more arguable factors, such as whether a single man should be asked to take more or to take less radiation than a married man who has already had two or three children. And always it will depend on need - on what the alternative is to sending out a search party. Lack of food and water would, for example, justify sending a search party under more dangerous conditions than lack of reading matter or tranquillizers. Barring these extreme cases, however, it is desirable to set standards for the conditions under which work parties are to be sent out.

Decisions for Community Shelter System

Protective respiratory devices will be stocked in the shelters, at the rate of _____ for each 100 shelterees. These will be used for outside tasks as long as the air is contaminated.

The number needed for this community is _____.

The amount of radiation received in the shelter will be taken into account in calculating the amount of radiation each shelteree has received.

Definite procedures will be developed concerning the shelter egress and ingress of work parties, scouts, etc.

Standards will be set for acceptable radiation levels in which work parties may be sent out.

Modifications for Shelter No. _____

The number of protective respiratory devices stocked for Shelter No. _____ is _____.

| | Decisions for Community Shelter System | Modifications for Shelter No. |
|---|---|---|
| In the later stages of shelter occupancy, it may be necessary to send work parties out to search for needed supplies. And before the occupants of the shelter leave it, the ground in front of the shelter and the routes to new living places, as well as the living spaces themselves, will have to be decontaminated. In order to assign people wisely for this type of work, it will be necessary for the shelter manager to know which people can best stand getting additional radiation. So that such information will be available to him, he can have the radiological defense personnel keep a radiation history on each person in the shelter. Such a history could be kept on cards or slips of paper, one for each shelteree. | Individual radiological histories, telling how much radiation they have received, will be kept for each shelteree. | |
| If you plan to have radiological histories of this kind kept for the shelter occupants, it would be a good idea to have the blank slips for them mimeographed and placed in the shelter ahead of time, along with the other radiological supplies.<br><br>You will need blanks for the extra people who may enter the shelter for a short time during the emergency period as well as for the regular occupants, because their radiological histories will help determine which people can most safely be removed to some other place when it becomes necessary to make the shelter less crowded. | Blanks for keeping individual radiological histories will be mimeographed and placed in each shelter along with the radiological supplies. There will be as many blanks in each shelter as are needed to supply one for each person, on the basis of the maximum population the shelter can hold on an emergency basis.<br><br>The number of radiological-history blanks needed for the community's shelter system is _____. | The number of radiological-history blanks needed for Shelter No. _____ is _____ |
| Applying these standards and carrying out these procedures will be an important part of the duty of the radiological defense personnel, who will require considerable training for the purpose. | Personnel will be trained in applying radiological standards and carrying out radiological procedures. | |

| RADIOLOGICAL DEFENSE: Decontamination | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| After the supply of food and water stocked in the shelters has been used, it may be necessary to use food and water that have been exposed to radiation. Food and water are not harmed by residual radioactivity. But any fallout particles that have been gotten into them have to be gotten out. If they are not, when the food is swallowed the fallout particles will go right on radiating and the individual who has swallowed them will suffer from internal radiation exposure. The fallout material must be removed from food and water before they are consumed to prevent it from getting inside the body. | Each shelter will contain materials, equipment and instructions for removing fallout particles from food and water. | |
| The necessary materials, equipment and instructions for doing this should be stocked inside each shelter. | | |
| There should be facilities in each shelter for the disposal of contaminated clothing, water, food, and equipment. For the first part of the shelter occupancy it will probably be dangerous to open the shelter door to get rid of such materials. Contaminated liquids, such as the water people use for washing in the personnel decontamination process, should be stored in separate tanks if there is no sewage system, ejector system, or similar method for getting it out of the shelter entirely. Other contaminated wastes can be put in plastic bags and kept in the part of the shelter where they will do as little harm as possible to personnel. | Facilities will be provided within each shelter for the disposal of contaminated waste. If contaminated liquids have to be kept in the shelters they will be stored in separate tanks. Plastic bags will be provided for other contaminated waste. | In Shelter No. _____. contaminated liquid waste will be: _____. Contaminated non-liquid waste will be kept in the following place: _____. |
| Since these will continue giving off radiation, they should be stored in the parts of the shelters farthest from the living area. | | |
| At the earliest time that it is safe to do so, contaminated material should be removed from the shelters. | Contaminated materials will be kept at a distance from the living area and removed from the shelter as soon as possible. | |
| In order to be able to live safely after they leave the shelters, the shelterees will have to learn a good deal about radiation during the shelter period. Many people will find it hard to realize that an area that looks just as it did before the attack may actually be | Courses will be prepared to give shelterees training during the shelter period on how to live safely in the post-shelter environment and on how to carry out decontamination work. | |

Decisions for Community Shelter System

Modifications for Shelter No. _____

a place of deadly danger. The information needed for protecting themselves and their families, and for dealing cautiously with the radioactive environment without being completely intimidated by it, can be taught them as part of the in-shelter training for post-shelter living. In the same way, they can be taught safe and effective decontamination procedures for use in making their world habitable again after they leave the shelter.

In areas near to the place where a missile strikes, or downwind from it, the fallout may begin coming down before all the people have reached the shelters. In this case they will arrive at the shelter entrances with radioactive fallout on their clothing, on their skin, and in their hair. The contaminated clothing can be cast aside at the door of the shelter, but the fallout will have to be removed from their hair and skin before they join the shelterees who have already entered, or else the radioactive particles clinging to them would continue to give off radiation after they had entered the shelter living areas. This process of removing radioactive particles from the people coming into the shelters is known as "personnel decontamination." If it were done in the main part of the shelters, radiation would be given off and radioactive particles would get loose that would damage the other shelterees. So there has to be a special place for it. This special place is called the "personnel decontamination area." It needs to be equipped with water for people to wash in; preferably with showers so that they can wash all their bodies, including their heads.

A separate personnel decontamination area will be included in each shelter. It will contain water for washing and, if possible, showers.

As shelterees enter the shelters, they should be examined with a monitoring instrument to see whether radioactive materials are present on their skin, hair, or clothing, or on the things they are bringing into the shelters. If they are, decontamination procedures should be carried out in the decontamination area.

People entering the shelter will be examined to see if they need to be decontaminated.

One has to be sure that the personnel decontamination procedures that are planned are procedures that can actually be carried out with the facilities there are in the shelters. If the decontamination plan calls for every contaminated person to take a shower bath, and there are no shower baths in a certain shelter, nor any means for adding them, then the personnel decontamination plan for that shelter will have to be revised.

The personnel decontamination procedures planned will be such as can be carried out with the facilities available in the shelter.

Other radiological supplies besides instruments and materials for personnel decontamination are needed. There will have to be equipment for post-shelter decontamination activities, so that areas outside the shelter can be made safe for living and working. These supplies should be inventoried and stored in some place where they will not become contaminated themselves. They will include brushes, brooms, hoses, shovels, etc. for washing down contaminated areas and for removing the top layers of paint or of earth. They will also include protective clothing for the workers.

Knowledge of area decontamination procedures may be useful very early in the period of shelter occupancy if a shelter has taken an overload of occupants during the early period of high radioactivity. If this has been done and the shelter is seriously crowded, it will be necessary to move the excess personnel out of the shelter to some adjacent building. To make this ready for them to occupy with a fair degree of safety, it will have to be decontaminated, that is, cleaned of radioactive particles. The shelters should contain materials and instructions needed for doing this.

Decisions for Community Shelter System

Decontamination equipment for post-shelter use will be inventoried and stored in a place safe from direct contamination. Supplies stored for this will include:

1. Brushes.
2. Brooms.
3. Hoses.
4. Pails.
5. Shovels.
6. Protective garments.

If necessary, adjacent buildings will be decontaminated to allow early exit from the shelter of overflow and unauthorized occupants. Needed materials and instructions for doing this will be placed in the shelters.

Modifications for Shelter No. _____

Shelter No. _____'s decontamination equipment for post-shelter use will be stored at _____.

SHELTER MANAGEMENT (In-Shelter): Management

Just as in a business organization, there needs to be management structure, both for each shelter and for the entire shelter system. Lines of authority need to be clear, and each man needs to know just what his duties are.

Most, though not all, authorities agree that a trained shelter management staff should be provided for every shelter in the shelter system. Experiments involving short periods of actual shelter occupancy have shown that having a trained shelter management staff contributes greatly to success in adapting to confinement. And the great importance of the actions that must be taken at the very beginning of the shelter period allows no time for on-the-job training.

But since there may be high mortality and a high casualty rate in a nuclear attack, we must consider the possibility that not all of the staff may be able to reach a given shelter in good enough condition for duty. For this reason provisions should be made for determining lines of succession (rules deciding who takes over the job.)

If the shelter manager or the maintenance officer do not appear, who will take their places? This should be decided ahead of time, along with methods for choosing new officials if the substitutes or alternates also fail to appear or are not in condition to work.

Most writers on shelter management feel that the shelter manager should be the final authority on any question that arises regarding the policy or operation of a shelter, in the same way that the captain of a military company, or the head of a civilian business organization, is the final authority. Otherwise the situation may degenerate into a debating society and no effective action be taken.

However, the shelter manager should be aided in his decisions by his staff and by the opinions of an advisory council made up of shelterees, to make sure that he is aware of all the facts and that he knows the feelings of the shelter occupants.

Decisions for Community Shelter System

A management structure will be determined for individual shelters and for the entire shelter system.

Each shelter (will / will not) have a shelter management staff that is selected and trained ahead of time.

Provisions will be made for determining lines of succession in case shelter management officials are absent or incapacitated, and for choosing new officials if necessary.

The shelter manager (will / will not) be the final authority on shelter policy and operation.

He will be advised by his staff and by an advisory council made up of shelterees.

Modifications for Shelter No. _____

Shelter No. _____ (will / will not) have a shelter management staff that is selected and trained ahead of time.

There are three principles that you are likely to find useful in working out a shelter management policy. These are: maximum delegation of authority, shelteree autonomy, and manpower utilization.

1. Maximum delegation of authority will keep the shelter manager and other officials from being snowed under by small tasks so that they cannot give proper attention to the large ones. For example, the shelter manager ought not to have to decide what courses are to be scheduled for each day of in-shelter training. He can delegate this authority to his Education officer, and keep his own time free for more important matters. Similarly, the Education Officer ought not to have to decide which shelteree can have which book to study; he can delegate that authority to one of his assistants.

2. Shelteree autonomy - this means shelteree self-government. Of course complete self-government would not be practical in a situation where the survival of everyone depends on following certain necessary procedures. But as much self-government should be allowed as will not endanger the safety of individuals or of the group. The fact that authoritarian management is necessary for a time should not lead us to forget the basic principle of democratic procedure. Also, allowing as much self-government as possible will be good training for the post-shelter period, when society begins to move back along the road of reconstruction toward normal living. Shelteree autonomy can operate safely in regard to such things as rules for quiet hours, arrangement of sleeping shifts, hours for meals, and so on.

3. Manpower utilization means two things - using all your manpower, and using it in the most efficient way. The people in the shelter should be kept at work, both for their own mental health and in preparation for the strenuous period of reconstruction. If there are not enough tasks in the shelter, extra time can be spent on the study that will be needed for safe and effective post-shelter living.

Decisions for Community Shelter System

Modifications for Shelter No. _____

The shelter management policy will be based on:

1. Maximum delegation of authority.
2. Shelteree self-rule.
3. Manpower utilization.

SHELTER MANAGEMENT (In-Shelter): Organization

People in large groups are hard to manage. In business and industry, one man is seldom placed directly over twenty or thirty people. It would be too hard for him to get to know so many, or to supervise what they were doing. In the same way, a shelter will be easier to manage if it is split up into small groups, with each small group becoming an administrative unit that can elect its own representative. Then the shelter management can deal with these representatives, and they can relay the management's decisions and policies to their group. At the same time, they can express the opinions and difficulties of their group to the shelter management. In other words, the group unit leader can act as the foreman of the people in his unit.

The organizational structure of the shelter system will depend on the size and type of the shelter population. These will probably differ from shelter to shelter and this should be taken into account when planning the organizational structure of the shelters. For example, the shelter in a small rural community, made up of law-abiding people who have known each other for years, can have a looser organizational structure than one located in the New York subway system.

The organization of the shelter personnel into small units will be easier if the shelter space is divided into small units. Some shelters are divided into separate rooms. In others, temporary or impromptu partitions can be put up, if the materials are available, to create rooms. Any system of marking off one block of bunks from another block of bunks will help divide the shelter into small units to correspond with the units into which the shelterees are organized.

Wherever possible, it is best to keep shelterees in the same groups that they were in during peacetime. That is, school children should be with their classmates and their teacher, residents of a certain area along with other residents of the same area, and so on.

Decisions for Community Shelter System

A definite plan will be made for organizing shelterees into groups of manageable size, each headed by an elected unit or group leader who will act as foreman. These leaders will act as a link between shelterees and management.

The organizational structure of each shelter will be suited to the size and type of the population in the shelter.

If a shelter is large, it will be divided into small units so that each can be organized independently.

Pre-shelter groupings of shelterees will be maintained wherever possible, but this will not be allowed to interfere with the safety of any individual.

Modifications for Shelter No. _____

Decisions for Community Shelter System

Modifications for Shelter No. _____

Of course, this should not be put ahead of anyone's safety. But keeping people in their natural groupings will be an advantage in several ways. First, it will make shelter management easier, because the shelterees will know each other's ways and have similar standards of behavior. Second, people who know each other can offer each other mutual support and security in a time of crisis. Third, knowing that shelter associations will extend into the post-shelter period makes people careful not to injure what may be a long-term relationship by selfish or inconsiderate conduct. Fourth - and this may be the most important - having people in the same shelters as people they have been with before will cut down the amount of infection, since they are already used to each other's germs and bacillae and have developed antibodies against them.

It should be emphasized again that this principle should not be allowed to work against the safety of any individual.

In a large shelter complex, it may be better to subdivide it into small units, so that each one can function independently as an individual shelter. This will simplify the management problem, and will lessen the spread of disease by keeping people within their own groups.

Large shelter complexes {will / will not} be subdivided into small units so that organization within each can act independently. In this community, the shelter complexes that will be subdivided into smaller shelters are:

The organizational structure should be put into effect as soon as possible after entering the shelter. Officers that have already been selected and trained should be introduced to the shelter population. Gaps in the organizational structure should be filled by appointment or by election. The workers in the various shelter services - Food Service, Health and Sanitation, Communications, and so on, should be appointed.

The organizational structure should be set up and unoccupied jobs filled as soon after ingress as practicable.

The tasks of carrying on the shelter, such as setting up the bunks, planning the first meal, and getting the communications system to working will have to start right away, and these tasks will require organization. Although your organizational structure will probably

Plans will be made for electing or assigning persons to complete the organizational structure of the shelter as soon after ingress as possible.

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| have been planned before this, it will have to be implemented (staffed and put into action). | | |
| Having a workable organization going as soon as possible will help in getting necessary work accomplished and in keeping order. It will also be emotionally stabilizing to people who have had their lives violently disrupted. | | |
| The shelterees should be made part of this organizational structure, so that every person able to work has definite duties and knows just who is in authority over him. This has two purposes--first, to get the work done efficiently, and second, to improve morale by shifting people's attention from worry to action, and making them realize that they are not alone but part of an efficient and purposeful organization. | The shelterees will be made part of the organizational structure. | |
| The advisory council is an important part of shelter organization. It is made up of shelterees, chosen by election. Although, as its name suggests, its function is only advisory, it can be very influential in modifying shelter policy. A wise shelter manager gives serious consideration to the opinions of the advisory council. | An advisory council will be elected by the shelterees, to advise management of their wishes and needs. | |

SHELTER MANAGEMENT (In-Shelter): Documentation

While the duties and responsibilities of shelter management personnel need to be written out, these instructions should not be so rigid that they will inhibit shelter officers in dealing with situations that have not been foreseen by the planners. Loopholes must be left for individual judgment in an unforeseen situation. The task of operating shelters for the general population in a radioactive area, at a time when hostilities may still be going on, is something in which no one has had any experience.

However, the very fact that the situation is so unfamiliar and unprecedented makes guidelines particularly necessary. These written descriptions of the duties and responsibilities of each member of the shelter staff, including newly appointed persons in subordinate positions, should be printed and placed in each shelter ahead of time. (Printed material carries more authority than written or typed material.)

Even if the shelter is only intended to protect against fallout, standing operating procedures should be set up for putting it in readiness for an attack. There are two reasons for this. The first is practical; something can always be done to reduce risk and give the shelterees a better chance of survival, even if the attack comes in a more severe form than the one for which the shelter was designed. If a fallout shelter is to be subjected to blast, which it is not equipped to withstand, it will still help to have all movable objects fastened in place and the personnel moved to parts of the shelter where a blast that blows in the door and other openings will injure them as little as possible. Second, having a formal procedure for assuming an attack readiness condition will help in gaining the respect and confidence of the shelterees. To people justifiably concerned with their own safety, seeing that the shelter management knows just what to do and is prepared to take vigorous and immediate action builds confidence and a readiness to accept the leadership of the shelter authorities.

Decisions for Community Shelter System

The duties and responsibilities of shelter management personnel will be written out in such a way that they do not prevent the proper handling of contingencies that were not foreseen by the planners.

The duties and responsibilities of all positions in the shelter organization will be written out and placed in the shelters.

This material (will / will not) be in printed form.

Standing operating procedures will be set up for assuming an attack readiness condition.

Modifications for Shelter No. _____

SHELTER MANAGEMENT (In-Shelter): Selection

To give the shelterees a further feeling of participation in the management of the shelter, the lower-ranking positions in the shelter management staff, that do not require technical or specialist training, can be staffed by the democratic process of election. This will probably work best in a shelter where the occupants were previously acquainted with each other and therefore have some idea of each other's character and abilities.

The method of choosing people for the various positions in the shelter organization will vary according to the kind of position. Some, such as the shelter manager and the communications and radiological defense personnel, will probably be selected ahead of time. Others, such as the group leaders, will be elected by the shelterees. Still others will be appointed by the shelter manager. But the method of choosing people for each position should be decided on ahead of time, and written statements of the proper method placed in the shelters. This will enable the staffing of the shelters to proceed without delay and without friction.

Decisions for Community Shelter System

Lower-echelon and non-specialist positions on the shelter management staff will be filled by election

The methods for selecting people for the various positions in the shelter organization will be pre-determined, and documentation of them will be placed in the shelters.

Modifications for Shelter No. _____

SHELTER MANAGEMENT (In-Shelter): Activity Scheduling

Shelter experiments have shown that setting up a daily routine or schedule to be followed by the shelterees helps to improve living conditions in the shelter, because it gets the work done efficiently and at the proper time. It also helps give people a feeling of emotional security and confidence that the world has not become entirely disorganized. So that this work schedule can go into effect immediately, at the time when it is most needed, it should be worked out ahead of time.

Of course this schedule may have to be modified to conform to actual conditions. There may be more people or fewer people in the shelter than had been expected. There may be a large number of sick and injured. Some of the supplies needed for various activities may not yet have been placed in the shelter. When modifications in the schedule have to be made, they should be worked out according to the wishes of the majority of shelterees, subject to approval by the shelter manager. In this way democratic procedure will be followed, but a veto will be possible if the decision of the majority is not for the good of the group or if it would be unfair to a minority. For example, the shelter manager could not agree to a decision to abolish quiet hours, because lack of sleep would cut down on efficiency.

The depression induced by the war situation and by the shelter situation, and often by grief for lost friends and relatives, can be lessened by making every shelteree responsible for some regular task. It has been found that this works better than having tasks assigned on a rotation system by which several people take turns at performing a certain task.

To use manpower efficiently, account will have to be taken of individual differences in ability and training. For example, a garage mechanic would be assigned to the care of the shelter's ventilating machinery or lighting system instead of to the Health Service or the Food Service, unless the needs of these services and something in his former life or his leisure life made it seem he would be more useful there.

Decisions for Community Shelter System

A schedule for routine shelter activities will be established ahead of time and placed in the shelters. This will go into effect as soon after ingress as possible.

When modifications in the schedule are necessary, they will be worked out in accordance with the wishes of the majority but subject to approval by the shelter manager.

Every shelteree who can work will be assigned a specific task to perform for a specific period each day. In general, the same shelteree will continue to be responsible for the same task.

In assigning tasks, individual abilities and experience will be taken into account.

Modifications for Shelter No. _____

While everyone should be given work to do, the tasks assigned must be genuinely useful and meaningful to the persons who are to do them. People resent "make-work" jobs, and unnecessary physical activity both uses up needed calories and tends to make the shelter hot and humid as the body gives off heat and perspiration during exercise.

Decisions for Community Shelter System

The tasks assigned will be genuinely useful.

Modifications for Shelter No. _____

SHELTER MANAGEMENT (In-Shelter): Other

Decisions for Community Shelter System

Modifications for Shelter No. _____

A census should be taken in each shelter as soon as practicable after the shelter is filled. Knowing just how many people are there will help the shelter manager in his planning. Also, people will be feeling a great deal of anxiety as to the survival of relatives and friends. Taking a census in each shelter will make it possible for a list of survivors, and their present locations, to be compiled in the control center, so that information can be given out from there.

A census of the shelterees will be taken as soon as possible after ingress and sent in to the control center.

A list of survivors and their location will be compiled in the control center.

An inventory should also be taken of the skills that the shelterees possess. This will help in assigning people to the various jobs in the shelter and to the various tasks that will have to be carried out during the post-shelter period, before normal living can be resumed. The best way to do this will be to have each individual's name and skills on a separate card, so that the card can be pulled out if necessary, or classified with other cards for certain purposes. These cards should include not only the skills people have used in making a living, but other useful things that they know how to do, such as masonry, plumbing, gardening, and the use of firearms.

A card file inventory of personnel and their skills will be prepared to help in assignment.

The registration cards that the shelterees are asked to fill out should have a space on which any serious medical conditions are to be listed. It is necessary to know whether any contagious disease exists, so that the persons who have it can be isolated and the infection of other shelterees prevented. Advanced stages of pregnancy should be reported so that provisions for childbirth can be made. Acute illnesses should be known so that proper care can be given. And chronic illnesses will need to be taken into account both in assigning personnel to jobs and in making sure that needed medical materials are available. For example, if the diabetics in the shelter are going to run short of insulin, an early expedition to a drug store may be necessary, or the shelter medical officer may want to cut down on dosage. Since deaths in the shelter would be shattering to the morale of all the shelterees, awareness of the condition of sick persons is for the general good of the shelter as well as for that of the sick persons themselves.

Medical conditions requiring attention or consideration will be entered on the registration cards.

Some means of identifying shelter management personnel will be necessary. Armbands are one method that was used successfully in the shelters of World War II. However, shelterees in a recent experiment said that armbands reminded them of the Nazis. These armbands, or whatever other method of identification is chosen, should bear the name of the position held by the wearer. Such an identification will increase both the prestige and the authority of the officials, and make it easier for the shelterees to identify them when they want to give them information or ask them questions.

A night watch needs to be established to enforce silence and keep order during the sleeping hours. If the bunks are in tiers several bunks high, he may also be needed to assist people out of and into their bunks when they get up at night. Having a night watch on guard will add to the shelterees' feeling of security, and in some shelters may be necessary to the safety of the occupants.

Having a police officer on duty assigned to the shelter will be of great assistance in keeping order. This should be done unless the makeup of the shelter population is known in advance and is such that it is obvious that no police protection will be needed. However, in most shelters containing children and young people some kind of police will probably be necessary.

If a police officer or deputy is not available, a sergeant-at-arms can be elected or appointed.

A decision should be made as to whether items brought in by shelterees that could contribute to the welfare of the group should be left in their possession, or whether they should be turned over to the shelter manager and pooled with the shelter supplies for the common interest.

Firearms or other weapons in a shelter could be very dangerous, particularly if food and water supplies ran low or friction developed between groups. Any firearms or other lethal weapons that are brought to the shelter should be confiscated and stored in a locked container, under constant supervision. If no other lockable place

Decisions for Community Shelter System

Some means of identifying shelter management personnel will be devised and stocked in the shelters. The means chosen is _____ _____.

A night watch will be posted to enforce silence, keep order, and assist shelterees in and out of tiered bunks.

A police officer, deputy, or sergeant-at-arms will be on duty in each shelter.

Items brought in by shelterees will (mark one)

1. Be left in their possession unless need for them is severe.
2. Be turned over to the shelter manager.

Weapons and other dangerous objects will be confiscated and placed in a locked container that is under constant surveillance. A place for locking them up will be provided in each shelter.

Modifications for Shelter No. ___ ___

| | Decisions for Community Shelter System | Modifications for Shelter No. ____ |
|---|---|---|
| Some means of identifying shelter management personnel will be necessary. Armbands are one method that was used successfully in the shelters of World War II. However, shelterees in a recent experiment said that armbands reminded them of the Nazis. These armbands, or whatever other method of identification is chosen, should bear the name of the position held by the wearer. Such an identification will increase both the prestige and the authority of the officials, and make it easier for the shelterees to identify them when they want to give them information or ask them questions. | Some means of identifying shelter management personnel will be devised and stocked in the shelters. The means chosen is _____ _____. | |
| A night watch needs to be established to enforce silence and keep order during the sleeping hours. If the bunks are in tiers several bunks high, he may also be needed to assist people out of and into their bunks when they get up at night. Having a night watch on guard will add to the shelterees' feeling of security, and in some shelters may be necessary to the safety of the occupants. | A night watch will be posted to enforce silence, keep order, and assist shelterees in and out of tiered bunks. | |
| Having a police officer on duty assigned to the shelter will be of great assistance in keeping order. This should be done unless the makeup of the shelter population is known in advance and is such that it is obvious that no police protection will be needed. However, in most shelters containing children and young people some kind of police will probably be necessary. | A police officer, deputy, or sergeant-at-arms will be on duty in each shelter. | |
| If a police officer or deputy is not available, a sergeant-at-arms can be elected or appointed. | | |
| A decision should be made as to whether items brought in by shelterees that could contribute to the welfare of the group should be left in their possession, or whether they should be turned over to the shelter manager and pooled with the shelter supplies for the common interest. | Items brought in by shelterees will (mark one)<br>1. Be left in their possession unless need for them is severe.<br>2. Be turned over to the shelter manager. | |
| Firearms or other weapons in a shelter could be very dangerous, particularly if food and water supplies ran low or friction developed between groups. Any firearms or other lethal weapons that are brought to the shelter should be confiscated and stored in a locked container, under constant supervision. If no other lockable place | Weapons and other dangerous objects will be confiscated and placed in a locked container that is under constant surveillance. A place for locking them up will be provided in each shelter. | |

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| is available in the shelter, a footlocker with a padlock can be brought in for storing dangerous objects and materials such as guns and drugs. | | |
| A potential source of danger lies in conflicts in moral values among the shelterees. This will be especially true in shelters that include a group taken at random--again, the shelters in the New York subway system are an example--and in shelters located in areas where there is a marked demarcation between various groups. | Possible conflicts in moral values among shelterees will be identified and steps taken to control them. | |
| Shelter discipline will be better and the shelterees will be happier and have more peace of mind if moral standards and standards of behavior are upheld in the shelter. Immoral behavior is upsetting both to the people who disapprove of it and to the people who would like to engage in it themselves but for some reason can not. Also, immoral behavior often ends by involving some persons who do not want to be involved. It is better to avoid these difficulties by simply barring immoral behavior. | Standards of morality and good behavior will be upheld in the shelters. | |
| As for quarreling, and incidents and speeches likely to lead to it, such things are likely to end by upsetting shelter discipline and damaging the shelter manager's control. | | |
| Standards in the shelter can be upheld by establishing a moral code and discouraging activities that may cause offense. Rules of conduct can be drawn up ahead of time, written or printed in such a way as to be obviously official documents, and placed in the shelters where they can be read by the shelterees. These rules should set reasonable limits for conduct and morality, and should conform to majority opinion. It is no use making rules so strict that most of the shelterees will think they are unjust. | Rules of conduct that the majority of the shelterees will agree with will be developed and placed in the shelters. | |

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| Methods for dealing with these problems of behavior should be a part of shelter management training. If the shelter manager is the person holding final authority, his problem in controlling shelteree behavior will not be greatly different from that of the head of a school or the captain of a ship. | Shelter management will be given training in how to deal with such problems. | |
| Minor infractions of rules, such as talking during quiet hours, should be handled by the group leader in charge of a small group of shelterees. This will save the time of the shelter management officers, and increase the influence and authority of the unit or group leaders. Also, they are the ones who will know most about the circumstances under which the infraction occurred, and therefore will be best able to deal justly with it. | Minor infractions of the rules will be handled by the group or unit leader. | |
| Unit leaders can also be responsible for sleeping arrangements, use of blankets, and so on, within the space assigned to their groups. Here again they will know the circumstances better than the higher officers of the shelter do, and can therefore make wiser decisions. If there is only one blanket for ten people, knowing the people will help decide which one needs it most. | Unit leaders will be responsible for living arrangements within the space assigned to their groups. | |
| When supplies are to be given to the shelterees, it is best not to give them directly. Instead they should be released to the leaders who will pass them on to the shelterees. In this way some check will be available on whether the need for them genuinely exists, and the persons in charge of the supplies will be protected from many individual demands. In any case, supplies will be released only according to definite plans that have been agreed on. | In general, supplies will be released to the appropriate leaders, under approved schedules or plans, and not directly to the shelterees. | |
| After the shelter population has been broken up, for administrative purposes, into smaller units, each to be headed by its elected group leader, it would be advisable to mark the area occupied by the persons making up the unit with the name of their unit. Thus, a block of bunks under a certain group or unit leader would be marked with the name or number of the group. | Organizational units will be named or numbered and their areas marked. | |

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| Each shelter should keep a log-book of significant happenings, in the same way and for the same reasons that a ship at sea keeps a log-book. Not only is the log-book valuable evidence in case anything goes wrong, but it will constitute a legal record for the time in which the ordinary keeping of legal records by county authorities is necessarily suspended. | A log will be kept in each shelter. | |
| For example, accounts of births and deaths written into the log-book will be the first official recording of such births and deaths. | | |
| A log-book should be bound, not loose-leaf. This is so that nothing can be easily removed from it without the removal being obvious, and nothing can be inserted. To make sure of this, you should number all the pages of the log-book as soon as you get it. | Logs will be kept in a bound rather than a loose-leaf type of book.<br>The pages of log-books will be numbered. | |
| The size of log-book needed will depend on the size of the shelter. For a small one, an ordinary school composition-book will do. For a larger shelter, you can either get a larger log-book or get several of the smaller ones. If you do this, number them consecutively. | If more than one log-book is used for a shelter, the books will be numbered. | |
| The name of the shelter it belongs to should be written on the cover of each log-book, and the book placed in the shelter beforehand. | The name and location of the shelter will be placed on each log-book. The log-book will be placed in the shelter along with the other supplies. | |
| All entries in the log-book should be dated with the date and hour of occurrence. Fixing the hour of an event, as well as its date, is sometimes important in legal cases, as where inheritance is involved. | All entries will show the hour and date of occurrence. | |

| ATMOSPHERE CONTROL | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| For a shelter to maintain life, ventilation is even more important than food and water. People can live a few weeks without food and a few days without water, but only a few minutes without air. And the very features of a shelter that enable it to protect against radiation also keep air from getting in. Ventilation may be the most crucial factor in shelter living, particularly if the shelter has had to take an overload of people in the initial period of high radiation following an attack. | | |
| Both the content and the temperature of the air have to be considered. The requirements for each will be slightly different during the period of normal occupancy and for the period of emergency occupancy. | | |
| During normal occupancy, there should be enough ventilation to maintain a normal amount of oxygen in the air - - at least 20%. During the emergency period this amount can be allowed to fall to 14% if necessary. | The oxygen content of the air will be at least 20% during normal occupancy and 14% during emergency occupancy. | |
| During normal occupancy the amount of carbon dioxide in the air should not be more than 2%, and during the emergency period not more than 3%. | The carbon dioxide ($CO_2$) content of the air will not be more than 2% during normal occupancy or 3% during emergency occupancy. | |
| The "effective temperature," which takes both temperature and humidity into account, should not be more than 85 degrees during normal occupancy or 90 degrees during the emergency period. | The "effective temperature" will not be more than 85 degrees during normal and 90 degrees during emergency occupancy. | |
| To maintain proper oxygen and carbon dioxide levels, it is recommended that 3 cubic feet of fresh air be provided per person per minute. | 3 cubic feet of fresh air will be provided per person per minute. | |
| If the shelter does not have fresh air seeping in, or sufficient volume to hold air enough to support life in the number of people who will be occupying it, either on a basis of normal occupancy or during the emergency period, mechanical ventilating systems will be needed. These may be driven by electricity or by liquid fuel. | If the shelter has so small a volume of space per person that artificial ventilation is needed, hand-operated blowers will be installed in case the regular ventilating system fails. | |

Decisions for Community Shelter System

Modifications for Shelter No. _____

Electricity is likely to go off after an attack, and fuel may become exhausted. For this reason there should be hand-operated blowers installed as a backup system in any shelter that does not have volume enough to support life in the largest number of people who may be occupying it. Then, if the electricity goes off or the fuel gives out, the occupants can keep themselves alive by bringing fresh air into the shelter by working the hand-operated blowers.

There are other impurities beside carbon dioxide that may build up in the shelter atmosphere and endanger life and health. These are carbon monoxide from engines and cigarettes, gas fumes, tobacco smoke, etc.

Steps will be taken to prevent concentrations of toxic agents, such as carbon monoxide, gas fumes, and smoke from building up in the shelter atmosphere. This will be done in the following way:

There are various methods of dealing with this problem, some preventive and some directed at removing the impurities from the air.

Various devices are obtainable for detecting the presence of toxic fumes, such as carbon monoxide, gas fumes, and smoke, and these should be available in every shelter. Carbon monoxide is especially dangerous because it has no odor, and can kill before it is noticed.

Devices for the detection of toxic fumes will be placed in each shelter.

Equipment will be needed for measuring both the temperature and the humidity of the air, since both go to make up the "effective temperature." For measuring temperature, an accurate room thermometer will do, and can be bought cheaply. Instruments for measuring humidity are somewhat more expensive, but are necessary because humidity will build up easily in a shelter. People's bodies give off water in perspiration, and cooking or even the heating of water will add to it. Unless there is ventilation to carry out the moisture-laden air, humidity may be a serious problem.

A thermometer and a device for measuring the humidity of the air will be placed in each shelter.

There also needs to be adequate equipment for checking the oxygen and carbon dioxide content of the air in each shelter, to make sure there is enough oxygen and not too much carbon dioxide.

Each shelter will contain equipment for monitoring the oxygen and the carbon dioxide content of the air.

| | Decisions for Community Shelter System | Modifications for Shelter No. |
|---|---|---|
| Using these devices and interpreting their readings, and advising on what action to take on the basis of the readings, is a technical job and people should be selected and trained for it ahead of time. These should preferably be persons with some scientific background. | Personnel with scientific background will be selected and trained to use atmospheric measuring devices. | |
| However, since these trained persons may not succeed in getting to the shelter, complete instructions for using and interpreting the readings of these devices should be written out and placed in the shelters along with the instruments. Everyone can read a thermometer, but humidity indicators are unfamiliar to most of us and combining the temperature and humidity readings to get the effective temperature requires the use of a formula. | Detailed instructions on the use of these devices and the interpretation of their readings will be placed in the shelters. | |
| Devices for detecting impurity in the air are also unfamiliar to most persons, and will require either training or instructions for their use. | | |
| Similarly, instructions on the use of the air conditioning equipment should be written and placed in the shelters. It would be well to have these in two forms - - rather extensive instructions, kept in some convenient place in the shelter, and very brief instructions posted on the wall next to the controls, so that persons unacquainted with the shelter could start the air conditioning going in the first moments of shelter occupancy if no experienced persons were available. | Detailed instructions on the use of the air conditioning equipment will be placed in the shelters, and brief instructions posted near the controls. | |
| Though it may be necessary to bring outside air into the shelter, there is danger that this fresh outside air may be laden with radioactive fallout particles. To prevent this the air can be filtered. These filters should remove at least 90% of the particles 50 microns in diameter. (A micron is a thousandth of a millimeter.) | Air being brought into the shelter will pass through filters that remove 90% of the 50-micron particles. | |
| If firestorms are burning outside the shelters, there is also danger that heated air or noxious gases may be drawn into the shelters during the emergency period when fresh air is badly needed. To prevent this the air-intake systems should be located in a place on the outside of the shelters where they will draw in as little as possible of the heat and gases from the flames. | Air-intake systems will be located so as to minimize the chances of heated air and poisonous gases from outside fires being drawn into the shelters. | |

Fortunately, one tends to become accustomed to bad odors, so that they are less annoying after a while than they were at first. Nevertheless, shelters with a great many people crowded into a small space are likely to be highly odorous. Body odor and tobacco odor are likely to be noticeable even to the shelterees unless steps are taken to control them.

Of course an adequate supply of fresh air is the best means of controlling odor, but this may not be available. Another method is to recirculate indoor air through an activated charcoal filter, so that the particles that cause the odor adhere to the charcoal and are removed from the air.

Air can also be purified by recirculating it through a spray-type dehumidifier, as is done in many residential and commercial air-conditioning systems. Or a capillary-type air conditioner can be used.

Still another method is to use deodorants or counteractants.

Odors are less noticeable in warm air than in cold air. You have probably noticed how bad a cold room full of tobacco-smoke smells. So keeping the shelter warm is one way of controlling odors, or at least of making them less noticeable. In the same way, odors are less noticeable in a humid atmosphere. Since the natural tendency of shelters is to become hot and damp, artificial means will not usually have to be used to increase humidity or temperature.

If ventilation is poor, prohibition of smoking may have to be considered. If the shelter stay is long, this problem may solve itself when people run out of cigarettes. Yet depriving people of cigarettes entirely might add to the nervous strain they will already be under.

A compromise solution is to limit the times and places at which smoking will be allowed. If smoking is done near the air vents where air leaves the shelter, it will pollute only the outgoing air.

| Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|
| Odors will be controlled by (check the means to be used.)<br>1. Adequate supply of fresh air.<br>2. Recirculation of indoor air through an activated charcoal filter.<br>3. Recirculation of indoor air through a spray-type dehumidifier.<br>4. Use of a capillary-type air conditioner.<br>5. Use of deodorants and counteractants.<br>6. Increase of temperature and relative humidity (within the limits of comfort.) | |
| If tobacco odor is a problem, smoking will be allowed only at certain hours and at places near the vent where air leaves the shelter. | |

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| If the shelter contains a gasoline-driven generator, the fumes from it must be kept from getting into the shelter atmosphere. This can be done if the air intake to the generator, and the exhaust gases from it, are conducted through pipes to the outside atmosphere. Since these fumes are likely to contain carbon monoxide, a deadly gas, preventing the exhaust gases from getting into the shelter atmosphere is literally a matter of life and death. | If there is a gasoline-driven generator within the shelter structure, its air intake and exhaust will be connected by pipes to the outside atmosphere. | |
| There will probably not be very much cooking done in the shelter, except for heating water for moistening the wheat wafers, heating sauce to put on them, and perhaps making tea and coffee. However, even these simple cooking operations will produce heat, so it would be desirable to have an exhaust fan near the cooking area to reduce heat and odors. | An exhaust fan will be installed near the cooking area. | |

WATER

Since no one knows how long the shelter will have to be occupied, water must not be wasted. Unless the shelter contains a well, water should be rationed from the beginning, and watch should be kept to make sure that none of it is wasted. To do this water must be "packaged" in such a way that it can be measured out in small amounts. It will be necessary to keep track of the rate of consumption, which means that one must be able to tell how much is left in the containers.

One way to make it possible to monitor the rate of consumption is to have vertical sight glasses on the tanks, so that the level of water can be observed.

If you cannot afford this, you can paint lines on the outside (outside because many paints are poisonous) of the tanks, and label them with the quantities of water that they represent, so that each tank will be like an enormous measuring cup.

Records should be kept of the amount of water used. To tell whether too much is being used, it will help to keep curves or graphs. In this way, if the line on the graph indicating the amount of water consumed goes up for one day, an effort can be made to find the reason and eliminate it. If good water discipline is followed, and conditions are normal, the graph of water consumption should be almost a straight line.

Until you know how bad the fallout situation is, (and unless you have a well), water should be rationed to not more than a quart per day per person. The shelters are supposed to be stocked with a certain supply of water, but if the bombs fell in such a way that the fallout areas of various bombs overlapped, there might be areas of very heavy fallout that would make it necessary to stay in longer than two weeks. In this case the water may run short, so it is better to ration it from the first. If you find later that a long stay will probably not be necessary, the water rationing can then be relaxed.

Decisions for Community Shelter System

Water will be stored in such a way as to permit rationing and monitoring the rate of consumption.

Water tanks will have vertical sight glasses.

or

Lines will be painted on the outside of the tanks. These lines will be labelled to show how much the tank holds if filled to that point.

Records and graphs will be kept of the amount of water used each day.

Water will be rationed at not more than a quart a day per person until the fallout situation is known.

Modifications for Shelter No. _____

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| Here again, as with all measures likely to be unpopular, it is best to have the instructions regarding this written into the shelter regulations, so that the shelter manager will not be personally blamed for them. | This will be written into the regulations. | |
| For sanitary reasons, individual drinking-cups should be provided for the shelterees. Having individual cups will also make it easier for them to save small unused quantities of water. | Individual drinking-cups will be provided. | |
| If drinking cups are non-disposable, each should be marked with the owner's name. | If non-disposable, drinking cups will be marked with the owner's name. | |
| In one simulated shelter experiment, the question arose of what to do with the cups when they were not in use. This was solved by making a peg-board, with the pegs slanting upward, and putting the cups upside down on it when they were not in use. | Such cups will be kept on a peg-board when not in use, or some other sanitary means of taking care of them will be devised. | |
| If a shelteree takes more water in his cup then he can drink, the unused portion should be set aside for later drinking. No drinkable water should ever be thrown away. | Unused portions of water will be set aside for later drinking. | |
| As radioactive material settles on the surfaces of water reservoirs, the city water supply may become contaminated. So, if the water storage tank in a shelter is connected with the city water supply, there needs to be some way of cutting off the city water so that no water will enter the shelter water-storage tank after an attack. This can be done by a valve. | If a shelter's water-storage tank is directly connected with the public water supply, provision will be made for cutting off the inflow of water when an attack occurs. | |
| It is possible that water not suitable for drinking may be available in some shelters for bathing purposes, for decontamination of personnel and areas, or for toilet flushing. If s , water for human consumption should be stored separately, in containers that are very plainly labelled with the kind of water they contain. Confusion in regard to the kind of water used for drinking might cause the shelterees to get internal radiation from fallout particles suspended in the water. | Water for drinking will be stored separately from water that is not suitable for drinking. Containers for each kind of water will be plainly labelled as to the kind of water they contain. | |

It is best for the water-tanks to be arranged so that water can be gotten from them by gravity flow----simply by running out. In this way, failure of the pumping system will not make the water hard to get at.

If this is impossible, the water can be kept in barrels and dipped out, or some other means of getting it can be used that will not involve use of a pumping system.

Even in a shelter with good water discipline, there will be some waste water. Dishwater and water that has been used for decontamination purposes will have to be disposed of, as will water used for personal washing if the water supply permits personal washing. Naturally an attempt will be made to control the amount of waste water, since the water supply must be conserved.

There are two ways of dealing with the waste water that is produced---storing it in receptacles, or removing it from the shelter. If the chemical toilet tanks are large enough, waste water can be put directly into them.

The methods of dealing with waste water will probably vary from shelter to shelter, according to the kind of shelter and its manner of construction.

Decisions for Community Shelter System

Access to water will not depend on a pumping system.

The amount of waste water will be kept as small as possible.

Waste water will be (mark one)
1. Stored in adequate receptacles.
2. Removed from the shelter by ejection or similar means.

Modifications for Shelter No. _____

In Shelter No. _____, waste water will be dealt with in the following manner:

FOOD

In a shelter complex (several shelters connected together) food can be warehoused and stored under the supervision of a competent supply officer. This will simplify the keeping of inventories and the control of pests and spoilage, and lessen the possibility of pilferage (stealing).

Decisions for Community Shelter System

In a shelter complex, all food will be stored in one place under a competent supply officer.

Modifications for Shelter No. _____

In any shelter, rations should be stored so as to protect them from insects and rodents. The rodent problem in shelters may be severe, since rats are capable of detecting radiation and therefore will go to places that are free of it. Large tin cans or other metal containers provide good protection. Such containers should never be left open.

Stores of food will be protected from insects and rodents by the following means:

The possibility of pilferage must be taken into account even when the shelter is occupied. Many people will get very hungry on 2,000 calories a day, and if the ration has to be further reduced because of extended stay the danger that food will be stolen may become considerable. Food should be stored either in a place that can be locked up or in a place that will be under continual guard by shelter officials. The methods of safeguarding the food stocks will probably differ from shelter to shelter, since they will depend on the layout of the shelter, the availability of lockable rooms, etc.

The food supply will be stored in such a way that it can easily be secured against pilferage.

In Shelter No. _____ the food stores will be protected against pilferage by ____. ____ _____.

Food should be stored in such a way that the things to be used first will be on top or in the front. Haphazard storage is likely to lead to unnecessary delays in food preparation, since quantities of supplies might have to be moved in order to get at what was needed.

In storing food, consideration will be given to the order in which it is to be used, so that the food to be used first can be gotten at most easily.

The principles on which rationing is to be done should be decided on in the pre-attack period, before the shelters are occupied. Since rationing will be unpopular, these should be written out and placed in the shelters to back up the authority of the shelter manager.

The basis for a rationing program will be developed, made into an official document, and placed in each shelter for use by the shelter management.

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| In doing this, a decision should be made as to whether all persons are to be given equal rations, or whether individual needs are to be taken into account. A woman in a sedentary (non-active) occupation requires 2,000 calories a day; a man in a sedentary occupation 2,400. Children require less than adults and adolescents more. Old people, as far as is known, require the same amount as younger people. This means that if each person in the shelter gets 2,000 calories a day the women will be properly fed, the children overfed, and the men and the adolescents underfed. Also, tall and heavy persons need more food than smaller persons. In prison camps where male adolescents and adults were confined, it was noticed that the youngest and the largest were the first to die. | The rationing program {will / will not} take into account differences in individual needs. | |
| Whether or not you decide to take individual differences into account in developing your rationing program, the advice of nutritionists and dieticians will be found useful. If none are available, a doctor could give advice. | A nutritionist, dietician, or doctor will help in working out the mass feeding program. | |
| There should be absolutely no waste of food. If the shelters are stocked for two weeks and additional missiles fall near the end of that period, the next two weeks may be a time of famine. Uneaten portions of food should be given to some other shelteree, or set aside for the next meal, and a smaller portion given at that time. Unit leaders can be made responsible for seeing that no food is wasted. | Unit leaders will see that no food is wasted by the following means: | |
| You have already decided whether or not to stock food in the shelters, interim shelters, and shielded areas. If food is to be stocked, provisions should also be made for preparing and serving it. Having definite plans for this will lessen confusion at the beginning of the shelter period, and will assure a fair distribution of the rations. Experience in military prison camps, concentration camps, etc. shows inequitable distribution of food to be a major cause of friction. | Provision will be made for preparation and serving of food in shelters, interim shelters, and shielded areas. | Provision {will / will not} be made for the preparation and serving of food in Shelter No. _____. |

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| Definite plans and schedules should be worked out for preparing the meals, setting up tables and removing them, and cleaning up after meals. These schedules should be worked out ahead of time, although they may require modification after the actual shelter conditions are known. Especially if the shelterees are likely to have to be fed in shifts, dining schedules and procedures should be developed ahead of time so that the first day or two of shelter occupancy will go more smoothly. | Coordinated plans and schedules will be worked out for food preparation, placing and removing tables, and cleaning up after meals.<br>Dining schedules and procedures will be worked out ahead of time. | |
| If the shelter is extremely crowded it may not be possible to serve meals in the regular manner. In this case plans should be made to deliver food and water to the shelterees by cart or, if conditions are too crowded for that, by basket, in something of the way that hot-dog vendors pass among a football crowd. | If the shelter is likely to be extremely crowded, equipment such as carts and baskets will be provided for serving food to the shelterees where they are. | |
| There is disagreement among the authorities as to whether shelters should have a separate dining area. This question will probably be settled automatically by the fact that the shelters will be so crowded that there will be no room for separate dining areas. If room permits, however, it may be desirable to have such areas, because they can also be used during recreational periods and for the in-shelter training classes. If there is shift sleeping, a separate dining area makes it possible for the people who are awake to talk without disturbing the sleepers. Even if shift sleeping is not used, the persons who have been on duty during the night will be asleep during the daytime. | The shelters will have separate dining areas if room permits. These areas will also be used for recreation and in-shelter training classes. | Shelter No. _____ {will / will not} have a separate dining area. |
| If you are going to have a separate dining area, seats and tables will be needed. Bunks can be used as seats if they are available. | Equipment such as bunks, chairs, and tables will be provided so that a separate dining area can be set up. | |
| Whatever the kind of ration provided, and regardless of how food is served, there will be a need for good food preparation space, such as counters or tables. | Counter space or tables will be provided for food preparation. | |
| A sink will be needed in the kitchen area for use in the preparation of meals and the washing of utensils and equipment. | A sink will be provided in the kitchen area of each shelter. | |

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| There should be a source of water in or near the kitchen area for use in food preparation. A food storage area should also be easily accessible. In a crowded shelter, going back and forth for food supplies or water would add greatly to the difficulty of food preparation, and would create difficulty for the shelterees as well. | A food storage area and a source of water will be easily accessible from the food preparation area. | |
| Because little water will be available for cleaning, equipment and work surfaces should be very easy to clean. For example, a plastic-topped table would be much easier to clean than a wooden one. | Equipment and work surfaces will be of a kind that is easy to clean. | |
| Since the shelter may be extremely crowded for a time, a barrier arrangement should be provided to keep the crowd from pressing in on the food handlers. Also, having the kitchen area clearly marked off from the rest of the shelter will help to prevent small-scale food pilferage, and will keep children from the danger of getting burned. | A barrier will be provided between the kitchen area and the rest of the shelter. | |
| In a shelter of any size, where people of all ages are to be sheltered, there should be a separate baby-feeding facility. Children die easily of diseases such as diarrhea and dysentery when they have unsanitary food, and the death of infants from such diseases or from food poisoning would be shattering to the morale of the shelter. Separate utensils, separately washed, can be used for the feeding of infants, and a capable individual should be assigned to the preparation of infants' food. | Equipment used for baby-feeding will be kept separate and handled separately from that used for adults.<br>Preparation of formulas will be the specific task of a specially appointed person. | |
| Hot food is thought to be valuable for its psychological effect. On the other hand, cooking is likely to make the shelter hot and humid. A reasonable compromise is to do a very little cooking--- to make hot drinks and to heat various kinds of sauces that can be poured over crumbled bulgur wheat wafers to make a hot main dish. | In regard to cooking, (mark one answer)<br>1. No hot food will be provided.<br>2. Regular hot meals will be provided.<br>3. A very small amount of cooking will be done. | |
| The means of heating food should be such as not to require the use of flame. Flame would be a serious fire hazard in a shelter. Electric stoves or hot plates are recommended. | Any type of stove used for cooking will be such as not to require the use of flame. | |

One question to decide is what kind of dishes to use. Both disposable and non-disposable dishes have disadvantages. The disposable ones take a good deal of room to store after they are used. Waste may have to be kept in the shelter for several days, stored in plastic bags, before the shelter door can be opened to throw it out. On the other hand, non-disposable dishes have to be washed, and washing takes water. Furthermore, in some shelters, the used dishwater will have to be stored in the shelter. Strict sanitation procedures are necessary to prevent the spread of disease, so unless there is water enough for washing them properly, you will not want re-usable dishes. This will probably differ from shelter to shelter.

Decisions for Community Shelter System

Re-usable dishes will be used only if there is water enough for washing them properly.

In general, the dishes used in this shelter system will be

1. Disposable.
2. Re-usable.

Modifications for Shelter No. _____

In Shelter No. _____ the dishes will be {re-usable. / disposable.

If you decide to have re-usable dishes, you will need to decide whether you are going to use china or plastic ones. They should be of a type and quality to last at least two weeks. In a simulated shelter experiment it was found that inexpensive hard plastic dishes were inadequate-- they broke easily. Inexpensive soft plastic bowls were adequate but discolored easily.

If re-usable dishes are used, they will be made of

A. Hard plastic.
B. Soft plastic.
C. China.
D. Earthenware.

They will be of a kind that will last at least two weeks.

Dishes will be made of _____.

Disposable dishes should not be used unless the trash disposal system can handle them. Plastic bags, two feet by six feet, are satisfactory for holding them, but there must be room for storing the filled bags in the shelter until they can be thrown out of it.

If disposable dishes are used, large plastic bags 2' x 6' will be stocked to hold the used dishes.

A similar problem arises in regard to eating implements--- knives, forks, and spoons. Of these, spoons are the only ones really essential for shelter use.

Like dishes, spoons can be either disposable or re-usable. Which kind will be chosen depends on the water available for dishwashing. In a simulated shelter experiment it was found that plastic spoons were not satisfactory. Stainless steel was preferred, since

Serviceable tableware, including spoons, will be provided. It will be made of

1. Stainless steel
2. Other metal

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| it does not break and is easy to clean. However, if your shelter is being furnished partly by contributions of needed materials, ordinary metal spoons should be satisfactory if you have water and facilities for washing them.<br>If you decide to use disposable spoons, you can choose between plastic, wood, and paper. Different plastics may differ in serviceability.<br>One way to decide what kind of spoons you want to get is to consider the ration provided, prepare some food similar to it, and try different kinds of spoons. The bulgur-wheat-and-hot-sauce ration can be approximated by the use of crackers with some sort of hot sauce poured over them. You can then try eating this substance with various kinds of spoons. Remember that the brand of spoon used may make a difference-- one kind of paper spoon may wilt in hot sauce, and another kind may work very well. | 3. Wood<br>4. Paper<br>5. Plastic | |
| The most important thing in regard to eating and cooking equipment is that it be suitable for the type of ration that is provided. For example, if tinned food is to be used, it is very important to have can openers. | Eating and cooking equipment will be suitable for the type of ration used. | |
| It will help in the preparation and serving of liquid food if the containers used in heating, carrying and serving liquids have handles and if they have lips or spouts for pouring. This will help prevent burns and spilling of liquids. | Containers for liquid food will have handles and pouring spouts or lips. | |
| Food will cook more rapidly, and water will boil more quickly, if the containers have covers. This will conserve fuel and add less water vapor to the humidity of the shelter. | Utensils used for cooking or for heating water will have covers. | |
| If large pots are to be used in cooking, long-handled spoons and ladles will be needed for stirring and serving the food. Lack of them could lead to minor burns. | Spoons and ladles will be provided that are large enough for use with the largest pots. | |

At the right is a list of kitchen and eating equipment that has been recommended for shelter use. Cross out any that you think are not necessary and add any others that you think should be included.

Kitchen waste can be disposed of in the chemical toilets if their tanks are large enough. Solid material such as tin cans and empty bottles can be placed in large plastic bags and stored until the shelter door can be opened.

Whatever the means used, some arrangement must be made for waste from the cooking area and from eating.

Decisions for Community Shelter System

The following utensils and kitchen equipment will be provided for each shelter:

1. Hot plates or some other source of heat
2. Stock pots
3. Coffee urn
4. Pitchers
5. Ladles to measure portions
6. Can openers
7. Large spoons
8. Knives for opening packages
9. Dish-cleaning equipment
10. Individual disposable bowls
11. Individual disposable spoons
12. Re-usable cups
13. Gloves or holders for handling hot pans

Adequate facilities will be provided for disposing of the waste materials associated with feeding.

Modifications for Shelter No. _____

SLEEP

The Office of Civil Defense does not provide bunks, mattresses, or blankets. This means that shelterees may have to sleep on the floor, using their clothing or other belongings as mattresses and covers. If bunks are to be provided, they will have to be bought by the local civil defense authorities.

One advantage of having bunks, aside from the comfort involved, is that a shelter can hold more people if double-decker or three- and four- tiered bunks are used. This is something like the principle followed in Hong-Kong, where ordinary rooms are made into two stories so that one family can live above another family.

You may be able to reduce the cost of bunks by getting them at war-surplus sales. Though these are only double-deckers, they would still increase the capacity of the shelter.

If bunks are provided, they should be large enough to provide reasonable comfort for most shelterees. The standard that has been suggested is that they should be at least 72 inches long and 20 inches wide.

Most experts say that bunks should be designed so that they can be taken down and stored during the day, to make room for exercise, recreation, and dining. However, people have to have somewhere to sit during the day, and several people can sit on a bottom-tier bunk. So you may not want to take <u>all</u> the bunks down, only some of them.

Of course if you have a dual-purpose shelter, it will probably be necessary to have all the bunks of a kind that can be taken down, or else there will not be room enough in the dual-purpose shelter for it to be used for its other purpose.

It may be a good thing to have the bunks so that individual bunks can be removed without having to remove several or all of the others. Thus a small amount of space can be made available for setting up a table, for doing exercises, or for children's play.

<u>Decisions for Community Shelter System</u>

Bunks (will / will not) be provided. There will be _____ bunks per hundred shelterees, or _____ bunks for the entire community.

If bunks are provided, they will have two or more tiers.

Bunks will be at least 72" by 20" in size.

(Some / All / None) of the bunks will be designed so that they can be taken down and stored.

The bunks will be made so that individual bunks can be removed.

<u>Modifications for Shelter No. _____</u>

Shelter No. _____ will have _____ bunks.

In Shelter No. _____, (some / all / none) of the bunks will be designed so that they can be taken down and stored.

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| If possible, the bunking equipment should be designed so that when a person tosses or turns over in one bunk, the movement will not be transmitted to other bunks and waken or disturb other sleepers. One cheap way of constructing a bunking system is to put up iron pipes and then spread a long strip of canvas over them, so that the strip of canvas serves as a sleeping surface for several people. However, this kind of bunk easily transmits movement from one person to the others because the sheet of canvas moves whenever a sleeper moves. | The bunking equipment will be designed so that movement in one bunk is not transmitted to others. | |
| Cribs for babies can be provided easily and cheaply by getting large clean cartons of rather heavy cardboard from a grocery store. Very large cartons of the same kind can be used as playpens to keep small children from getting underfoot and getting hurt. | The shelters will be stocked with clean cardboard cartons for use as cribs and play-pens.<br>There will be _____ cribs and _____ play-pens per 100 shelterees. | Shelter No. _____ will stock _____ cartons for cribs and _____ cartons for play-pens. |
| You should decide on whether or not the shelters should be equipped with blankets. This will depend both on the money available and on the climate in which you live. | Blankets (will / will not) be stocked for as many shelterees as will be sleeping at one time in the shelters, interim shelters, and shielded areas. | Blankets (will / will not) be stocked for as many shelterees as will be sleeping at one time in Shelter No. _____. |
| The Office of Civil Defense does not stock blankets in the shelters. But it states that local communities should make sure that each shelter has at least one blanket for every ten shelterees, so that covering will be available for infants, the sick, and the aged. | At least one blanket will be provided for every ten shelterees.<br>The total number of blankets to be provided is _____. | The number of blankets to be provided for Shelter No._____ is _____. |
| For a very low-budget shelter, it may be possible to get used blankets contributed by the community. These should be clean but it will not matter if they are ragged or worn. | Contributions of clean used blankets will be requested from community groups. | |
| The geographical location of the shelter will effect the number of blankets needed. In wintertime in the northern United States, one blanket may not be enough to assure warmth even in a crowded shelter. In fact, in an experiment run early in November near San Francisco, the people in the lowest tier of bunks in an underground shelter were very cold with one blanket apiece. | The geographical location of the shelter will be taken into account in deciding how many blankets are needed. | |

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| One economical way for making a single blanket more effective is to put a piece of plastic, such as a raincoat, a cheap plastic tablecloth, or an opened-out plastic dry-cleaner's bag on top of it. This helps keep the warmth from escaping. Newspapers also prevent the escape of warmth, but they are hard to use with a single blanket because they will not stay in place.<br>On a cold night plastic alone, even without any blanket, can be wrapped around the body and is considerably better than nothing. | Pieces of plastic will be provided for additional covers. | |
| If bunks are not provided, shelterees can be urged to bring in their own sleeping equipment if there is room for it in the shelter. Many families have sleeping bags, air mattresses, and mattresses designed for the backs of station wagons. Pillows will help to alleviate the discomfort of a bare floor. Blankets will add to comfort, and can be used as mattresses and pillows if they are not needed for warmth. If you want shelterees to bring in their own sleeping equipment, this fact, and the fact that the shelter provides none, should be announced in civil defense publicity releases. | Shelterees {may / may not} bring their own sleeping equipment.<br><br>If storage space and shelter regulations permit, and if there is need for shelterees to bring their own sleeping equipment, they will be urged to bring in<br>1. Blankets.<br>2. Pillows.<br>3. Sleeping bags.<br>4. Mattresses, air.<br>5. Mattresses, other.<br>6. Portable cots.<br><br>If the shelter does not provide sleeping equipment and shelterees are to bring their own, this fact will be publicized. | In Shelter No. _____, shelterees {will / will not} be allowed and requested to bring their own<br>1. Blankets.<br>2. Pillows.<br>3. Sleeping bags.<br>4. Mattresses, air.<br>5. Mattresses, other.<br>6. Portable cots. |
| One important thing to be decided is whether or not the shelterees are to sleep in shifts. If the shelter is so crowded that not everyone can lie down at once, then shift sleeping may be necessary. It is generally recommended that it should not be used unless it is necessary, because it is hard to keep the people who are awake quiet while the others sleep.<br><br>One advantage of shift sleeping is that fewer bunks and blankets are necessary. However, with shift sleeping an additional shift of staff members will have to be provided. | Shift sleeping {will / will not} be used. | In Shelter No. _____, shift sleeping {will / will not} be used. |

| | Decisions for Community Shelter System | Modifications for Shelter No. ____ |
|---|---|---|
| While the details of the bunking system will depend on many circumstances that cannot be foreseen ahead of time, it will be helpful to the shelter manager to have some general guidelines on how to set up a bunking system that have been prepared in advance and placed in the shelter. | The general outlines for a bunking system will be prepared in advance and placed in the shelter for the shelter manager to use in working out the details of the system. | |
| One thing to decide is whether sleeping places are to be assigned according to any classification system. It is generally agreed that families should stay together, but you may want to have single women and single men sleeping in separate areas. | Families will be assigned adjacent bunking space. Single men and single women will be assigned separate bunking areas. | |
| The incidence of infection from respiratory disease can be lessened if shelterees are made to sleep alternately head to foot---that is, if each sleeper has the feet of the sleepers on either side of him near his head, instead of their heads. In this way no one breathes air that someone else has just breathed. | Occupants will sleep alternately head to foot. | |
| It may be wise to allow the shelterees some part in deciding on sleeping arrangements, both because this matter so greatly affects their comfort and because they can contribute first-hand knowledge of the problems involved. This can be done if the shelter manager confers with the advisory committee chosen by the shelterees, and an arrangement acceptable to both the shelter manager and the advisory committee is chosen. | The location and arrangement of the sleeping space will be determined by the shelter manager with the advice and consent of the advisory committee. | |
| One authority suggests that sleeping schedules be compulsory, and that shelterees be disciplined so that they do not oversleep at times and therefore prevent themselves from sleeping during the regular sleeping hours when the shelter is supposed to be quiet. However, some people, such as old persons and those with certain illnesses, need a great deal more sleep than others, and preventing them from sleeping might work a hardship on them. This may be a matter that should be decided by experience and by personal knowledge of the persons concerned. | Shelterees {will / will not} be allowed to sleep at times other than the scheduled sleeping times. | |

In any case, definite sleeping hours should be established and quiet maintained during this time. Since the noisiness of shelters tends to get on everyone's nerves, quiet hours are likely to be welcome, but a few shelterees may require disciplining in this regard.

Decisions for Community Shelter System

Regular sleeping hours will be established. Quiet during this time will be compulsory.

Modifications for Shelter No. _____

SANITATION: Toilet Facilities

The Office of Civil Defense directs that, for shelters that it is helping to stock, there must be at least one toilet for every twenty-five occupants. Half of these may be outside the shelter itself, if they are in the same building.

They should be either regular or austere flush-type, chemical or disposable camp toilets with disposable plastic bags.

A reason why this relatively large number of toilets is recommended is that radiation leads to dysentery and vomiting. Therefore the presence of any large proportion of radiation-affected persons in the shelters will increase the load on the toilets.

Account must also be taken of the fact that an epidemic of food poisoning would greatly increase the toilet facility requirements. Another factor to consider is that the presence of young children in the shelters will lengthen the average time of stay in the toilets.

You may want to provide covered pails for use if there are great numbers of cases of illness involving dysentery.

Radiation sickness is accompanied by both nausea and diarrhea, and since both of these will lead to frequent use of the toilets, some means of lessening the load on the toilet facilities may be necessary. One way of doing this is to provide paper bags for people to be sick into, as the airlines do. This will leave the toilets for the people who need them for evacuation.

Decisions for Community Shelter System

There will be at least one toilet for every 25 shelterees. Half the toilets may be outside the shelter if they are in the same building.

or

There will be at least one toilet for every _____ shelterees.

These toilets will be flush-type, chemical, or camp toilets with disposable bags.

Toilets will be sufficient to meet the need if shelterees are affected by radiation sickness.

In deciding on the number of toilets needed in the shelters, account will be taken of the possibility of food poisoning epidemics and the presence of young children, either of which will increase the need for toilet facilities.

Covered hospital pails will be provided in case of epidemic illness involving dysentery. _____ pails will be provided per 100 shelterees, or _____ for the community.

Plastic )
Paper ) bags will be provided for use in case of nausea.

Local groups will be asked to contribute bags for this purpose.

Modifications for Shelter No.

In Shelter No. _____ there will be one toilet for every _____ shelterees, or a total of _____ toilets.

They will be of the following type:

_____ covered hospital pails will be provided for Shelter No. _____.

Plastic bags will be best if you can afford them. If you are running a very low-cost shelter system, you can ask women's groups in the community to save paper bags, and the plastic bags in which food is packed, for the purpose. The bags can be placed with the other sanitation supplies and given out as needed.

Decisions for Community Shelter System

_____ bags will be provided per 100 shelterees.

Modifications for Shelter No. _____

_____ bags for sickness will be stocked in Shelter No. _____.

Separate toilets are recommended for men and for women. If chemical toilets are used several seats may sometimes be attached to each chemical toilet tank.

There will be separate toilets for men and for women.

In deciding how many are to be for men and how many for women, it should be remembered that small children of both sexes use the women's toilets.

The ratio of men's toilets to women's toilets will be _____ to _____.

If flush toilets cannot be used, it is important to make sure that the tanks of the chemical toilets are large enough to hold the sewage that will be produced over a two-week period. Research shows that this will be about 8 gallons per person.

Each shelter will have a sewage capacity of at least 8 gallons per person sheltered for a two-week period.

The total sewage capacity required for Shelter No. _____ is _____ gallons.

Chemical toilets have to be "charged," that is, loaded with water and chemicals, before they are used. This is done as soon as the shelters are opened. The necessary materials and instructions for doing this should be placed in the shelters. In case it has to be done by inexperienced persons, the directions should be posted prominently above the toilets themselves. On egress the tanks must be emptied and rinsed.

Materials for charging the chemical toilets will be placed in the shelters and instructions for doing so will be posted above the toilets. Toilet tanks will be emptied and rinsed when the shelter is vacated.

Lack of modern toilet facilities will be a hardship for a population accustomed to modern plumbing. It will not be possible to prevent toilet odors entirely, and the presence of small children will add to them. But everything possible should be done to prevent the atmosphere from being more fetid than necessary.

Provisions will be made for minimizing odor from the toilet facilities.

To lessen odors in the shelters, the toilet tanks of chemical toilets should be vented to the outside.

The tanks of chemical toilets will be vented to the outside.

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| Another thing you can do to prevent build-up of odor from chemical toilets is to add a disinfectant daily that will cover the water surface in the toilet tanks. | Disinfectant will be added to the tanks of chemical toilets daily to cover the water surface. | |
| Both because the toilets will have some odor and to prevent the spread of disease, they should be located as far as possible from the food-preparation areas. | Toilets will be located as far as possible from the food-preparation areas. | |
| The use of toilet seat covers has been recommended to prevent the spread of disease. These are not very effective in countering unsanitary conditions in women's toilets, but nevertheless represent some protection. | Toilet seat covers {will / will not} be used. | |
| For them to be fully effective, it is necessary to have the toilet seat kept dry. Probably the only way this can be done, especially with toilets used by women and children, is to appoint a toilet monitor who will examine the toilet area immediately after its use and call back any person who has left it in an unclean condition. Of course the necessity for this will vary with the make-up of the shelter population. | Toilet monitors {will / will not} be appointed. | |
| In a recent shelter-occupancy experiment where children were present and chemical toilets were used, anxiety was felt lest small children fall into the tanks of the chemical toilets. Having monitors outside the door would prevent small children from entering unattended for play purposes. Another solution suggested was to have springs on the toilet lids so that a small child could not lift them. | Small children will be prevented from falling into the chemical toilets by the following means: | |
| Toilet paper should be stocked in the shelters, in an amount sufficient for the expected shelter population and the expected length of stay. | The shelters will stock _____ rolls of toilet paper per 100 shelterees, or _____ rolls for the community. | Shelter No. _____ will stock _____ rolls of toilet paper. |
| It has been suggested that rubber gloves or some other form of protection be provided for such jobs as cleaning the toilet areas. It is now possible to buy pliofilm gloves that can be discarded after use. | Rubber / Disposable gloves will be provided for cleaning toilet areas, in the amount of _____ per hundred shelterees, or _____ pairs for the community. | Shelter No. _____ will stock ___ ___ pairs of rubber / disposable gloves. |

| SANITATION: Personal Hygiene | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| Clear rules on maintaining sanitary conditions in the shelters should be written and put in the shelters. These should go into considerable detail and should not assume a great deal of home training on the part of the shelterees. For example, in one shelter experiment it was found impossible to keep the floor clean because the shelterees threw candy-bar wrappers, etc., onto it. | Sanitary regulations will be written and put in each shelter. | |
| A thorough sanitary inspection of the shelter should be made at least once a day, and any unsanitary conditions reported to the person responsible for correcting them. For example, unsanitary conditions in the sleeping areas will be reported to the unit leader; in the toilet areas to the Sanitation department, and in the kitchen to the Food Preparation department. | A thorough sanitary inspection of the shelter will be made once a day or oftener. Unsanitary conditions will be corrected by the person responsible for the area in which they are found. | |
| Each unit of shelterees should police its own area and keep its assigned space as clean as possible under the circumstances. The unit leader should have power to enforce the maintenance of sanitary conditions in the area for which he is responsible. | Each unit of shelterees will be responsible for its own area, under the direction of the unit leader. | |
| Each latrine (toilet room) should have some facilities for hand cleaning. This is important in guarding against diseases that are carried by human excreta. If no water is available for such a purpose, waterless hand cleaner can be used. | Each latrine will have facilities for hand cleaning by means of _____. | In Shelter No. _____ hand cleaning in the latrines will be done by the use of _____. |

SANITATION: Supplies

In stocking sanitation supplies you must consider the number of people to be sheltered, how long they will occupy the shelters, and the kind of facilities available.

Provision should be made for monitoring (keeping track of) the use of sanitation supplies, so that the amount already used and the amount still on hand is known. If there seems to be danger that the stocks may run out before the shelter is vacated, rationing of supplies may be necessary. For example, toilet paper could be handed to shelterees by the monitor as they enter the toilet. Or a certain amount could be given to each person each day.

Keeping the shelter clean is important for sanitary reasons, but it also contributes to the comfort and sense of well-being of the shelterees. In the shelter experiments that have been carried out, dirt ranked high on the list of discomforts. So it is essential to have ordinary housekeeping supplies in the shelter. Some that have been suggested are listed at the right. Cross out any that you think are unnecessary and add any others that you think should be provided.

Insects and rodents may be a problem in the shelters, especially in shelters that have not been well maintained while they were vacant. Supplies and equipment for combatting them will need to be placed in the shelters. In choosing these, care must be taken to avoid drugs or chemical preparations that would be harmful to humans. Your medical officer will be able to give you advice on this.

Decisions for Community Shelter System

The sanitation supplies stocked will be suitable for the number of people sheltered, their probable length of stay, and the facilities available.

Provision will be made for monitoring and control of sanitation supplies.

These will be rationed if necessary.

Each shelter will contain
1. Brooms.
2. Dust-pans.
3. Cleaning-rags or sponges.
4. Mops.
5. Soap or detergent.

Supplies and equipment for controlling insects and rodents will be placed in the shelters. These will be harmless to humans.

Modifications for Shelter No. _____

SANITATION: Food Handling

The personal hygiene of the food handlers is important in a crowded shelter where the spread of disease is one of the major dangers. The shelter health officers should make sure that the food handlers realize that they must clean their hands after visiting the toilets, and that they must report every illness, no matter how minor. Epidemics of food poisoning have been caused by a food-handler having a boil.

Even if disposable dishes and utensils are used as far as possible, cooking utensils will probably have to be re-used. These should be sterilized before being used again, by either heat sterilization or chemical sterilization. In either case, supplies and equipment for the sterilization will have to be provided. Sterilization is particularly important if there are cases of communicable illness in the shelter.

Decisions for Community Shelter System

Special measures will be taken to ensure good personal hygiene among food handlers. They will wash their hands after visiting the toilet and report all illnesses.

Supplies and equipment will be provided for sterilizing dishes, cooking utensils, etc., by the use of _____.

Modifications for Shelter No. _____

| SANITATION: Water | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| If the water supply is limited, as will be the case in nearly all shelters, non-sudsing detergents should be provided for dish-washing. Suds are difficult to dispose of by any means except rinsing them away. | Non-sudsing detergents will be provided for washing dishes. | |
| The provisions for personal hygiene must be such as to require little or no water. The usual custom of letting water flow from a tap into a wash-bowl is highly wasteful. One way of conserving it might be to put the water for washing into squeeze bottles, of the type that detergent often comes in, so that only a little of it could be gotten out at a time. You may be able to think of other and better ways to conserve the water used for washing.<br>If water is very scarce it will not be used at all for washing purposes. In this case some sort of waterless hand cleaner will be necessary. | Personal hygiene will make use of little or no water. Waterless hand cleaner {will / will not be used.<br>If water is used, it will be conserved by the following method: | |
| Unless the shelter contains a well or an abundant supply of water, strict water discipline must be enforced. Americans are accustomed to a lavish use of water, and some of them will be unable to break themselves of the idea that cleanliness comes first. For example, in a recent shelter experiment, complaint was made that there was no provision for washing children's clothing. The kind of water discipline used will depend on the kind of people in the shelter. For a responsible, socially-oriented group, telling them to be careful of water and to use only a definite amount--- say a quarter-of-a-cupful or two squeezes of the plastic bottle--- for washing may be enough. In other groups, it may be necessary for the toilet monitor to hand the shelteree entering the toilets a container holding only the allowed amount of water. | If drinkable water must be used for personal cleanliness, strict controls will be instituted to avoid waste. If necessary the amount of water allowed will be measured out to each user. | |
| Having clean clothes to put on helps to make up for the lack of bathing facilities. Stocking supplies of clean clothes, particularly underwear, in the shelter would be a very good idea if you can afford it. | Provision will be made for changes of clothing. | |

SANITATION: Other

Some provision will have to be made for the collection of dry waste and garbage such as tin cans, wastebasket contents, etc. The best solution that has been found to this problem is the use of large plastic bags, about two feet by six feet. These do not allow the escape of odor, or allow flies to get in, when they are closed. When they are filled they can be sealed and stored in the shelter until it is safe to open the door and throw them out.

The shelter management will have a difficult task in maintaining sanitary conditions if there is much radiation sickness, food poisoning, or epidemic illness. For this you will need cleaning agents for cleaning floors and bedding. Ask your medical officer what kinds will be safe for use in an enclosed space.

Basement shelters and shelters constructed especially for the purpose are likely to have concrete floors. These are likely to be hard to keep clean because of "dusting" of the concrete. This can be prevented by treating the floor with two coats of concrete hardener and sealer. This gives the concrete a glossy impervious finish that completely eliminates the dusting problem.

On the other hand, it has been pointed out that sealing the floor will keep it from absorbing moisture, and this will make the atmosphere of the shelter more humid than it would be otherwise.

One writer has suggested that painting the inside of the shelter white will help in maintaining sanitary conditions, because it will remind the shelterees of hospitals and make them feel that they are in an institutional setting where cleanliness is required.

It will help in keeping the shelters clean if there is a wastebasket in or near each unit area. As a precaution against fire caused by smoking, it would be advisable to have wastebaskets made of metal. These can be improvised from large tin cans to save expense.

Decisions for Community Shelter System

Dry waste and garbage will be collected and temporarily stored in sealed containers, such as large plastic bags.

To keep the shelter clean in case of extensive illness, supplies of the following kind of cleansing agent will be stocked:

The amount to be stocked per 100 shelterees is _____, or _____ for the community.

If the shelter floor is of concrete, it {will / will not} be treated with two coats of concrete hardener and sealer.

The inside of the shelters {will / will not} be painted white.

Metal wastebaskets will be provided for placing in each part of the shelter. The number for each 100 shelterees will be _____.

The total number of metal wastebaskets needed will be _____.

Modifications for Shelter No. _____

The amount of _____ to be stocked for Shelter No. _____ is _____.

The inside of Shelter No. _____ {will / will not} be painted white.

_____ metal wastebaskets will be provided for Shelter No. _____.

MEDICAL

Decisions for Community Shelter System

Modifications for Shelter No. _____

It is impossible to tell what the medical needs of a shelter population will be, because we do not know how much radiation they may have encountered before reaching the shelter. There may be a great deal of radiation sickness. If there is, other ills will multiply also, because radiation greatly lowers the body's ability to resist infection.

It is essential that there be at least one person with some sort of medical training in each shelter. Preferably it should be a doctor, but if there is no doctor, veterinarian, nurse, etc., available, a first-aid expert should be assigned. If no first-aid expert is available, a suitable person can be trained for the job.

At least one person with some form of medical training will be assigned to each shelter.

In case the shelter should have no doctor, a first-aid manual should be included in the shelter supplies. This should, in fact, be something more than an ordinary first-aid manual. Someone has commented that in the nuclear age we need to know, not only what to do till the doctor comes, but what to do if the doctor isn't coming.

A first-aid or medical manual will be stocked in each shelter.

Even though it is impossible to tell how many casualties (people killed or hurt so that they cannot work), will result from a missile attack, it will still help in planning if you make an estimate of the number that you think is probable. This number may be very large in a target city with important military installations or factories manufacturing military goods; it may be very small, or none at all, in a rural community far from a target area.

In this area the total number of casualties for each hundred of population is estimated as being about _____.

In the district served by Shelter No. _____ the number of people hurt or made sick by a nuclear attack will be about _____.

Of course people who are killed outright will be unable to come to the shelters, so for shelter planning purposes they can be ignored.

In this area the number of people hurt or made sick by a nuclear attack is estimated as being about _____ for the entire community.

It will help in handling the problem of sickness in the shelters if a part of each shelter is set aside as a "sick bay" or hospital area

Each shelter will have a sick bay (hospital area).

It has been recommended that the sick bay be separated from the

The sick bay will be separated from the rest of the shelter by a solid wall.

In Shelter No. _____ the sick bay (will / will not be separated from the rest of the shelter by a wall.

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| rest of the shelter by a solid wall. This will keep the sick and the well from disturbing each other, and will prevent the spread of disease. Also, the presence of sick persons among them is likely to be emotionally upsetting to the shelterees. Having a wall between the sick bay and the rest of the shelter may not be practicable in all shelters, but where the layout of the shelter permits it, a walled-off sick bay will be better for both the sick and the well. | | |
| Blankets should be provided for the sick even if they are not provided for the shelterees in general. If possible there should be more than one blanket apiece. | The number of blankets to be provided per patient is _____. | The number of blankets to be provided for the sick bay in Shelter No. _____ is _____. |
| Medical supplies and first-aid kits should be kept under lock and key, under the supervision of the shelter manager or someone appointed by him. There are three reasons for this:<br>1. Children and would-be suicides might damage themselves with some of the drugs.<br>2. Dope addicts may use some of the drugs to satisfy their craving.<br>3. The amount of medical supplies may be inadequate so that they can be used only sparingly. | Medical supplies will be kept locked up. They will be given out only by the shelter manager or someone he has appointed. | |
| Since it is hard to tell exactly what medicines will be needed, it is a good idea to stock quantities of all-purpose medicines, such as aspirin and perhaps a sulfa derivative. This will help prevent resentment on the part of shelterees who are denied medicine, which might create a difficult management problem. Your medical officer can be consulted on what other medicine to stock in large quantities in addition to aspirin. For persons accustomed to taking medicine, its absence appears as a hardship. | All-purpose medicine will be stocked so that no shelteree need be denied medicine.<br><br>Large quantities of aspirin and _____ will be stocked. | |
| It is impossible for the shelters to stock the variety of medicines needed by all persons. For this reason it is important to let prospective shelterees know that they are expected to bring their own medicines and special foods to the shelter with them. | Prospective shelterees will be told to bring needed medicine and special foods with them to the shelter. | |

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| These medicines should be left in the keeping of their owners in most cases. However, some drugs, such as insulin, need refrigeration. And drugs containing opium, cocaine, etc. should be given into the keeping of the shelter manager or his representative to keep them from being stolen by drug addicts. It may even be necessary, in cases of severe need, to take medicine from one patient to give it to another. But in general it will save time and trouble to let patients who have brought their own medicines keep them. | These will be kept by the owner unless it is desirable to turn them over to the shelter manager for refrigeration, safekeeping, or the use of other patients. | |
| In any shelter where infants may be present, supplies should be stocked for feeding them. These should include infant food, the equipment needed for preparing it in a sanitary manner, and bottles and nipples for feeding. While prospective shelterees should be told to bring food and other supplies for their infants, it is likely that many of them will not, or will bring them in insufficient quantity. The death of infants from food poisoning, or from starvation, would have a serious effect on the morale of the shelter population. | Baby food and supplies needed for preparing it and for feeding infants will be placed in the shelters. Parents will also be instructed to bring baby food and supplies. | |
| In any large assemblage of persons there are some who are insane or mentally disturbed. It is possible, though not certain, that the numbers of these may be increased by fear and excitement of a nuclear attack. In case some of these persons are violent, a large shelter or shelter complex should have a detention area in which such persons can be placed. In small shelters, tranquillizers, close supervision, or tying up appear to be possible alternatives. | Some provision will be made for the detention or restraint of the mentally ill who become violent. | In Shelter No. _____ the mentally ill who become violent will be controlled by _____. |
| But for each mentally ill person who is violent, there are many who are harmless. These can be handled most easily by treating them like the other shelterees, while appointing one or two persons to keep them under quiet surveillance to make sure that no difficulties occur. | The mentally ill who are harmless will be unobtrusively watched by persons appointed to do so. | |
| In addition to mental illness, there may be many cases of irrational behavior resulting from the stress of the attack and from confinement. Shelter management personnel should be instructed in | Shelter management personnel will be advised on how to cope with irrational behavior on the part of shelterees. | |

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| how to deal with such cases, so that their condition will not be made worse by harsh or repressive measures. Your medical officer can give instruction on this subject. | | |
| Some provision should be made for the handling of maternity cases in the shelter. A certain number of full-term births would occur in any two-week period, but the excitement of a missile attack may bring on premature childbirth in cases that would otherwise progress to full term. These provisions should include some means of privacy, such as a screen, anesthetics, and material for making antiseptic solutions. | Facilities for childbirth will be provided, including some means of privacy, anesthetics, and antiseptics. | |
| The likelihood of epidemics differs from one community to another, according to what diseases are already present, whether the population has built up immunities to various diseases, and similar factors. Your county and state health organizations can advise on what the specific dangers of epidemic are in your locality, and on what precautions can be taken against them. | County or state health organizations will be consulted on the possibility of epidemic or other illness in the shelters and how to prevent it. | |
| In a shelter complex or a large shelter made up of several rooms, spread of disease can be controlled to some extent by restricting movement between shelter groups. That is, a quarantine can be instituted before illness appears. | In a shelter complex or a large shelter, movement between shelter groups will be restricted to prevent the spread of disease. | |
| It is probable that occasional deaths will occur in the shelters. If this happens in the days before the door of the shelter can be opened, the presence of the corpse will be seriously disturbing to the shelterees. Special wrapping kits for disposing of corpses in a shelter have been devised, consisting of large plastic bags filled with chemicals to destroy odor. In any case, some facilities for the wrapping of corpses should be stocked. These could consist of large plastic sheets for wrapping the corpse, a non-transparent outer cover such as a tarpaulin, and ropes or cords for tying the wrappings on. When the door of the shelter can be opened for a short period, the corpse can then be placed outside for later burial. | Some provision for packaging and concealing corpses will be provided.<br><br>Plastic sheets, non-transparent wrappings, and cords for wrapping and tying corpses will be placed in each shelter. | |

SPACE-VOLUME REQUIREMENTS

To find out how many people each shelter can hold, on a normal-occupancy basis and on an emergency basis, a good many factors have to be taken into account--- the size of the shelter in square feet and in cubic feet, whether it has mechanical ventilation and how much mechanical ventilation it has, whether it is above ground or below ground, and so on.

It will be easier to find out how many people you can shelter in your community if you classify your shelters according to whether they are above or below ground and whether they have mechanical ventilation or not.

If you do this you will have four classes of shelters:

1. Above-ground shelters with mechanical ventilation
2. Above-ground shelters without mechanical ventilation
3. Underground shelters with mechanical ventilation
4. Underground shelters without mechanical ventilation

Since the ways of computing how many people the shelter will hold are different for each kind, it will be best to make a separate table for each kind of shelter. In Table 1 on page 157 , list all your above-ground shelters with mechanical ventilation.

First, fill in columns 1, 2, and 3.

The floor space (Col. 3) is gross floor space--that is, no deduction is made for space used for latrines, storage rooms, etc.

To fill in Column 4, you need to know that the government requires 10 square feet of floor space per person. So, to get the number of persons your shelter can hold for 2 weeks on the basis of area (floor space) alone, divide the total floor space by 10, and put the resulting figure in Column 4.

No official figures are given as to how many square feet of space each person must have during the emergency period, when the shelters may have to take more occupants than they were designed to hold in order to give them shelter until the worst period of radiation danger is over. To decide what is the degree of crowdedness that you are willing to endure for a day or two in your shelters, mark out a square on the floor that is five feet on each side. This contains 25 sq. ft. Have 5 people step into it. This shows how crowded the shelter will be if 5 sq. ft. are allowed for each person. Have more people step into the square, one by one, until it becomes so crowded that you think people could not endure it. Then work out the number of square feet for each person, under these conditions.

| Col. 1 Shelter No. | Col. 2 Location of Shelter | Col. 3 No. of Sq. Ft of Floor Space in Shelter | Col. 4 No. of Persons Shelter Can Hold for 2 Weeks on Basis of Floor Space Alone | Col. 5 No. of Persons Shelter Can Hold for 2 Days on Basis of Floor Space Alone | Col. 6 No. of Cubic Feet of Net Volume in Shelter | Col. 7 No. of Persons Shelter Can Hold for 2 Weeks on Basis of Volume Alone | Col. 8 No. of Persons Shelter Can Hold for 2 Days on Basis of Volume Alone | Col. 9 No.of Cubic Feet of Fresh Air Supplied per Minute | Col. 10 No. of Persons Shelter Can Hold on Basis of Ventilation | Col. 11 Maximum No. of Persons Shelter Can Hold for 2 Weeks | Col. 12 Maximum No. of Persons Shelter Can Hold for 2 Days |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |

To get the number of people the shelter can hold for 2 days, on the basis of area alone, divide the total floor space in Column 3 by this figure, and insert the result in column 5.

For Column 6, figure out how many cubic feet of net volume (air space) you have in the shelter.

The standard for above-ground shelters with mechanical ventilation is that there must be at least 65 cubic feet of air space per person for at least half the occupants and at least 40 cubic feet for the rest. You will get the same result if you figure that each person needs 52.5 cubic feet of air space. So divide the total cubic feet of air space by 52.5 to get the number the shelter will hold for two weeks on the basis of volume, and insert the result in Column 7.

Next, decide how many cubic feet of air space each person will have to have for the crowded two days of emergency occupancy. Divide the total amount of air space by this and insert the result in Column 8.

For column 9, find out how much fresh air the mechanical ventilation system brings into the shelter each minute. People need 3 cubic feet of fresh air per minute, so to get the number of people the shelter will hold on the basis of ventilation, divide the number of cubic feet of air supplied per minute by 3. This will be the same for two weeks as for two days, since it takes very little time to smother to death. Dividing the number of cubic feet of fresh air the mechanical ventilation system provides per minute by 3 gives you the figure for column 10, the number of people the shelter can support on the basis of ventilation alone.

Column 4 tells you the number of persons the shelter can hold for two weeks on the basis of floor space, column 7 shows you the number it can hold for two weeks on the basis of volume alone, and column 10 shows you the number it can hold on the basis of ventilation alone. Since all these conditions have to be met--enough space, enough volume, and enough ventilation--the smallest figure in column 4, column 7, and column 10 will show you the number of people the shelter can hold for two weeks. Insert this in Column 11.

In the same way, the number of people that the shelter can hold for 2 days will be the smallest figure in columns 5, 8, and 10. Put this in column 12.

**********

Now you need to find out how many people each of your above-ground shelters without mechanical ventilation can hold, both under regular-occupancy conditions and under emergency conditions. To do this, fill out Table 2 according to the directions below.

Fill out columns 1 through 5 just as you did in Table 1, allowing 10 square feet of floor space per person for the two-week period and whatever amount of space you have decided is necessary for the two-day period.

For column 6, include not only the net volume of space in the shelter itself, but also in the surrounding or

TABLE 2. ABOVE-GROUND SHELTERS WITHOUT MECHANICAL VENTILATION



| Col. 1 | Col. 2 | Col. 3 | Col. 4 | Col. 5 | Col. 6 | Col 7 | Col. 8 | Col. 9 | Col. 10 |
|---|---|---|---|---|---|---|---|---|---|
| Shelter No. | Location of Shelter | No. of Sq. Ft. of Floor Space in Shelter | No. of Persons Shelter Can Hold for 2 Weeks on Basis of Floor Space Alone | No. of Persons Shelter Can Hold for 2 Days on Basis of Floor Space Alone | No. of Cubic Feet in Shelter and Surrounding Parts of Building | No. of Persons Shelter Can Hold for 2 Weeks on Basis of Volume Alone | No. of Persons Shelter Can Hold for 2 Days on Basis of Volume Alone | Maximum Number of Persons Shelter Can Hold for 2 Weeks | Maximum Number of Persons Shelter Can Hold for 2 Days |
| | | | | | | | | | |

adjacent areas of the building, because air can come from other parts of the building into the shelter. Under these conditions each person needs 65 cubic feet of net space. So divide the space in the shelter and surrounding or adjacent parts of the building by 65 to get the number of people the shelter can hold on the basis of volume alone, and insert the result in Column 7. Since volume is important mainly because it holds air to breathe, take the same figure for Colum. 8.

Now, to find out the maximum number of people that your above-ground shelters with no mechanical ventilation can hold for 2 weeks, take the smaller of the figures in columns 4 and 7. This will be the number of people that the shelter can hold for 2 weeks. Insert it in Column 9.

To find out the maximum number of people that an above-ground shelter with no mechanical ventilation can hold for 2 weeks, take the smaller of the figures in columns 5 and 8. Insert it in Column 10.

**********

To find out how many people can be sheltered by your underground shelters with mechanical ventilation, fill in Table 3.

Fill out columns 1 to 6 just as you did for Table 1, allowing 10 square feet of net floor space for each person staying for two weeks, and whatever space you have decided is necessary for people staying two days.

In an underground shelter with mechanical ventilation, there must be at least 65 cubic feet of net space for each occupant. So divide the entire cubic net space in the shelter by 65 to get the number of people who can occupy it for two weeks on the basis of volume alone. This will give you column 7.

Divide the entire cubic net space in the shelter by whatever minimum volume of space you have decided people can get along on to get the number of people who can occupy it for 2 days on the basis of volume alone. This will give you Column 8.

Work out columns 9 and 10 as you did in Table 1, allowing each person 3 cubic feet per minute of fresh air, whether he stays for two weeks or two days. As in Table 1, the smallest of the figures in columns 4, 7, and 10 will give you the number of people the shelter can hold for 2 weeks. Insert this in Column 11.

The smallest of the figures in columns 5, 8, and 10 will give you the number of people the shelter can hold for 2 days. Insert this in Column 12.

**********

Next, you need to find out how many people you can shelter in your underground shelters without mechanical ventilation. To do this, fill in Table 4.

TABLE 3

UNDERGROUND SHELTERS WITH MECHANICAL VENTILATION

| Col. 1 | Col. 2 | Col. 3 | Col. 4 | Col. 5 | Col. 6 | Col. 7 | Col. 8 | Col. 9 | Col. 10 | Col. 11 | Col. 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Shelter No. | Location of Shelter | No. of Sq. Ft. of Floor Space in Shelter | No. of Persons Shelter Can Hold for 2 Weeks on Basis of Floor Space Alone | No. of Persons Shelter Can Hold for 2 Days on Basis of Floor Space Alone | No. of Cubic Feet of Net Volume in Shelter | No. of Persons Shelter Can Hold for 2 Weeks on Basis of Volume Alone | No. of Persons Shelter Can Hold for 2 Days on Basis of Volume Alone | No. of Cubic Feet of Fresh Air Supplied per Minute | No. of Persons Shelter Can Hold on Basis of Ventilation | Maximum No. of Persons Shelter Can Hold for 2 Weeks | Maximum No. of Persons Shelter Can Hold for 2 Days |

TABLE 4

UNDERGROUND SHELTERS WITHOUT MECHANICAL VENTILATION

| Col. 1<br>Shelter No. | Col. 2<br>Location of Shelter | Col. 3<br>No. of Sq. Ft. of Floor Space in Shelter | Col. 4<br>No. of Persons Shelter Can Hold for 2 Weeks on Basis of Floor Space Alone | Col. 5<br>No. of Persons Shelter Can Hold for 2 Days on Basis of Floor Space Alone | Col. 6<br>No. of Cubic Feet of Net Volume in Shelter | Col. 7<br>No. of Persons Shelter Can Hold for 2 Weeks on Basis of Volume Alone | Col. 8<br>No. of Persons Shelter Can Hold for 2 Days on Basis of Volume Alone | Col. 9<br>Maximum Number of Persons Shelter Can Hold for 2 Weeks | Col. 10<br>Maximum Number of Persons Shelter Can Hold for 2 Days |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |

Fill out columns 1 to 5 just the way you did in the other tables. For column 6, use only the net volume of the shelter itself.

In an underground shelter without any mechanical ventilation, each person ought to have 500 cubic feet of net space. So divide the total net space in the shelter by 500 to get the number of people it can hold on the basis of volume. Insert this in columns 7 and 8.

The smaller of the figures in columns 4 and 7 is the number the shelter can take for two weeks. Insert it in column 9.

The smaller of the figures in columns 5 and 8 is the number the shelter can take for two days. Insert it in column 10.

**********

Now you have found out how many people each of your shelters will hold, on a regular-occupancy and on an emergency-occupancy basis. To consolidate the data from the four tables, fill in Table 5 with data from the other four--the number and name of each shelter, the number of people it can take on a regular-occupancy (2-week) basis, and the number it can take on an emergency (2-day) basis. Add up the totals.

TABLE 5

CAPACITY OF THIS COMMUNITY'S SHELTERS

| Number of Shelter | Name and Location of Shelter | Maximum Number of Persons Shelter Can Hold for Two Weeks | Maximum Number of Persons Shelter Can Hold for Two Days |
|---|---|---|---|
| | | | |
| | | Total = | Total = |

To summarize the space-volume requirements, during the regular-occupancy period there must be at least 10 square feet of shelter area for each person.

With mechanical ventilation, for normal occupancy, there must be an average of 52.5 cubic feet of net volume per person in above-ground shelters and 65 cubic feet per person in below-ground shelters.

Without mechanical ventilation, above-ground shelters need at least 65 cubic feet of net space per person, but surrounding or adjacent areas of the building can be counted in. For below-ground shelters, there must be 500 cubic feet of net space per person.

Mechanical ventilation should provide 3 cubic feet of fresh air per person per minute.

Decisions for Community Shelter System

For normal occupancy, each person must have 10 square feet of space.

For emergency, short-term occupancy, each person must have _____ square feet.

The following volume requirements will be met:

For shelters with mechanical ventilation:
STANDARD: For above-ground shelters, at least 65 cubic feet of net space per person for at least 50% of the occupants and at least 40 cubic feet of net space for the remainder.

For below-ground shelters, at least 65 cubic feet of net space for all occupants.

If mechanical ventilation is not provided:
STANDARD:
Above-ground shelters: at least 65 cubic feet of net space per person. Volume of surrounding or adjacent areas of the building may be considered in determining volume requirements.

Below-ground shelters: 500 cubic feet of net space per person.

Each person will have 3 cubic feet of fresh air per minute.

Modifications for Shelter No. _____

Of course, in addition to considering whether you have enough space, you have to consider whether it is in the right place. You might have an enormous warehouse out on the edge of town that would hold all your people, but they might not be able to get to it.

Still, it will help give you some idea of how near you are to having enough shelter space if you compare the number of people you can shelter, on a 2-week basis and on a 2-day basis, with the total number of people you are likely to have to shelter.

If you have neither enough regular-occupancy shelter space or enough emergency shelter space, then your people are inadequately protected, and unless numbers of them are killed outright in the attack, you will badly need more shelter space.

However, if you have too little shelter space to hold all your people for two weeks, but enough to hold them for a few days, your problem is easier. You may be able to find additional space near the present shelters--though it may be space with a lower protection factor--and use it for shelter space. In this case the additional space should be marked and stocked, though the stocking may be less complete than in the regular shelters.

Decisions for Community Shelter System

In estimating adequacy of shelter space, location as well as amount of space will be considered.

The total number of persons in the community for whom shelter space is needed is _____.

On a regular-occupancy (2-week) basis, the number of persons we have shelter space for is _____, which is _____ (fewer / more) than we need to have.

On an emergency (2-day) basis, the number of persons we have shelter space for is _____, which is _____ (fewer / more) than we need to have.

If present shelter space is inadequate, additional shelter space, perhaps with a lower protection factor, will be located near by. This will be marked and stocked on an austere basis.

Modifications for Shelter No. _____

The total number of persons in this shelter district for whom shelter space is needed is _____.

On a regular-occupancy (2-week) basis, the number of persons we have shelter space for is _____, which is _____ (fewer / more) than we need to have.

On an emergency (2-day) basis, the number of persons we have shelter space for is _____, which is _____ (fewer / more) than we need to have.

Additional shelter space will / will not be needed near Shelter No. _____. It should hold _____ persons.

When such space is available, you can crowd many people into your regular shelters for the few days when radiation is worst, then move some of them out to the auxiliary shelter space with a lower protection factor as soon as it is safe to do so.

It will add to efficiency if the shelters are divided into various sections, and the divisions are marked in some way (possibly with lines of paint on the floors.) The sleeping quarters can be marked off into units and sections, to correspond with the way the shelterees are organized. This will also make it easier for the shelterees to find their own bunks.

The management area should also be marked off, and so should the medical area, the storage area, the supply area, the distribution area, and so on.

Decisions for Community Shelter System

The excess personnel crowded into the shelters will be moved to auxiliary shelter space, if necessary with a lower protection factor, when the radiation goes down so that it is safe to do so.

The areas used for various purposes within the shelters will be marked off. The sleeping area will be divided into units to correspond with the organization of shelterees into units.

Modifications for Shelter No. _____

## LIGHTING

Adequate lighting will help in making the shelters safe and livable.

Without lights it would be difficult to carry on the necessary work.

While full use should be made of the regular supply of electric current for lighting as long as it is available, we cannot count on the lights staying on. Severe disturbance anywhere along the line between the power station and the shelter may result in their going out.

Shelter experiments have shown that there should be from 25 to 50 foot-candles of light in the work areas. Five foot-candles of light will be enough to keep people from bumping into each other or stumbling. From three to five foot-candles will be enough in the sleeping areas, but the sleeping areas should never be completely dark, both for the convenience of the shelterees and to prevent misdemeanors.

Since it is very possible that the public power may go off during the attack, it is necessary that adequate emergency lighting be provided. On an emergency basis, 20 foot-candles at desk level will be sufficient for the administrative and medical areas, five foot-candles at floor level for the activity areac (as kitchens and recreational areas) and only two foot-candles for the sleeping areas.

Even if you have a shelter power supply so that you can have lights if the public power supply goes off, the shelter power supply itself may fail. In case it does, you will need to have a second type of emergency lighting on hand. Flashlights and electric lanterns have been found to work well. Extra batteries should be stocked for them.

### Decisions for Community Shelter System

Provision will be made for illumination in each shelter. We will make use of public power for lighting but will not depend on it.

The number of foot-candles of illumination to be provided will be

- 25 to 50 in work areas
- 5 in hallways, aisles, and stairs
- 3 to 5 in sleeping areas.

The sleeping area will never be completely dark.

Emergency lighting will be provided by the shelter's own power plant. This will be such as to give

- 20 foot-candles at desk level for the administrative and medical areas,
- 5 foot-candles at floor level for the activity areas,
- 2 foot-candles in the sleeping areas.

Flashlights or electric lanterns, with extra batteries, will be stocked for emergency use if the shelter power supply fails.

The number of flashlights or electric lanterns

### Modifications for Shelter No. _____

Shelter No. _____ will stock _____ flashlights or electric lanterns and a total of _____ extra batteries for them.

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| | stocked for each 100 shelterees will be _____. The number of extra batteries to be stocked for each flashlight or lantern will be _____. | |
| Night-lights should be provided to permit easy passage to and from the toilets and to provide sufficient light for night-watch monitoring. Having lights on at all times is a good insurance against wrong-doing and crime. | Night-lights will be provided throughout the shelters. | |
| The entry-ways should be equipped with lights to make quick and easy entrance possible. If people had to grope their way in in the dark, entrance would be slower and the people waiting to get in would receive more radiation. Also accidents such as twisting of ankles might occur. | There will be lights in the entry-ways. | |
| Small clip-on lamps are very convenient for reading or close work, if there are places available for plugging them in. | Small clip-on lamps will be provided at the rate of _____ per hundred shelterees. | _____ small clip-on lights will be provided for Shelter No. _____. |
| If possible, the lights required during sleeping hours should be on a different circuit from the lights required during active hours, so that different levels of illumination can be provided without unscrewing bulbs. | Sleeping lights will be on a different circuit from those used during waking hours. | |
| Centrally controlled switches are best for most of the shelter, so that all the lights can be turned on or off by management. This is desirable for reasons of discipline, as in getting people to go to bed and get up at the right time, or in emergencies. | The lights for most of the shelter will have central switching that can be controlled by hand. | |
| Lights in the service area, however, need to be controlled by switches near them, so that they can be switched on whenever they are needed without waking the rest of the shelter. | Lights in the service areas will be locally controlled. | |

| | Decisions for Community Shelter System | Modifications for Shelter No. ____ |
|---|---|---|
| Circuit-breakers should be used instead of fuses. They cost more to start with but they do not have to be replaced. If the shelter ran out of fuses, its occupants would probably resort to replacing the fuses with pennies or tinfoil, an unsafe practice. | Circuit-breakers rather than fuses will be used in the circuits. | |
| The low lighting of the shelter will be more efficient if the ceilings and walls are painted in such a way as to reflect the light. Glossy white paint will have this effect. | The shelter ceilings and walls will be painted so as to reflect light. | |

POWER SUPPLY

If possible a shelter should have an independent power supply, especially if it is dependent on mechanical ventilation to supply enough air for its occupants. This independent power supply should have enough capacity for the expected shelter population. The Office of Civil Defense requires approved shelters to have independent power supplies with generators of 1 to 10 kilowatts per hundred occupants.

The power supply must be sufficient to provide power in the shelters at the times when the demand for power is greatest.

Enough fuel should be stored to last as long as a shelter is expected to be occupied, plus some extra to allow for unexpected requirements. The Office of Civil Defense requires that the shelters it helps to stock have at least a 14-day fuel supply.

Even though a shelter power supply system is a substitute for the public power supply system, this substitute itself may break down. So there should be some kind of back-up power system to provide continued power in case there is a major breakdown in the independent power supply system. In other words, there should be a substitute for the substitute.

The fuel tanks should have calibrated sight gauges so that the level of fuel in them can be read without leaving the shelter living area. In this way one can calculate the rate of fuel used without incurring radiation hazard by going into the possibly less protected area where the fuel tanks are kept.

Records and graphs (curves) should be kept so that the manager can see how fast the fuel is being used. If it is being used so fast that it will not last until the time a shelter is expected to be vacated, he will have to place restrictions on the use of power.

Decisions for Community Shelter System

Each shelter will have an independent power supply generating 1 to 10 kilowatts for each 100 occupants.

Shelter generators will provide enough electricity to meet peak demands of the shelter electrical system.

Enough fuel will be stored to last 14 days, with some extra for emergencies.

A back-up power supply system will be provided to supply power in case the shelter's independent power supply system fails.

The fuel tanks will have calibrated sight gauges that can be read in the shelter living areas.

Records and curves will be kept to monitor fuel consumption.

If necessary, use of power will be restricted.

Modifications for Shelter No. _____

Shelter No. _____ will have an independent power supply generating _____ kilowatts.

The amount of fuel to be stored in Shelter No. _____ is _____ gallons; enough to last _____ days.

| | Decisions for Community Shelter System | Modifications for Shelter No. ____ |
|---|---|---|
| Cold fuel has to be heated up before it will burn, which causes a loss of power. For this reason a shelter's power supply sources should be located within the shelter. But for the sake of safety they should be vented and shielded, so that they will not give off noxious fumes and so that their explosion would not destroy the shelter. | Fuel tanks located within the shelters will be vented and shielded. | |
| There should be two fuel tanks for each engine so that leaks in the tanks or the service pipes can not lead to loss of all the fuel. This is made more necessary by the possibility that earth movement might break some of the pipes. | Each engine will have at least two fuel tanks. | |

| CONTINGENCY PLANNING: Fire Hazards. | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| Fire would be a serious danger in a shelter, particularly during the early period when outside radiation is so heavy that leaving the shelter might be fatal. Consequently, having efficient methods of fire-fighting and fire prevention is far more important in a shelter than in an ordinary structure. Fire-fighting equipment should be available in every shelter. | Each shelter will have fire-fighting equipment. | |
| A good deal of help on fire-fighting equipment and methods for the shelters can be gotten from your local fire officials. They will tell you what methods of fire-fighting are best for use in an enclosed, crowded space. You can ask them what kind of equipment to get, how much of it will be needed for shelters of different sizes, where it should be kept, and how it should be used. | The shelter fire plan including number, kind, and location of equipment will be developed according to standards determined by the local fire officials. | |
| Fire-fighting instructions should be posted in the shelters, since the methods needed for fighting fire in a crowded, enclosed space are somewhat different from those that most people have learned. Suitable instructions can be provided by local fire officials. | Local fire officials will be requested to provide fire-fighting instructions which can be posted in the shelters. | |
| "Fire-parties" should be formed within the shelters to provide a trained and organized force for fire-fighting. | Fire-fighting groups will be organized and trained in each shelter. | |
| One of the great dangers of fire in any crowded area is panic. It helps to prevent this if people know exactly what they are to do in case of fire. Fire drills should be conducted from time to time, beginning soon after entry into a shelter. | Fire drills will be held soon after shelter entry and at intervals thereafter. | |
| Chemical fire extinguishers such as we are accustomed to can not be used in shelters, since the toxic chemical products produced during their use would be a greater danger than the fire. Instead, pails of sand and water can be placed here and there in the shelters for use in fire-fighting, or other safe methods recommended by your local fire officials can be used. | Pails of sand and water, or some other devices suitable for use in a closed space, will be used for fire-fighting in place of ordinary chemical fire-extinguishers. | |
| The fixtures and equipment connected with the power supply should be explosion-proof, and there should be good enough ventilation in the power-supply area to prevent accumulation of gases that could lead to blast or fire. | The power supply area will be well ventilated and the fixtures and equipment explosion-proof. | |

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| The interiors of the shelters should be fire-resistant. If they are of wood they can be painted with fire-resistant paint. Furnishings also should be fire-resistant, particularly in areas such as the kitchens. | The shelters' interiors and their furnishings will be fire-resistant. | Shelter No. _____ will be made fire-resistent by the following means: |
| If the shelters are dual-purpose ones located above ground, all easily combustible but unnecessary materials such as curtains should be removed when a shelter is readied for occupancy. Otherwise the light and heat from the bomb, coming through the windows, may set fire to materials inside it. | Combustible objects and materials that are not needed will be removed. | |
| Strict fire-prevention regulations will be necessary. They should cover smoking practices, litter control, keeping passageways from being blocked, and the use of equipment that might give rise to fire hazards. These should be posted in prominent places in each shelter, and unit leaders made responsible for the fire-prevention discipline of their group. | Detailed fire-prevention regulations will be posted. | |
| Fire hazards in the shelter can be kept down by having regular fire inspections throughout the period of shelter occupancy. All areas of a shelter should be checked for cigarette butts that have not been properly disposed of, matches left within reach of children, electric cords that could be stepped on, oily rags that might undergo spontaneous combustion, and similar hazards. | Frequent and thorough fire inspections will be made and fire hazards eliminated. | |
| Since sparks or explosions from mechanical equipment might give rise to fires, there should be a fireproof door between the mechanical-equipment rooms and the parts of the shelters used for living purposes. These doors should be kept shut when the mechanical-equipment rooms are not in use. | There will be fireproof doors between shelter mechanical-equipment rooms and the shelter living space.<br><br>They will be kept shut when the mechanical-equipment rooms are not in use. | |
| Even if a shelter has gas and the gas lines are not broken, no heating device that uses flame should be used for cooking. Flame would not only be a fire hazard but would use up the oxygen in the shelter so that there would be less of it for the occupants to breathe. | Food will be heated by some means that does not involve the use of flame. | In Shelter No. _____ the means used for cooking will be: |

While it is unlikely that any of the shelterees will bring flammable liquids to the shelter with them, flammable liquids such as canned heat, ether, and alcohol may already be present in a dual-purpose shelter. If so they should be turned in to central supply for safekeeping and possible future use.

Decisions for Community Shelter System

All flammable liquids will be turned in to central supply.

Modifications for Shelter No. _____

CONTINGENCY PLANNING: Emergency Exits

In planning shelters one must take into account the fact that the buildings over and around them may be knocked down by blast. If this were to happen the resulting rubble might block up the entrance into the shelters so that the occupants would not be able to get out by the route they had used in coming in. To prevent such a situation, which might literally mean being buried alive, every shelter should be provided with an emergency exit for use if the regular entrance is blocked.

These emergency exits should be easily accessible, since delay in opening a sealed exit, or getting all the shelter occupants up a small ladder and through a small opening, might lead to loss of life.

Some emergency might occur that would make it necessary to evacuate the shelter suddenly, even if it meant going out into a radioactive landscape. In view of this, exit routes should be clearly marked, so that no one will have any doubt as to what way to go to get out of the shelter. This will be especially necessary in a large shelter or shelter complex.

To make sure that the shelterees know where the emergency exit is and how to use it, emergency escape drills should be conducted. These should include all the actions necessary up to the point of leaving the shelter--- shutting down the machinery, gathering up needed articles, etc. These shelter evacuation drills should be held soon after entrance into the shelter and repeated at intervals thereafter.

The possibility has to be considered that not only the regular exit but the emergency exit might become blocked. The emergency exit should be so located that it cannot be blocked or buried under the rubble from falling buildings. If it comes to the surface at a sufficient distance from any building so that the building, if it fell, would not fall on the opening of the emergency exit, it can be regarded as reasonably safe.

Decisions for Community Shelter System

Every shelter will have at least one emergency exit in addition to the regular one.

The emergency exits will be easily accessible.

Routes out of the shelter will be clearly marked.

Emergency escape drills will be held soon after entrance and at intervals thereafter.

The emergency exit will be so placed that it cannot be buried under the debris of falling buildings.

Modifications for Shelter No. _____

Shelter No. _____ will have _____ emergency exits.

But a shelter may be in a crowded city area where the only place for the exit to come up is in a street. If this is the case a strong masonry canopy can be built over the exit, so that any rubble falling would be held up by the canopy instead of blocking the opening of the exit.

Decisions for Community Shelter System

If necessary a masonry canopy will be built to keep debris off the exit.

Modifications for Shelter No. _____

CONTINGENCY PLANNING - Other

In case of breakdown of equipment or damage to the shelter, tools will be needed. At the right is a list of tools and emergency equipment that have been recommended for inclusion in the requirements of every shelter. Cross out the ones that you think are not necessary and add on any others that you think should be included. Tools and equipment of this kind will be needed to make repairs in the shelter and to dig out of the shelter if the exits are blocked, but they will also be useful in the post-shelter period, when the population leaves the shelter and begins to rebuild a normal life on the surface. The amount of tools and emergency equipment that will need to be stored will differ from shelter to shelter, but to get a rough idea of what will be needed, estimate what quantity of each you think there should be for every shelter. The representatives of the individual shelters can then use this as a general guide in determining what stocks of tools and equipment will be needed in their own shelters.

These tools and equipment should be kept either under lock and key or under constant guard. There are two reasons for this: First, tools tend to drift away and get lost. If they are at some unknown place in the shelter they will not be available at a time when they are badly needed for immediate use. Second, tools make good weapons. If any group in a shelter is planning mutiny, possession of the tools to use as weapons would give them much greater strength.

Some of the systems of a shelter are of highly critical importance and it is absolutely essential that they be running properly. These include the power system, the ventilation system, the sanitation system, and the communication system. Mechanical backup systems (substitute systems that can be used in an emergency) should be provided for each of these. For example, there can be hand-operated blowers for use if the ventilation system fails.

In addition to the substitute or back-up systems, there should be trouble-shooting guides to aid in the operation and repair of these systems.

Decisions for Community Shelter System

Every shelter will contain the following tools and emergency equipment:

| Kind | Amount or number needed per shelter. |
|---|---|
| 1. Shovels | |
| 2. Screwdrivers | |
| 3. Wrecking bars | |
| 4. Wrenches | |
| 5. Hatchets | |
| 6. Saws | |
| 7. Pliers | |
| 8. Rope | |

The tools and emergency equipment stocked will be suitable to the needs of the individual shelter.

Tools will be kept locked up or under guard.

Backup systems and trouble-shooting guides will be provided for the

1. Power system.
2. Ventilation system.
3. Sanitation system.
4. Communications system.

The backup system for the power system will be:

Modifications for Shelter No. _____

One of the most dangerous "contingencies" possible is the dropping of additional missiles near the end of the expected period of shelter stay. If supplies are almost exhausted at this time, the next two weeks may be a time of famine and disorder. It is extremely desirable to have enough supplies so that people can stay in the shelters for longer than 14 days.

When the shelterees leave the shelter they may not be leaving it for good. Additional radiation or the need for a reasonably safe habitation may drive them back into it. For this reason, as well as for the general principle that one should never leave a place dirty, the shelter should be left clean and ready for occupancy. This cleaning will include emptying and rinsing the sanitary tanks.

As far as possible, depending on conditions outside, shelters should be restocked so that they can be used again in case of need.

Many of the shelters used will be in structures that were built for some other purpose, or dual-purpose shelters in which some other activity is also carried on. Such structures should be inspected for hazards that may interfere with their usefulness as shelters. Among these hazards are flooding, collapse of overhead structures, and danger of fire because of use of inflammable construction material.

Decisions for Community Shelter System

The backup system for the ventilation system will be:

The backup system for the sanitation system will be:

The backup system for the communication system will be:

The shelters will be stocked so as to support life for more than 14 days.

In this community shelters will be stocked to make possible a stay of _____ days.

The shelters will be cleaned and sanitary tanks will be emptied and cleaned at the end of the shelter period.

As far as possible the shelters will be restocked.

Converted or dual-purpose shelters will be inspected for hazards of flooding, collapse of overhead structures, flammability, etc.

Modifications for Shelter No. _____

Shelter No. _____ will be stocked to maintain life for _____ days.

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| In some shelters there may be danger of seepage and flooding. This will vary not only with the construction of the shelter but with its location. If such a danger is found to exist, the same measures can be taken to make the shelter water-proof that are taken to keep a cellar dry, using sealer, etc. In case such measures fail, a sump pump or similar device can be stocked to get rid of water that has accumulated. | Precautions will be taken against flooding and seepage of water into the shelter. Sealer will be used if necessary and sump pumps or similar devices stocked if there is danger of flooding. | In Shelter No. _____, flooding and seepage will be prevented by: |
| Safety rules should be established and enforced. These should deal with the use of the shelters and the shelter equipment. The kind of safety rules required will probably differ from shelter to shelter, since the layout of the shelters and the kind of equipment in them will be different. | Safety rules pertaining to the shelters and the equipment in them will be established and enforced. | |
| The shelters should be inspected once a day or oftener to make sure that no condition dangerous to safety exists. | Thorough safety inspection of the entire shelter will be made at least once daily in every shelter. | |

| COMMUNICATION | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| There should be communication between each shelter and the outside world--and in a time of nuclear attack the "outside world" will probably be in other shelters. Inter-shelter communication will enable the management of a shelter to get the information that it needs on the extent of damage and the amount of radiation. | Provision will be made for inter-shelter communication. | |
| Then, too, it will be good for morale if a shelter is in communication with other shelters, so that they can exchange news and discuss their problems. The sense of isolation is one of the difficult things about shelter occupancy. | | |
| The individual shelters will be in communication with the community control center, and the community control center in turn ought to be in contact with the state control center. In this way it will be able to get advice on difficult problems and information about radiation levels in other parts of the state. Such information will be important in deciding how long the shelterees must stay in the shelter, and what they are to do after they leave - - whether they are to stay in that area or be evacuated to some other area. | The individual shelter will maintain contact with the community control center, and the community control center will, if possible, maintain contact with the state control center. | |
| If there were only one kind of communications equipment in a shelter - that is, if there were only radio, or only a telephone - it might be knocked out by the blast, or damaged in some other way, and the shelter would have no communications. Telephone lines can easily be blown down by blast, and we do not know yet just what effect a nuclear bomb explosion will have on the radio. So a shelter ought to have at least two kinds of communications systems, as insurance that one will be left working. If you can, it will be better to have more than two. | There will be more than one means of communication between the shelter and the outside world. | |
| The shelters should have telephones, but telephones are likely to stop working in places near the target area, since blast anywhere along the line can knock them out. In this case the possession of two-way radio communication will be essential. | Both telephone and two-way radio communication will be available in the shelters. | The kinds of communication planned for Shelter No._____ are: |

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| Since the public power may go off as a result of blast, it is important to have emergency power supplies available at suitable points to keep the telephone system operating. | Emergency power supplies will be available at vital points in the warning and communications channels. | |
| Telephones will be more likely to keep on working if there are two wire routes that messages can come over than if there is only one. | The telephone wires will be such that messages can come to the shelter over more than one route. | |
| The kind of communications equipment needed will differ from shelter to shelter. One shelter may not need radio antennae; another may be too small to need a public address system. Putting the same communications equipment into each shelter would mean unnecessary expense. However, each shelter should have enough equipment to enable it to take part in the communications plan that has been worked out by the community civil defense system. | The communications equipment of each shelter will be suited to its needs and will be such as to enable it to follow the communications plan of the community shelter system. | |
| In some shelters antennae will be needed for good radio reception. These should be affixed in peacetime, since there might not be time to do it after the attack warning. You can determine which shelters will need them by taking radio outfits, of the kind that will be provided for the shelters, into each shelter and seeing how they work. In many dual-purpose shelters antennae will already be available. | Radio antennae will be affixed to shelters needing them. | |
| In areas where blast is expected, the antennae should be retractable; otherwise they may be destroyed at the time of attack. | For this community, retractable antennae (will / will not) be needed. | |
| Since the skilled communications personnel assigned to a shelter may not be able to get to it, instructions for operating the radio and other communications devices should be placed near them so that some of the shelterees will be able to operate them. | Instructions for operating the radio and other communications devices will be placed in each shelter. | |
| Communication <u>inside</u> a shelter is important too. Whether or not special apparatus, such as a PA (public address) system, loudspeakers, or battery-powered megaphones are needed will depend on the size and layout of the shelter. But there should be some way for announcements to be made to the entire shelter. | If necessary, public address systems, loudspeakers, or battery-powered megaphones will be provided so that announcements can be made to the entire shelter at once. | In Shelter No. _____, communication within the shelter will be provided by _____. |

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| Such announcements should be limited to vital information, so that they will command special attention whenever they are made. If they were too frequent, or dealt with trivial matters, some shelterees might not listen immediately, and in an emergency this might keep them from getting needed information or instructions promptly. | These announcements will be limited to vitally important information. | |
| A record should be kept of these in-shelter broadcasts. In-shelter broadcast monitors can be assigned to log (write down) all the important information and orders presented in this way. | In-shelter broadcast monitors will log all important information. | |
| The local civil defense organization can direct useful activity and help prevent panic and disorganization by giving full information to the public and directing its activities. | The local civil defense organization will furnish the public with a full flow of facts and directions. | |
| People need to be told what is going on and what they ought to do. | | |
| The broadcast networks should be monitored (listened to) continuously so that the shelter will not miss getting any important information. This task can be specifically assigned to members of the Communications group. It should be carried on during the night as well as in the daytime. Important news and anything relating to the shelter should be logged. | Broadcast networks will be monitoried continuously day and night. Important information will be logged. | |
| Information gotten in this way can be passed on to the shelterees in the form of regular news reports. These can cover the general situation in the community and other items of news that they will need or want to know. | Regular news reports will be given to the shelterees. | |
| One major use to which the shelter communication system will be put is the reuniting of families. Particularly if the attack occurs during working hours, some members of a family will be in one shelter and some in another. Great anxiety will be felt as to the well-being of absent members of the family. | The inter-shelter communication system will be used to locate missing relatives and friends of the shelterees. | |

Modifications for Shelter No. _____

A shelter not only needs to be able to communicate with other shelters; it needs to be able to communicate with its people who may be working outside the shelter during the latter stages of shelter occupancy. These may be radiological teams, engaged in measuring the radioactivity of nearby areas to see when it will be safe to leave the shelter. Or they may be work parties who have gone to search for needed supplies, or who are decontaminating the immediate area.

If a warning of a new attack, or any other danger, came to the shelter there would need to be some way of calling in the radiological teams or work parties. Also, the people working at a distance from the shelter may need to call the shelter for advice and instructions.

In shelter experiments is has been found that people in a shelter feel a great curiosity about what is going on outside. This is true even when they know that they are only taking part in an experiment, and that everything outside is all right. It will be much more true in the anxious and eventful time after an attack.

For this reason, it is recommended that a shelter have a periscope, like those on submarines, so that the people inside can see what is happening outside the shelter.

A periscope sticking up when the blast from an atom bomb reached it might be knocked down, and this would leave an opening into the shelter through which the blast could come--- something that would be very dangerous. So, particularly if you are near a target area, you should have a retractable periscope--- one that can be retracted or pulled down into the shelter when blast is expected.

Decisions for Community Shelter System

Communications equipment will be available in the shelters for maintaining contact with radiological teams and work parties working outside the shelters.

The shelters (will / will not) be provided with periscopes.

The periscopes (will / will not) be retractable.

CONTROL

A shelter should not be thought of as a separate thing, but as one unit in a community system of shelters, headed by a control center under the authority of the civil defense director. The shelters are separated only because they need to be scattered throughout the community to enable people to get to them quickly.

In its turn, the control center is one unit in the state civil defense system.

In a large community, there may need to be zone control centers that will control several shelters in one vicinity. These zone control centers will all be under the main control center for the civil defense district. In smaller communities, the individual shelters will be directly under the main control center, and no zone control center will be needed.

The sites for these zone control centers should be chosen before the disaster, so that they can be properly equipped and so that everyone will know where they are.

There needs to be a control center, well protected and adequately equipped, where community officials who are directing and coordinating the shelter system can work. Of course this also will be a shelter. In many cases it will be the same as the shelter control center, and officials of the local government and shelter officials will be working together.

The individual shelters should keep in contact with the designated control point of the local government. This may be the same as the shelter control center. The local government control point will be able to give them current radiological information. They can then take whatever emergency action is necessary on the basis of this information.

Decisions for Community Shelter System

Each shelter will be organized as a unit of the community shelter system. As such it will be under the direct control of the control center and the civil defense director.

The control center for the community shelter system will be integrated into the state civil defense system.

In this community there (will / will not) be zone control centers administering several individual shelters, and themselves administered by the main control center.

If there are to be zone control centers, their sites will be chosen and they will be staffed before the disaster. Zone control centers for this community will be located at:

There will be a control center for community officials who are directing and coordinating the shelter system. In this community it (will / will not) be the same as the shelter control center.

Individual shelters will keep in contact with a designated control point of local government, which will give them radiological information.

Modifications for Shelter No. _____

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| In case the control center should be knocked out by enemy attack, an alternate control center should be designated and fitted up with suitable communications facilities, radiological defense data, etc. In this way, when the original control center is knocked out, the alternate one can take over its functions. | An alternate control center will be designated and equipped. | |
| In a city shelter system, there should be a civil defense director at the city level, to coordinate the work of all the community's shelters. | In this community there (will / will not) be a civil defense director at the community level. | |
| The functions of the central control unit should be worked out ahead of time. For example, is it to compile lists of survivors and answer inquiries as to the whereabouts of specific individuals? Is it to put together all the available radiological information and relay it to the individual shelters? Is it to move people from an overcrowded shelter to one that can support more people than it has? Can it issue orders, or only advice, to the individual shelters? All these things should be decided ahead of time and the functions of the central control unit should be listed and made known to all concerned. It should be given legal authority for carrying out these functions. | The functions of the central control unit will be defined and publicized along with the legal authority to carry them out. Its functions will include:<br>1. Compiling lists of survivors and answering inquiries about them.<br>2. Collecting and relaying radiological information.<br>3. Directing movement of shelterees between shelters.<br>4. Giving orders to individual shelters<br>or<br>Giving advice to individual shelters.<br>(Add any other functions that you think are necessary.) | |
| One question that ought to be decided ahead of time is that of who gives the orders for a shelter to be evacuated--- the shelter manager or the shelter control center? Of course they ought to consult on the matter, but a situation may arise where the shelter manager and the shelter control center disagree on whether or not a shelter should be evacuated. The shelter manager is the better acquainted with the conditions in the shelter, but the shelter control center probably knows more about the conditions into which the shelterees will emerge if they leave the shelter. | The shelter manager and the shelter control center will consult on the matter of when a shelter is to be evacuated. In case of disagreement this will be decided by the<br>(shelter manager.<br>(shelter control center. | |

MAINTENANCE

Maintenance of the shelter and its equipment are of primary importance. Since these tasks require both ability and experience, persons capable of performing them should be assigned to each shelter, if this can be done without lessening their chances of survival.

In case this cannot be done, or the assigned maintenance personnel are unable to reach their assigned shelter, provision should be made for selecting maintenance personnel after a shelter is occupied, from among the best qualified shelterees. These persons can be made responsible for maintaining the shelter facilities and equipment for the period that the shelter is occupied.

Since maintenance work usually requires tools and materials, the tools and materials likely to be needed in maintaining the shelters and their equipment should be stocked in the shelters ahead of time.

In case no persons skilled in such work get to a shelter full instructions on maintenance, particularly on how to maintain the shelter equipment, should be written out and placed in the shelter. These should be clear enough for intelligent but unskilled persons to understand, and should cover the various difficulties that may arise.

Decisions for Community Shelter System

If possible, persons skilled in the maintenance of buildings and equipment will be assigned to each shelter.

If necessary, such persons will be chosen after a shelter is occupied and made responsible for maintenance of the shelter and its equipment. Provision for this will be written into the plan.

Tools and materials needed for maintenance and repair will be stocked in the shelters.

Written instructions on maintenance will be placed in each shelter. These will cover difficulties likely to arise.

Modifications for Shelter No. _____

NOISE

In the shelter experiments that have been carried on, noise has ranked very high as a cause of discomfort. A shelter is an enclosed space and the noise produced in it reverberates back and forth from wall to wall. People who are excited are likely to make a good deal of noise. And the shelter machinery, such as the ventilating system, adds mechanical noise to the rest.

Ways of keeping down the noise should be carefully outlined and placed in each shelter in written form, to help the shelter management keep noise levels from becoming too high.

In some shelters acoustical tile can be used to cut down noise. In others, the shape of the shelter or other factors may make this impossible. Expense is also a factor to be considered.

Since some of the noise in a shelter comes from the ventilating system and the power generator, these should be put at a distance from the living areas.

Some kinds of ventilators and generators are noisier than others. The amount of noise they produce can be kept in mind when selecting them. While it should not be the deciding factor, it can be taken into account along with others.

Some ways of mounting machinery tend to reduce noise. For example, mounting the ventilator on a vibration damper may make it quieter.

Decisions for Community Shelter System

Methods of keeping noise to a comfortable level will be written out and placed in the shelters, to be enforced by the shelter management.

If possible, acoustical tile {will / will not} be used to cut down noise.

If possible, the ventilating systems and the power generators will be placed at a distance from the shelter living areas.

In selecting shelter equipment, the amount of noise made by each kind will be taken into consideration.

Machinery will be mounted in such a way as to make it as quiet as possible.

Modifications for Shelter No. _____

In Shelter No. _____, acoustical tile {will / will not} be used to cut down noise.

TRAINING

You will probably want to carry on an educational program in the shelters, for four reasons:

First, when people have work to do and something to occupy their minds they are less likely to be depressed, anxious, or quarrelsome.

Second, and more important, the world into which people emerge when they come out of the shelters may be very different from the world they left at the time of the attack. They will need to know how to avoid areas and actions that seem harmless but that would lead to deadly doses of radiation. If the aqueducts and water-mains are destroyed they will have to know how to purify water. If the sewers are broken and no water is available for toilet flushing, they will have to learn other methods for the disposal of waste. In a time when doctors are scarce and overworked, they will need to know more about health care. They will have to know how to decontaminate houses so that they can be lived in again, and fields so that crops can be grown. In short, a large amount of technical information is going to have to be acquired by every citizen, if he is to be useful in rebuilding society and in fact if he is to keep himself and his family alive.

Third, a shelter educational program is a good way to teach people the techniques of shelter living and the reasons for them. It provides support and explanation for the orders given by the shelter manager and his staff. It helps people understand the organization and workings of the shelter. It allows them to air their grievances and to ask questions when the rules, or the reasons for them, are not clear to them.

Fourth, you will want to have the school children in the shelters keep up, as far as possible, with their regular school subjects. This will give them a sense of order and a realization that, whatever happens, life continues. It will also keep them from being as much of a nuisance as they would otherwise be to the adults in the shelters.

Decisions for Community Shelter System

An organized educational program is to be given in the shelters.

It will include instruction in

1. Protection against radiation
2. Water purification
3. Decontamination
4. Waste disposal
5. First aid and home medical care
6. Techniques of shelter living
7. Organization and workings of the shelter
8. Shelter problems
9. Regular school subjects (for children and adolescents)

(Add anything else that you think the shelterees in your locality should be given instruction in).

Modifications for Shelter No. _____

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| A shelter training program for adults will have two parts--training for life in the shelter, and training for life after leaving the shelter. The in-shelter training program will train shelterees in the art of shelter living, and the reason for the various rules and restrictions enforced in the shelter. The fact that this can be done has been demonstrated by experiment. | Training programs will be developed to train shelterees in shelter living and post-shelter living. | |
| Training in post-shelter living will need to stress the techniques of survival in a radioactive landscape. Many people will find it difficult to understand that areas that look harmless are actually lethal. Failure to follow the rules will lead to deaths from radiation sickness among people who have survived the period of attack and the shelter period. This material is somewhat difficult to learn, but the teachers will have the advantage of good motivation among their pupils. | Training in post-shelter living will stress techniques of survival in a radioactive environment. | |
| While a well-prepared teacher can do a good job of teaching without teaching materials, the technical nature of much of the material to be taught and the fact that it is uncertain whether the pre-trained educational staff will be able to reach the shelter make it essential to have manuals and materials for all the necessary training programs (especially those dealing with radiological matters) already stocked in the shelters. If this is done the probability is that the shelter will contain some persons able to understand the material and teach it to the others. | Manuals and supplementary materials for all training programs to be conducted in the shelters, especially those dealing with radiological defense, will be stocked in them ahead of time. | |
| Material of this kind gets to be out of date rather rapidly, as more is learned about the effects of radioactivity and as the size of the bombs and the amount of radiation to be protected against increases. This makes it necessary to go over the training material at intervals and see whether anything needs to be changed or added to. | Training materials will be updated when necessary. They will be reviewed to see whether updating is necessary every _____ months. Doing this will be the responsibility of _____. | |
| It is especially important that children be given training in post-shelter living, especially in how to avoid radiation. This will be difficult for children too young to read warning signs. If | Children will be given special training courses to prepare them for post-shelter living. These will stress avoiding areas | |

you decide ahead of time on what kind of a sign is to mean "Radioactivity--Keep Off" and have it of a distinctive color and shape, it may be possible to teach even non-reading children to avoid places where the sign is displayed. Unless you intend to have the children all taken care of by some group system, after they emerge from the shelter, it will be necessary to impress the meaning of the warning sign upon them and give them practice in avoiding it while they are still in the shelter.

It would be desirable to have the warning sign the same in all parts of the country, so that children moving from one part of the country to another would still recognize it. If this cannot be done, it would at least be a good idea for neighboring communities to have the same sign.

The shelter period will allow time for reviewing the skills of the shelterees to see whether as many skilled persons are available as will be needed for the task of reconstruction. Many of our peacetime skills will be of little use in rebuilding a shattered economy. Other skills such as building, plumbing, agriculture, and health care will be in great demand. While the shelterees are in the shelter and have plenty of time, you can have them fill out a questionnaire that will give you some idea of what skills are already available.

If not enough of these critical skills are available, as will probably be the case, you can start a training program to develop more of them while the shelterees are still in the shelter. Of course some skills can be taught in this way better than others. For example, it may be hard to teach carpentry in the shelter. But nursing and radiological work can probably be taught there as well as they could be taught in peacetime life. Mass feeding is one thing that will be needed immediately in the post-shelter period, so people who are charged with this responsibility should be given instruction in preparation of large quantities of food.

Decisions for Community Shelter System

posted as being radioactive.

A warning sign indicating radioactivity will be agreed upon and children will be given training, while in the shelter, in avoiding areas so posted.

The sign used to indicate radioactivity will be the same over as large an area as possible. In this community it will be: (Here draw a picture of the sign and indicate its colors).

A questionnaire will be developed ahead of time and given to the shelterees to see what skills they have that will be needed in the reconstruction period. An adequate stock of these questionnaires will be placed in the shelters. The number required for the community is _____.

A training program in the skills needed in reconstruction will be begun during the shelter period. These will include mass feeding.

Training in the following skills likely to be needed in the reconstruction period will be given in the shelters capable of teaching them:

Modifications for Shelter No. _____

The number required for Shelter No. _____ is _____.

Modifications for Shelter No. _____

At the right is a list of skills that will be needed in the reconstruction period. Cross out any that you do not want to have taught in your shelters and add any others that you think are desirable.

Decisions for Community Shelter System

1. Carpentry
2. Masonry
3. Roofing
4. Plumbing
5. Decontamination
6. Radiological defense
7. Agriculture-- raising of crops
8. Agriculture-- raising of livestock
9. Child care
10. Nursing
11. Mass feeding
12. Teaching
13. Food preservation
14. Police work
15. Guerrilla warfare
16. Identification, registration, and burial of the dead

To carry out this program more efficiently, you can assign people capable of teaching these skills to the different shelters, so that there will be someone in each shelter who can teach some skill that will be needed in reconstruction. Naturally you may not be able to teach every needed skill in every shelter. But you can assign the different skills to different shelters in such a way that approximately the right proportion of people will be in training for each.

Potential shelterees whose skills will be greatly needed in post-shelter living will be selected ahead of time and assigned to shelters to conduct training courses during the shelter occupancy period.

Of course it may turn out that there will be someone else in a shelter beside the assigned teacher who can teach one of the needed skills. In this case the shelter can put on an additional course.

Advantage will be taken of the presence of other persons possessing some of these important skills to offer additional training courses.

The control center can decide which courses are to be taught in which shelters, depending on the need for them and the persons in the shelters who can teach them.

The control center will determine which courses are to be taught in which shelters.

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| In addition to the training for shelter and post-shelter living, the regular processes of academic education can go on in the shelters. Whatever kind of world we emerge into after nuclear war, education will be needed. Carrying on accustomed educational activities may also be a stabilizing factor to children who have undergone frightening experiences and feel anxiety about the future. Also, continuing their school work in the shelter provides a way of keeping them under control. Aside from that, the law requires that children be educated. | The education of school-age children will continue in the shelters. | |
| If possible, personnel with teaching experience should be assigned to each shelter. If the attack occurs during the school day, it is likely that the teacher will accompany the children to the shelter and that the classroom social structure can be maintained. If this is not the case, a similar classroom relationship must be set up between the children and the new teacher, who if necessary can be appointed from among the shelterees. | Teachers or former teachers will be assigned to each shelter that is expected to hold children. If there are none, suitable persons will be appointed as teachers. | |
| Regular hours should be laid out for school activities. You may want to have school run for six days a week instead of five, as a means of controlling the children. On the other hand, in some communities there may be persons who worship on Saturday. If this is the case you will probably decide to have only a five-day school week. | School will be held at regular hours, on _____ days of the week. | |
| It will help a great deal in carrying on formal educational activities if materials for it are stocked in the shelter. These would include textbooks, maps, paper and pencils, and if possible a blackboard and chalk. (The blackboard and chalk would also be very useful in the adult training program.) At the right is a list of school materials that might be stocked in the shelters. Cross out any that you think are not needed and add any that you think should be added. | School materials will be stocked in the shelters. These will include:<br>1. Textbooks.<br>2. Maps.<br>3. Paper.<br>4. Pencils.<br>5. Blackboard.<br>6. Chalk. | |

RECREATION AND RELIGIOUS ACTIVITIES

In shelter tests lasting for periods of up to two weeks, it has been found very helpful to have an organized recreational program. Shelterees felt that it was one of the factors that helped them to tolerate the long confinement period. Recreation prevents inactivity and despondency and tends to promote good feeling and retard the development of grudges among the shelterees.

Since some people are not good at finding recreation for themselves, material suggesting various methods of recreation should be stocked in each shelter. Word games that require no equipment could be included here and directions for playing games like shuffleboard with improvised equipment. The recreations for which equipment is provided in the shelter will have less need of being mentioned, since seeing the equipment will be a reminder in itself.

Reports of shelter experiments say that reading is the most effective form of recreation. It is also easy to provide and requires no supervision. Having plenty of reading matter available will be the main thing necessary in providing for recreation.

If you are finding it necessary to economize, remember that old magazines, which are plentiful in nearly every community, provide as good reading matter as books, and cost nothing.

Also they have other uses besides reading; children can cut out pictures from them and controversial articles in them can be the subject of group discussions.

It will probably be possible to get games, puzzles, etc., contributed beforehand by the prospective shelterees.

Appointing some literate person as a librarian may be helpful, since he or she can suggest suitable reading for persons who are not sure what they want to read.

Decisions for Community Shelter System

An organized recreational program will be planned.

Each shelter will be provided with a document containing suggestions for recreation.

Adequate reading material will be stocked in each shelter.

Prospective shelterees will be asked to contribute books, games, and used magazines for the furnishing of the shelters.

One of the shelterees will be appointed as librarian.

Modifications for Shelter No. _____

| | Decisions for Community Shelter System | Modifications for Shelter No. ____ |
|---|---|---|
| It will help if some space is available for recreation. Reading and word games require little or no space, but many other recreations do require varying amounts of room. | | |
| If the dining and recreation area has tables and benches, this will make it easier to play cards, work picture puzzles, play games, write letters, etc. It will also be useful in carrying on the educational program, since it will give people a place to write and take notes, and provide a place where classes can be held. | Areas for active recreation will be provided--- possibly the dining area. It will have tables and benches or chairs. | |
| Vigorous and strenuous activities usually have to be avoided in shelter life. The body heat given off in them is likely to raise the temperature of the shelter to an uncomfortable level, and exercise makes people hungry and thirsty, and causes them to use more oxygen than they otherwise would. Yet some physical activity must be engaged in to maintain physical fitness. This can be given in the form of mild calisthenics (exercises.) | Vigorous and strenuous activities will be avoided, but mild calisthenics will be given. A program of non-strenuous physical activity will be planned. | |
| It is very important to have supervised recreation and some form of physical activity for the children. When they are allowed to run loose in the shelter they get in everyone's way and on everyone's nerves. They also swing on the bunks, crowd into the kitchen near the stove and scalding liquids, and otherwise endanger themselves. | Supervised games and directed exercises will be provided for the children. | |
| Dividing the children into age-groups will make it possible to give each group the kind of recreation and activity suitable for it. | Children will be divided into age-groups. | |
| In a recent Navy experiment, a story hour for the children was found to work well. Many of the adults also listened with apparent pleasure. | Story hours will be held for the younger children. | |
| In a time when people feel great anxiety for the future and many of them are grieving for lost relatives and friends, religious activities will be a source of comfort and for that reason should be encouraged. Of course they will not be in any way compulsory. | Religious activities on a voluntary basis will be encouraged. | |

| | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| If possible, space should be made available for religious services. Quiet should be required of the groups that are not engaging in the service. Since the noisiness of shelters tends to become wearisome, maintaining quiet for a time will not be a hardship to the non-participating shelterees. | Space will be made available for religious services if possible, and quiet will be maintained during them. | |
| Ridiculing or making unkind comments on any person's religion should be strictly forbidden, since this is an almost sure cause of bitter quarrelling. | Respect for the religion of others will be enforced. | |
| Each shelter should be provided with both Catholic and Protestant versions of the Bible, and with a Jewish version of the Old Testament if that faith is likely to be represented among the shelterees. These books not only give great comfort to some persons, but are very long and provide a great deal of reading matter in a small space. A hymn-book or two may make possible group singing of hymns. | Catholic and Protestant, and, if needed, Jewish Bibles and hymn-books will be provided. | |
| If clergymen are present, Catholic, Protestant, and Jewish chaplains can be selected. If they are not, laymen may be chosen for the position. Chaplains are useful not only for holding services, but as counsellors to the troubled and as a means of keeping peace and order. | Catholic, Protestant, and Jewish chaplains will be appointed. If necessary these can be laymen. | |

| POST-SHELTER PLANNING (In-Shelter): Egress | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| Some definite decision should be made on how to determine when the shelters are to be vacated. Otherwise this could become a cause of dissension. | A basis will be developed for determining when shelterees may leave the shelter. | |
| Authorities recommend that the instructions to evacuate a shelter should ordinarily issue from an authoritative source, by way of the communications system. That is, the shelter control system will decide when to vacate each shelter, of course having taken the recommendations of the shelter manager into account. This may not be possible if the shelter is isolated or if there has been a communications breakdown. In this case the decision will have to be made by the shelter manager. | The decision as to when a shelter is to be vacated will normally be made by the shelter system control center and relayed to the shelter manager. But if the shelter is isolated or if communications have broken down, the decision will be made by the shelter manager. | |
| The reason for having the decision made by the shelter control center is that this center will have available a great amount of information about post-attack conditions. It will know whether the outside world is safe or unsafe. It will know how great the need is for getting people back to work to distribute and later to produce the necessities of life. | | |
| There is considerable danger that part of the shelter population may want to leave the shelter before it is safe to do so. This will be particularly true in areas far from the scene of the blast, where there is no visible destruction to make the existence of danger seem real to them. It will be the duty of the shelter management to make the existence of invisible danger real enough to the shelterees so that they will be willing to stay in a crowded and dirty shelter until it is safe for them to leave it. For example, the radiological personnel can tell them the level of radiation outside the shelter, and how much total radiation dose would be gotten in a given period of time. Printed material can then be cited showing the effects of that amount of radiation--- and describing the symptoms of the radiation sickness that it would produce. | Premature leaving of the shelter will be prevented by making its dangers real to the shelterees. | |
| Special medical precautions have to be taken when shelterees, after a long period of shelter occupancy, leave the warm and humid shelter to go outside. Too abrupt change in climatic conditions might lead to illness. | Special precautions will be taken to guard health on the change from shelter to outside conditions. | |

| | Decisions for Community Shelter System | Modifications for Shelter No. ____ |
|---|---|---|
| Just how the egress from the shelters (leaving the shelter) is to be done will be a problem for management. It will depend largely on the post-attack conditions prevailing in the outside world. Are the roads passable? Are the shelterees' homes livable? What is the food situation? Are the water and sewage systems operating? Will the entire population of the shelter leave at the same time, or will the shelter be vacated by degrees? All of this should be planned while the shelter is occupied, so that the change from shelter to outside living can proceed smoothly and without hardship. | Plans outlining the manner in which egress of the entire shelter population will be carried out are to be developed by management during the period of shelter occupancy. These plans will conform to post-attack conditions. | |
| It is probable that long before the mass of occupants leaves the shelter, some individuals will have gone out on emergency missions. Such trips should be planned with the help of the radiological personnel, who can use their instruments and charts to tell how long a stay outside can be made without excessive danger. | Any emergency missions outside the shelter will be planned with the help of the radiological personnel. | |
| Since all such trips involve some danger, standards should be set up for determining when they are to be allowed. One authority says, "In general shelterees should not be exposed to significant radiation dose levels unless necessary in contributing to the welfare of the people or the rehabilitation of the community---- securing needed supplies, decontaminating, repairing, cultivating, rebuilding, and the like. Therefore, the shelter manager should strive to preserve a reasonable balance between shelter and stagnation on one hand, and danger and action on the other if it becomes necessary to keep the shelter in operation for a long period of time." | Shelterees should be exposed to significant radiation dosage only when the welfare of the people or the rehabilitation of the community requires it. | |
| Beside the emergency missions, work parties and scouting parties will probably be organized during the period of shelter occupancy. Decontamination of the immediate area will have to be done to keep too much radiation from getting into the shelter, and some place will have to be found for the occupants of the shelter to go to when they leave it. | Work parties and scouting teams, and decontamination parties will be organized during the period of shelter occupancy. | |

In large shelters, these temporary trips outside the shelter should be made in small groups instead of letting large numbers of people go outside at once. This will make it easier to control the shelterees and keep them from running into radiation hazards. It will also make it easier to get them back into the shelter quickly if this becomes necessary.

Decisions for Community Shelter System

In large shelters, temporary trips outside the shelter will be made in small groups on a rotated basis.

Modifications for Shelter No. _____

POST-SHELTER PLANNING (In-Shelter): Manpower Allocation

Decisions for Community Shelter System

Modifications for Shelter No. _____

As we have already mentioned, information on the skills which the shelterees possess, with emphasis on the skills especially needed in reconstruction, will be collected during the shelter period. This can be kept on cards in a card file, for easy access and sorting, and used as a basis for assigning people to jobs in the shelter and to post-shelter jobs.

A card file of information on the shelterees' skills will be set up during shelter occupancy.

It will be used in assigning people to in-shelter and post-shelter jobs.

All this information should be sent from each shelter to a central place where the manpower needs of the community are being worked out and manpower allocated to the places and occupations where it is most needed. Of course many people will be left in the jobs that they had before the attack. People keeping the electrical and water-supply plants in order, and others dealing with the basic necessities, will probably be left at their regular jobs. But the large proportion of the population that deals with non-essentials will probably have to be reassigned to more needed occupations for the duration of the emergency. It will probably also be necessary to assign persons who have not been working before-- housewives, retired persons, and adolescents.

Information on shelteree skills will be fed into a central controlling agency responsible for manpower allocation in the community.

If the decision on what work each person is to do is made while people are still in the shelters, they can be given training in their new occupations during the shelter period.

Whenever possible, manpower allocations will be made while the population is still in the shelters to allow time for necessary training.

In this way they will be able to go directly to work when they leave the shelters without going through an unproductive training period.

POST-SHELTER PLANNING (In-Shelter): Medical Supplies.

Decisions for Community Shelter System

Modifications for Shelter No. _____

If a serious nuclear attack occurs, with the means of production and transportation seriously damaged, it may be necessary for drugs and other medical supplies to be taken over by the community for controlled distribution. Otherwise, since drugs will be scarce, the price of them might go very high and people in need of them might not be able to get them. If a great deal of radiation sickness exists, the need for drugs will be serious.

Plans will be made during the shelter period for the immediate acquisition and controlled distribution of drugs and other medical supplies during the recovery period, if this proves to be necessary.

During the shelter period, after the amount of destruction is known, plans can be made for acquiring, and controlling the distribution of, drugs and other medical supplies.

As a start toward this, the surviving normal medical stockpiles in the community can be located and plans developed for their use. There may be supplies of drugs in warehouses, etc., as well as in drug stores and hospitals. These plans will have to be made during the shelter period, after the amount of damage and destruction is known.

The surviving medical stockpiles in the community will be located and plans developed for their use during the shelter period.

Once the post-attack situation is known, plans can be made for the use of the remaining medical facilities and personnel. If the hospitals are destroyed, new hospital areas will have to be chosen. If they are not, patients may have to be sent to less damaged areas from areas so badly damaged as to have nothing that can be used for emergency hospitals.

Plans will be made for the organization and use of existing medical facilities and personnel.

Medical personnel will have to be used in whatever way the greatest use can be made of their services. Decisions will have to be made as to whether medical attention is to be given to those most in need or to those with the best chance of recovery, and as to whether private medical practice is to continue during the emergency or whether doctors will spend all their time in public service. Here again the planning will have to be done after the attack, since it is impossible to predict just what facilities and personnel will survive.

POST-SHELTER PLANNING (In-Shelter): Water.

Decisions for Community Shelter System

Modifications for Shelter No. _____

An adequate supply of pure water will be one of the essentials of the recovery period. It will need to be pure in two senses--free from harmful radioactivity, and free from disease-producing organisms.

Exposure to radiation does not in itself make water harmful. But when fallout particles are in the water, they are swallowed along with it and go on giving off radiation inside the body. For this reason water from an open reservoir may be dangerous, because fallout particles will have settled on it, and more fallout particles may be washed into it by the rain. The radiological defense personnel, using a Geiger counter, will be able to determine whether or not water is radiologically harmful. This will probably be determined by scouting parties.

The various sources of safe water can be located during the period of shelter occupancy. This can be done in two ways:

Potential sources of water for the recovery period will be located by sending out scouting parties and by referring to pre-emergency planning documents.

1. By searching the planning documents that were prepared during the period before the emergency. These should mention the location of covered reservoirs, tanks, etc., the contents of which can be safely used.

2. By sending out scouting parties to test bodies of water for radioactivity.

If there is likely to be a shortage of water, some means of rationing it will have to be worked out during the occupancy period. Otherwise water needed for drinking purposes might be used for bathing and other non-essential purposes. Americans are used to using a great deal of water, and merely telling them to be careful of it will not be enough. Rationing will be necessary. How this is done will differ according to circumstances, and especially according to whether people are being fed by mass feeding or are eating in their own homes.

If there is likely to be a shortage of water, an effective means of control and rationing of water will be worked out during the shelter period.

| | Decisions for Community Shelter System | Modifications for Shelter No. ____ |
|---|---|---|
| Disease-producing bacteria, of course, can be killed by boiling water before using it. But experience with this method has shown that some people will not take thetrouble to boil their drinking-water. In this way epidemics can get started, and a few careless people can endanger the health of the community. | Plans will be made for the decontamination of the community water supply. | |
| It is better for water to be purified at a central source and then given to the people in drinkable condition, both for this reason and because purifying water from radiological contamination is a far more difficult and technical job than purifying it from disease-carrying organisms. Boiling water has no effect on its radioactive content. The only way to make radioactive water safe to drink is to reduce the amount of soluble fallout material to the 1% level or lower. Sometimes this can be done by a coagulation process. Another way is by ion exchange. But these methods are highly technical and are best applied to the community water supply before the water is distributed to the people. | The water will be decontaminated before it is distributed. | |
| The shelterees will need to be given instructions on what kind of water will be safe to drink after a nuclear attack. The community should supply and, if necessary, ration, pure water, but unless the people realize the necessity for limiting their intake to this, the plan will be only partially effective. Particularly if water is rationed, some persons will drink other water if they get thirsty. Knowing the safest sources of water will be a protection to them. | Shelterees will be briefed on what the safest sources of water will be during the post-shelter period. | |

| POST-SHELTER PLANNING (In-Shelter): Industrial Rehabilitation | Decisions for Community Shelter System | Modifications for Shelter No. ____ |
|---|---|---|
| For the nation to recover from a nuclear attack its industry will have to recover, not only to supply the current, continuing needs of a large population but to repair the damage of the war. For a time industry, like human labor, will have to apply itself to the basic and pressing needs of the people. It will have to busy itself with producing the things that the community needs in order to recover. For example, if most of the buildings in an area are destroyed and transportation has been damaged so that building materials cannot be shipped in, it will be important for industry to manufacture cement and excavate gravel to make concrete blocks, or to cut and dress lumber, or to make an earth-ramming machine for adobe houses. Once these basic needs are met, industry can return to a production pattern more like that of peacetime. But for a while those industries will have to be rehabilitated, and new ones set up, that deal with the basic necessities. | The first industries to be rehabilitated will be those most needed to enable the community to recover from the effects of the attack. | |
| Not only the welfare of the community must be considered, but the welfare of the nation as a whole. It may be necessary for an area that can produce something badly needed elsewhere in the nation to concentrate on producing that, even if doing so means not producing something needed for recovery in its own community. For example, Peoria, Illinois, which produces earth-moving equipment, might allocate a considerable amount of its resources to this, because earth-moving equipment will be badly needed for decontamination programs throughout the country. | Allocation of manpower and resources for industrial rehabilitation will be considered from the point of view of national recovery as well as from that of recovery of the individual community. | |

POST-SHELTER PLANNING (In-Shelter): Food.

Decisions for Community Shelter System

Modifications for Shelter No. _____

It is likely that food will be scarce for some time after a nuclear attack. A year or two may pass before any considerable amount of crops can be raised. A heavy mortality can be expected among livestock. We may be largely dependent for a while on the food in the warehouses and on the stored surpluses owned by the government. Until it is certain that an adequate food supply is available, the food that we have should be rationed to make sure that everyone gets what he needs and nothing is wasted. Otherwise food prices might rise to levels that would mean hardship for much of the population, and part of the country might be overeating while the rest was starving. Also, food shortage leads to civil disorder.

. lans will be made for controlling food distribution by means of rationing.

Plans for rationing can be made during the shelter period, after the amount of damage done by the attack is known. The kind of rationing needed will depend on the kind and amount of food available--- and on the number of people surviving.

One thing to decide in regard to rationing is whether you want to give larger rations to people who are doing heavy work, or very essential work. Working people, especially those doing heavy work, need more calories than idle people, and heavy work considerably increases the need for water. Also, feeding workers better than you do non-workers will make more people want to work.

Persons doing heavy or very demanding work {will / will not} be fed separately and given highly nutritious meals and generous supplies of water.

If this is done, it would be best to feed the workers separately, as otherwise it will be difficult to see to it that they get more food than the non-workers.

While the population is still in shelter, plans can be made for feeding it after egress. For a time this will probably be done by mass feeding. The easiest way to do this is by taking over restaurants, hotel kitchen and dining-rooms, etc., where cooking and serving can be done conveniently.

Early scouting parties will locate restaurants, cafeterias, etc. where mass feeding can be carried on.

POST-SHELTER PLANNING: (In-Shelter). Shelter Rehabilitation.

Decisions for Community Shelter System

Modifications for Shelter No. _____

The shelter occupants can not be sure, when they leave a shelter, that they may not have to come back to it again. More missiles might strike, or it might be found that the outside world was unsafe, either because of radiation or because of civil disorder. So a shelter should always be left in condition so that the occupants could come back to it if they had to. Thismeans that it should be clean, the equipment should be in working order, and supplies should be in it for a two-week stay.

Shelters will be left clean, stocked, and with their equipment in working order.

The first necessity is to clean it. It may be very dirty after two weeks of crowded occupancy. It should also be disinfected. This should be done as soon as the occupants leave it. Specific plans for doing this can be drawn up during the shelter occupancy period, and shelterees assigned to do the work.

Each shelter will be cleaned and disinfected as soon as it is emptied of its occupants.

Plans will be made for this and workers assigned.

Leaving a shelter should be done according to planned procedure. All machinery should be shut down and oiled or otherwise protected. Toilet tanks should be emptied. If water is available, the water tanks should be refilled. Food that is not taken with the occupants should be secured for possible future need. As far as possible, a shelter should be left ready to occupy again if hostilities are reopened later, or if chaotic conditions make it desirable to use the shelter as a base of operations for a time.

Before leaving a shelter the occupants will

1. Shut down the machinery and oil or cover it to prevent damage.
2. Empty the toilet tanks.
3. Refill the water tanks if water is available.
4. Secure any food supplies to be left.
5. Clean and disinfect the shelter.
6. Do everything necessary to leave the shelter so that it can be occupied again without delay.

During the occupancy period, a list can be made of all that needs to be done to make sure that the shelter machines and equipment are in good repair, so that they will not deteriorate while the shelter is empty and so that they can be used again when needed.

A schedule of equipment overhaul and repair will be developed during the occupancy period for all shelter equipment.

To re-stock a shelter properly it will be necessary to know just what it had in it in the first place. If the shelter contained lists of these things, these lists can be kept to use as guides in re-stocking. They should show the types and quantities of food, medical supplies, water, fuel, etc., that were in the shelter. Of course it will not be possible to stock the shelter again with exactly the same things: for example, ordinary white or graham crackers may have to be used instead of the bulgur-wheat wafers, or paper spoons instead of plastic ones. The important thing is that the shelter be re-stocked with things that can be used for the same purpose as the original items.

Decisions for Community Shelter System

Lists of all the shelter's original supplies will be kept, or new lists made, to use as guides in restocking. As far as possible each shelter will be restocked with materials similar to those on the lists.

Modifications for Shelter No. _____

| POST-SHELTER PLANNING: (In-Shelter). Decontamination. | Decisions for Community Shelter System | Modifications for Shelter No. ____ |
|---|---|---|
| During the period of shelter occupancy, reports of the amount of radiation in various places will have been sent in to the shelter control center. Some of them will have come from the radiological-detection instruments outside the shelters; others will have come from the reports of radiological monitoring teams that have made expeditions outside the shelters. Altogether, the shelter control center will have a good deal of information about the amount of radiation in various places in the community. It can use this information to plan the decontamination program and decide where large-scale decontamination should begin and how it should proceed. | Based on the reports of the radiological monitoring teams, large-scale decontamination efforts will be planned in detail during shelter occupancy by the control center. | |
| Of course the individual shelters will plan the decontamination around their own entrances. | The shelter manager, with the advice of the radiological defense personnel, will plan the decontamination of the area just outside the shelter. | |
| The manpower and equipment available for decontamination can be used most efficiently if decontamination efforts are under central control. In this way the work can be planned so that the machines will not have to make long trips between the place where they work one day and the place where they are to work the following day, and will not have to stand idle while they wait for laboring crews to become available. Also, the places that people need most to use can be decontaminated first. | All decontamination efforts will be under central control. | |
| Cleaning equipment such as brooms, brushes, buckets and hoses, and earth-moving equipment such as shovels and wheelbarrows should be stocked in protected and easily accessible places. | Tools and equipment for decontamination will be made available. These will include:<br>1. Brooms<br>2. Brushes<br>3. Buckets<br>4. Hoses<br>5. Shovels<br>6. Wheelbarrows | |

Even a skilled workman is not likely to have learned the techniques of decontamination in his peacetime life. And there may be no one present in the shelter who can teach these techniques. Decontamination activities can be dangerous to the worker if they are not carried out properly. Instructions on how to carry out decontamination procedures should be placed in the shelters so that the decontamination personnel can work safely and effectively.

Decisions for Community Shelter System

Decontamination instructions will be placed in the shelters.

Modifications for Shelter No. _____

| POST-SHELTER PLANNING: (In-Shelter). Other. | Decisions for Community Shelter System | Modifications for Shelter No. _____ |
|---|---|---|
| Governmental services such as the fire department and the police, administrative, health, and welfare services will probably have to be reorganized a good deal after the attack. For one thing, many of their officials and workers may be dead. These gaps will have to be filled by promotion from within or by appointment of new personnel from among the survivors. Some services, such as Health and Welfare, will have to be greatly expanded to meet the needs of the refugee and dispossessed population. | Governmental services such as Fire, Police, Administration, Health and Welfare will be reorganized as much as possible during the shelter period so as to provide effective services immediately upon egress. | |
| If many buildings have been destroyed in the community, it may be necessary to allocate living quarters according to need. This may necessitate moving families in with other families, or other makeshift arrangements that in themselves are likely to be unpopular. Such measures can be done more easily if they are done immediately, in an emergency atmosphere, than they can if they disrupt already existing arrangements. If the administrative machinery for allocating living quarters is already set up, the new arrangements can be made quickly-- something that is desirable in any case, to keep any family or person from undergoing an interlude of homelessness. | The administrative machinery for allocation of living quarters will be established to be set in motion immediately upon egress from the shelter. | |
| It is impossible to make a definite decision on the following matter, because so much will depend on what conditions are in the outside world after the population leaves the shelters. In any case, the matter will be decided by the survivors and not by us. But you may want to consider whether or not you think it would be desirable for the shelter organization to continue into the post-shelter period, if the conditions of the outside world are such that continuing the present social and economic structure is temporarily impossible. | If the peacetime social structure has been destroyed as a result of war, the shelter organization will continue into the post-shelter period as a means of providing stability and group support during the period of reconstruction. | |
| The people in the shelters will have gotten to know each other very well at the end of two weeks. Shelter experiments show that lasting friendships are formed under such circumstances. They will have gotten used to working together, and know each other's abilities and disabilities. | | |

Someone has written that the most enduring social structure in the world is that of the neolithic village. It may be that the social structure of the shelter, as its occupants emerge into a destroyed and dangerous landscape, will have something of that stability. In meeting the trials and hardships of a new kind of life, the occupants of a shelter may decide that they want the companionship and common support of their friends instead of splitting up into isolated family groups.

If events develop in this way, the occupants of neighboring shelters will seem like the inhabitants of neighboring villages, and the control center will temporarily act as "government."