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A GUIDE  
for  
THE TRAINING OF FOOD MANAGERS  
of  
LICENSED FALLOUT SHELTERS

Prepared for the  
DEPARTMENT OF DEFENSE

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A GUIDE  
FOR  
THE TRAINING OF FOOD MANAGERS  
OF  
LICENSED FALLOUT SHELTERS

This report has been reviewed by the Office of Civil Defense and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the Office of Civil Defense.

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HAS PREPARED FOR THE  
DEPARTMENT OF DEFENSE

A GUIDE  
FOR  
THE TRAINING OF FOOD MANAGERS  
IN LICENSED FALLOUT SHELTERS

As a supplement to - A RESEARCH STUDY -  
FOOD SERVICE PROCEDURE  
IN  
FALLOUT SHELTERS

## PREFACE

Thermonuclear power as a weapon of war represents perhaps the greatest challenge to national survival that has ever confronted any society. In response to this threat, scientists have focussed their attention on the need for designating or building public and private shelters, and the need for identifying and analyzing the technical and human problems that would arise in the equipment and management of these shelters.

This publication has been prepared to deal with that phase of the administration of the large public or semi-public shelters which has to do with the management of the water and food problems. It is designed to serve as a guide for those responsible for planning, organizing and maintaining the facilities and the voluntary forces that will be needed for the shelters and the post-shelter functions. •

It describes the purposes, activities and responsibilities of the food manager and suggests policies, organizational patterns, and administrative practices that will be helpful to him in attaining his difficult goals.

Because of the wide differences in the size and facilities of the designated shelters with resulting variation in personnel and equipment needs, the discussion is largely limited to basic problems and principles.

With some adjustment, these suggestions can be adapted to most large fallout shelters in American communities where voluntary local help is expected to provide both the management and working force for the shelters

## INTRODUCTION

The basic assumption of this guide is that intelligent planning and training can save the lives of many people in communities where habitable fallout shelters are available. This material is concerned with that phase of management which has to do with the provision, storage, preparation, control and distribution of water and food supplies.

An analysis of the reports of human behavior in the serious disasters of history clearly indicates that the planning and training of the leaders was often responsible for the cooperative efforts of the people involved who managed to survive. In planned strenuous experiences, such as polar or submarine expeditions, pre-training was an important factor in helping the men through these crises. In some situations, training is reported to have meant the difference between survival and death.

In the shelter planning of the Office of Civil Defense, it has been assumed that as much training as possible will be provided for individuals selected to manage and staff public fallout shelters. Pre-shelter technical and managerial training, at least of key staff members, should provide the knowledge and skill essential to efficient operation of shelters and encourage an attitude of confidence and optimism among the population.

Civil Defense has an opportunity and an obligation to do all it can to assure the success of this national program. To this end, they hope to provide as much guidance as possible to develop well-trained operating staffs and an informed public.

This guide, along with a manual for the "Management of Foods in Licensed Shelters", was developed as a part of the basic research report "Food Service Procedures in Fallout Shelters" by members of the Staff of the School of Hotel Administration at Cornell University.

It is the purpose of this guide to assist in the selection and training of the food manager and his staff. It will consider his responsibilities and functions as organizer and manager of all water and food services from the storage to the final distribution of the supplies to the shelter occupants.

It is also designed to serve the food manager as a guide for selecting, organizing and training his voluntary staff. Consideration will be given to policies, responsibilities, skills and relationships essential to achieving the goals of the shelter program through efficiency and the maintenance of morale.

Information and ideas in the guide will also emphasize the importance of the psychological well-being of the shelter occupants. As these preparations are made for the preservation of life in the event of nuclear attack, efforts for the preservation and development of basic social objectives of our culture should not be neglected in the training program. For this reason, the spare time during occupancy will be used for the training of the people for adjusting to a contaminated environment in the community upon their emergence from confinement.

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CHAPTER I  
GENERAL INFORMATION AND BACKGROUND

---

1. THE NEED FOR A TRAINING PROGRAM

An analysis of the problems likely to arise in the operation and management of the water and food service in a large public or semi-public shelter indicates a definite need for careful training. If time permits, it is planned that the manager of a shelter will be carefully selected and adequately prepared for his post in anticipation of shelter occupancy. He must then supervise the selection and training of the key men he will require to staff his organization. If possible, this training will be done before the disaster occurs.

Because of the complexity and seriousness of many of the decisions to be made, relative to the survival of the shelter occupants, the food manager should undertake extensive study. The unusual nature of his work, in addition to the problems of feeding a large group of people with limited facilities, lies in the fact that he must organize and manage a cross section of the population under conditions of great frustration and fear with a voluntary staff. It is much more demanding than hotel or restaurant management.

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Only shelters with a capacity of 50 or more occupants will be considered in this discussion. In general these people will constitute a cross section of the United States population except where special institutions with selected groups are involved. People of all ages, all degrees of health, all occupations, professions, religions, nationalities, races, cultures and philosophies of life may be seeking protection in any one shelter.

In order to restrict the size of the guide as much as possible, many assumptions have been made. They are based on the experiences with the disasters of history, experiments by specialists in shelter management, laboratory studies with food and nutrition, learning and personnel management studies, behavior studies on the effects of sensory deprivations and publications of the Civil Defense.

These assumptions will serve as guidelines in the development of this guide.

## 2. SOME BASIC ASSUMPTIONS

- a. Designated public shelters will be arranged to provide adequate space, air, food, water, light and energy to perform essential functions for a specified number of people. The number of occupants may range from 50 upwards and the duration of confinement may extend to 14 days.
- b. A high degree of protection with reasonable living conditions can be achieved in one of these shelters with a well selected, organized and trained staff of local volunteers.
- c. As a political subdivision, a shelter will need to be organized as a government unit with need for as many operational and service supervisors as is required to maintain and operate the shelter.
- d. Although democratic processes should be maintained if possible, the manager will be given executive authority with final power on critical policy residing with the occupants. An advisory committee of well known and respected citizens will be selected to advise with the manager and serve as representatives of the shelter. Maximum authority and responsibility will be delegated by the manager to the officers and supervisors in control of specific functions.

- e. The shelter manager will adjust his plan of organization and administration to the nature of the disaster, the physical characteristic of the facility, the number of occupants, the anticipated length of stay, and the amount and nature of his supplies.
- f. Information obtained from the managers of historical disasters will be used when appropriate in planning policy and training programs.
- g. Much of the training of the staff must deal with relationships with the occupants and with behavior problems arising from frustration, restriction, confinement and fear.
- h. The training program must insure compliance with sanitary rules and regulations in connection with food and waste disposal as a precautionary measure against sickness and disease.
- i. Once the shelter has been organized, serious efforts will be directed toward preparing the occupants of the shelter for rescue and restorative action in the community. The shelter organizations may provide the best approach to recovery in the community from nuclear devastation.
- j. Efficiency and high morale are very difficult to achieve with a frightened confused and restricted population. The more severe the disaster, the greater the need for trained leadership and good organization. Involvement of the population in useful activity may improve morale.
- k. As in previous disasters, the control of water and food may become the most critical problem in management where survival is fundamental.
- l. An intensive training program for shelter leaders, assistants and alternates is necessary. If possible, one alternate should be trained for each key position.
- m. The maintenance of standards of conduct in his organization is an important responsibility of food managers.

- n. Crowded conditions necessitate special consideration and tolerance for the group whenever possible.
- o. Cleanliness and the wise use of water and food should be observed by the food staff as a way of influencing others.
- p. Obedience to others and cooperation with managers must be accepted as a way of life where limited space and rationed supplies are necessary.
- q. Where space permits, a program of instructional and recreational activities will be needed for energy release, tension reduction and exercise. A basic program of activities should be planned as a part of the training and recreational program. Occupants may be expected to cooperate.
- r. If shelters are furnished with basic supplies and equipment for survival, if volunteers are trained to use them, and if the occupants are taught, the probability of survival is good.

### 3. THE NATURE OF THE TRAINING PROGRAM

In this guide, training of the food manager and his staff will consider the nature of equipping, stocking and management of the federal ration and supplementary foods provided by the Civil Defense or local people in each public and semi-public shelter. Wherever possible, this training will be carried out with the aid of specialists in the community who are qualified either in technical or professional aspects of the assignment. Those who may have had experience in a disaster of any sort that might be helpful should be invited to participate in the discussions on planning.

As soon as the neighborhood or institutional shelter has been designated, the food manager should make a careful analysis of the space arrangements

for feeding, sleeping, ventilating and storing in order that he can plan his organization and service to conform to the environmental problems and the likely occupants. Special attention should be given also to health and sanitation problems as they relate to the disposal of garbage and the cleanliness of utensils in the training work. The many reports and articles prepared by Civil Defense should be studied and organized to use in the training program.

Because of the cost, storage qualities, health values, and other qualities stipulated for the federal food supplies, restriction is of necessity placed on the amount, variety and palatability of the food placed in the shelters. These factors will affect the preparation and distribution of the food to some extent but the chief managerial problems will arise because of the limited amounts of both water and food and the lack of variety served. Some Americans who are used to unlimited amounts and numerous varieties of food may grumble and protest at such an austere diet. Children who may have been used to a great amount of freedom in bounteous homes may not understand or appreciate such limitations and create turmoil if compelled to eat austere rations. To such frustrations over food must be added - as managerial problems - the overcrowding and confinement, the lack of privacy, the probable concern for folks, pets and property unprotected from fallout and the unhappy outlook for the future.

To create efficiency and good morale under such conditions would call for comprehensive understanding of human nature, unlimited patience and peculiar qualities of leadership. No one would be expected to be experienced in such a calamitous catastrophe and only imaginative training can help the manager who must be prepared to face it.

#### 4. SHELTER TRAINING POLICIES AND FUNCTIONS

Predetermined policies for the new managers and assistants in the food service will be helpful by constituting some ground rules of operation for the organization and the training program. Additional policies will of course be added as experience dictates. These policies are based on the disaster experiences that have been recorded and on judgments about what are prudent precautions in the light of our knowledge of what might happen from our evaluation of scientific facts.

##### a. Training Policies

- 1) With the dual goals of survival of the population and recovery of community functions in mind, the food manager will provide strong control of his organization and his training program.
- 2) The best people available will be selected for the service jobs and as trainers.
- 3) As much training as time permits will be arranged for those selected.
- 4) A well conceived organization pattern will be developed in terms of the size arrangement and special needs of this particular shelter, and the staff should be taught about its operations.
- 5) As much authority as is compatible with good discipline and tight control will be delegated to assistants in charge of special functions.
- 6) Democratic principles of management and knowledge of the situation should be invoked as far as possible to promote cooperation with the occupants.
- 7) Each individual should be granted as much freedom and authority in performing his duties as the situation permits.

8) As many occupants of the shelter as are able should be involved in activities of the shelter operations to prevent boredom and increase morale.

9) Water and food supplies should be kept under rigid control even if force is necessary.

10) Sanitary regulations having to do with food services should be written out and enforced.

11) In the rationing of water and food strict impartiality should be observed. Hoarding or trading basic rations will not be permitted.

12) Because of the complexity of the problem and the limitations on food, no ethnic or dietary laws will be recognized in the preparation or servicing of food.

13) Daily inventories of water and food will be made and reported to the shelter manager.

14) The specific tasks and responsibilities of supervisory personnel will be written out and given to persons appointed to these posts.

15) All occupants of the shelter will be made aware in advance of the probable restrictions on water and food and their privilege to supplement these items within certain limits.

As indicated in the policy statement, many functions in the shelter need to be delegated not only because of the crowded conditions but because it is good personnel practice. The purposes of the shelter are of such a serious nature that performance of delegated functions may need to be required by the leader.

The manager's delegated authority does not extend beyond what the group can and will do. Along with the authority goes an obligation that he be effective in his work. He must make it clear to his associates that he is strongly motivated by the shelter aims and then if he has to deprive them of more water or food later, they will understand and cooperate better.

As far as possible, working conditions should be made as good as possible under such crowded conditions. Causes of mutual distrust and suspicion should be eliminated and feelings of security should be developed through the reduction of threat.

The proper management of water and food will have much to do with the habitability of the shelter. If air purity and motion, temperature, humidity and space are maintained at levels consistent with human endurance and if possible, human comfort, the management of water and food will be simplified.

b. Special Training Problems

The manager of food in a large community shelter must face many unusual administrative problems for which he needs special instruction. Next to the problem of working under all of the restrictions of a major disaster, he has the problem of organizing and supervising an untrained voluntary group of workers. The extent to which the more capable citizens offer their services will depend upon the pre-shelter public education program carried out to inform them of the critical nature of the disaster and the extent to which a cooperative shelter program can provide security

from fallout. Information, if not training, needs to be effectively presented to every person in the community so that once the signal is given he is ready to participate and cooperate whenever requested.

Normally, untrained voluntary help should be something of a management problem. But in a disaster situation where most of the tasks are simple and obviously essential if the purposes of the shelter are to be gained, the great majority of American citizens, when well informed, would willingly assume their assigned responsibility and do it to the best of their ability. Much will depend on the nature of the leadership and the degree of confidence they have in the manager who is chosen to direct them.

Through exerting a real effort to help themselves, occupants of the shelter may find participation rewarding. Self help reduces anxiety and helps pass away the time.

CHAPTER II  
PRELIMINARY PRE-ENTRY TRAINING

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1. THE SELECTION AND MANAGEMENT OF THE STAFF

For purposes of training in the problems of management, the food services divide themselves into two periods of time, the pre-entry and the post-entry periods. The pre-entry phase deals primarily with general problems related to policies, purposes, organization functions, supplies and equipment. The post-entry phase considers selection and orientation of additional service people, the checking, storing and arrangement of water and food supplies, the preparing and serving of food under the restrictions of the shelter, the problems of relationship with the occupants, the need for maintaining sanitary conditions in spite of limited quarters, the importance of maintaining standards of equality in water and food rationing, the need for cooperation to maintain efficiency and reasonable morale in spite of confinement conditions and the problem of preparing staff and occupants for the water and food hazards that might confront them outside when the confinement is over.

In planning the training program of the staff, consideration must be given in both periods to the purpose and size of the shelter, the nature and number of the occupants expected as well as the probable overcrowding that is likely if the supply of shelters is inadequate or difficult to reach. A degree of panic may follow the signal to occupy the shelters particularly if the people have no preparation in advance and are uncertain as to what they will do. The Russian population, which faces similar disaster, has been required to undergo weeks of experience each year learning how to occupy shelters and behave, once they are inside. Under such discipline, panic and overcrowding is less likely to

occur. Overcrowding will be very difficult to prevent and will put a severe strain on limited facilities of water and food in some shelters as well as a strain on the manager.

The pre-entry program would be under the supervision of the Civil Defense organization. In addition to selecting and designating the shelter and providing basic equipment and supplies, it is their important responsibility to select the manager of the shelter. He in turn would determine his manpower needs and select such key men as the food managers. The food manager under the general supervision of the manager would select and begin to instruct his aides. In the light of the nature of the work, very careful consideration should be given to the selection of the best men the community can provide for this service. While a group can make decisions and determine its direction it is necessary for an able individual to carry out the program. Before the training program can be undertaken the food manager must be selected and assigned.

Whenever water and food have been limited in a disaster experience, much of the activity and attention has centered around the preparation, serving and consuming of these limited supplies. The food manager has often been the most popular man in the situation but he is also under the greatest pressures. A strong person should be selected for this position.

His qualifications should include the ability to:

- a. Select, assign, train and manage a team of voluntary assistants in such a way as to insure efficiency and high morale.
- b. Plan and direct food storage, preparation and distribution for a disturbed and confined population.

- c. Inventory the supplies and determine the best method of distributing them and balancing them for nutrient and caloric values.
- d. Undertake strict rationing if necessary with impartiality and a minimum of disorder.
- e. Supervise the proper cleaning and storing of all utensils and dishes used in the operation in accordance with sanitary rules and regulations.
- f. Get along with a confused, frightened and upset population trying to subsist under conditions of deprivation and confinement.
- g. Resolve behavior problems arising in connection with food distribution when possible without recourse to the shelter manager.
- h. Report significant changes in the water and food supplies to the occupants as well as the manager.
- i. Make and enforce rules of conduct for the staff while on duty.
- j. Check on commercial power, equipment, supplies, fire hazards and sanitary facilities before the confinement begins.

It is unlikely that any one man or woman in the community would possess all of these qualifications or have had the experience to develop them. Consideration must be given therefore to finding the person with the greatest potential and try to provide him with as much training and experience as possible in the pre-entry period.

His selection should be made from among qualified food handlers in the community, but his ability to manage disaster problems may outweigh the importance of his knowledge of food. Under restrictive conditions, the preparation and servicing of food becomes less complicated and the management of people uprooted from home and deprived of their usual water and food supplies may become more complicated.

Serious consideration might well be given to the selection and training of an alternate food manager in case the number one man fails to reach the shelter when the signal is given. This will be particularly likely in residential areas where many of the adult population leave their home section to work or attend school during the day. The onset of the disaster is unpredictable and may catch some trained people too far away from their planned shelter to get to their assignment.

## 2. THE PHILOSOPHY OF MANAGEMENT

In addition to his other qualifications, the food manager should understand human nature and make his decisions tactfully but decisively in terms of an accepted policy when possible. Once made, he must carry out his policies with resourcefulness and courage. Above all, he must earn and hold the respect of the group in his administration of the water and food rations. Any suspicion of partiality or unfairness could terminate his usefulness as a leader and cause cooperation and discipline to break down. He must be able to convince the occupants of the seriousness of the situation and elicit their cooperation in attaining the goals of the department. He must present convincing arguments of the need for sacrifice and coordinated effort if he is to get the support of his volunteer working force. Cooperation is harder to achieve when the emergency is not understood but if members once understand the problem and agree to sacrifice for the good of the group, such an attitude is an important morale builder. Morale of a reasonable order should be the goal of every division manager in spite of the obvious difficulties.

To attain cooperation and effectiveness with the population of the shelter, the food manager should understand something of their behavior and how they as humans respond to deprivation in disasters.

The social patterns of this particular culture, such as their need for security or the need for independence and freedom from fear, or approval and prestige, should be taken into consideration by the manager. Frustration of such influence, while not so serious as limited food, thirst, or sleep, may still lead to emotional disturbances severe enough to create management problems.

It has been observed in simulated studies of shelter management that agitation and tension mount immediately after occupancy and this is followed by mild depression. It has also proven true in shelter experiments that pre-training and wise selection of managers and staff increased the overall adjustment to shelter living and improved attitudes. Urges to be free are quieted and new loyalties can be developed under the guidance of directors who understand such behavior. For example, under crowded conditions a level of tolerance for bumping, elbowing, and complaining must be worked at continuously to avoid low morale and strife. Compulsions that are sure to be felt will become irksome and troublesome to manage in a shelter unless the manager possesses unusual understanding and patience and forestalls such actions by encouraging tolerance by the occupants.

During the centuries that man has faced and survived disasters, the ability that one observes emerging most often and that comes to his rescue frequently is the tendency, under such stress to cooperate. Every observer of behavior

must have noted how quickly men fighting a fire resort to various cooperative efforts to work most effectively toward subduing the conflagration. The manager of a shelter needs to select the type of person who can capitalize on this characteristic. An attempt must be made to find a person who can convince all people in the group of the need for purposeful and intelligent cooperation - one who can show them why cooperation is necessary and can convince them of the need for following the proposed plan of action. This will require advance thinking and effective communication. Intelligent self-directing and self-sustaining people must be kept informed of the forces and circumstances that they must deal with if they are to succeed. Only then can they coordinate and delegate the efforts of the occupants of the shelter.

People coming into a shelter will represent a great variety of backgrounds with varying values. Some will be motivated by one religious pattern; some by another. Some have been used to a puritanical way of life, others by complete permissiveness. The manager will not be able to change these incentives. He must know how to get the people to work together rather than to allow these influences to become disruptive. Stronger cooperative incentives must be made to replace cultural or religious differences that could interfere with achievement of the shelter goals.

Admiral Byrd tells how he did not dare to leave two men to occupy the Advanced Base in Little America during the long winter months. Two men cooped up together in such a narrow space would begin soon to get on each others' nerves.

"The way one ate his meals would become intolerable to the other", Byrd said. "The habit of snoring in his sleep would cause the other to hate him. Little things would become great things and all sense of proportion would be distorted". Without a well selected manager, such situations would develop rapidly in the crowded shelter.

Unjust criticisms, ridicule and witticisms designed to puncture the ego of a fellow occupant have no place in a crowded basement where survival is the dominant purpose. The well selected and trained leader will try to replace them through discretion, tolerance and respect through wholesome activity, courtesy and understanding. It will be difficult enough to tolerate the cries of spoiled or sick children and sick adults without putting up with unnecessary disturbances of quarreling adults.

### 3. PROBLEMS OF MOTIVATION FOR COOPERATION

How quickly and how well potential assistants in the food division will learn will depend on many factors, including their attitudes and motives, the kind of material to be learned, and the conditions under which the learning takes place. If a community is attacked with modern weapons, the motivation to enter a shelter will be the preservation of one's life, the strongest of all motivations. It is this motivation that may result in overcrowding. Until such a condition exists, one of the most difficult problems in connection with preparing people for service in shelters will be to convince them of the need for such preparation.

At the present time a feeling of indifference and skepticism in the general population exists with respect to an eventual need for shelters as well as an attitude of futility as far as protection from fallout is concerned. Until this attitude is changed, through a concerted informational effort or through a worsening of the cold war situation, the training of officers for shelter management will be essentially a motivation problem.

Unlike the Russian method, the use of compulsion to get people to prepare for shelter occupancy could not be resorted to in a democracy. Participation should take place through education and understanding only.

#### 4. THE NATURE OF THE INSTRUCTIONS

In the food division, the material to be learned is of two types; that which deals with the knowledge of foods and services required, and that which provides an understanding of the behavior of the population particularly with respect to storage of water and food under shelter conditions. With well chosen assistants who have had food handling experiences knowledge of foods and services will not be much of a problem. A knowledge of what to expect by way of behavior of people confined and crowded with a limited amount of freedom as well as restricted water and food may require specialized training. Immature children are more likely to be self-centered and more concerned with immediate satisfaction of their desires than adults. They might be provided with competitive activities to distract them from their organic needs where as most adults could be reasoned with.

It will be a major problem of the shelter manager to keep the staff informed and engaged in a continuous training program. Information should be collected and organized that will provide adequate popular support for the organization so that a healthy environment can be set up. Rules and regulations should be drawn up for service people as well as for the regulation of the population and a training program established that will insure favorable attitudes and relationships as well as essential technological information.

#### 5. THE ORGANIZATION OF THE FOOD SERVICE DIVISION

The executive process is one of integration of the whole through organization and control. Once the objectives and policies of the food manager have been completed and approved, he must plan for the development and maintenance of an operating organization. The purpose of such an organization is to facilitate the achievement of shelter goals with effective procedures providing for the cooperation and coordination of all members of the staff. Habitability studies show that shelter organization and leadership have an important effect on shelter habitability even when the situation is simulated and the actual psychological reaction to disaster are lacking.

Coordination is the creative factor in this process and guarantees the most effective arrangement of member functions and duties. A free-service self-sustaining operation such as a shelter has a special need for a well designed organization. It makes possible identification of the aptitudes, knowledge and needs of the occupants and indicates direction of the efforts to attain those needs. A good organization is particularly valuable in helping

to control people who are enduring privations and experiencing frustration and fears over which they have no control. Whether simple or complex, an organization is an impersonal system for coordinating human efforts. Even though the size of the organization changes from shelter to shelter, the elements and purposes remain the same. The same principles that govern the functioning of the small food organization may be concerned in governing a more complex and larger organization.

In order that the division of food services might be seen in its relationship to the entire organization and the problem of distribution of the water and food might be more clearly understood, a proposed chart for the overall management of the shelter is presented in Display II-1.

It will be seen by the lines of the chart that the manager of the shelter has been delegated authority for the administration of the unit. Because of the many critical decisions he may be called upon to make, he has been provided with an advisory committee from whom he can seek advice and support. This committee will have been selected from the mature adults in the shelter.

The chart also provides for assistants to direct the line functions of which food is an example, with further divisions such as storage, preparation, cooking, service and sanitation, when the size of the shelter makes such an expansion necessary. Staff functions such as personnel administration, communication, safety, health, and radiology are related directly to the office of the manager. Public welfare functions such as information, recreation, religion, and medical are organized as delegated services probably under an assistant manager as in the case of the other basic

SHELTER ORGANIZATION CHART

I.

MANAGEMENT	
A	
B	

III.

ADVISORY COMMITTEE					
A	B	C	D	E	
F	G	H	I	J	

IV.

PUBLIC WELFARE			
A	B	C	D
Information	Recreation	Religious	Medical

II.

STAFF				
A	B	C	D	E
Communication	Personnel	Safety	Sanitation	Radiology

V.

OPERATIONS			
A	B	C	D
Maintenance	Food	Water	Admission & Assignment

Building
Location

Display II - 1

operations. Final authority for the organization rests with the occupants of the shelter once outside contact with Civil Defense terminates.

"Men usually submit willingly, even cheerfully, to authority when they believe it to be exercised well and responsibly in the pursuit of ends of which they approve and in whose benefits they will justly share."

In the community organizations the food division will be headed by an officer appointed by the manager to whom the necessary responsibility will be delegated for supervision of his section. With a well selected staff, the greater the delegation of authority, the more efficient the operation of the organization.

No organization can be successful that is not based on the psychological forces of human behavior. For that reason the over-all policy of involving as many people as possible in activities would be observed by the food chairman in manning his various services. Such participation will give each individual a feeling of responsibility and keep him busy part of the day. Boredom would then be less of a problem in the shelter.

Each shelter should organize its population into small manageable units of from 8 to 10 persons for convenience in feeding, sleeping, recreation, and other activities. Each group should select a chairman to represent them. These units may in turn be formed to create sections and in the larger shelters the section may be grouped into divisions for easy control. In the smaller shelters, one man may handle all of the operations in a division. The number of workers and the complexity of organization will increase with the size of the population.

In a shelter of 1000 or more, a complete comprehensive organization chart should be posted showing the number and relationships of all functions and workers in the shelter.

Once the structure of the organization is completed, the food manager will be concerned with the establishment of a schedule for performing routine activities. This schedule must take into consideration the sleeping arrangement of the shelter and try to coordinate sleeping and feeding patterns. Where it becomes necessary, because of limited sleeping facilities or feeding facilities, to stagger the sleeping or feeding in three eight-hour shifts, the feeding pattern must be organized for night and day service. This would mean at least two full complements of food service workers to provide and serve meals when the occupants need them. Such a situation would permit using many more people as helpers.

The schedule should provide for the best internal traffic and feeding arrangements the shelter structure permits. Where possible, special areas should be set apart for feeding at specific times. To avoid confusion and congestion at meal times special traffic rules for groups as well as individuals may need to be set up and enforced.

Since the capacity, equipment, and occupants of each large shelter will be different, only general organizational and staffing conditions will be considered in this guide. Where possible, organization patterns should be worked out before occupancy so that electrical outlets can be provided where needed.

The orientation of all staff members selected as a part of the pre-entry program should be carefully planned.

- a. The manager and division managers need to know all members of their staff together with their capabilities, interests and experiences as soon as possible so that each can be appropriately placed in the organization.
- b. Such subjects as the following should be discussed:
  - 1) The shelter organization and command structure and the relationship of staff to occupants of the shelter and to the community office of command
  - 2) Map of the community showing all community shelters and the control center.
  - 3) The functions of the shelter advisory committee.
  - 4) Standing operating procedures and daily routines on entry and thereafter.
  - 5) Policies pertaining to the retention and protection of personal possessions.
  - 6) Rules covering individual and group conduct should be learned.
  - 7) The authority and responsibility of the food manager.
  - 8) The relationship of good food management to the morale and welfare of the shelter occupants.

They must be made to appreciate the fact that disharmony, despite crowding and confinement, must not be allowed to develop. The need for absolute impartiality in the distribution of food and drinks and services should be made clear. Social, economic or family status should be ignored in serving rationed water and food.

Once the members are introduced and informed of the overall purposes of the shelter program, they should visit the shelter and become familiar with its location, structure, equipment and supplies. Particular attention should be

given to the food storage space, any cooking equipment, and facilities for sanitation and the disposal of waste. Power and water sources should be carefully checked and studied. The overall organization and management policies should then be explained in as much detail as necessary so that each staff member will know what his role is to be and where he fits in the organization pattern. He should be given a card having the title, duties and responsibilities of his post.

After the organization is explained, the manager will explain to each team the seriousness of their responsibility as a whole and the need for wide involvement of all who are capable of assisting in the effort and the expectation of maximum cooperation of individuals as well as groups.

Once this general orientation has been completed, groups with special assignments should meet, select a leader and begin more specialized training.

#### 6. TRAINING METHODS TO BE USED

In shelter experiments with management the importance of fire shelter training has been emphasized. The influential leader plays a large role in food acceptance and the effective leader will play a large role in preparing the staff and occupants of the shelter for the ordeal ahead. Teachers in the community should be utilized in the pre-shelter period to instruct the staff of their duties and responsibilities. In whatever method used for training, it must be emphasized that the preparation job for all aspects of shelter management is essentially human relations training and that is one of the most formidable of training problems.

Any sound training program must be based upon the fundamentals of learning and learning is a dynamic active process. The trainee learns best by doing but there is no opportunity for complete disaster experience in management. Experience in the operation of equipment and the preparation of foods can be provided, but the management of human relations in disasters can only be simulated.

The most effective method of training food managers would be the case method through participative discussion of performance. Case training is the group discussion of a real life situation within a training environment. The best cases available in disaster history should be brought into the discussion for analysis and consideration of all the factors that contributed to the results obtained. This should be under the leadership of teachers well informed about the behavior of humans under all conditions.

CHAPTER III  
ADVANCED PRE-ENTRY TRAINING

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1. THE NATURE OF THE BASIC RATION

Experiments have shown that healthy persons can fast for a period of time equal to the duration of the shelter period without serious effects, if water and air are adequate for survival. However, physical weakness develops rapidly and morale is low under such conditions. Since a reasonable physical readiness needs to be maintained for facing the calamitous situation that might follow the disaster, something more than a minimum amount of water and food should be provided. The objective of the Civil Defense ration program is to provide a palatable food in sufficient quantity so that the occupants of the shelter will have the strength to face a difficult reconstruction period. The manager of foods must concern himself with the procurement, storage and distribution of enough water and food to sustain as many of the occupants as possible through the period of confinement, and to enable them to undertake the recovery of the community.

For this purpose, the Civil Defense organization will have procured and stored at government expense a minimum supply of water and food to provide a limited ration for the 14 days of maximum anticipated occupancy. The amount of these supplies will be limited by the designated number of occupants planned for a given shelter.

The basic ration which meets the suggested restrictions above consists of a supply of water for each person occupying a community designated shelter. The food will be packaged in cans of two sizes. One will supply seven persons with 10,000 calories of food each and the smaller one will supply five persons with 10,000 calories of food each. There are approximately 2,000 calories per pound.

Carbohydrate in the form of hard candy may become a part of the ration without changing the total calorie count. These candies will be packaged in moisture proof cellophane bags which are in turn packaged in a drum, or they will be stored in five gallon square tins loose. In the latter case, a scoop and cellophane envelopes for one portion each will be provided.

Local governments are responsible for the proper storage and safekeeping of these supplies. If the communities have designated shelters not supplied with basic rations, food should be selected according to the characteristics listed below.

## 2. THE SELECTION OF FOOD

Potential occupants of the shelter will have been advised that they may, under certain restrictions, supplement the basic ration with additional food. The first restriction is that additional food will not be allowed if storing it would in any way reduce the number of people who could be admitted to the shelter. The second suggestion is that foods brought to the shelter should be selected in conformity with the same restrictions as were used in making up the basic ration. These characteristics considered desirable in selecting food for shelters follow:

a. A Relatively Long Shelter Life. Generally, the selection of foods having a longer shelf life reduces the problems of surveillance and replacement.

b. Palatability. So that the food selected be acceptable to most of the shelter community, it is desirable to stockpile food of the kind usually consumed in the area. Exotic, highly seasoned, or food possessing 'extreme' flavors is to be avoided. A food that can be easily varied which allows some choice as to condiments is desirable.

- c. May Be Eaten Hot or Cold. Circumstances may preclude the service of hot foods, therefore it is deemed highly advisable that foods selected may be eaten at room temperature.
- d. Relatively Economical. Cost is always a factor where large stockpiling is necessary. Cost includes initial outlays, supervision of stored food and replacement of items at the termination of shelf life.
- e. Easily Prepared and Served. Simplicity of preparation and service of food under mass-feeding conditions would contribute to the overall efficiency of the food program. If possible, the only utensil used should be a spoon.
- f. Suitability. Foods selected should be suitable to the clientele of the shelter. For example, menus for a school shelter would differ from those prepared for an industrial plant.
- g. No Waste Characteristics. Garbage disposal will be a problem so it is recommended that foods will be completely edible.
- h. Variety in Texture and Consistency. A reasonable amount of roughage should be included in the concentrated-type diet.
- i. Containers Should Be Vermin-Proof. This is especially necessary for long storage periods.
- j. High Caloric/Bulk Ratio. Except for water, foods should have a high caloric content where space is limited, although survival for two weeks is not expected to be dependent upon balance of nutrition or calories.
- k. Hygroscopic Qualities. Foods that absorb moisture, used in an area of anticipated high humidity, should be avoided. For example, salt or sugar are highly hygroscopic.
- l. Minimum Food Spoilage. In order to reduce cost and garbage, contents should pour clean as much as possible.

- m. Foods Requiring a Low Order of Cooking Time Should Be Selected. A longer time is required to cook food in large cans. More liquid foods cook faster than those with small quantities of liquid.
- n. High Liquid Content If Cooked in Container. These will supplement the water ration.
- o. Freeze-Proof. In some sections frost may be a factor to contend with during storage.
- p. Resistance to High Humidity. For example, bulk-packed cereals in the usual paper containers would soon break down.

These specifications for food selection are not requirements but suggestions for the guidance of management of foods.

The problem of use and replacement of food supplies in the pre-shelter period looms as a complicated problem, and its solution lies with the manager of food.

### 3. THE STORAGE OF FOODS

As indicated earlier, the problem of selecting and stocking the basic food ration for the designated community shelters will rest with the local government working through its Civil Defense organization. Once the food has been chosen and delivered to the community warehouses, it will be assigned and stored at the shelters. This food must be maintained under proper temperatures and in accordance with state sanitary regulations. As time passes, it will be necessary to examine the supplies at intervals to guard against spoilage or loss of palatability. Replacements should be arranged at proper intervals to permit these foods to be disposed of before they deteriorate.

As soon as the shelter is occupied, the problem of storage becomes a problem for the food manager and the rotation will, of course, be discontinued. Before taking over responsibility for these supplies, the food manager should make a careful check of both the quantity and quality of the reserves.

Parents and guardians in the community should be informed of the nature of the basic ration and be invited to provide formulas or other special baby foods with them when they enter the shelter or before. Adults with special dietary problems or people who are ill and require food of a particular nature may also bring supplementary foods with them. In some cases, the community or certain groups in a given area may elect to augment the rations because of the limited amounts or the monotony of eating nothing but crackers. These additional items would not be considered essential to survival and the amount that would be allowed must conform to the standards listed above as far as possible.

Quantities and varieties of supplementary foods should be adapted to a specific shelter in accordance with available space, the nature of the expected population, the equipment provided and funds available.

Of course, the addition of supplementary supplies to the ration will multiply storage and sanitation problems, especially if they are brought to the shelter in advance of the disaster period. In general, they will represent more desirable, more perishable and perhaps less well-packaged food than the basic ration. It will be more of a problem to store them and the temptation to take them may be greater. If they are brought to the shelter in significant quantities, problems of preparation, storage, and distribution will also be created for the food service.

The need for the disposal of containers may also create difficulties unless special care is given to their selection. A tin container that might easily be crushed would require less garbage space.

#### 4. CONSERVATION OF WATER AND FOOD

The manager of foods has a critical responsibility to conserve water and food. He and his staff must develop a control of distribution and a campaign against waste that will insure a minimum supply for the shelter. All water and food should be stored where it can be placed under lock and key or it must be guarded day and night for the welfare of the total group.

Once the stockpile of food has been determined the depletion rate should be regulated to conform to the probable duration of occupancy. Until this can be determined, rationing should not allow more than 700 calories of food per day with one quart of water only. Adjustment can be made once the seriousness of the situation is assessed and the probable duration of the shelter stay is determined.

This restriction can be made best through an adjustment of the portion served. Water and food should be stored adjacent to the food preparation and distribution area if possible. In no case should people be given more food than they can consume at a given time.

Strong and determined people should be selected for the post of food control. Special consideration should be given to the water containers to insure minimum loss either through faulty vessels or careless handling. Very large containers create problems of manipulation under some conditions.

## 5. THE DISTRIBUTION OF FOOD

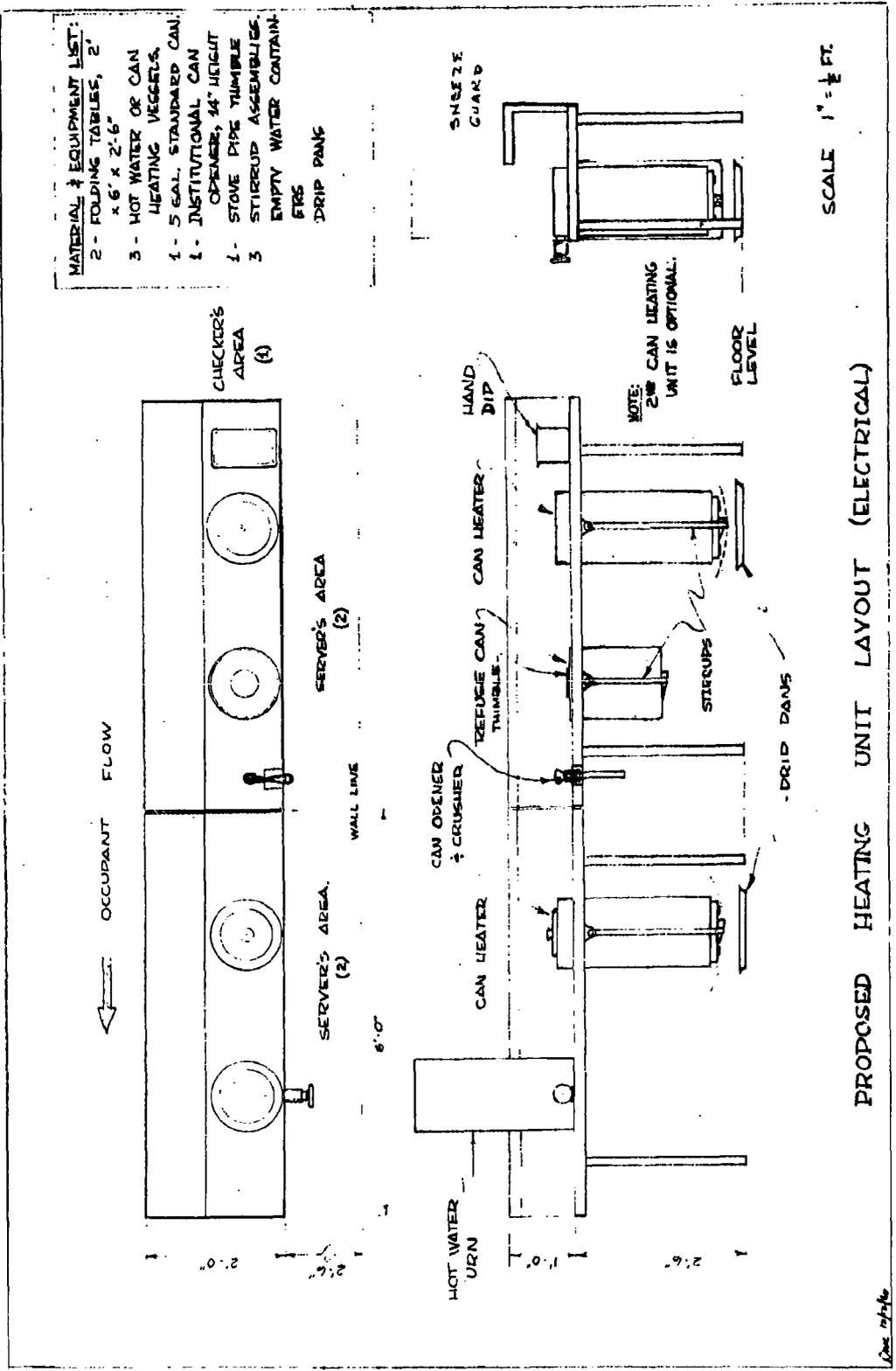
Space arrangement and density of the population as well as the nature of the food supply will determine where and how people are fed. A special eating center near the food preparation and storage area and away from toilet facilities would probably provide the best arrangement. In general, however, such centralization may not be possible because of the crowded conditions.

Where the basic ration in the form of biscuits or crackers is the only food available, the need for a special feeding area will be minimized. Where supplementary foods in significant amounts are provided requiring facilities for heating or cooking, then a special center will be necessary. Conveying food through crowded areas would invite spilling and increase the job of controlling rations. A suitable arrangement for serving supplementary foods in a food center is shown in the accompanying chart.

If the organization has provided for small units of 8 to 10 people, it might be possible to turn the distribution of the packaged crackers over to the leader of these small groups and have him pass out the meals and assume responsibility for equitable distribution.

If sleeping arrangements do not force day and night feeding shifts, the customary routine of three meals per day should be followed. The eating rhythms of the group should not be disturbed more than necessary.

The ration for the day should be set by the food manager after careful consideration of the remaining supplies and the probable duration of the confinement. The possibility of post-shelter feeding if fallout is serious should not be overlooked.



PROPOSED HEATING UNIT LAYOUT (ELECTRICAL)

Case 1/1/16

Exhibit B-9

The entire day's ration should not be passed out at one time unless distribution problems are very restricted. If the day's ration is distributed at one time, both water and food not consumed for breakfast would be in danger of being wasted or exchanged before the next meal period thus creating morale or sanitary problems.

The disciplining and training of the service personnel for the distribution of strictly rationed water and food deserves special attention by the food manager. Partiality either of service or in the amounts of the portions delivered will cause complaints and accusations leading to strife and turmoil, especially if the people being served are hungry or thirsty. Every precaution must be taken to measure portions of the same amounts with no variations due either to carelessness or intent. If some people bring extra food to the shelter and others do not, the problem of equal distribution is more complicated. Hungry children would find it difficult to understand if some are allowed more than others. The food supervisors in public shelters provided with supplementary foods may find it necessary to spend much time explaining practices and policies of distribution.

## 6. THE DISTRIBUTION OF WATER

Next to air, water is the most important element needed for survival during the confinement period. More than food, the water supply will determine the number of people that can be admitted to the shelter. With the supply limited to one quart per person per day, complete control of conservation as well as distribution is indicated. This means that there will be no water for bathing, cleaning, or other personal use unless supplementary supplies have been added. Whenever possible, the consumption of foods that increase thirst unduly should be avoided.

Although washing is the most practical means of cleaning contaminated food, articles, utensils, or equipment, the meager ration of one quart would not permit such use.

In the pre-entry planning, the food manager should give fourteen quarts of water per person top priority as a supplementary item in his space. Thirst can become very demanding and no manager would want to contend with a thirsty population.

#### 7. THE REGULATIONS FOR FOOD HANDLERS

As a part of the training program, basic regulations for the handling of food should be written out and distributed to those who will be directly involved with the procurement and preparation of food. Such rules as those below could serve as a reminder of the importance of these contacts.

- a. No food exchange should take place in unsanitary surroundings that might expose food to contamination.
- b. Anyone engaged in the handling of food must keep clean all parts of his person, keep clothing clean, cover any abrasions, cuts, or other exposed part with a suitable dressing, refrain from spitting and refrain from smoking near the food.
- c. Articles of equipment used in connection with a food operation must be clean. They must be made of such material and in such a way as to prevent any risk of contamination.
- d. Carriers of food should not have infections or diseases.
- e. Food should not be wrapped in printed papers for transportation.

f. When toilets must be near food operations, they must be clean and well ventilated. No food should be stored in a toilet room.

g. All food handlers should be warned by signs to clean their hands before handling food. If water is not available, disinfectants should be provided.

A small pan in which a germicidal solution can be placed for hand washing after toilet use together with disposable towels for drying hands is advisable.

#### 8. SANITATION PROBLEMS

The serious consequences of such sickness and disease under shelter conditions would seem to justify extreme precautionary safeguards in the preparation and serving of food. These measures should include daily health inspection of food handlers and alertness in identifying sources of infection which may create a hazard. Waste food and containers of food should be placed in tight containers until they can be disposed of outside.

In the larger shelters, health and sanitation problems will be under the direct control of a special officer, but the preventive aspect of the health functions will depend largely upon the food division. With very limited water facilities for cleaning and restricted sanitary equipment, special training and constant supervision will be demanded of the food services.

The food manager should anticipate these critical needs and be sure that supplementary supplies include antiseptic solutions so that hands of food handlers can be sterilized. Health and hygiene information should be an important part of staff training and special rules should be drawn up and posted to remind service personnel of their responsibility in this field.

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In the limited space of a shelter, good sanitation is not merely a matter of comfort; it could be a matter of life or death. Human waste can spread such diseases as typhoid, dysentery, and diarrhea.

With the Civil Defense basic ration, packaged as proposed, danger of unsanitary residues would be minimized. Dry packages would not constitute a serious waste problem. When, however, supplementary foods demanding preparation are brought into the shelter, the possibility of waste and sanitation problems is increased.

#### 9. FOOD VALUES

Managers of food in hotels and restaurants sometimes question the necessity of concerning themselves with food values. They offer a wide variety of food from which the nutritionist may select and are usually under no compulsion to offer a balanced diet. As a result, they may not be well informed on nutritive matters.

The food manager of the shelter on the other hand is under some obligation to keep the diet balanced and he will have access to very few foods. It would be necessary, therefore, for him either to inform himself or have available charts showing the nutrient and caloric values of all common foods.

A very convenient and reliable chart showing the composition of most foods will be found in the U. S. Department of Agriculture Handbook No. 8. One of these copies might be standard equipment in every large public shelter.

In planning menus, appropriate food could be selected by referring to the charts so that needed nutrients and energy would be available in the diet. For two weeks, most people could subsist on 1,000 calories per day where physical activity will, of necessity, be limited. The slight loss of weight that might ensue would be welcome to many people and might improve health. Where, however, a strenuous job of reconstruction awaits the manpower in the shelter at the end of confinement, energy and strength should be kept at as high a level as the supply of food permits.

The protective elements of vitamins and minerals in food can easily be lost or reduced through faulty handling, storing, cooking and serving. The person responsible for the foods must be aware of these possibilities. Supplemental sources of vitamins and proteins as well as high caloric food could be stored for those who are especially concerned about a completely balanced diet.

In shelters containing children, body building materials should be used as much as possible and supervisors should check on nutritive losses through preparation of foods.

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CHAPTER IV  
POST-ENTRY TRAINING

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1. THE SELECTION AND ORIENTATION OF SERVICE PERSONNEL

When the shelters are opened for occupancy, it can be assumed that the manager of the food services and some of his associates have been selected and have been given as much training and orientation as possible. If the Civil Defense organization of the local government has completed its responsibility, basic water and food supplies will be found properly stored in one section of the shelter and equipment for the preparation of food will be available and ready for use.

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In general, the food stocks thus provided may be expected to meet the minimum caloric intake to maintain reasonable health and energy for the expected occupancy period. It may be further assumed that these foods will be reasonably palatable, contribute as little as possible to the waste disposal problem and require little or no cooking. The food stores will be supplemented by a supply of drinking water amounting to at least one quart per occupant per day.

Parents and guardians of infant children will have been advised by the local government to bring formulas or other appropriate baby foods to the shelter with them and turn them over to the food manager for storage and control. Persons with special dietary needs will also have been informed of their privilege to bring the particular food they require to maintain health with them and turn it over to the food manager. The community itself may have determined that the space in the designated shelter has permitted storage of additional food and will have placed such supplies in the shelter.

A careful examination and inventory of both stored food and that which has been brought to the shelter by the occupants will constitute one of the early problems of the food manager. With the help of his assistants he will find it necessary to classify, identify, and store packages of whatever water or food he has space for without limiting the number of persons planned for the shelter. He should be supplied with tags or stickers to place on these additional packages and be prepared to handle them without obstructing the rush of the people to obtain security as soon as possible. Undoubtedly, attempts will be made by some people to smuggle food or drinks into the shelter. That should not be allowed. Control measures will need to be rigid even at the entrance, in spite of the anticipated confusion, to insure conformity with the policies.

As soon as the additional food has been catalogued, packaged and stored and the food staff has completed its task of assisting with the checking in and placing of all of the occupants, the food manager will be concerned with the completion of his organization as soon as possible. He will need time to select the best persons available in the shelter to help with the food service so that he may use volunteers to assist with the service for the first meal or two while he investigates the qualifications of occupants of the shelter. Other things being equal, jobs should be spread among different natural groupings of the community so that all segments of the population are represented.

For key positions not already filled and for special supervisors or technical assistants, care should be exercised to select people for their ability to handle other people as well as for their knowledge and skill with foods. The larger the shelter population, the greater the need for careful selection. Wherever possible, men or women who know the nutrient or caloric values of food and are familiar

with food service should be selected but they should also be able to supervise and discipline inexperienced workers who may be designated to help them. If hunger or thirst problems develop during confinement, great pressure will be put on the food service people for additional or larger rations. Where the usual incentives such as pay, security, or recognition by promotion is lacking, the ingenuity of the supervisors is taxed to insure cooperation and integrity by the workers. Some people may have volunteered for service with the expectation that this would give them access to a larger portion of food or an opportunity to favor their friends.

The number of new persons required to carry out the feeding functions will depend on the size of the population, the extent of crowding, the design of the shelter, and the policy of the manager with respect to the involvement of as many people as possible to help out with the morale problem.

Whatever the number selected for service after the shelter is occupied, they will need special instruction and orientation before they can carry on successfully in this unusual situation. As far as specific skills or special knowledge is concerned, the requirements will be limited, but the more serious problems of attaining the purposes of the shelter program through their contribution will be much more involved and demanding. If previous indoctrination and information on the seriousness of the disaster and its consequences have not been achieved or were poorly done, earlier administrative officers of the shelter are confronted with the grave responsibility of informing the occupants of the life or death struggle that may confront them. They must stress the need for the cooperation of all concerned and for conforming to the traditional social norms and controls. If the disaster occurs before occupancy of the shelter is possible, the seriousness of the situation will probably be apparent. Many disabled people will need to be cared for.

After the newly appointed workers have been instructed on what they are to do and how it is to be done, the food manager will explain his program and policies as he has developed them. He should explain the nature of the food available and the need for a tight control over supplies. He will emphasize the urgent need for honesty and impartiality in distributing critical supplies, such as the rationed water and food. He will do all he can to point up the need for understanding and tolerance in their relationship with distracted, frightened, sick or uncooperative people in the shelter. He will want to warn them of the probability of rejection of food, particularly by some children, and the need for patience in dealing with them. He will caution them to inform themselves of the sanitary regulations in connection with food and waste and the desirability of strict adherence to them because of the possibility of and the seriousness of sickness in shelter living. He will remind them of the need for daily inventories of food as a basis for determining each day's ration during the occupancy of the shelter and the possibility of the need of extending food, services and beverages into the post-shelter period. Normal supplies of food may be contaminated, or outside homes may still not be habitable, forcing continued dependence on shelter living beyond the expected time.

He should inform them of the shelter's written policies and regulations that have been drawn up for their guidance, and urge them to study them and abide by them.

## 2. POLICIES AND RESPONSIBILITIES OF THE DIVISION

In support of the general shelter policy of survival and ultimate restoration of the community, continuous efforts at orientation and training must be accepted as policy in the foods division. New supervisory personnel should be informed of

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these additional policies as a working basis in the shelter. They should:

- a. Select the best people possible for the food services.
- b. Develop maximum cooperation through, and appreciation of the goals and the significance of the role of each helper in attaining them.
- c. Seek the advice of those qualified in the shelter.
- d. Follow democratic principles of control as far as possible.
- e. Permit as much individual freedom as possible in carrying out assignments.
- f. Delegate as much authority to the team leaders as they can safely assume.
- g. Provide for as much involvement of shelter occupants as efficiency will permit.
- h. Keep water and food supplies under tight control at all times.
- i. Maintain rigid enforcement of sanitary regulations.
- j. Observe strict impartiality in the rationing of water and food.
- k. Recognize no ethnic or religious dietary laws in the preparation of or serving of food.
- l. In all relationships with the occupants, they must be mindful of the strain and fear under which they may be struggling and practice patience.

### 3. PROBLEMS OF CULTURAL PRACTICES AND RELIGIOUS TABOOS

Under severe stress, many social values succumb to the struggle for survival. A cross section of most American populations would produce a variety of cultural or religious traditions with respect to food and its service. To conform to all of these practices or restrictions would make planning and management of a large shelter more complicated than it would otherwise be. In the interest of fairness and in the light of the goals of the shelter program, it seems wise to ignore these

cultural and religious food patterns and operate instead on the basis of health and survival for the duration of confinement. No ethnic or religious dietary laws can be recognized in the storage, preparation or servicing of foods.

To some people this will come as a severe restriction and the need for it should be thoroughly explained.

#### 4. THE PROBLEM OF DEPRIVATION

The administration of water and food in a shelter situation requires an imaginative grasp of the behavior of frustrated, frightened and restricted individuals. Few people have any real conception of what shelter living will entail. The many deprivations that must be imposed will cause physiological, psychological and social reactions that need to be understood to avoid confusion and loss of control. These reactions may result from confinement, reduced water and food supplies, foul air, high temperatures and humidity, loss of sleep, bad smells, unusual noises, crowding and uncertainty.

The major studies of human reaction to shelter conditions have been made with healthy male subjects, and physiological effects, rather than emotional or social reactions, have been noted. With women and children in a real disaster where no escape is possible, many emotional and social problems will arise that the food manager and his staff must identify and deal with when no doctors are available.

Physiological or sensory deprivations are the most serious and every effort should be made in planning shelter living to reduce them as much as possible.

Where fresh air, adequate food, and sufficient water can be made available, life will be preserved and good morale may be developed. A shortage in any of these basic needs will start a chain reaction that will be difficult to control.

a. Oxygen Deprivation. This may cause temporary or permanent damage to the individual as well as severe problems of administration. Sufficient oxygen must be assured through a satisfactory ventilation system. If by accident, the system should break down, or overcrowding deplete the oxygen, violent, uncontrollable activity such as that of a drowning person ensues ultimately, and paralysis is apt to occur. Undoubtedly, the person is unaware of the onset of his situation and may fail to realize the seriousness of his plight. Hence, supervisors must be on guard for any symptoms.

b. Hunger. This may become an inescapable problem for many people in shelters if basic rations only are available. Some starvation is characterized by feelings of weakness, hunger pains, dizziness and blackouts upon standing up suddenly. The hunger drive becomes the dominant dynamic factor affecting the behavior of the person. There is constant preoccupation with thoughts of food. Ultimately, the individual becomes unresponsive and uncooperative. Many emotional problems arise. Attempts are made to steal food and other signs of moral deterioration develop. The food manager is likely to have to deal with various degrees of hunger.

c. Thirst. Man can live for weeks without food but he can survive only a few days without water. Next to air, sufficient water should be given top priority in stocking supplies. Deprived of water for a long period of time, men report that sensations of thirst become maddening. Adequate water

should be stored and protected against waste by the food service division. Serious behavior problems arise from a depletion of water in the human system.

d. Odors. Bad odors in the shelter contribute to the discomforts of the situation and may be a real cause of complaint and turmoil. Fortunately, our olfactory senses become adapted to odors so that even foul odors become less objectionable, and very few people are known to have died from bad smell. Nevertheless, loss of appetite, nausea and aggression may result from bad odors so that the food manager will struggle to reduce them as much as possible.

e. Illumination. Sensory problems with light may result from over stimulation or lack of it. Too much light has been known to cause increased tension among confined people and no light can create innumerable problems. Darkness will lower morale by reducing activities, reading and training. Problems of illumination should be carefully planned and controlled if possible.

f. Temperatures and Humidity. It will be very difficult to control these factors in fallout shelters with uncertain sources of power and little access to fresh air. Hot, humid air sometimes produces vomiting and with little if any water for sanitary purposes, it could result in a very messy as well as uncomfortable situation. Many of the internal temperature problems will arise in connection with attempts to provide hot foods so that the food manager may have to face controversial decisions in this case.

g. Sounds and Noises. Here the problem may be excessive stimulation rather than deprivation, but judging from other confinement experiences, continuous or loud noises or even continuous harmony may irritate some people and cause aggressive emotional responses. Every effort to mask or eliminate noises should be taken in the planning for shelter living. Noisy motors or fans may disturb some people. At least control of unnecessary noise is a continuing problem of management.

h. Sleep. The pattern of behavior by which we satisfy the need for sleep is partly the result of cultural factors. Our pattern is based on the regular alternation of sleep and darkness. Man may go many hours without sleep although some sleep is necessary to recover from fatigue. Most people require from 6 to 9 hours of sleep daily and when men have been allowed to sleep as much as they care to the average was 7 to 9 hours per day. With sleep deprivation, concentration is impaired, motor performance deteriorates and the individual is easily disturbed emotionally. Lack of sleep is a common complaint of people who have spent time in shelters. Many factors are involved, but every effort should be made to make sleep possible. Where lack of space makes it necessary to resort to shifts, the problems are multiplied.

i. Appetite and Taste. Appetite may be stimulated by the sight, odor, and taste of food with or without hunger. It can be stimulated by appetizers or destroyed by smells. Seeing others eat stimulates eating. Habit plays an important part in the rhythms of eating when situations are favorable. Taste will of necessity be sacrificed to convenience and survival. Some people may refuse to eat under shelter conditions and may insist on release before the signal for opening the doors is given.

j. Crowding. Crowding involves most of the skin and muscle senses but its real effect may be on the imagination. A feeling of claustrophobia is not uncommon in confined places. The sufferer has a feeling that the walls are closing in on him and he is mentally very disturbed. By the very nature of the shelter, limitations in space will create problems of heat, odors, humidity and aggressive behavior. Some people will insist on release in spite of any dangers that may be outside.

To these deprivations, some of which may become tyrannical in nature, must be added the uncertainty of the future and the possible breakdown of outside protection. On the other hand, with wise management, shelter confinement could be nothing more than an unpleasant interruption of peoples' lives.

If at all possible under the circumstances, it is much wiser management to avoid deprivations that have to deal with reactions from them. Wherever medical service is available, all indications of abnormal reactions should be referred to this department.

k. Problems from Fears and Tensions. Anxiety, as well as the stresses or deprivations to be endured, is also productive of emotional disturbances. Fear of the unknown is a cause of emotional upset. In the early hours of shelter occupancy, these symptoms may be quite common and may react unfavorably on the normal procedures of distribution and the morale of the occupants. The well trained manager will expect such problems and think first of involvement of these people in some activity to quiet them down.

To most Americans, the call to a disaster will be a novel and horrifying experience. The problem of leaving homes and pets and rushing to a community shelter without knowledge of the security of some member of the family will be a common and disturbing experience.

Less serious causes of emotional upset will be not knowing what to expect of shelter living; fear of contagious disease because of the close contacts with people; fear of suffocation in such a small space; and possible fear of radioactive contamination through contact with other people.

In the initial stages, some of these people will create serious management problems that will be reflected in rejection of food and increased aggression. Headaches and sleeplessness will follow with many of the occupants which they may attribute to food or noise. Both studies of actual disasters and polar studies have shown that the best way to deal with these initial disturbances is to find useful employment for these people if possible. Where space permits, some sort of activity could be organized and provided.

Minor complaints about lack of privacy, no hot food, no reading facilities, etc. will come later and will be an indication that the occupants are returning to normal and panic is over.

Given such developments as high temperature and high humidity, additional fears and discomfort will arise, particularly if methods of control are inadequate or absent. Even in submarines where careful attention is given by engineers to prevention of such problems, they occasionally occur and cause both discomfort and illness.

Some occupants will be sure to find the food unpalatable or at least monotonous and will refuse to eat. The problem will become a nuisance but it may become severe if they try to leave the shelter before the signal for opening the doors is given.

Many will suffer from constipation on the diet now provided, with its lack of liquid, fruit, and other normal items.

Complaining occupants need to be reminded frequently that all men can endure much more than they think they can if they will have the will to do it, especially for the common good.

CHAPTER V  
PRE-EXIT TRAINING

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1. POST-SHELTER EDUCATION

The period of shelter occupancy should be used by the food manager to prepare the occupants for the water and food hazards which they might face on leaving the shelter. Planning recovery from a real nuclear attack involves a very imaginative effort in planning and organization. Destruction could be widespread. Much of the water and food supply in the neighborhood could still be contaminated. The actual situation should be explored and reported before people are allowed to return to their homes. If it is found that widespread destruction and contamination exist, the shelter organization should serve as a focus for cooperative community decontamination activities. Shelter occupants who have been prepared during confinement for remedial action in disaster areas will be able to return to their homes earlier.

The people should be informed during their stay in the shelter that protection from fallout is practical and attainable when approached in an organized way. They should be made to realize that systematic planning and informed management will insure success if all who are able to, cooperate. The food manager should plan to use the confinement period as the time for teaching the occupants of the water and food hazards that could confront them. If fallout has been general, it is possible that foods in the homes, in restaurants, in stores, and in the fields will be contaminated. It is even possible that communication and transportation will be destroyed and chances for getting new food may be very limited. Under such conditions, instruction in the processes of selecting and decontaminating food should be undertaken while the people await favorable reports from scouts who are monitoring the area.

The responsibility of the food department to continue to supply non-contaminated food through the facilities of the shelter longer than originally anticipated is a distinct possibility. Supplementary foods stored in warehouses or stores that have not been affected or are capable of decontamination may need to be brought to the shelter where they can be prepared and shared with those who have no such reserves.

If occupants are prepared in advance for such conditions, it will speed recovery and help to stabilize the community. Rescue and evacuation teams could be organized. A decontamination team could be established. Medical facilities could be planned for and law and order restored where needed. As soon as possible, clean up jobs could be undertaken in some areas. Utilities could be re-established, communications restored so that reports could be received about missing relatives, the fate of the government and national defenses determined and the outlook for the future estimated.

Post-entry training for post-exit existence would consist essentially of conveying reliable information of the danger inherent from fallout in the environment and keeping the occupants aware of changing conditions particularly as they apply to food. While emphasis should be on prevention of serious contact with radiation, attention should also be given to identifying danger signs, to protection against radiation by shielding, and the possibilities of decontamination when contact has been made.

Every responsible person should be expected to read prepared Civil Defense manuals dealing with radiation detection equipment. These deal with radiological fallout. These meters, when understood, provide information about the extent

and rate of change in the radiological situation. As far as possible, individuals should develop self-sufficiency before leaving the guidance of shelter officials. They should know the necessity of removing debris from around the house and how to remove it safely. If during such a process they become contaminated, they should know how to apply first aid. Emergency care of the sick and injured should be learned before leaving the shelter. Where the disaster has been widespread, shelter occupants might be the only source of aid.

The maintenance of law and order may be urgent in some communities to prevent looting. The procurement of additional supplies of food or the rationing of present stores may all call for cooperation and sacrifices to restore the community to some degree of effectiveness.

Movement of people may need to be restricted or courts to be restored where former institutions have been interfered with. There could be a sizeable burial problem or organization for further attack may be paramount.

## 2. PROBLEMS OF CONTAMINATED WATER AND FOOD

Since one of the objectives of civil defense action is to minimize the radiation exposure of people to as low a level as possible, the internal as well as the external radiation hazard should be considered. Investigations have indicated that as a primary annihilator, ingestion of contaminated food and water is of little consequence. Radiation from ingested radioactive material produces gradual damage thus becoming a long-term postattack recovery problem.

The habitability of an area after a confinement period of a given period of time will determine when occupants of the shelter may leave permanently. This exit time must, of necessity, be flexible and subject to careful determination of radiation throughout the neighborhood. Some sections may continue to be unsafe for a much longer period than others and as long as there is danger from fallout, the occupants would be expected to continue to use the shelter at least for sleeping or eating. There will be no sure way to predict the best time to quit a shelter. This will be a judgment made by management in contact with Civil Defense.

This uncertain situation will create many problems for the food manager. It may be necessary to stretch the supplies farther than he had originally planned. Supplementary foods outside the shelter that had been relied upon for use after 2 weeks occupancy may have become contaminated. On the other hand, foods stored in basements or warehouses may be available for distribution. As soon as it is safe for anyone to leave the shelter, information about stored foods should be sought and their relative availability determined. If ample safe foods should be found, occupants will need only to understand the need for caution in their use. Occupants should not be exposed to a radiation dose by indiscriminate use of what appears to be safe food supplies or shelters.

The food manager should learn as much as possible about radiation levels in surrounding areas before he uses outside food or permits occupants to use it. This means that a campaign of information about these dangers and possibilities of serious consequences must be carried out once the shelter is occupied and ready for such instruction. Close contact with outside

reports and radiological personnel within the shelter should be maintained for dependable information. With the consent of the manager, short excursions might be undertaken after a few days of occupancy by reliable staff members and samples they may collect for analysis might serve as a guide for further exploration. If supplies of water and food permit, the food manager should operate conservatively in undertaking the use of exposed foods.

Until he is quite sure of the accuracy of his data, he should make no predictions of the termination of his responsibility. The food service should continue until all occupants are assured of a safe supply of food outside.

If communication has been maintained with local headquarters of Civil Defense, their instruction with respect to the fallout situation should be followed, but occupants should not be released into an infected area until they have been carefully instructed about possible dangers.

### 3. DECONTAMINATION PROCESSES

Decontamination is the process of removing radioactive material from a location where it is a hazard to one in which it can do little or no harm. It is one of the means which are available for reducing the radiation dose that would be received from fallout. Radiation measuring instruments should be used not only to determine the effectiveness of the decontamination but also to make sure that the contaminated material is disposed of safely.

Because of its particular nature, fallout will tend to collect on horizontal surfaces, e. g. , roofs, streets, tops of vehicles, on top of open

foods, and on the ground. The main effort should be directed to clearing such places in preliminary decontamination. If an adequate supply of water is available, that would be the simplest way to achieve this. A detergent will make the water more effective.

If oil could be poured over such supplies to make them unfit for consumption, animals might also be protected. Contaminated materials should not be burned. Ashes would carry the contamination wherever they are moved to. Radioactivity cannot be destroyed. It must have time to decompose.

If emergency food supplies are exhausted or become contaminated in the course of the attack, the food manager will need to be informed about the decontamination of such foods. If food stored in refrigerators or basements has been exhausted and canned foods are not available, he would have to resort to food in the fields. Fresh fruits or vegetables can be washed or peeled to remove the outer skins or leaves. Boiling or cooking of the food has no effect in removing the fallout material. Potatoes, corn and other field crops exposed to early fallout would be safe to eat after cleaning. Grain that has been covered would be safe but it would be better if washed.

The meat of farm animals and poultry is probably freer from radiation than meat on the market unless refrigerated and protected. Chickens are relatively resistant to radiation, especially if they are raised under cover and fed packaged food. If available, eggs and poultry meat would be good food for the interim period of decontamination. Chickens should be provided with water and food for the period of the disaster as an important extra food reserve.

Every householder, even though they expect to occupy a designated public shelter, might be well advised to put aside a week or two supply of canned water and food that would be on hand when they emerge from confinement. If fallout has been general, it might be days before a safe supply of foods from regular community sources would be available.

Stockpile foods should be in cans, jars, or tightly sealed paper containers. Food should be selected that will last for months without refrigeration and can be eaten with no cooking. As far as possible, the needs and preferences of family members should be taken into consideration. Familiar foods are more likely to be acceptable in a disaster situation. As far as possible, foods should be stocked that meet nutrient and caloric values. A convenient set of tables for food values in canned food is available from the National Canners Association, Canned Food Tables, Bulletin No. 8.

Cans and jars of appropriate size for family needs for one meal should be selected. This is especially true for foods that deteriorate rapidly after the can is opened. Food spoilage in a well-filled, well-insulated home freezer does not begin until several days after the power goes off. The time will be from 3-5 days depending upon the size of the freezer. Food should be used and replaced to avoid spoilage before the disaster.

#### 4. WATER SUPPLIES

Domestic water supplies from underground sources will usually remain free from radioactive contamination. Water supplies from surface sources may become contaminated if watersheds and open reservoirs are

in areas of heavy fallout. It should be emphasized that mere boiling of water contaminated with fallout is of absolutely no value in removal of radioactivity. Most of the radioactive fallout would be removed by regular water treatment which includes coagulation, sedimentation and filtration. Chlorination has no value in removing fallout. Water may be distilled to make it safe for drinking purposes. The water contained in a hot water heater at home would serve as an emergency supply provided it can be removed without admitting contaminated water.

Radiation in itself does not affect water. It is only if the radioactive particles themselves get into it that the water becomes dangerous. The particles can be removed by a simple filtering process that is easily devised.

It should be kept in mind that in shelter planning and post shelter planning water is more vital than food. Ample supplies for the confinement period and the cleaning up period should be safely stored where they will be secure from contamination and destruction of the vessels containing them will not be likely.

The countermeasures for contaminated food and drinking water have been developed and evaluated. They include conventional food processing techniques and existing conventional water treatment procedures, plus suggested expedient measures. These involve no new principal or phenomena in addition to those already considered in the public health, sanitation and water supply field. The major portion of the fallout will be insoluble and removed along with the sand, silt and other surface contaminants. In no

case should food or water be wasted or thrown away. As a general rule the best quality of water and the least contaminated food should be consumed first. However, no one should be denied food or water if the only source available is contaminated. Infants and small children should be fed a milk substitute like similac, saylac or a product like metrecal.

#### 5. POST-SHELTER PSYCHOLOGICAL PROBLEMS

The psychological effects of emergence from a shelter may be more overwhelming than those noted at the time of entry. The failure to locate relatives and friends and the discovery of the complete destruction of homes, plants, churches, and familiar places would have an intense emotional impact. The feeling of guilt or frustration at not having helped save others; despair about the future and the feeling of helplessness in face of the hopeless outlook; all these can create situations in which only strong men could remain sane and rational.

It is to be hoped that the situation is more favorable at the conclusion of the shelter period. It is to be hoped that normal life can be resumed with certain precautions and organization provided to offer maximum protection. The preparation and training for rebuilding society may be the vital thing to satisfy the needs of the occupants for a new sense of purpose. Furthermore, training is the only way known to diminish fright.

Management should make it clear to the occupants of the shelter that they should remain in the shelter until the signal is given to leave. Before

permanently closing the shelter and dismissing the staff, the manager should have assurance that all occupants can return to their homes or that provision has been made for their removal elsewhere.

#### 6. RADIATION SICKNESS

If the disaster has been widespread, radiation sickness will be a common problem both in the shelter and in the contaminated period following confinement. It would be helpful if it could be identified early so that proper treatment could be provided or fears removed.

Radiation sickness is not contagious. Many of its symptoms however, may appear in anyone subjected to anxiety and great stress. Since many people in the community will experience these conditions, there might be a tendency for some people to panic and assume they have been contaminated with fallout unless they are familiar with these facts.

The severity of radiation sickness depends on the amount of radiation to which a person is exposed and on the length of the exposure time. The body can take a limited amount of radiation damage and repair itself without serious permanent injury. It is only when one gets too much, too fast, that radiation sickness or death may result.

It might be helpful to think of at least three different degrees of radiation sickness in terms of the symptoms to be identified.

Some nausea, lack of appetite and fatigue shortly after exposure would characterize a mild attack. The best treatment would be rest and the person would be expected to recover rapidly and resume normal activities. Unless the patient has been exposed to fallout, it should be expected that these symptoms are the result of emotions or strain of some sort. These facts would be comforting to the sufferer.

When the same symptoms are more severe and accompanied by vomiting and even prostration, the patient may be suffering from a moderate attack. A few days rest may be all he needs but symptoms may recur for a few weeks.

Again, when the above symptoms are followed in a week or more with fever, sore mouth, and diarrhea or ulcerated or bleeding gums, and in the third week the patient's hair starts to fall out, he has had a severe attack. Recovery may take two months. When exposure has been overwhelming, death comes in hours or days.

The following treatment has been suggested for all degrees of exposure. General rest, aspirin for headache, motion-sickness tablets for nausea, liquids as soon as possible for diarrhea and vomiting, but not until vomiting has stopped, then one teaspoon of table salt to one quart of cool water to be sipped slowly. For sore mouths, this solution can be used for a mouthwash.

Where professional medical care is not available, because of emergency conditions, the first aid handbooks in the medical kit should be followed closely.