

**UNITED STATES
CIVIL DEFENSE**

**CIVIL DEFENSE
IN SCHOOLS**



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FEDERAL CIVIL DEFENSE ADMINISTRATION

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Civil Defense in Schools is one of a series of technical manuals prepared by the Federal Civil Defense Administration. These manuals provide detailed technical or specialized information in particular fields of civil defense.

This manual is a further development of the administrative guide, *Civil Defense in Industry and Institutions*,¹ which recommends principles of civil defense organization and administration for the Nation's industrial plants and institutions.

Civil Defense in Schools is intended as a guide and reference primarily for local and State school administrators of schools. It is intended to assist principals, superintendents, and staff in the self-protection of their staff, and students, largely in terms of local and State and local principals. School of responsibility and defense measures jurisdiction of local authority, school systems persons ected to carry out superintended for teachers, ons contained in classroom

Many of these organizations already exist throughout the country.

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¹ *Civil Defense in Industry and Institutions*, Federal Civil Defense Administration, August 1951. Superintendent of Documents, Washington 25, D. C.

UNITED STATES CIVIL DEFENSE

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**FEDERAL CIVIL DEFENSE ADMINISTRATION
(Technical Manual)**

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**FEDERAL CIVIL DEFENSE ADMINISTRATION
PUBLICATION TM-16-1**



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GENERAL PRINCIPLES

Scope

1.1 The suggestions offered in this manual afford a maximum degree of self-protection for schools. However, circumstances affecting individual buildings in various types of communities may indicate treatment far less extensive. In fact, inclusion of some of the precautions and emergency services suggested, would probably be superfluous in many communities. It is not expected that any one school will attempt to use all of these suggestions. Local school authorities should decide which of these measures are most important and necessary to their individual school civil defense problem.

1.2 There are wide differences in school conditions—between various sections of the country, between urban and rural situations, and within a given community. It would be difficult to set forth rules and regulations applicable to all schools. One may be able to provide for its own protection while another may be largely dependent upon the community civil defense services. However, regardless of the degree of protection available, the school system administrator should coordinate his planning with the director of the facilities self-protection division of the local civil defense organization. Some elementary schools, special schools for the handicapped, and smaller junior high and private schools may be unable to provide for their protection because of staff limitations, type of students, age level of pupils, and lack of protective facilities. These schools should depend upon the local civil defense block warden unit for organization, leadership, and training in self-protection. The local warden service should be contacted to furnish assistance and coordinate the protective efforts.

1.3 This manual does not attempt to cover the many community functions schools may perform during emergency conditions. Its sole purpose is to indicate the planning and procedures necessary for the self-protection of schools.

Necessity

1.4 Schools are not exempt from attack. A Honolulu school, for example, was completely destroyed by fire as a result of the Japanese

bombing of Pearl Harbor. All schools within the territorial limits of the United States must be prepared for such an emergency.

1.5 An impregnable defense against determined enemy bombing attacks is impossible. A potential enemy now has the planes, bombs, and other weapons with which to attack us at any time. Enemy bombs would not fall solely on the big industrial plants or the railroad yards, but could hit homes, apartments, and schools as well.

1.6 A state of mobilization and the threat of war create varied and unique problems involving the safety of children. To meet these problems, educators must have all the information necessary for sound planning and effective administration of their school civil defense programs.

Responsibility

1.7 The responsibility for protecting children at school rests on school authorities. Besides meeting this immediate responsibility, school systems can do much to enhance and strengthen community civil defense preparations outside the school.

1.8 Every community will be making some adjustment to the emergency situation. In small rural communities that adjustment will not be the same as in larger communities. In target areas civil defense preparation requires an extensive but well-knit organization, with varied training programs. School officials must realize, with respect to civil defense, that what they organize and are responsible for is only a segment of the total community activity. In addition, they may be asked to assume other responsibilities in the local defense program.

1.9 Aside from the purely self-protective activities of the schools, there are numerous other ways in which they may serve. Civil defense activities for which school systems are singularly equipped to take a leading part are:

(a) Creating a community awareness of what civil defense is, the need for it, and its purposes.

(b) Assisting in educational programs for civil defense workers by providing teaching personnel and facilities for holding meetings and classes.

(c) Developing health and recreational programs, in cooperation with existing community plans, for civil defense emergencies.

(d) Helping to instruct the community on what to do in case of attack.

(e) Serving as first-aid stations, hospitals, and welfare centers after attack.

SUGGESTED ORGANIZATION FOR SELF-PROTECTION IN SCHOOLS

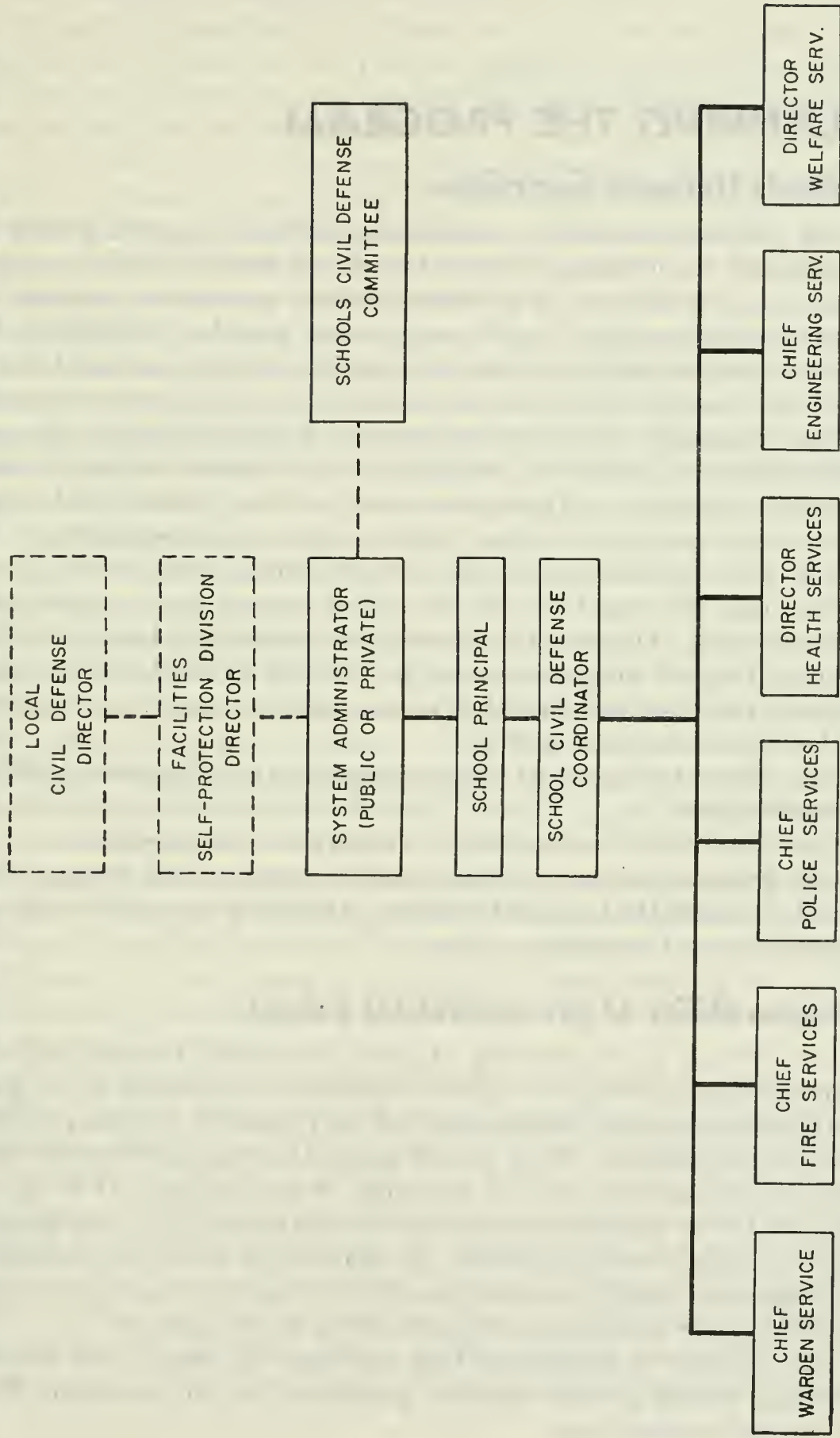


FIGURE 1.—Suggested organization for self-protection in schools.

PLANNING THE PROGRAM

Schools Defense Committee

2.1 In most localities a central civil defense program should be established to provide self-protection in all schools. This program should be coordinated by a schools defense committee composed of representatives of both public and private schools. (See figure 1.) It will then be possible to devise a unified plan and recommend fairly uniform practices to the administrators of the various school systems in the community. This unified approach is highly desirable because coordination of plans and policies will be advisable in such diverse aspects as curriculum adjustments, transportation, personal and school protection, emergency feeding, health, welfare, and recreation.

2.2 Just how the community's school defense plan is set up depends upon the way in which the school systems are organized and administered. (It cannot be stressed too frequently throughout this manual that all suggestions must be adapted to the local situation. Certain revisions will probably be necessary to make them conform to local administrative policy.)

2.3 Beyond the point of program organization, the schools defense committee can:

- (a) Provide for an exchange of experience and suggestions.
- (b) Serve as liaison on defense matters among school systems.
- (c) Promote the technical training of school personnel for efficient performance of emergency duties.

Responsibility of the Individual School

2.4 Within the framework of local, State, and Federal civil defense standards, the school system administrators should set up general guides governing the operation of the protection program in their own school systems. They should assign the responsibility for civil defense in each school to the principal of each school. It is the responsibility of the individual schools to adapt and apply the general guides to their own situations. In planning a school organization, consideration should also be given to the fact that each school will probably have to operate independently in an emergency.

2.5 It must be understood that although the school civil defense program cannot provide absolute protection, it can save many lives if properly carried out.

Public Relations and Community Support

2.6 When an emergency does occur, the success of school public relations with regard to civil defense will be put to a severe test. The parent who realizes that all possible protective steps are being taken will be less inclined to panic and interfere with vital communications and transportation facilities.

2.7 Parents and teachers should be informed of the necessity for defense preparations and given an opportunity to participate in the planning of the school defense program. Next, the students should be trained in their defense duties and responsibilities. As in other programs, parent and student participation in the planning stage will facilitate obtaining their cooperation. Complete understanding by parents and students of just what they are to do in an emergency is necessary to acceptance of the school civil defense plan by the community. Pupils should be encouraged to tell their parents and neighbors about the school defense program. Guidance of these "public relations agents," however, is necessary to avoid distorted and undesirable reporting.

2.8 When all those directly connected with the school (i. e., administrators, teachers, parents, and pupils) have been familiarized with the aims and methods of the program, they can help to obtain the support of the community. Specific information should be sent home which will acquaint parents with the progress of the school plan for safeguarding their children. This has been admirably accomplished in many communities by a letter sent to all parents from the local principal or superintendent of schools. Suggested letters of this type are included in the appendix of this manual. Other possibilities for informing parents lie in parent-teacher meetings, mass meetings of the community, or school-sponsored radio and television programs. Parents should be kept well informed so that there will be public confidence in what the school has done. Some ways of doing this would be by inviting them to the school to inspect shelter areas and observe practice drills.

2.9 Public relations benefits of the school civil defense program are many. Parents will be relieved to know that plans and preparations are being made to give their children the highest possible degree of protection and that it is not necessary for them to rush to the school for their children when warnings sound. Teachers will also find that in this, as well as in other school programs, parents can make a valuable contribution if they are kept informed. Reactions of individual pupils to the civil defense program may not be the same at home as at school. By reporting these reactions, parents can make a direct contribution to the improvement of the school's civil defense program.

THE SCHOOL CIVIL DEFENSE ORGANIZATION

The School Civil Defense Coordinator

3.1 Each school building should have a civil defense organization that can effectively carry out the program. The head of this will be the school civil defense coordinator. If the principal is able to devote the time and attention necessary to carrying out the program he should be the civil defense coordinator. Otherwise, he should appoint a person responsible to him, to carry out these duties. In selecting the school civil defense coordinator, due consideration should be given such qualities as leadership, ability to think quickly and clearly under stress, and past experience (e. g., camp leadership, or military service). Under administrative direction of the principal the defense coordinator should carry out preattack preparations and in time of emergency immediately put the school protection plan into operation and direct all activities. An alternate coordinator should be selected to assist and to act for the coordinator in his absence.

Communications and Control

3.2 To make effective use of all the resources at hand, the defense coordinator must be kept informed of conditions at all times during an emergency, so that he may coordinate the activities of the different services and check results. Thus, a control system operating from a control room should be set up under the direction of the principal and the defense coordinator.

3.3 The control room would probably be located in the principal's office since in many cases the regular communication system is centered there. Unless this office is in a shelter area, a secondary office should be established, from which operations could be conducted during an emergency. There should be an adequate staff in the control room to assist the school civil defense coordinator. Control room equipment should include, communications equipment, a map of the area showing nearby civil defense facilities, a map of the building and grounds, and a floor plan of each floor showing the location of the following:

- (a) First-aid stations.
- (b) Fire stations.
- (c) Utility lines and main valves.
- (d) Shelter areas.

3.4 A communication system linking the control centers with all class rooms, shelter areas, first-aid stations, fire stations, police stations, warden stations, engineering services, and welfare services is necessary to provide proper control. This contact may be made by a telephone, an intercommunication system, sound-powered telephone, messenger service, or a combination of these. The communication system should be augmented by a student messenger system to use in case other means are rendered inoperative. The control room should have a line of communication with higher school authorities or the local control center to report conditions and to request assistance when needed.

WARNING SYSTEM

3.5 The school's defense coordinator must find out the exact means by which an air-raid warning is to be transmitted to his school. This means of communication must then be kept open and available for an emergency. It would be advisable to provide alternate systems in case of the failure of one. Among devices used to transmit an alert are telephone, radio, and a local warning-siren system.

3.6 In some cases it may be advantageous for a local civil defense control center to alert the central school administrative office, which in turn can contact each school. This will probably speed notification as well as relieve the local control center.

3.7 The present system of air-raid warnings provides for three alerts—a "yellow," "red," and "white." The yellow alert means that an attack is probable somewhere in the general area. The red alert means that an attack on the immediate locality is imminent. The white alert means that there are no more enemy aircraft in the vicinity.

3.8 The yellow alert will be transmitted to key State or city civil defense officials and may be transmitted to school authorities, depending on the local plan. The red alert will be given to the general public by warning signal. The white alert will also be given to the public by an "all-clear" signal.

3.9 There is no assurance that there will be any time after the red alert to prepare for the emergency; thus, it is of vital importance that the school civil defense organization, as well as all the students and teachers, know and understand exactly what they are to do.

3.10 Immediately upon receipt of the red alert, the school building should sound its own warning signal. This may be through the class bell, the fire alarm, or a completely independent system. The latter is preferable as it would tend to avoid confusion. If one of the other systems is used, the air-raid signal must be easily and quickly distinguishable.

3.11 The signals used in the schools should be standardized through the schools defense committee and should correspond as

nearly as possible to the local alarm signals. The school warning system should be controlled both from the main control center, and from the alternate control center. Every room in the building, as well as all playground areas, must be reached by the signal, and it must be clearly audible above the noise of shop equipment or noisy games.² It may be necessary to expand the existing communications system to insure this.

Defense Staff

3.12 The school civil defense coordinator should select heads and alternates for the following school services: warden service, fire services, police services, health services, engineering services, and welfare services. (See figure 1.) Although it may be impracticable for some schools to have all these services, even the smallest and most isolated of schools should make provision for a warden service. The wardens in this case would be the teachers whose primary responsibility upon attack-warning would be to get the children to a shelter area. Teachers and the custodial staff should be trained in first aid and in the use of available fire-fighting equipment. The extent to which civil defense services are organized will depend entirely on the requirements as developed by a building survey. (See chapter 4.)

3.13 Where the school has peacetime counterparts of any of the services mentioned above, or if emergency procedures (such as fire drills) have already been established, existing services and procedures should be incorporated into and made a part of the defense plan. Merging of the peacetime and emergency groups is desirable to avoid confusion and duplication of effort, and also because most emergencies require the same general action in times of peace as in war.

3.14 Schools not having these services already in operation will require new organizations. Members will have to be recruited from the regular teaching and custodial staff, with particular attention paid to their qualifications when assigning each to a specific service. Students, particularly the older ones, can also play an important part in the defense organization.

3.15 Members of the school staff should be made aware that their primary civil defense responsibility lies with the school and that other community civil defense activities for which they may volunteer should not conflict with this primary responsibility.

Warden Service

3.16 Wardens, under the direction of the school defense coordinator, are primarily concerned with the safeguarding of life and

² *Outdoor Warning Device Systems*, Federal Civil Defense Administration, TM-4-1, November 1951. Superintendent of Documents, Washington 25, D. C.

property. In an emergency wardens must direct pupils to safe areas. They also must assume leadership to prevent panic. If the gravity of the situation calls for aid to other services, they may render first aid, assist in light rescue work, help fight fires, clear debris, report fires, incendiary bombs and unexploded bombs, and give other assistance where required, but only after they have fulfilled their responsibilities as wardens. They are the custodians first of life, then of property.

ORGANIZATION

3.17 It will readily be seen that in most cases warden functions will be performed by classroom teachers. In many cases it may prove advantageous to appoint one of the teachers or some one of the administrative staff as chief warden. The person so appointed should be well liked and respected by the teachers and have the ability to organize the warden program and express himself convincingly. To assure this respect the entire faculty may be given a voice in the selection of the chief warden. Teachers may find it helpful to appoint a junior warden, a student whose job would be to lead the class to the assigned space in the shelter area. This would allow the teacher to check and make certain that all pupils reach the shelter area. In schools where there are crippled or otherwise handicapped children, the functions of the wardens become vital. Unusual care should be exercised in the selection of students or adults for this work. If satisfactory appointments cannot be made for this duty, the "buddy" or "big brother" system may be provided as an augmentation of the warden service.

3.18 In time of emergency, searchers—probably students—should search washrooms, locker rooms, dressing rooms, and all other portions of each floor. They should see that all persons go to shelter except those authorized to remain for last-minute duties. If any person faints or is otherwise incapacitated, the searchers should assist him to the first-aid station or inform the nearest teacher or warden. Searchers should go to their assigned shelter areas immediately after completing their emergency duties.

3.19 The use of student messengers will be helpful, if not essential, to the wardens.

3.20 The school defense coordinator should institute an identification system for students with each homeroom teacher being responsible for compliance by those in her room. Metal identification tags are recommended as the most indestructible and practical form of identification. Because of the tendency of children to exchange tags, teachers should use the tag system as an educational means of helping children understand civil defense. In addition, parents should be urged to letter with indelible ink or sew the children's names and addresses on their underwear.

EQUIPMENT

3.21 To contend with emergency conditions such as fire, power failures, panic, and similar situations, each warden should have:

- (a) A whistle.
- (b) A notebook and pencil.
- (c) A flashlight and extra batteries.
- (d) A first-aid kit.

3.22 The duties of the wardens will naturally determine the necessary special equipment. They should make frequent checks to see that the equipment is accessible and in working order.

ALERT DUTIES

3.23 Immediately upon hearing the red alert, wardens should direct all persons in the school to their assigned shelter areas. Each class would go to its assigned space within the shelter area. This movement must be performed quietly and in orderly fashion, to avoid panic and confusion. Teachers should carry roll books to check each student's whereabouts. If it is known that there is sufficient time, students should get their hats and coats before going to the shelter, and windows and doors should be closed. Teachers should carry flashlights. Simple means should be devised for keeping children's minds occupied in the shelter to reduce fear and panic.

3.24 In the event that no warning is received prior to the attack, everyone should drop to the floor immediately, taking cover under desks and tables and facing away from the windows. Children should be thoroughly instructed and drilled in this procedure so that "ducking and covering" will be a reflex action.³ In such an attack, members of the school defense organization would perform their special emergency duties as soon as possible after the attack.

3.25 If an alert is received while children are on the school bus, the driver is responsible for seeing that the children find shelter in designated shelter areas. If no shelter is nearby they should take cover in commercial buildings, cyclone or storage cellars, culverts, or even depressions in the ground. Following the all-clear, the driver is responsible for taking children to the school or other previously designated points.

POSTATTACK DUTIES

3.26 When the control center has been notified by local civil defense authorities that there is little or no further danger of enemy attack, wardens should return uninjured students to those classrooms

³ See pamphlet *Duck and Cover*, PA-6, 1951. Federal Civil Defense Administration. Superintendent of Documents, Washington 25, D. C. Also official U. S. Civil Defense film, *Duck and Cover*, 16 mm, B and W sound, 10 minutes. Produced in cooperation with the National Education Association, available through film dealers and film libraries.

which can be occupied and the students should remain there until it is declared safe for them to go home. Teachers should again check the roll and make appropriate notes as to the status of each child. Slightly injured students should be taken to the first-aid station. The seriously injured should be attended where they are, if possible, until medical assistance is available. Students who are given first aid and then released by the school health director should rejoin their classes.

3.27 Wardens should make sure that all persons are directed to proper areas for safety or to receive such aid as may be needed. Proper attitude and leadership by the wardens can prevent confusion and panic.

Fire Services

3.28 The primary duties of the fire services are to locate and fight fires. Since extensive fire-fighting equipment will probably not be immediately available, the fire services should make the most effective use of emergency equipment to extinguish fires or at least keep them under control until help can be obtained.

SCHOOL FIRE CHIEF

3.29 The responsibility for fire prevention and fire fighting should be placed in the hands of a fire chief. If the school does not already have such a man, he might be selected from the engineering or custodial staff. He should be completely familiar with the building, its layout, and any special hazards such as laboratories and chemical stockrooms. He should recommend fire-safety precautions, help with inspections, and aid in organizing efficient teams of fire fighters. He should see that extinguishers, hoses, buckets, sand, and other fire-fighting materials are in readiness, and that the type and quantity of such equipment conform to recognized standards. He must make sure that exit doors are kept unlocked and that panic bars are free. He should have control of the interior fire-alarm system, test it frequently, and recommend necessary repairs.

3.30 If the school is located near an auxiliary source of water supply, consideration should be given to arranging for its use in an emergency. Completion of such arrangements may require the assistance of the local civil defense organization.

ORGANIZATION

3.31 The size of the fire services will depend on the size of the school and the kind of fire risks to which it is exposed. Teachers or older students should be assigned specific extinguishers or fire-fighting apparatus. These persons should be thoroughly trained in the use of the equipment. Whether older students are to be assigned to

this type of work will be determined locally, depending upon laws, local tradition, and public opinion.

FIRE BRIGADE

3.32 In the larger school buildings, or where a school includes several buildings, the central fire brigade should be considered. A fire brigade should consist of enough personnel and auxiliary equipment to extinguish or control a fire until outside help can be expected to arrive. The headquarters of the brigade should be well protected from possible blast damage and should be accessible to all parts of the school. Members should report to the headquarters immediately after the alert is sounded and be prepared to answer any call from the fire chief or school control center. Schools which desire a fire brigade but do not have sufficient manpower should consider applying for volunteers from the nearby community. Particular attention should be given to examining the records of all volunteers as a precautionary measure against possible sabotage.

FIRE GUARDS

3.33 A system of student fire guards, under the supervision of the fire chief, may also be used. These guards can be selected from the occupants of different floors or areas and trained in the use of emergency fire-fighting equipment such as extinguishers and hose. Their duties should include:

(a) Making periodic inspections of their assigned areas and reporting all fire hazards to the person responsible for their areas, as well as to the school fire chief.

(b) Immediately notifying the control room of any fires.

(c) Taking steps to extinguish small fires in their areas, and closing windows and doors to prevent the spread of fires.

(d) Assisting the fire brigade as directed by the school fire chief.

3.34 Local fire department officials can help to train school employees and students in how to combat fires, what types of equipment to use, and the limits to which volunteers may go.

EQUIPMENT

3.35 The National Fire Protection Association, the National Board of Fire Underwriters, local fire underwriters, and public fire departments will be able to advise the schools regarding the variety and amount of fire-fighting equipment desirable. In addition to the usual portable fire extinguisher equipment, every school should have hand pumps, hoses, ladders, buckets, sand, and miscellaneous fire-fighting tools. Some faucets should be equipped with adapters for attaching garden hose.

3.36 Fire brigade equipment should include a strategically located

hand cart containing reserve fire extinguishers, buckets, sand, garden hose, shovels, boots, crowbars, axes, and fire hooks.

FIRE DRILLS

3.37 Fire drills should be held at least once a month, at different hours of the day, with the school fire services participating. Since it is possible that fire might break out during an attack while the children are in the shelter areas, it is recommended that fire drills be held occasionally during air-raid drills. This will serve to point out differences in the alarm signals and train students in prompt evacuation under different conditions.

LIAISON WITH LOCAL CIVIL DEFENSE FIRE SERVICES

3.38 It is necessary to work in full cooperation with the local civil defense organization. The local civil defense director will provide inspection and advisory services, utilizing the community's fire services organization. The local municipal fire chief can be of assistance in planning and evaluating test drills and other protective and rescue services with which he is familiar.

ALERT DUTIES

3.39 When the red alert sounds, the school fire chief should go at once to the control room or to the sheltered area which will serve as the headquarters of the fire services. If the school has a fire brigade the members should report to their headquarters. Fire guards should get their extinguishers, go to the shelter area, and await orders. Any fires which are observed in or near the shelter areas while the students are in the shelter should be brought under control at once.

POSTATTACK DUTIES

3.40 Immediately after the all clear, fire-guards should leave the shelter for their assigned areas and report fires to the control room. The school fire chief should dispatch his fire-fighting personnel and equipment to extinguish such fires or keep them under control until help can arrive. The school fire chief should keep the school defense coordinator informed of any changes in the situation and should be prepared to request evacuation of the building if necessary. If the building must be evacuated because of fire, the children should be housed temporarily in nearby buildings or homes selected for that purpose, in accordance with plans made by the school and local emergency welfare services.

Police Services

3.41 In general, the civil defense program of the school will need certain services which normally would be considered police functions.

These are the maintenance of order and discipline, the safeguarding of people and property, and the direction of traffic. Since most schools will not have a traffic problem, and the other functions mentioned above will be taken care of by the teachers or wardens, a school police services organization may not be desirable.

3.42 Where school police services are considered desirable, they may be built around the existing school guards or safety patrol units. They should be provided with positive identification, such as arm bands or caps, and furnished such equipment as flashlight, whistle, paper, and pencil. They should be thoroughly trained in their duties so that they can operate efficiently and in a positive manner. All members of the police services should be familiar with the physical layout of the school plant, including first-aid stations, fire stations, main utility controls, and similar important features. The police services should maintain close liaison with the local police department through the local civil defense director.

ALERT DUTIES

3.43 At the red alert, police services personnel should take shelter in a predetermined area near their duty stations.

POSTATTACK DUTIES

3.44 The school police services personnel should take their previously assigned positions immediately after the all clear. They should direct traffic within the school property if necessary. They should aid the fire services in getting to the scene of fires. If it is necessary to transfer the children from one location to another, the police should assist the wardens or teachers in directing and in controlling stragglers. Certain areas in the building such as laboratories and offices may have to be guarded by the police services to prevent looting. They also support other services where necessary.

Health Services

3.45 The school health services are responsible for providing first aid and necessary medical service to the maximum extent of their ability and for referring cases beyond their ability to the proper persons. The extent to which this service can be provided will depend entirely on the size of the school and the personnel available. If suitable medical personnel to head the services are not available within the school organization, arrangements may be made with the local director of civil defense to provide health services personnel in time of emergency. In staffing the health services, it must be remembered that there will never be enough professional workers to do all that will be necessary in a major catastrophe. Staff and selected students

should be trained in non-technical duties and in first-aid procedures. Such training provides more help when needed and releases professional persons for more exacting and highly skilled work. Many cities are planning to use their schools as emergency first-aid stations, in which case medical help would be available at those schools immediately after an attack.

SCHOOL HEALTH DIRECTOR

3.46 If the school's staff includes a doctor or a nurse, he or she should be named the health director.⁴ If neither is available the regular staff member best qualified should be placed in charge of the civil defense health services.

3.47 In addition to supervising the routine medical care of the sick and injured, the school health director should be made responsible for the following defense duties:

(a) Planning the school defense health services program, including the establishment of first-aid stations.

(b) Making an appraisal of the equipment, supplies, and other health resources of the school, and determining their adequacy for coping with large-scale disaster.

(c) Providing sufficient first-aid equipment, and stocking supplies as recommended by the local civil defense organization.

(d) Organizing classes in first aid and supervising first-aid stations.

(e) Coordinating school health services plans with those of the community.

(f) Attending courses to train himself and his staff in the medical aspects of special weapons defense.

(g) Studying the special hazards involved in the operation of such activities as chemistry, physics, and biology laboratories, and making plans to cope with health emergencies that might arise because of them.

FIRST AID

3.48 First-aid teams, supervised by the health director, should work out of stations located in areas that provide shelter, safety, and accessibility to ambulances. They should contain stretchers, blankets, and emergency first-aid supplies. In an emergency first-aid teams should:

(a) Render service immediately necessary to save the life of the casualty and place him in the best possible condition for transporting to a first-aid station or hospital.

⁴ For recommendations on setting up a health services organization see *Health Services and Special Weapons Defense*, AG-11-1, Federal Civil Defense Administration. Superintendent of Documents, Washington 25, D. C.

(b) Sort casualties and determine what should be done immediately for each case.

(c) Supervise stretcher teams.

STRETCHER TEAMS

3.49 Every school should have at least two stretcher teams per 100 students. A team should consist of four persons trained in loading and unloading stretchers, in taking patients in and out of ambulances, and in first-aid techniques. As the work of a stretcher team is difficult and tiring, only strong, husky boys should be used.

ALERT DUTIES

3.50 At the red alert, health services personnel should go at once to the first-aid station and stand by to receive casualties.

POSTATTACK DUTIES

3.51 If there is any possibility of radiological contamination the school should be checked by monitors. This should be arranged by the health director.

3.52 Injuries which require treatment beyond the ability of the school civil defense health services should be referred for other care provided by prearrangement with the local civil defense director. Stretcher teams should continue to search out and bring in casualties as long as there are persons unaccounted for.

3.53 As soon as practicable, the school health director should report to the school civil defense coordinator the number of hospital cases and fatalities, as well as the amount of help and supplies needed. The health director should keep a medical record of every case treated and the final disposition of each.

Engineering Services

3.54 In an emergency the engineering services, in cooperation with and according to predetermined instructions by local utility companies, will shut off utilities and support the other protective services by making emergency repairs, restoring damaged utilities, and performing light rescue.

SCHOOL ENGINEERING CHIEF

3.55 The engineering services should be organized under the school's chief engineer or custodian, or possibly under an industrial arts teacher or one whose background would qualify him for such duties. He should make a list and maintain an inventory of the tools, materials, and equipment that each unit needs, including personal protective equipment such as goggles, safety helmets, and gloves. He should be familiar with all details of the building and its utility

lines so that necessary repairs can be made quickly. Since he will probably need additional help in case of an emergency, he should recruit such assistance where available among the best qualified shop students and other high school boys.

3.56 In an emergency, the engineering chief should direct his service units from the control room and assist the civil defense coordinator on all engineering problems that arise.

ORGANIZATION OF ENGINEERING SERVICES

3.57 The engineering services in larger institutions may consist of units for maintenance and repair and rescue. Many schools which do not have an engineering or custodial staff sufficient to have these units will have to combine and consolidate functions and perhaps even eliminate some. Necessary services which the school cannot provide, should be requested from the local civil defense organization.

ALERT DUTIES

3.58. When a red alert is received, engineering services personnel should take immediate steps to reduce hazards from failure or destruction of utilities. (See paragraph 3.54.) They should open firebox doors, check drafts, stop all fuel feeding equipment, throw ashes on the fire, and open relief valves. Each engineer or custodian should study his own plant and determine what steps are necessary to reduce steam pressure quickly and safely. The men who fire the boilers should also be fully instructed in this work, as this duty may fall to them.

3.59 Electric light and power should be cut off according to instructions from the local electric power company; however, current for essential services such as the communications system, emergency lights, and water pumps should be provided. Automatic bell-ringing systems should be shut off to prevent confusion. If there is a lunch room or cafeteria in the school, employees should be instructed to shut off all appliances. Some form of auxiliary lighting is recommended for use in stairways and shelter areas. Engineering services should see that necessary ventilation is available for all shelter areas.

POSTATTACK DUTIES

3.60 Engineering services with the advice of local utility companies should restore the utilities as soon as possible. Before this is done, however, there should be a survey to locate broken mains and wires. The engineering services should also perform light rescue where special equipment is not required, and assist the local rescue service in other rescue work. In case of contamination, measures necessary to isolate or make the area safe should be provided by the local civil defense organization.

Welfare Services

3.61 Immediately following an emergency, there may be a great need for welfare services. Students will have to be cared for at the school until it has been determined whether or not it is safe for them to leave and whether or not their homes have been destroyed.

3.62 Liaison should be maintained with other schools in the vicinity and with the local civil defense organization. Arrangements and provisions should be made now, in cooperation with the local civil defense emergency welfare services, for temporarily housing students in event homes and school buildings are seriously damaged.

3.63 If parents cannot be located, pupils should be turned over to the local emergency welfare services. The children will have innumerable personal problems following an emergency, so both the school and community services should include individual counseling service.

3.64 The welfare director will need many assistants for these functions. Help should be obtained from the school administrative office in the form of clerks, stenographers, telephone operators, and messengers. Reliable older students can also be used in this service.

SCHOOL WELFARE DIRECTOR

3.65 The welfare services should be organized under the school registrar, personnel officer, boy's or girl's advisor, or some other person whose background would help to qualify him for such duties. The welfare director should be responsible for:

- (a) Providing adequate emergency food supplies,
- (b) Establishing case record systems,
- (c) Establishing a system for escorting students to their homes.

3.66 When it is necessary to keep children at the school, the welfare director should keep them busy to allay fear.

ALERT DUTIES

3.67 If a red alert is received, welfare services personnel should go to the shelter area assigned and be prepared to assume their duties after the all clear.

POSTATTACK DUTIES

3.68 The welfare services should arrange to take care of the children temporarily and return them to their homes as soon as possible. Food and water should be made available through the school cafeteria or from outside sources such as restaurants, and possibly even nearby private homes. A means should be devised for finding out which homes are able to receive their own children. This information could be obtained through the local civil defense warden service, by sending out older high school boys on bicycles, by getting information from

parents, or by other means available at the time. Elementary school children should be taken home in school buses or at least accompanied by some older person. This should be carried out with the assistance of the local warden service. Every effort should be made to get children to their parents or relatives. In cases where this is impossible, children should be turned over to the local civil defense emergency welfare services and a record made of the disposition of each child.

SURVEYING THE SCHOOL

4.1 In each school a survey of the property should be made at once by the school principal, the school civil defense coordinator, and representatives of the local civil defense organization. This survey should consider the following: physical location of main and alternate control centers; possible locations for first-aid and fire stations and other civil defense posts; desirable locations for shelter areas; hazards resulting from poor housekeeping; and structural weaknesses or lack of protective equipment.

4.2 The locations of the control centers and emergency posts will be determined by the principal and the school civil defense coordinator, based on the geographical location of the building with respect to anticipated target, size and construction of the building, location of utilities, exits, and general floor plan. In general, locations selected should be in protected areas, accessible to the rest of the building, and on the side of the building away from the anticipated target.

Selecting Shelter Areas

4.3 Shelter areas should be carefully selected, in accordance with recommendations in FCDA publication *Shelter from Atomic Attack in Existing Buildings, Part I, Determining Shelter Needs and Shelter Areas*.⁵ It is impossible to give exact specifications for shelter areas which will apply in all school buildings, since each building should be considered and surveyed individually. The local civil defense organization will provide the technical advice, but a number of general considerations can be mentioned.

4.4 Although basements do not necessarily make the best shelter areas, they are usually recommended if the walls are at least 80 percent below ground level. Within a basement, the shelter area should have at least two exits well apart from each other; should be surrounded by substantial, permanent walls; and should be free from the possibility of flying glass and other small objects. Basement rooms containing heating plants, hot water tanks, electrical distribution equipment, or compressed gas cylinders which constitute hazards should

⁵ *Shelter from Atomic Attack in Existing Buildings. Part I. Determining Shelter Needs and Shelter Areas*, TM-5-1, Federal Civil Defense Administration. Superintendent of Documents, Washington 25, D. C.

not be used. Possible hazards from broken gas, water, and steam lines should be carefully considered.

4.5 On floors above the ground level, a central corridor with permanent walls on both sides is generally considered safest. Here, the walls are substantial and danger from flying glass should be at a minimum. Classroom doors leading into the corridors offer some hazard if they contain glass panes or transoms. The glass should be removed and replaced with some non-shatterable material. Where corridors are used for shelter, a 3-foot passageway should be maintained, and stairways and exits kept clear. Areas opposite doorways should not be used for shelter. If the corridor ends at an outside wall, consideration should be given to the possibility of flying debris being blown in from the outside. Other interior areas at least 20 feet from an outside wall with two exits and substantial walls of their own may be used for shelters, provided the glass and flying-missile hazard is not present.

4.6 The top floors are generally considered unsafe because of their lack of sufficient overhead protection.

4.7 Each class should be assigned a specific space in the shelter area. The space would vary in size from 6 square feet per person for older children down to $3\frac{1}{2}$ square feet per child for small children. Drinking water and toilet facilities should be accessible to people in shelter areas.

4.8 Overcrowding in a shelter area presents two major problems: suffocation and difficulty in evacuating a damaged shelter area.

4.9 In the event no adequate shelter area is available in the school, nearby buildings such as stores, banks, and libraries might be used.

Determining and Correcting Hazards

4.10 Particular attention should be paid to general housekeeping. All nonessential flammable material should be eliminated. Chairs, boxes, and other equipment which interfere with the free flow of traffic through corridors and stairways should be removed. The number, location, and condition of fire extinguishers should be checked. Any glass which is not absolutely necessary should be noted and removed. Defects, structural and otherwise, which might become hazards should be noted and corrected where possible. Availability of exits should be carefully considered and plans should be made to provide additional exits if they are needed. If additional shelter areas can be obtained, or existing ones made safer by cross-bracing or adding supports, this should be done. Any serious hazards, such as fire and collapse, which might result from damage to neighboring buildings should be considered in the planning.

ORIENTATION AND TRAINING

Orientation Meeting

5.1 The civil defense program can be explained to school faculty and staff personnel at an orientation meeting. At this meeting the principal should outline the purpose of the civil defense program and explain how the school can organize for self-protection.

5.2 The following agenda is suggested:

- (a) Announce purpose of the meeting.
- (b) Explain the program.
- (c) Explain results of the survey of the school plant and discuss plans for eliminating hazards and correcting deficiencies.
- (d) Explain the functions of the local civil defense organization and discuss its relationship to the school.
- (e) Introduce the school civil defense coordinator who should:
 - (1) Announce names of the heads of the protective services.
 - (2) Supply each service head with a copy of this manual and instruct him to study it carefully, especially the sections pertaining to his particular service.
 - (3) Explain to service heads that they are responsible for organizing and training their units. Limit the time for organization and arrange for progress reports periodically.
 - (4) Point out to service heads that they should recruit qualified persons who have presence of mind and are calm in emergencies, and who can act as advisors and guides to others.

Training

5.3 The school civil defense coordinator is responsible for setting up and administering a comprehensive training program covering everyone in the organization. Training should start as soon as possible after the orientation meeting.

5.4 Training falls into three parts: training for the school civil defense coordinator and his staff; specialized training for the protective services; and general training for all.

STAFF TRAINING

5.5 The defense coordinator should consult with the local civil defense director to determine what training courses are available. He should attend courses in basic civil defense organization and obtain

current civil defense information as it becomes available. He should also arrange for the training of his service heads, who in turn are responsible for training their units. Training in the broader aspects of civil defense is available at the staff college and technical training schools of FCDA.

SPECIALIZED TRAINING FOR THE PROTECTIVE SERVICES

5.6 The head of each protective service is responsible for the individual and collective training of workers in his unit. The local civil defense director can assist in providing this training. Since the resources of all public, private, and local civil defense groups will be utilized in an emergency, it is essential that their work during the planning and training stages be coordinated with the local civil defense director.

5.7 The local police department can assist in training members of the school police services in patrol duty. The fire department can give valuable instruction in fire-fighting to the school's fire and warden services and can demonstrate the use of portable extinguishers and other fire-fighting equipment. In addition, instructor training for the fire, warden, and rescue services is available at FCDA training schools.

5.8 In view of the inherent hazards involved in the training and operations of the engineering and health services, the school service chiefs should consult with local, county, or State organizations to keep informed on safe practice requirements. Rescue units should be given training under simulated disaster conditions. Local civil defense organizations will provide guidance to school emergency welfare services.

5.9 Training for the protective services in a large school should be carried out in these four stages:

(a) *Individual training.*—All trainees should be given basic civil defense training by instructors either from the school faculty or from the local civil defense organization. First-aid instruction is given by the Red Cross for civil defense. Certain trainees should be given specialized instructions to qualify them for specific duties.

(b) *Team training.*—Units should be formed for team training. The functions of the team should be taught and demonstrated, and there should be a liberal interchange of individual duties within the teams. Messengers should be trained as auxiliary workers of the units which they serve.

(c) *Collective training.*—Service teams should train together to assure coordination of activities. Collective training should be as realistic as possible, anticipating actual conditions likely to arise before, during, and after an attack.

(d) *Combined training.*—The school's protective services should

engage in combined training exercises with local civil defense services. The school self-protection organization should be so well integrated with that of the surrounding areas that together they can function at peak efficiency during an emergency.

GENERAL TRAINING FOR ALL SCHOOL PERSONNEL

5.10 Training at the top is of little benefit unless it reaches down through the entire school. All school personnel should be given instruction in self-protection. The new American Red Cross Standard First-Aid Course, which includes atomic warfare first aid, is a good start. Each teacher should receive a copy of the FCDA booklets, *Survival Under Atomic Attack* and *Emergency Action to Save Lives*.⁶ Training lessons and tests should be based on these booklets to make sure that everyone understands how to protect himself in case of attack. Additional training material will be made available by FCDA. Red Cross booklets can be obtained from the local Red Cross Chapter. A complete list of booklets and how to obtain them is printed at the back of this manual.

Activation Ceremony

5.11 A formal activation ceremony might take place in the school auditorium before the entire student body, with the local or county civil defense director and other public officials present. Materials such as arm bands, hats, signs designating shelters and first-aid stations, and fire-fighting equipment should be on hand and ready for use.

Drills

5.12 Training should continue by means of frequent drills. It may be well to announce the first few drills in advance. Younger children especially should be prepared, to prevent emotional upset. When routine satisfactory procedures have been established, drills should come at irregular intervals and without warning. These drills will uncover weaknesses in planning, coordination, and communication. The school civil defense coordinator should meet with service heads after each drill, to discuss the operation and methods for its improvement.

Conclusion

5.13 Once the schools of the Nation have been organized and trained in the most effective civil defense procedures known, we can be assured that in an emergency our children will have the best protection possible. We will also have the satisfaction of knowing their education can be resumed sooner and in a more orderly way after an attack than would ever be possible without civil defense preparation.

⁶ *Survival Under Atomic Attack*, 1950, 32 pages. *Emergency Action to Save Lives*, Pub. PA-5, 1951, 32 pages. Federal Civil Defense Administration. Superintendent of Documents, Washington 25, D. C.

SUGGESTED LETTERS TO PARENTS

Following are three letters which have been used by civil defense organizations in three different cities. They are designed to acquaint parents with civil defense action taken by the schools in those cities, and to enlist the parents' support. (See paragraph 2.8.)

Since conditions vary in different localities, a letter written for one community may not be effective in another. In preparing such letters, consideration should be given to the size of the community and school, types of persons and general characteristics of the community, and the objectives of the letter.

The letters in this appendix are not necessarily models to be followed exactly, but rather a representative sampling of what has already been used.

----- Schools
Office of the Superintendent

DEAR PARENTS:

In conformity with the national, State, and local policies to strengthen civil defense, we want you to know that every possible precaution is being taken to promote the safety of your children in our schools. We are cooperating very closely with the several agencies having to do with civil defense in our city.

Each school is holding civil defense drills at regular intervals. During these drills, which take place at various times of day and at regular intervals during each month, pupils and teachers go to places in the building deemed safest by our building authorities.

We feel that it is much better for our boys and girls to continue studying under as normal a school situation as possible. Children will be kept in school during an attack until directed otherwise by the principal who will be guided by advice from competent authorities or by his own judgment if such advice is not available. Pupils at school will at all times be under the supervision and training of teachers and principals. School nurses will remain on regular duty in each school building. Provision has been made for the playground director or athletic coaches to have access to the school building for shelter in case of an alert during playground hours, after school, or on Saturday.

Children have been directed to ring the door bell of the nearest residence and ask to be taken in, or go into the nearest store or other building for shelter in case of an alert while they are on their way to or from school. Your cooperation as parents and residents is requested in case any child should come to your door.

We are arranging for a stainless steel identification tag for each child at a nominal cost to parents.

The schools are also asking you to help by not telephoning or coming to the school in case of an alert. Each adult in the building has a definite, assigned duty in the care of our many children and cannot neglect this duty to give attention to a call regarding any one child.

Our school civil defense plan is based upon the best judgment of the school civil defense committee after consulting local civil defense authorities and studying Federal Civil Defense Administration publications.

We trust that an enemy attack will never occur, but we are adopting these precautions for the safety of your children.

Superintendent of Schools.

BOARD OF EDUCATION CITY OF -----

A MESSAGE TO ALL PARENTS OF -----SCHOOL CHILDREN

DEAR PARENTS:

You are probably aware that our children have been and are now practicing civil defense drills in school. We are required to hold such drills by State law. At the present time drills are held once a month.

All Americans hope for peace, but hope alone would make a poor shelter if war should come. While we must continue to hope for peace, let us prepare for the emergency that would come if our hope is in vain. After all, we hope none of our children will be injured while crossing the street, but still we give lessons in safety on the street. We hope that none of our schools will catch fire; nevertheless we hold fire drills.

By knowing what to do in an emergency and by practicing the right things to do beforehand, we contribute to the continued safety and well-being of our children and ourselves. When the present emergency started, all informed persons agreed that the best way to practice the right responses beforehand was to hold civil defense drills, and the vast majority of our children have reacted magnifi-

cently to these drills. I am proud of our children and teachers who approached these drills in such a sensible, matter-of-fact way.

So far, our drills have been those in which children go to shelters when a signal sounds. But there is another kind of drill which we must all practice, children and adults alike, at home as well as in the school—the drill on what to do when there is no warning except the sudden, dazzling light that will come as the result of a “sneak” attack.

If we are indoors when this light is seen, authorities advise us to drop to the floor immediately, if possible underneath a table or chair, keeping our backs toward the windows. Cover exposed parts of the body with anything handy. Keep face down, covering the face with the hands. Remain in this position for a full minute.

Your children will soon be coming home and telling you of the practice they are getting in these safety measures at school. Again the vast majority of them will accept these drills matter-of-factly as part of school routine. You can help to strengthen this feeling if you yourself accept them in the same spirit. Why not let your children teach you what they have learned in school about protective measures?

Let your children talk to you about their civil defense drills if they wish. Remember, they will be watching you closely to observe your reaction. Your attitude will largely determine theirs. If you are calm, they will be calm. If you are sensible, they will be sensible. It is suggested that you practice at home the same precautionary measures being used in the school.

One point more—rely upon our teachers to take the best possible care of your children during an emergency. Do not go to the schools yourselves. By doing so, you will only endanger your own life and upset the carefully laid plans of the school to protect the children.

I shall keep you informed of future developments in the school civil defense program. In the meantime let us hope we shall never need to use the plans we have made, but we will continue to plan since the future welfare and safety of our children—and our Nation—may depend on it.

Sincerely yours,

(S)

Superintendent of Schools.

I have received, read and discussed A MESSAGE TO ALL PAR-
ENTS OF-----SCHOOL CHILDREN.
School-----

Parent

BOARD OF EDUCATION

Department
of
Instruction

TO THE PARENTS OF BOYS AND GIRLS IN THE-----SCHOOLS:

We are writing to you so that you will know of the civil defense activities we have undertaken in our schools. Because it is so easy for young people to carry home an excited account of these procedures and possibly to cause undue alarm at home, we believe you should have this information.

We regard civil defense as we do hospitalization. It is desirable to have it but we hope we never have to use it. We believe you want your schools to be aware of even potential dangers and to safeguard the welfare of the children. Accordingly, we have some of our key personnel engaged in making plans for such possible emergencies. We intend to stress simple instructions to the point where safe conduct will become automatic. Expert knowledge is being used in developing our procedures.

We are working with the entire community in setting up these civil defense plans. We believe that you want us to prepare early rather than too late.

Sincerely yours,

(S)

Board of Education.

(S)

Superintendent of Schools.

OFFICIAL CIVIL DEFENSE PUBLICATIONS

The following Federal Civil Defense Administration publications are on sale by the Superintendent of Documents, Washington 25, D. C.

1. United States Civil Defense, 1950, 25 cents, 168 pp. The national plan for organizing the civil defense of the United States.

Administrative Guides

1. *Civil Defense in Industry and Institutions*, Pub. AG-16-1, 1951, 25 cents, 64 pp. Plans for organizing and administering civil defense self-protection programs for the Nation's industrial plants, office and apartment buildings, and other institutions.
2. *The Clergy in Civil Defense*, Pub. AG-25-1, 1951, 10 cents, 12 pp. Guide for the clergy of all faiths for determining their place and functions in civil defense.
3. *Emergency Welfare Services*, Pub. AG-12-1, 1952, 20 cents, 62 pp. Guide for developing a program to meet the multiple welfare problems that would arise from enemy attack.
4. *Engineering Services*, Pub. AG-13-1, 1952, 15 cents, 25 pp. Assists State and local civil defense directors in planning and establishing their engineering services.
5. *Fire Services*, Pub. AG-9-1, 1951, 15 cents, 27 pp. Basic guide to assist States and communities in planning, organizing, staffing, and operating an expanded fire-fighting service during periods of war emergency.
6. *Health Services and Special Weapons Defense*, Pub. AG-11-1, 1950, 60 cents, 264 pp. Methods for organization of all basic health and special weapons defense (atomic, biological, and chemical warfare) for State and local civil defense programs.
7. *Police Services*, Pub. AG-10-1, 1951, 20 cents, 48 pp. Basic guide for State and local civil defense officials in organizing and directing police civil defense services.
8. *Principles of Civil Defense Operations*, Pub. AG-8-1, 1951, 20 cents, 48 pp. Basic guide in planning and organizing for mutual aid and mobile support operations.
9. *The Rescue Service*, Pub. AG-14-1, 1951, 15 cents, 32 pp. Basic guide for State and local civil defense officials in organizing rescue services and training rescue teams.

10. *The Supply Service*, Pub. AG-6-1, 1952, 20 cents, 50 pp. Assists State and local civil defense directors and supply officials in establishing adequate supply programs.
11. *The Warden Service*, Pub. AG-7-1, 1951, 20 cents, 48 pp. Basic guide for civil defense directors and supervisory wardens in selecting, organizing, training, and equipping the warden service.

Public Booklets

1. *Duck and Cover*, Pub. PA-6, 1951, 5 cents, 14 pp. Cartoon instruction for children on what to do in case of atomic attack.
2. *Emergency Action to Save Lives*, Pub. PA-5, 1951, 5 cents, 32 pp. Practical instructions for the untrained person on the emergency care of injured people.
3. *Fire Fighting for Householders*, Pub. PA-4, 1951, 5 cents, 32 pp. Basic information for the householder on how fires start, how they can be prevented, and how to fight fires.
4. *This Is Civil Defense*, Pub. PA-3, 10 cents, 32 pp. Highlights of the national civil defense program and the part the volunteer must play to make civil defense a success.
5. *What You Should Know About Biological Warfare*, Pub. PA-2, 1951, 10 cents, 32 pp. Techniques of personal survival under biological warfare attacks.
6. *Survival Under Atomic Attack*, 1950, 10 cents, 32 pp. Techniques of personal survival under atomic bomb attacks.

Technical Manuals

1. *Blood and Blood Derivatives Program*, Pub. TM-11-5, 1952, 40 cents, 179 pp. Describes Federal, State, and local organization and operation of a civil defense blood program.
2. *Fire Effects of Bombing Attacks*, TM-9-2, 1952, 20 cents, 42 pp. Summarizes data on World War II bombing attacks and suggests a method of appraising fire susceptibility of cities to minimize the effects of mass fires.
3. *Interim Guide for the Design of Buildings Exposed to Atomic Blast*, Pub. TM-5-3, 1952, 15 cents, 34 pp. Suggests to architects and engineers methods of increasing the strength of new buildings to resist atomic blast, and points out hazards which should be considered in the design of shelter areas in buildings.
4. *Organization and Operation of Civil Defense Casualty Services—Part III—Medical Records for Casualties*, Pub. TM-11-3, 1951, 15 cents, 36 pp. Recommends medical records and forms for uniform use by all States in the handling of casualties resulting from enemy attack.
5. *Outdoor Warning Device Systems*, Pub. TM-4-1, 1951, 15 cents, 36 pp. Data for planning, procuring, and installing public warning device systems for civil defense.

6. *Radiological Decontamination in Civil Defense*, Pub. TM-11-6, 1952, 15 cents, 31 pp. Provides information for all radiological defense personnel and serves as an operations manual for decontamination crews.
7. *Shelter from Atomic Attack in Existing Buildings, Part I—Method for Determining Shelter Needs and Shelter Areas*, Pub. TM-5-1, 1952, 20 cents, 53 pp. Instructions, forms, and recommendations for use of civil defense directors, survey teams and their supervisors, and technically qualified personnel in conducting a shelter survey.
8. *Shelter from Atomic Attack in Existing Buildings, Part II—Improvement of Shelter Areas*, Pub. TM-5-2, 1952, 15 cents, 26 pp. Offers suggestions to architects and engineers for improving certain shelter areas.
9. *The Nurse in Civil Defense*, Pub. TM-11-7, 1952, 20 cents, 52 pp. Assists key civil defense nurses in planning and operating State and local nursing services.
10. *Water Supplies for Wartime Fire Fighting*, Pub. TM-9-1, 1951, 10 cents, 16 pp. Program for increasing available water supplies to meet the needs of emergency water-supply operations during wartime.
11. *Windowless Structures—A Study in Blast-Resistant Design*, Pub. TM-5-4, 1952, \$1.00, 164 pp. Describes methods and procedures for designing windowless structures or windowless portions of conventional structures, based on the dynamic properties of loading; presents principles, methods, and formulas for determining the magnitude, duration, and distribution of atomic blast loads on windowless structures.

Other Publications

1. *Annotated Civil Defense Bibliography for Teachers*, Pub. TEB-3-2, 1951, 20 cents, 28 pp. Aid for teachers in locating publications for use in civil defense planning and instruction in schools.
2. *Civil Defense Against Atomic Warfare*, 1950, 10 cents, 24 pp. Lists sources of unclassified scientific and technical data useful as background information in planning civil defense against atomic bombing.
3. *Civil Defense and National Organizations*, 10 cents, 15 pp. Outlines the need for civil defense and informs national organizations how they can participate in the program.
4. *Civil Defense in Outline*, 1951, 25 cents, 41 pp. Guide for the use of organizations in their national and State civil defense programs.

5. *Civil Defense Nursing Needs*, Pub. VM-2, 1952, 15 cents, 20 pp. Outlines program for increasing nursing services to insure an adequate supply of nurse power in the event of attack or disaster.
6. *Damage from Atomic Explosions and Design of Protective Structures*, 1950, 15 cents, 32 pp. Damage from blast to various types of structures and buildings and design of building construction to resist these effects.
7. *Interim Civil Defense Instructions for Schools and Colleges*, Pub. TEB-3-1, 1951, 30 cents, 32 pp. Guide for educational administrators in planning immediate civil defense training and education programs.
8. *Medical Aspects of Atomic Weapons*, 1950, 10 cents, 24 pp. Medical and biological aspects of injuries resulting from atomic bomb explosions and their treatment.
9. *The Warden's Handbook*, Pub. H-7-1, 1951, 15 cents, 34 pp. Basic reference aid for the block warden.
10. *Women in Civil Defense*, Pub. VM-2, 1952, 15 cents, 20 pp. Emphasizes the importance of women's participation in the civil defense program.
11. *The Staff College*, Brochure, 1952, 10 cents, 15 pp. Describes courses, registration procedures, and nature of facilities of FCDA Staff College (now known as the National Civil Defense Training Center) at Olney, Md.
12. *Annual Report for 1951*, 1952, 30 cents, 108 pp. Comprehensive report to the President and Congress on the FCDA program during 1951.
13. *National Civil Defense Conference Report*, May 1951, 45 cents, 73 pp. Transcript of the National Civil Defense Conference held in Washington, D. C., on May 7 and 8, 1951.
14. *Civil Defense Household First Aid Kit*, Leaflet, 1951, \$1.50 per 100 copies. Lists first-aid items for a family of four or less; gives items to be stocked, quantity, substitutes, and uses.
15. *Atomic Blast Creates Fire*, Leaflet, 1951, \$1.50 per 100 copies. Instruction to householders on how to reduce fire hazards and prevent fires in the home.
16. *Air-Raid Alert Card*, \$1.50 per 100 copies. Instruction card on what to do in case of an atomic bomb attack.



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