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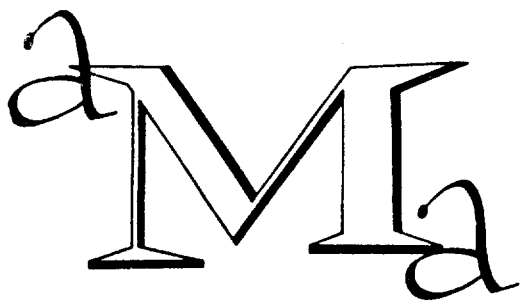
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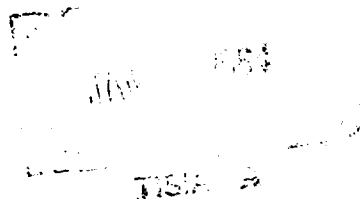
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**ORGANIZING
MUNICIPAL GOVERNMENTS
FOR
CIVIL DEFENSE**



OCTOBER 1963

DEPARTMENT OF URBAN STUDIES
AMERICAN MUNICIPAL ASSOCIATION

Study Abstract

The study describes the civil defense responsibilities of municipal government as defined by present federal programs and policies, especially as they relate to the fallout shelter program. Six cities are then analyzed to determine the manner in which community resources have been organized to meet these responsibilities. The cities were selected to represent the several common forms of city government and to provide a wide geographic distribution and spectrum of population sizes from the very small city to the large metropolitan city.

Each case study provides a profile of the city to establish its essential characteristics and identify any exceptional circumstances that may be peculiar to the city and affect its civil defense capabilities. The preparations made by the city for government operations in the event of nuclear or natural disaster are investigated, including continuity of government, emergency powers, and the civil defense agency, its financing, program, and facilities for emergency operations.

The emergency operations or survival plans of each city are related to the assignment of its regular departments and agencies to emergency and disaster functions. The utilization made of volunteers and non-governmental agencies, organizations, and institutions to augment and supplement city forces is described. Finally, the relationships established between the city and other governmental jurisdictions and the effects of those relationships on the city program are evaluated.

The study identifies major problems being encountered by the cities in building their civil defense capability and recommendations are suggested to overcome these problems.

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ORGANIZING MUNICIPAL GOVERNMENTS FOR CIVIL DEFENSE

Contract Number OCD-OS-62-293

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October, 1963

AMERICAN MUNICIPAL ASSOCIATION
Washington, D.C.

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SUMMARY OF FINDINGS AND RECOMMENDATIONS

City chief executives, administrators, and civil defense officials are not satisfied with the present condition of their civil defense readiness. They are almost unanimous in their desire for more positive direction and leadership from state and federal authority. They have experienced frustration in building their local civil defense programs because of rapid changes in national program and doctrine, the absence of effective state programs in many states, and, except during periods of unusual international tension, public apathy. Rapidly rising costs of local government, the need to provide increased services and undertake major programs of community development, and severely limited sources of revenue, have all combined to restrict the commitment of city resources to civil defense.

Problems of Organization

1. The municipal civil defense agency frequently has failed to establish an effective working relationship with the chief executive and operating, line departments of city government. Although the civil defense director always is responsible to the chief executive, the staff nature of the agency has been obscured and undermined by a number of factors. Basic misconceptions about the role of the agency have been created because of its increasing line activity and behavior, and its operational detachment from the chief executive. Department heads do not recognize the civil defense agency as acting in the name of the chief executive when it seeks to coordinate their emergency services and help them plan the assignment and utilization of their personnel and equipment resources or employ their departments to carry out peace time civil defense tasks. Contributing to this condition are the following:

The absence of clear directions by the chief executive establishing the staff relationship and continuing insistence that this relationship be observed in the administration of the program.

The use of volunteer civil defense directors and volunteer chiefs for key civil defense services, or the selection of city personnel of less than department head rank for direction and leadership of the civil defense program and emergency operations.

The failure to utilize existing appropriate city departments to carry out programs requiring major commitments of man hours of work such as shelter marking, stocking, and inspecting shelter facilities and supplies.

2. Mayors in commission and "weak-mayor" cities have inadequate control over large segments of the city services having critical emergency capabilities. Effective coordination is difficult because of the plural executive in commission cities and the independence of department heads who are not appointed by the mayor.
3. The most unified and positive leadership for civil defense purposes was found in the two council-manager cities. This finding must be tempered by the observation that managers are reluctant to seek more than the most modest appropriations from city council for civil defense.
4. The optimum organization or assignment of city forces for civil defense purposes frequently may require a shift of agencies and staff within and between departments, out of the normal chain of command, to unfamiliar and weakly established command relationships.
5. Civil Defense emergency assignments are made too frequently on the basis of individual assignments rather than to organizations, offices, or agencies; and rosters continually are in need of revisions with which the civil defense staff does not keep pace.

Planning and Implementation

1. Civil defense planning goals have been aimed at a too ambitious program of emergency services to attain successful implementation with the funds and level of support from the regular city departments now available. City survival plans also have been too long and complicated in the past. Both the bulk and complexity of the plans have discouraged comprehension by city officials, operating units, and the general public. As a result, the plans have tended to demoralize or overwhelm city governments and reduce, rather than enhance, the possibility of building workable core programs.
2. Existing survival plans usually are obsolete and unworkable, and yet they remain officially in effect. Annexes are also obsolete and revisions are being anticipated or commenced without revision of the basic survival plan on which they should be based.
3. There are deep divisions of opinion within municipal civil defense staffs and within the administrative and legislative branches of city governments concerning the efficacy of the shelter program as opposed to evacuation, or even no program at all. Cities where evacuation is a credible alternative to fallout shelter have been discouraged by the present emphasis on fallout shelter planning and implementation to, what many local officials feel, is the sacrifice of all other programs.
4. The existing professional staffs of city operating agencies are not being utilized to develop civil defense plans and annexes to the extent that is desirable. For example, the professional staff of planning agencies are not being used to develop shelter utilization plans.

5. Survival and emergency plans have been developed by public utilities, industries, businesses, federal facilities, and other governmental and community organizations. Little coordination of these plans with the city plans is apparent in some cities. The implementation of many of these plans is more advanced than the city program.

Training

1. City personnel, from mayors and councilmen through administrators and down to the rank and file employee, have not been kept informed about the shelter program as it has been developing, and they have not received orientation or briefing about the facts of nuclear conflict from which the program has been generated or the plans to meet this threat. These people are little better informed than the general public. Except for the uniformed services, the average employee does not recognize that he has a responsibility to serve his community during an emergency caused by a nuclear attack on the country.
2. Students returning from the federal civil defense instructor training courses seldom have been used as instructors in municipal training programs which have been sporadic and, at times, poorly organized and attended.
3. The training of radiological defense teams and radiological monitors has made a significant start, but as yet, equipment is not in position and calibrated and personnel are not available for all the stations required. There is concern that personnel already trained may be lost to the program if these conditions are not corrected.
4. The training of shelter managers at the municipal level has made almost no progress, as yet. City civil defense staffs and resources are inadequate to carry out successfully a program of such magnitude and critical importance.
5. The special training given volunteer and auxiliary forces in the past has served to sustain the interest and participation of these people in the program for a time, but eventually they have drifted out of the program because of continued inactivity or loss of a feeling of urgency, and the end result has been a waste of training effort.
6. Classroom courses for the general public in first aid, basic civil defense survival, or civil defense orientation, are not productive enough in terms of the number of people reached to justify the efforts already being expended. Special civil defense courses presented by organizations with continuing programs not dependent upon civil defense have been more successful.

Manpower

1. It was found that the civil defense agency was undermanned in cities under 250,000 population. In cities with populations over 250,000, it would appear that an adequate

staff was obtainable, but the shifting climate of public opinion and the estimate made of that opinion and appreciation for the need of the civil defense program by city council is critical. Additionally, salary scales are too low and funds too limited in the small cities under 50,000 to retain a professional, full-time civil defense director and a capable staff.

2. The federal personnel and administrative assistance program was of minor benefit to the majority of the municipalities studied. The conditions, or alleged conditions, attached to this assistance inhibited its utilization to the point where meaningful improvement of the civil defense staff had not been accomplished. Many times, personnel not officially attached to the civil defense staff were being used for the accomplishment of civil defense tasks. No attempt had been made to secure personnel and administrative contributions for these people.

3. Municipal forces, with the exception of the departments of health and welfare, appear to be adequate for the program in terms of their operational capability in cities over 100,000 population. A break occurs somewhere between 50,000 and 100,000 population, at which point the forces become too small in most services to meet the requirements of either the fallout shelter program or effective post-attack recovery operations.

4. Cities have utilized their existing forces only partially in civil defense preparations. The staff agencies, departments of health and welfare, departments of parks and recreation, the city engineers office, and department of public works, are examples of agencies which have not been utilized fully to date. Most of the personnel do not have civil defense assignments, nor do they have agency tasks to carry out in emergency situations. Agency directors repeatedly indicated that no thought had been given to their agency's contribution to the civil defense effort.

5. Full-time city health and welfare personnel are too limited in number to serve as a base for organizing a civil defense medical or welfare activity. Welfare and health departments either do not exist, or their staffs and the peace time functions they perform are too limited to carry out the planning and operations tasks expected of them. Assignment of these functions to existing county agencies did not fill these gaps in the program because of the lack of county activity.

6. Programs to develop volunteer and auxiliary forces have been unproductive. It is too difficult to recruit, train, and retain these people over long periods of time and inactivity. The major effort expended on these programs has been wasted to a great extent. The use of established community organizations like the Red Cross and Salvation Army, on the other hand, should be promoted even though their forces may be largely volunteer, because their programs are such that continued interest on the part of the volunteers can be sustained.

Municipal Employees
Major Civil Defense Services

	Broken Arrow	Marietta	Springfield	Hartford	Portland	Cleveland
Police	7	38	96	387	664	1,901
Auxiliary	10	24	80	232	600	1,283
Fire	None	40	107	388	701	1,314
Volunteer	14	None	None	None	None	None
Auxiliary	None	None	None	30	None	None
Public Works & Utilities	12	153	441	635	1,617	5,838
Health	None	None	13	102	136	345
Welfare	None	None	None	71	None	None
Civil Defense	* 0	0	4	2	13	23
Per Capita Expenditures 1961-62	None	\$0.15	\$0.25	\$0.065	\$0.146	\$0.185

7. Cities have not made calculations of the forces needed for emergency operations, or made inventories of where the augmentation of city forces can be obtained.

Equipment

1. City construction equipment, in most cases, is too limited for recovery operations without augmentation from private contractors. Arrangements for emergency service with the city's regular contractors have not been formalized, and the need for such arrangements on a pre-attack basis is not considered of high priority by the cities in the development of their local programs.

2. The vehicular and mass transit equipment now available to cities is more than adequate to implement a movement to shelter if its utilization is fully planned.

3. Radio equipment appears ample for essential control of emergency activities. However, little of this equipment has fallout protection and it may rapidly become inoperable. There appears to be an over-emphasis on RACES and Citizen Band radio manned by volunteer amateur operators in the total communications program. The reliability of these resources is open to serious question.

5. It is unlikely that there will be a significant municipal augmentation of the basic shelter supplies provided by the federal government. The idea of providing variety in the food diet, cooking facilities, auxiliary lights, cots, blankets, and, of course, games, is scorned by most local officials as unrealistic and unnecessary. At this time it is evident that a shelter stocking program has a chance of successful local implementation only if it remains on the most austere basis.

Shelter Availability and Utilization

1. Cities under 100,000 population have inadequate shelter for their people. Cities under 50,000 population have so little shelter available that the shelter program itself does not appear credible to the officials of these cities.

2. Cities between 100,000 and 250,000 population should be able to move a substantial portion of their population to shelter in one movement. This is possible on the planning assumption that the city will not be an immediate target and some vehicular movement of people would be possible.

3. Cities over 250,000 population should plan for a two stage shelter movement. The first stage should be planned to move people to the best available shelter no more than one mile from their location, and the second stage should be a post-attack movement of inadequately sheltered people to shelter with higher protection factors.

4. Many cities, states, and federal regional offices have no emergency operations centers with fallout protection. This condition must be corrected so the sheltered population would not be without leadership and direction during and after the shelter stay period.

Financial Support

1. Municipalities are experiencing severe public pressures for an end to rising local taxes and for a leveling-off of municipal expenditures. Employee demands for salary increases are becoming more intense, and the difficulty in finding qualified personnel will necessitate meeting these demands. City policy makers regard the civil defense program as important, but the remote threat of war is not sufficient to give the program a priority claim to city funds in competition with more popular and pressing programs which yield an immediate and obvious benefit to the city. Significant increases in civil defense expenditures are unlikely, and the program is very vulnerable to reduction in its budget whenever there is a relaxation of international tensions. Although it was not explicitly stated by city officials, federal financial contributions and guidance must be greater than they have been in the past if the cities are to develop and maintain their shelter systems on a ready basis.

2. Metropolitan central cities with substantial civil defense capability, a surplus supply of shelter, and large non-resident working population, feel, with some justice, that the costs of their program should be shared on a regional basis.

3. Officials in cities with little or no shelter available believed that the federal shelter incentive program is a first requirement if they are to continue to support civil defense locally. In the absence of any shelter facilities, or few shelter facilities, there is little incentive for them to develop a civil defense capability.

4. State and federal reluctance to appropriate the funds needed for the adequate support of the civil defense program at their levels has a pronounced effect on the local effort to finance the program at that level. Whenever a state program is weakened, whenever Congress rejects a phase of the civil defense program presented them, local government officials tend to interpret this as justification for their inaction locally.

Legal Problems

1. There are no substantial legal impediments to an effective civil defense program at the local level. Several areas, however, should be given more attention by local governments. They are:

Succession to all key administrative offices should be provided for in depth.

Special emergency provisions for filling vacancies on council should be obtained by amendment of city charters.

Charters should be amended to permit emergency sessions of council, the passage of ordinances by an abbreviated procedure and their passage by a majority of a reduced quorum.

2. Standby ordinances should be enacted authorizing the city to make emergency requisitions and regularize procedures for the taking of private property both in shelter and during periods of emergency recovery operations.
3. Cities have not provided for the uninterrupted continuation of either the judicial function or the legislative function through a disaster or shelter period. In most cities, judicial continuity cannot be provided for by local government because the courts are a county or state instrumentality and not a part of city government. Common opinion was expressed that neither of these functions is necessary in an emergency and, in some cases, would only serve to complicate and confuse the command and direction of emergency operations.
4. Cities have not made adequate provisions for records preservation nor have they consulted the city attorney to advise them concerning the legal requirements of their records preservation program.
5. City solicitors or law departments have not been consulted in formulating emergency plans, nor have these plans been submitted for systematic review by the attorneys. Officials react to this problem by taking the position that in an emergency, no one is likely to resort to legalisms, and if they do, the matter will be settled long after the recovery phase is over. Anticipating these problems is a "frill" not necessary to the progress of the program.

Intergovernmental Problems

1. There is a need for closer liaison and more guidance from federal regional offices and state offices of civil defense. In those cases where the state civil defense staff is totally inadequate to give the guidance and service needed by the municipality, the federal regional office should be authorized to act directly with the municipality.
2. There is a need for an area-wide approach to planning shelter systems for entire regions. Workable plans are not feasible for each separate municipality in heavily conurbated areas. Existing mutual aid plans are not adequate or realistic for metropolitan areas because their voluntary nature makes them unreliable in emergency situations and they offer no satisfactory substitute for unified, area-wide command. The efforts of suburban governments to carry out their civil defense responsibilities were not studied in detail, but the cities invariably were critical of the efforts made by their smaller neighbors.

3. When an emergency function was assigned to the county civil defense agency, or a county department, the county lagged far behind the city in the development of its program and left large gaps in the city's readiness posture that could not be closed.

4. School districts have not been included in civil defense planning, nor have they been given directions or briefing in civil defense policies to the extent they should be. Inconsistencies between school emergency plans and the city's survival plans are of critical importance and should be **reconciled**.

National Policy Considerations

1. In some states, cities that could **develop effective civil** defense capabilities have been hampered by the failure of the state to create a capable and adequately staffed state office of civil defense. The federal policy of working only through the states rather than directly with municipalities has meant that cities in states with sub-standard programs have fallen far behind cities in states with good programs.

2. More positive federal guidance, especially in the establishment of priorities within the civil defense program, would permit units of local government to concentrate their efforts on a core program, rather than spreading their efforts over too wide an area as they are now doing.

3. The results of state and local training efforts suggests that the federal government should develop a program of end product training as opposed to instructor training for those courses oriented toward special civil defense services such as radiological monitoring, shelter management, or shelter coordinator.

4. No city agency may be adapted readily to plan for and effectively carry out a program of immediate post-shelter rationing of food, clothing, and allocation of critical supplies such as fuel, gasoline, and medicine. Existing city departments have the needed administrative personnel and clerical personnel to undertake a program of this kind. They must, however, be given a completely planned and packaged federal program and cannot be expected to improvise one on their own initiative.

5. The present pattern of local civil defense organizations based upon each unit of municipal government and each county has perpetuated a large number of small units with inadequate capability for emergency operations, partial civil defense programs, and inadequate civil defense staffs for planning purposes. A single civil defense structure should be established for metropolitan areas employing a unified civil defense staff and providing for an emergency chain of command over the entire region. This could be based upon an advisory commission of the participating units for planning purposes. The core city should be used as the base for civil defense organization in metropolitan areas, and in rural areas, the county could serve this function. The state office of civil defense could be the agency to define the civil defense areas. This problem, in particular, should be studied in greater depth and a pilot program undertaken to determine its feasibility.

PART I

THE CIVIL DEFENSE RESPONSIBILITY

OF

MUNICIPAL GOVERNMENT

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Part I

THE CIVIL DEFENSE RESPONSIBILITY OF MUNICIPAL GOVERNMENT

A. Basic Principles of the Municipal Civil Defense Program

Cities must organize and plan for civil defense to survive, conduct recovery operations, and sustain their people for at least one month in the event of a nuclear attack upon the United States. Each city must strive to accomplish this by utilizing its own resources entirely, because it is anticipated that post-attack conditions would impede substantial assistance or control from the state and federal governments for as long as 30 days. Neighboring communities would be extended to the limit of their capability to meet their own needs, and unless a joint survival program had been planned and firm multijurisdictional command established, they could not be relied upon for assistance either.

The municipal civil defense effort must be designed to cope with the most dangerous threat to the city and its people that can be met with the methods and means of passive defense¹ available. This requirement has caused, and may cause in the future, fundamental modification of municipal civil defense programs in response to changes in the nature of the threat. When attack by manned bombers carrying kiloton yield weapons was the main threat, a civil defense program based upon the evacuation of people from the urban centers and the dispersion of city forces of men and recovery equipment around the urban periphery would have been effective. Now the threat is the intercontinental ballistic missile armed with a thermonuclear warhead having a destructive force measured in megatons.² It is possible that attack could come without any warning, and as little as fifteen minutes warning of an attack may be a valid assumption for planning purposes. Following an attack, 95 per cent of the land area

1. Passive defense measures are those which tend to minimize the damaging effects of enemy weapons; for example, removing people from the area where severe damage is likely, sheltering people and supplies from the effects of those weapons, or applying remedial action after an attack such as extinguishing fires. It complements active defense measures which embrace actions, usually military, to prevent the delivery of a weapon to its intended target; for example, use of anti-missile missiles.

2. The explosive power of a nuclear weapon is expressed in terms of the weight of TNT that would be required to produce an equivalent force. Thus, a 20 kiloton nuclear weapon has the explosive force of 20,000 tons of TNT, and a 20 megaton weapon has the force of 20,000,000 tons of TNT.

of the United States might be spared the direct effects of blast, heat and initial radiation from nuclear weapons but become contaminated with lethal amounts of persistent radioactive fallout.³ Evacuation of people from urban areas to the surrounding countryside, where there are too few structures to shield them from radiation, would only remove them from the danger of possible death from immediate weapons effects to suffer certain death later from exposure to fallout radiation. Evacuation of most cities, then, is not feasible because of the widespread nature of this danger; and those cities on the West Coast, where evacuation might still be possible, because the prevailing winds normally would carry the fallout inland and away from the evacuees, must also plan to shelter their population as an alternative in the event they did not receive warning of an attack in time to carry out an evacuation.⁴

The present National Fallout Shelter Program has an ultimate goal of providing every American with space in a structure that will have the protective shielding necessary to enable him to survive all but the direct and proximate blast, thermal, and initial radiation effects of a nuclear detonation. The immediate program is to identify, obtain the building owner's license to use, mark, and stock with austere survival rations, those buildings that will accommodate 50 people or more in shielded areas where the radiation intensity is reduced to at least 1/40 of the intensity outside the building. By making improvements to the ventilation and shielding characteristics of existing buildings, and by encouraging the inclusion of dual-use shelter space in new construction and the construction of community and home fallout shelters, the minimum standard of protection will be raised from 1/40 to 1/100 as the

3. Fallout is composed of earth and debris drawn up into the fireball of a nuclear explosion which was detonated close to the ground. This material is vaporized and as it cools it condenses and becomes contaminated with radioactive isotopes. It falls back to earth as the gases cool over an area extending for hundreds of miles from the point of detonation in a pattern and intensity determined by the weight of the fallout particles and the wind directions aloft. Fallout emits highly penetrating gamma radiation, similar to x-rays, but it will not make other materials radioactive as some people erroneously believe.

4. See The Effects of Nuclear Weapons, Revised Edition, prepared by the United States Department of Defense and published by the United States Atomic Energy Commission, April, 1962; for sale (\$3.00) by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20025, for a definitive treatment of this subject.

program progresses.⁵

"The National Plan for Emergency Preparedness" describes the assignments of emergency nonmilitary responsibilities to the executive branch of the federal government and relates to these the emergency roles of the states and their political subdivisions. Each political subdivision is called upon to contribute to the objectives of the "National Plan" by preparing for its own survival with the least possible pre- and post-emergency disruption of its political, social and economic system.⁶

Cities, therefore, are responsible for establishing clear lines of succession to key government offices and obtaining legal authority by ordinance or statute, as may be necessary, to insure the continuity of their government through an emergency period. They are responsible for the survival of those records which are vital to individual and property rights, or essential to post-attack recovery operations and the orderly resumption of their normal government services. They must also plan to use all of the city's resources in personnel and equipment to conduct emergency disaster operations and supplement these forces with trained auxiliaries and volunteers in the services for which governmental resources are inadequate, or, plan for the participation of non-governmental agencies and organizations. Finally, and most importantly, cities are expected to exercise the key role in

5. Office of Civil Defense standard terminology converts these fractions to whole numbers. A shelter area that reduces the radiation level to 1/40 of the level outside is identified as having a Protection Factor of 40 and this is abbreviated as "PF 40". For greater convenience, shelters are put in categories according to their PF rating as follows:

Shelter Category 1 PF 20-39
Shelter Category 2 PF 40-69
Shelter Category 3 PF 70-99
Shelter Category 4 PF 100-149

Shelter Category 5 PF 150-249
Shelter Category 6 PF 250-499
Shelter Category 7 PF 500-1000
Shelter Category 8 over PF 1000

This report will use these categories to identify the relative protection of shelter facilities. For complete detail see Fallout Shelter Survey Instructions, Phase 2, Department of the Army, Office of the Chief of Engineers, Washington, D.C., 20025, March 21, 1962.

6. The National Plan for Civil Defense and Defense Mobilization issued in October of 1958 is currently being superseded by a complete revision to be titled The National Plan for Emergency Preparedness. All statements in this report referring to the Plan are based upon the External Review Draft of this revision released by the Office of Emergency Planning, Civil Affairs Office, beginning with the release of Chapter I, Basic Principles on June 14, 1963.

achieving the goals of the National Fallout Shelter Program. Each city is responsible for planning and implementing a program that will:

1. Promote the maximum utilization of its potential shelter space.
2. Maintain control over, and provide in-shelter services, for the sheltered population for as long as two weeks.
3. Carry out an orderly emergence from shelter and lead the citizens in their initial recovery measures.
4. Furnish people with guidance and direction in making the adjustments to the post-attack living conditions they may find.
5. Secure rationing and distribution of critical supplies located within the city in a equitable manner and until the state and federal governments are able to establish a nationwide system.

The following statement is indicative of the importance of the shelter concept to the present civil defense program:

Shelter is the core of civil defense. First emphasis must be given to the movement of people into the best shelter available to them at any time. This is, of itself, a broad effort involving not only obtaining shelters and making them ready, but also planning their use, including: assignment, population movement, warning, shelter management, and so on. All civil defense programming is related to, and built on, the shelter base.

Municipal civil defense preparations to meet the threat of nuclear attack also create an increased ability to meet lesser threats, such as attack by conventional weapons or a natural disaster. Enhanced capability to conduct effective emergency and recovery operations should the community become the victim of a natural disaster is, then, an important by-product or "bonus" a city gains by virtue of its civil defense effort. Civil defense programs, however, should not be organized and directed primarily to execute the more limited natural disaster operations, and the present Office of Civil Defense federal policy controlling federal financial assistance to local governments is designed to focus program emphasis on the

7. Federal Civil Defense Guide, Part A, Chapter I, Department of Defense, Office of Civil Defense, FGCC Clearance Draft, March 15, 1963. pp. 4-5.

nuclear threat and the development of fallout shelter facilities to meet it.

The remaining portions of Part I will identify and describe briefly the specific civil defense responsibilities, emergency services, and tasks of municipal government according to the two major types of activity in the order they would occur. The two types of activity are:

1. Pre-attack preparation --- building the system.
2. Shelter utilization and early recovery --- operating the system.

Each city is expected to develop and fulfill its own civil defense program consistent with its available resources, needs, and particular form of governmental organization. In doing this, the publication, "Federal Civil Defense Guide" should be consulted and the following descriptive treatment is in no sense intended to duplicate its complete coverage.⁸

B. Pre-Attack Preparation --- Building the System

The pre-attack period is considered to include all the time between the present and the receipt of actual warning of an attack or notice that an attack has been delivered. In short, the pre-attack period is now, and civil defense programs are currently in the pre-attack phase.

Pre-attack preparations for emergency operations require just as complete participation by the departments and agencies of municipal government as do the actual operations themselves if they are to mature and be effective in a crisis. In no sense should the activity required during this phase simply be delegated to the municipal civil defense agency to carry out on its own without the direct support of the skills, experience, manpower, and equipment of the regularly constituted departments of city government. Continued adherence to this commonly held misconception can only lend weight to the allegation of some critics that a municipality's civil defense program is little more than a "paper plan."

8. Ibid. The Federal Civil Defense Guide was available in draft form when this was written and is currently being published and released in sections.

1. Organizing Municipal Civil Defense

The first requirement for emergency operations is unified leadership organized along clearly established lines of command. Municipal government forms, in many cases, are designed contrary to this requirement by dispersing direction and control of city operations among ad hoc boards, commissions, authorities, and special districts, or committees of city council. The executive functions may be fragmented among several officials who constitute a plural executive body, or they may be severely limited by the restraints that accompany allocations of power and responsibility to a nominal chief executive. This pattern of leadership, when it exists, must be modified to meet crisis circumstances so that decisions can be made promptly and authority for action emanate from a single competent and responsible source.

The chief executive of city government is the official the citizens may be expected to accept leadership from most readily at the time of a severe crisis. This generalization appears valid not only with respect to the mayor of a "strong mayor" type of mayor-council government and the city manager of the council-manager type, but also with respect to the mayor of both the "weak mayor" and commission forms. Although the general public is not likely to make distinctions among the relative powers of city executive leaders, there are substantial differences in their normal civil roles which have pronounced effects upon the assumption of over-all operational command in an emergency, whether caused by a natural disaster or an enemy attack.

Many important departments or agencies in a "weak mayor" city may not be under the mayor's direction for normal operations, but rather, be found under the direction of a special board or commission, or, directly responsible to the city council. In a commission form of government, the mayor is usually but one of five commissioners, among whom the city departments and agencies are allocated for their administration. The commission acts as the city council in its collective capacity, and each commissioner acts individually as the executive head of the department assigned to his direction. There is a real need then, to provide unity of command and a clear chain of command starting with the mayor and extending through the departments to the final operating units of the administrative hierarchy in "weak mayor" and commission cities. No avoidable opportunity for confusion during a crisis should be permitted; and therefore, these arrangements should be formalized and communicated in written form to all affected personnel. Revisions to charters, ordinances, administrative codes, or state statutes should be sought if they are needed to establish a legal basis for grants of extraordinary emergency powers to the chief executive and his administration.

The task of planning and administering a municipal civil defense program is becoming ever more complex and demanding in technical knowledge. A professionally staffed civil defense agency should be established to serve the chief

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executive of the city. The director of the civil defense agency is properly a staff aide to the chief executive and should always act for and in the name of the chief executive. He should become the chief of staff for the executive during actual emergency operations, and as such, he should advise and assist but he should not assume over-all operational command himself.

The staff of the civil defense agency will, of course, vary in size according to the population of the city and the degree to which the city's civil defense program has matured. It will be relatively small in comparison to the size of the city's operating departments because its role is highly specialized and ought to be limited to that of a planning and coordinating group. Specific civil defense tasks usually should be carried out by regular city forces under the direction of the chief executive and his line administrators, and with guidance from the civil defense agency.

The director of civil defense should be assigned on a full-time basis with no collateral duties in any other department. He should have a professional status merited by previous experience and training to command the respect of the directors of the city departments and the public, and to enjoy the full confidence of the chief executive. His staff may be composed of personnel assigned to the agency from the regular departments to perform specific jobs in line with their particular professional competences, or, personnel specially recruited for civil defense assignments.

Federal guidance suggests a sample distribution of personnel and administration for a local civil defense organization. Very small cities will, of financial necessity, find that some of these suggested positions must be combined. Larger cities may increase the number of positions to adjust the greater scope of their program requirements to reasonable work loads. In many cities, a separate shelter utilization officer would be extremely advantageous at this time.

Sample of Positions and Functions **Civil Defense Organization**⁹

(1) Civil Defense Director

**Program Direction, Responsibility,
Evaluation and Reporting**

**Industry
Public Information**

9. Ibid. Part B, Chapter 2, Appendix 1, pp. 2-3.

(2) Operations Officer

Shelter Survey, Marking and Utilization	Police
Warning	Fire
Shelter Management	Rescue
Communications	Engineering
Health	Welfare
Shelter Systems Analysis	

(3) Supply and Logistics Officer

Shelter Provisioning and Inspection	Manpower
Supply	Transportation
Grant and Loan Property	Surplus Property
Matching Fund Property	

(4) Administrative Officer

Fiscal Administration	Personnel Records
Matching Fund Submissions	Surplus Property
Office Supplies and Equipment	Requests

(5) Training and Education Officer

Schools	Skills Training Coordinator
Staff Training	Community Group Training

(6) Radiological Defense Officer

Monitoring and Reporting	Fallout Forecasts and Evaluation
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All personnel and administrative costs of the city civil defense agency, including the necessary clerical staff, may be paid half by the city and half by the federal government if the employees meet the merit requirements under the Office of Civil Defense Personnel and Administrative Expenses Program. Periodic civil defense program papers, approved by the state office of civil defense and the Office of Civil Defense Regional Headquarters, and progress reports are also required to qualify for continued federal Personnel and Administrative contributions.

2. Planning

The municipal civil defense agency is responsible for developing a basic community survival plan and plan of emergency operations which may be adopted by resolution or ordinance of city council. Such resolution or ordinance should be

adopted by reference to avoid costs of advertising it in full, which could be prohibitive. Although the civil defense agency has a leadership role in developing these plans, it must involve and coordinate the planning efforts of all the departments and agencies that are to be assigned emergency roles or whose personnel are to be affected by the plan. To do otherwise would be to plan in a vacuum without the benefit of the experience, specialized competence, and intimate knowledge of the city's resources possessed by the operating services. Not only might plans be unrealistic, but equally damaging, they might never be given the full support of the departments if they were to be drawn solely by the civil defense agency and imposed by order of city council or the chief executive. Non-governmental agencies with assigned civil defense missions also participate in the planning process, especially in preparing the annexes (detailed operations plans) for their services. Industries, businesses, coterminous or overlapping jurisdictions such as the school district, special districts, and municipal authorities should all be encouraged to develop their own survival plans and be given guidance to make them consistent with the basic city plan.

The city civil defense agency should test, review, and revise the survival plan periodically. The plan should be tested to uncover operational defects and reviewed and revised to keep it up to date. When weaknesses are discovered, remedial action should be initiated. Amendments should be sought if aspects of the plan are obsolete because of changes in doctrine or changes in basic assumptions regarding the nature of the attack an enemy might deliver.

3. Orientation and Training

All city elected and appointed officials, city employees, auxiliary, volunteer, and private agency personnel participating in the civil defense program should be given orientation in basic civil defense. The goals of this orientation should be to impart to these people an appreciation for, and a general understanding of, the problems posed by a nuclear conflict, inform them about the city's survival plan, and explain the organizational pattern for civil defense so they will be able to relate their own unit and individual assignment to the total plan.

Orientation series may be brief (several hours is reasonable) but they should be repeated periodically to reach new personnel and keep veteran ones apprised of the most recent developments and progress made in the civil defense program.

There is an important secondary advantage to be gained from a well conceived and executed orientation program. Elected city representatives, and, indeed, all city employees frequently are looked to by their neighbors and the general public as informed authorities on the community's civil defense posture. They must be prepared to discharge this role in a manner that will instill confidence in the city's preparations and secure positive public support for the program.

Training programs, as distinguished from basic orientation, must be pursued to develop the special civil defense skills that will be needed in addition to the skills already available from the regular performance of peacetime jobs. Volunteer and auxiliary forces must also be given training in the fundamentals of police work and fire fighting so they may take their places beside the regular city forces in an emergency and render effective service. Specialized courses should be offered to train at least two shelter managers for every shelter facility and a team of radiological monitors for every shelter and monitoring station. First aid, light - and heavy-duty rescue, radiological decontamination, emergency communications procedures, and disaster medical care are representative of the subjects that should be stressed in a complete program of training to upgrade the city disaster service capabilities.

Instructors for municipal civil defense courses may be trained by one of the three Office of Civil Defense Instructor Training Schools or the university extension program serving the state. The cost of instructor training may be met, in part, by the previously mentioned federal Personnel and Administrative Expenses Program.

4. Public Information and Education

The ultimate effectiveness of a municipality's shelter program in saving lives will be dependent, in large measure, on the ability of the public to react to a warning as planned, make maximum use of all the available shelter space, and conduct themselves in the shelters with good discipline. The public should be kept fully informed about the progress of the shelter program in their community and the plans that have been made for using the shelters. Of course, they should be told the facts about the dangers of fallout and the protection to be gained by taking shelter. Even a carefully planned movement to shelter could be compromised if a great many people attempted to escape the city, moving against the flow of people who were proceeding to shelter, rather than take shelter themselves.

It is of the utmost importance that the warning signals be fully understood. The public's reaction time to the warning signal must be reduced to what amounts to instant response because there may be only 15 minutes or less to find shelter or cover prior to a nuclear detonation or little more prior to the arrival of fallout. The people should know, prior to a warning, where they are to go for shelter, how they are to get there, and what they should bring with them. They should be told what shelter living conditions will be and what shelter management will expect of them.

This general information may be conveyed to the public by the newspapers in the community and over local radio and television. However, the details of where specific work groups and families are to take shelter should be communicated by written notice and instructions to each business, industrial plant and household assigning them to specific shelter facilities.

It is desirable that this general information program be supplemented with more formalized public education or training for some of the people. Courses in medical self-help and basic survival techniques should be offered in evening adult programs, very possibly through the public schools, with the optimum goal of reaching one member of every household.

5. Community Warning System

A network of fixed sirens located in such a manner as to be audible in all parts of the city is the mainstay of the community warning system. Municipal government is responsible for installing and maintaining the sirens in working order. They should be inspected periodically and tested at regular and announced times to insure their constant readiness. A reliable source of emergency power should be furnished so that an untimely loss of regular electric current will not prevent the sounding of a warning.

It may be necessary for a city with scattered settlements on its outer fringes to supplement the fixed siren network with a mobile warning system. This can be done by mounting sirens and loudspeakers on police cars, fire trucks, or rescue vehicles which can be moved to these neighborhoods to spread the alarm. These improvised measures might be valuable even if a NEAR system is fully operational.¹⁰ Local radio and television also may be used to broadcast the warning and issue early, and official, civil defense instructions to the public.

6. Continuity of Government

It is very conceivable that key government officials could become casualties or otherwise unable to reach their duty stations in an attack situation. Under such conditions it is of critical importance that civil government continue to function effectively. Clear paths of succession should be provided by statute or ordinance so that vacancies in key positions may be filled immediately with no need for post-attack action by an appointing official or the electorate. At least three emergency

10. NEAR stands for National Emergency Alarm Repeater System. A small box-like receiver unit plugs into a standard electric outlet in office, plant, or home and is activated to emit a loud buzzing at the command of a signal sent over regular commercial powerlines from signal generators placed in strategic locations throughout the country.

interim successors should be designated for each key position and, upon succession, they should become fully vested by law with the powers and duties of the office until divested of authority by the return of the regular incumbent or until the vacancy is filled in the usual manner.

It is also good practice to assign the several designated successors for any given office to emergency duty stations as geographically separate, one from the other, as may be possible. Some of these people may be assigned to a secondary or "standby" emergency operations center if one is available or if one can be developed.

7. The Emergency Operations Center

Disaster operations demand the highest degree of coordination of all services and units and the ability of responsible leadership to make immediate but informed decisions. The top management team must be brought together in a place that affords them adequate work space, communications, essential operating records, and above all, protection from weapons effects. It would avail a city little if it planned well, protected the population in shelter, and then found it impossible to direct the fulfillment of the plan or maintain control over the shelters.

Cities should create an emergency operations center to use as a command and control point. When an attack warning is received, or a natural disaster strikes the community, the center should be activated and serve as the base of operations until normal conditions can be restored or the crisis has passed. The mayor or city manager, the civil defense director, heads of city departments, representatives of non-governmental agencies with disaster roles, and key personnel from the civil defense agency and emergency services should report to the center when a warning is received.

An important objective of the "National Plan for Emergency Preparedness" is the maintenance of civil government during and after an attack whenever possible. Therefore, federal guidance calls for the emergency operations center to serve not only the operations command, but also the legislative and judicial branches of city government. Space should be provided members of city council, so, upon reporting to the center, a quorum may be established, and emergency sessions held to enact any measures deemed necessary to legitimize previously unanticipated exercise of emergency power by the city and its administration. The city judges should also report and serve as advisors to the chief executive and council, at their request, and, if needful, dispense justice under the law according to temporary and special procedures established prior to the emergency.

The federal program seeks to promote the construction of emergency operations centers, and will help meet the cost on an equal matching basis. The ultimate goal is to have municipal centers removed from areas where heavy damage

is likely, and providing thermal, blast, and fallout protection. Until such facilities are available, the city should set a minimum standard of fallout protection for its operations center at a factor of 100, the same as a Category 4 shelter. This minimum protection factor is more important than the location of such an interim center, although, many of these facilities have been positioned just outside the city, or, on the fringes, in hope that they would remain operational even if the center of the city was damaged by a direct hit.

Emergency operations centers must be equipped with the land-line telephones and radio communications necessary to direct operations, land-lines to the various shelters or groups of shelters, an emergency power source to keep communications operational, essential records, plans and schematic diagrams needed to contain damage or effect emergency repairs to vital utilities, and austere survival supplies and rations to sustain the people at the center in efficient working condition. The CONELRAD system has been discontinued and replaced by the Emergency Broadcasting System, and the center should have facilities for originating broadcasts over this system to the sheltered population. Only in this manner can information be widely disseminated and its content officially authorized to sustain the morale and mobilize the recovery efforts of the citizens in anticipation of their emergence from the shelter.

A suitable emergency operations center, coupled with carefully drafted continuity of government ordinances, can contribute to the national policy goal of preserving our institutions of democratic civil government. In a very real sense, an emergency operations center enables a city to perform its duly constituted governmental services under disaster conditions --- its essential civil defense mission.

8. Shelter Development

Cities are given the chief responsibility for developing a program to bring their shelter system to a condition of operational readiness and to maintain it there. Once the shelter survey by the architect engineers under the direction of either the Navy's Bureau of Yards and Docks or the Army Corps of Engineers has identified the structures and special facilities which meet the criteria for use as public fallout shelters, the city must obtain licenses from the building owners to permit their use, then mark and stock them. The licenses should be obtained from owners or responsible managers who are fully informed about the program and the requirements for storage of survival supplies and access to the building when attack threatens.

Once the licenses are obtained, the buildings must be marked for ready identification with the official and distinctive black and yellow shelter signs provided by the federal Office of Civil Defense. An outside sign must be mounted on, or in front of, each building to be clearly visible from the street and the specific shelter areas inside the building must be delimited with smaller signs of similar design and directional signs placed at strategic locations throughout the building to guide people to these areas. Although the initial federal program did call for the marking to be done by the federal government, many cities found it expedient during the recent Cuban

Crisis to accelerate the marking by doing it themselves, using signs furnished by the federal government and, oftentimes, in consultation with the architect-engineering firms that made the building surveys.

The shelters must be stocked with the austere survival supplies furnished by the federal government. These supplies include tinned crackers and 17.5 gallon plastic lined water cans, which must be filled by the city or the building owners, sufficient to sustain the people in the shelter for two weeks. Also, sanitation kits, basic medical supplies, and radiation monitoring devices in sufficient quantity to serve the rated capacity of the shelter are provided. These supplies must be requisitioned by the city from the federal government when the shelter facilities have been prepared to receive them or the city is able to provide suitable temporary storage. If the federal warehouse serving a city is within 25 miles, the city must obtain the supplies at the warehouse and transport them with their own trucks and manpower or recruit volunteer assistance. If the haul is greater than 25 miles, the federal government will move the supplies to predesignated locations in the city by modular units. The minimum "package" of supplies is for 50 shelter spaces. The city is responsible for placing the supplies in shelter storage spaces made available by the owner or manager of each shelter facility to be stocked. Title to the supplies must be accepted by the city and it then becomes responsible for the security, periodic inspection, and rotation or replacement of overage, damaged, or pilfered supplies. The city, or the building management, may supplement the basic federal supplies with additional survival items. These additions might well include bunks and blankets, canned foods and beverages, simple recreational materials, and items of equipment such as hand tools, flashlights, and battery powered megaphones for interior communications and a telephone for exterior communications.

The people in the city should be assigned to specific shelters on the basis of both their day and night locations. The assignments should be made to secure maximum use of the available shelter space and with careful regard to the time it will take to reach shelter. The preparation of these plans and assignments would be greatly aided if the city planning or department of traffic engineering staff served as consultants to the municipal office of civil defense, or the task directly delegated to them. Individuals should not be assigned specific space in a shelter, only to the shelter facility. Shelter managers will have to assign space to individuals according to the number of people who actually seek shelter in the building. This task must not be made more complicated as it would be if individuals were given reason to feel that they had a proprietary right to a particular location in a shelter.

The authority of municipal government must extend into the shelters and be continued through the shelter-stay period. At least two managers for each shelter should be trained and commissioned with the authority they will need to act as officials of city government in controlling the people and organizing the essential shelter services. Key specialists, city personnel when available, should be designated and assigned to shelters to aid the shelter manager. It is a desirable goal to have

a member of the police force, fire department, and a doctor or member of one of the related medical professions available in each shelter to organize and lead a team to perform their specialized service for the welfare of the shelterees and to support shelter management. A radiological monitoring team should also be assigned to each shelter. Professionals in welfare, sanitation, education, and recreation would be of valuable assistance in running the shelter.

It is unlikely that any city will have all the shelter spaces it needs, or have them in the right location with relation to the distribution of day and night population. A continuing effort must be made to augment the presently available space so all may have adequate and proximate shelter should an attack come during the night or day. Several means may be used simultaneously. Home owners and neighborhood groups should be encouraged to build family and neighborhood shelters or make improvements to their basements that meet established federal fallout shelter specifications and comply with the city building code. The building code should be amended to promote, not hinder, the home owner or neighborhood group wishing to provide this kind of protection. Building owners should be encouraged and given guidance in making the needed improvements to their building if the protection factor can be upgraded at a reasonable cost by improving the building's shielding characteristics, or, if its capacity can be increased by the installation of ventilation equipment. New construction of all public buildings may have fallout protection designed into them and this would serve to give leadership to private builders and induce them to follow the city's example. The federal shelter development program, when it goes into effect, will provide a subsidy for non-profit health, education, and welfare institutions to construct and improve their building's fallout shelter capacity, and it may be expected to give substantial impetus to the city's program of shelter augmentation.

The most demanding pre-attack mission in terms of man-hours of direct labor and expenditure of municipal funds is the development of the shelter system. This mission cannot be performed by the handful of employees on the staff of the city civil defense agency, but must be carried out, in large part, by the operating departments of city government with the coordination and guidance of the civil defense agency. The scope of this program is so great in cities with substantial shelter capacity that the voluntary loan of personnel and equipment "when available" by the heads of departments will not be sufficient to complete the work expeditiously. The civil defense director must make his needs known to the mayor or city manager and orders must come from that level directing specific departments to accomplish specific tasks. Priorities must be established among the ongoing services of the city and concessions made to meet the needs of the shelter development effort.

C. Shelter Utilization And Early Post-Attack Recovery -- Operating The System

The shelter utilization phase would begin when warning of an attack was sounded and continue through the movement of the city's population to the shelters, through the time the people remained in shelter, and terminate when everyone had emerged from shelter and it was safe to live in homes and apartments again. It is unlikely that shelter living would end abruptly, but rather, when radiation intensities permitted, work parties would sortie from shelter for controlled but increasing lengths of time to conduct early decontamination and recovery operations. They would return to shelter for rest, food, and protection from the low-level outside radiation and thereby keep cumulative exposures, or doses, within tolerable limits. In time it would be safe for everyone to leave shelter and resume more normal living patterns. Because the operating requirements that must be met during the shelter phase would be different from those during the post-attack recovery phase, they will each be discussed separately even though they would overlap in actual practice.

1. Movement to Shelter

Quick and orderly movement of large numbers of people to shelter can be achieved if careful preparations are made. The movement will be most manageable if shelter assignments have been made known prior to an attack warning. As many as possible should walk to their assigned shelter, and automobile traffic into the congested areas where shelters tend to be concentrated should be restricted. Advice must be given to carry baby foods, formulas, and special medicines such as insulin to shelter. People also should be encouraged to bring easily stored and served canned foods and fruit juices, blankets, and extra clothing according to the season.

People who do not live within a reasonable walking distance of shelter, and warning time is short, may be directed to take expedient shelter in their basements or in unstocked buildings nearby. They may be moved to more protected shelter after attack, or, when the situation makes it more prudent to risk some exposure rather than remain in unsuitable shelter. Plans for this kind of two-stage movement may include the use of mass transit facilities and motor vehicles to reduce exposure time during the second stage of the movement.

The city may plan to use all its uniformed forces and their auxiliaries to control the flow of traffic toward shelter. Both on-duty and off-duty policemen and firemen should have standing orders to traffic control points which they are to execute automatically when a warning is sounded. Traffic signals, prepositioned special directional signs, and improvised road blocks may all be utilized to aid in the routing of traffic. Once the streets are clear, these forces should take shelter themselves and assist in the management of the shelters.

Local commercial radio and television stations should have prepared transcriptions to broadcast instructions to the public and help direct the movement to shelter. Now that the CONELRAD system has been discontinued because there is no longer a danger that radio transmissions will be of use to an enemy in directing his weapons to their intended targets, commercial radio stations in the Emergency Broadcasting System serving the area may be used to transmit pre-prepared messages. All stations, however, should transmit the same messages and they should not transmit extemporaneous announcements or advice unless approved by proper civil defense authorities.

2. Government in Shelters

Each shelter should be placed in the charge of a trained shelter manager who holds his position by appointment of the municipal government and exercises his authority on behalf of the duly constituted governing body. A shelter management team should be organized under his direction to support him in governing the shelterees and furnish the essential in-shelter services of police protection, fire defense, health and sanitation, welfare, and distribution of food and water. Members of the regular government force or appropriate profession should be assigned to every shelter for these special services.

Only men who are accustomed to responsibility and who have demonstrated their leadership potential should be trained and commissioned as shelter managers. Although it may be desirable to permit building owners to nominate the shelter managers for their buildings, the city should establish qualifications and commission only those who meet prescribed standards. The manager's position is comparable to that of the captain of a ship in some respects, although, he does not have the long history of legal precedent to support the exercise of absolute power and authority. If the manager's authority is not accepted as law by the shelterees, or, if they reject his leadership, the welfare and perhaps the survival of the group will be jeopardized. Spontaneous or "emergent" leadership may be uninformed, lacking in stability, and prone to make serious errors of judgment in running the shelter.

The most careful provisions for trained shelter leadership may be ineffective if the assigned managers are unable to reach their shelter or are otherwise unavailable. For this reason, each shelter should have directions for its organization and government posted in a conspicuous place and manuals of instructions prepositioned to guide those who will be selected by the group to fill the leadership void.

3. Shelter Communications

Each shelter should be in communication with, and responsible to, the city government at the emergency operations center. In cities with a large number of shelters,

it may be necessary to organize shelters into groups and districts with intermediate levels of command so that the operations center does not have an unworkable span of control. The shelters in each group or district should be interconnected by telephone land-lines and the district leader connected to the emergency operations center. This will enable each unit to make situation reports to the center and permit the center to give vital information and directions to each shelter.

Battery powered portable radio receivers may be brought to shelter and used to get news reports from national, state, or local sources over the Emergency Broadcasting System. News would be a critical factor in maintaining the morale of the shelterees and these frequencies should be monitored by shelter management and the news disseminated through the shelter promptly and accurately to avert the spread of unconfirmed rumors and distorted interpretations of events.

The shelter managers would have to communicate orally with the shelterees. To facilitate this, it would be well to furnish a battery powered hand megaphone for each shelter facility and divide the shelter into living sections. Each section could be reached by the shelter manager through a representative selected by the section, or addressed as a unit with the megaphone.

4. Radiological Monitoring

The emergency operations center should have a trained team to receive, plot, and analyze reports of radiation intensities and weather forecasts that come in to it. With this information, projections can be made of when and where people may be moved from inadequate to better shelter, and when it will be possible to emerge from shelter and initiate recovery operations.

Monitoring teams in each shelter would be responsible for reporting their radiation readings to the control center periodically and identifying the areas safe for habitation in their building. They would also keep records of the cumulative exposures of those leaving shelter for early foraging, recovery, or decontamination sorties. It would also be necessary for monitors to accompany recovery units and find areas that were still "hot", mark them for later decontamination and warn others to keep away from them until they were safe.

5. In-Shelter Government Services

Many of municipal government's normal services must be continued in novel ways to meet the special needs of the shelters. To compensate for the lack of sufficient governmental forces, teams may be formed that utilize the shelterees to perform these services under the direction of shelter management. These teams would not only contribute to the survival of the group, but the activity would have a positive effect on the morale of the participants and serve to give them a sense of

purpose and usefulness.

Crowded living conditions would increase the hazard of fire. A shelter fire-safety force should be organized and a constant fire watch maintained to discover and extinguish fires before they spread beyond the point where they could be put out with the limited equipment available. The radiation hazard would prevent using the city's regular fire forces to fight fires that might be ignited by the attack or start in unattended structures not used as shelters. These forces should be assigned among the shelters to give leadership in shelter fire defenses. It is also essential that the trained fire forces be conserved to play their critical role in post-attack recovery operations. Preserving lives must be placed before saving property and they should not be sacrificed putting out fires while exposed to fallout radiation.

The police force should also be sent to shelter as soon as their task of controlling the movement of people to shelter has been accomplished. They should be used in the shelter to lead the shelter security forces in preserving order and discipline. People will be under previously unexperienced stresses and a uniformed police presence would serve effectively to suppress lawless or anti-social behavior. Natural disaster situations have demonstrated that such behavior would not be prevalent and the social pressure of the majority would be sufficient to preserve the standards of acceptable conduct in most cases.

A reasoning similar to that applied to conserving fire forces also pertains to the municipal police. The police have a key role in reconstituting an orderly and law-abiding post-attack community and they should not be exposed to radioactivity guarding abandoned property against looting or protecting exposed facilities against sabotage during the period when they should be in shelter.

Doctors, dentists, nurses, and others from related medical professions should be assigned to shelters throughout the entire system and utilized to treat the ill and the injured and aid in maintaining a high standard of shelter sanitation. Outbreaks of contagious diseases must be averted or controlled. Every effort must be made to isolate persons who become ill to prevent epidemics. Even though the city's population is fortunate enough to escape without major attack-caused casualties and no serious radiation sickness is experienced, some people will become ill or otherwise require medical attention. The time spent in the shelter may also be used to conduct a training program in elementary medical self-help because the demands placed upon the medical profession in the post-attack period will restrict their care to only the most serious cases.

Shelter welfare activities should begin as soon as people are in the shelter by having them complete prepositioned shelter registration forms. These forms would

be used after the attack by those reuniting family groups which had been separated, and they would be helpful to shelter management immediately by indicating the occupations or special skills of the shelterees available for shelter services and post-attack recovery operations.

Recreation programs should be scheduled in shelter routine to sustain morale and occupy the children. Although physical activity must be limited, many passive diversions requiring no special equipment may be organized.

The stocked food and water must be rationed and distributed. Although the crackers and water constitute a very austere diet, their rate of consumption should be related to the number of people in the shelter and the length of time it will be necessary for them to remain there. A quart plastic water bottle is provided for each shelteree and enough water is stocked to allow one quart of water a day per person for 14 days, based on the rated capacity of the shelter. A total of 10,000 calories is allowed for each person of the shelter's rated capacity; enough for an issue of about eight crackers per person per meal if three meals a day for 14 days is planned. Each cracker constitutes about 30 calories. Water should be distributed no more than once each day because it is too difficult to partially fill every bottle at each meal. The crackers should be issued by the meal because they are easier to distribute and it would be impossible for individuals to store them from meal to meal in a secure and sanitary place.

The shelter manager may find that the shelter has exceeded its rated capacity and be forced to reduce the ration. It may be desirable to allow extra rations to persons engaged in physical labor on work details or sorties from shelter for early recovery activity. The procedures for issuing rations should be made known to everyone and followed exactly by shelter management so that there is no opportunity for any shelteree to feel that he, or his family, is not getting a fair share.

6. Post-Attack Operations

The Office of Civil Defense is responsible for the early post-attack phase. The long-range national recovery effort has been placed under the jurisdiction of the Office of Emergency Planning. It is generally recognized that this division of roles is arbitrary and in practice there would be a gradual shift of forces, operations, and program emphasis from civil defense type activities to those of long-range national recovery.

Initial post-shelter municipal responsibilities would be to make systematic radiological reconnaissance, identifying those areas that are still hazardous and marking them for decontamination and warning people away from them. Safe travel routes should be cleared of rubble so that the shelterees could move from the shelters and return to their homes, or, if damage prevented this, to temporary accommodations outside the damaged areas. City heavy equipment should be augmented by equipment

and operators supplied by private contractors. "Plan Bulldozer", developed and sponsored by The Associated General Contractors of America, is designed to regularize and facilitate the availability of these resources to municipal governments when they are required, either in attack or natural disaster situations.¹¹

The police and fire forces, supplemented by their auxiliaries and volunteers, would resume their operations as organized services. The fire department would have several demanding and high priority missions; extinguishing any fires still burning is one, of course. It would also take part in radiological decontamination by washing-down paved streets and building exteriors with fire hoses and participate in rescue work by extricating people trapped in shelters blocked shut by rubble. Police, too, have rescue skills that may be utilized at this time. However, they should be deployed quickly to protect property and maintain civil law and order in the community, their primary function.

Emergency medical centers and hospitals should be established to give treatment to the ill and injured. Municipal authority should control the allocation of medical supplies and drugs available in the city because it is likely that there would be serious shortages. Public health authorities would be responsible for maintaining standards of sanitation, testing the quality of the water supply, regulating its use, and conducting programs of widespread public education and information in preventive health measures. An emergency mortuary service must be instituted to identify and give burial to the dead if there are many fatalities.

The city department of public works, city engineer's staff, and public and private utilities should move to assess the damage to buildings and essential community utilities and restore them to operation. Ruptured water and sewer lines must be repaired, water purification facilities and sewage treatment plants put back in service, gas and electric supply secured, and telephone communications re-established. Public works equipment and manpower, supplemented by "Plan Bulldozer" would be used to remove earth that could not be decontaminated by washing techniques. It might be necessary to scrape off the first inch or two of some ground surfaces and bury the contaminated material by sanitary landfill methods. Rubble should be disposed of in this way also if it is found to be dangerously radioactive.

11. Information and documents to create a local disaster relief plan under "Plan Bulldozer" may be obtained by writing to AGC National Headquarters, 20th and E Sts., N.W., Washington 6, D.C.

City welfare services, with the assistance of agencies like the Red Cross, Salvation Army, and others, should aid in reuniting family groups, finding housing for those whose homes cannot be reoccupied, furnishing clothing for those in need of it, and running mass feeding stations if the situation called for them. Schools, auditoriums, and welfare institutions may be opened and staffed as emergency welfare centers to serve specific neighborhoods.

Existing stocks of food and other supplies essential to the preservation of life located in stores and warehouses should be conserved and rationed by city government until a national system of rationing can be instituted and the resupply of such materials assured. Fuels for automotive equipment would be in short supply and their use restricted to transport and construction projects necessary for community recovery on a priority basis.

This overview description of municipal responsibilities for both building and operating the civil defense system furnishes a frame of reference within which the civil defense capabilities, resources, and unmet needs of the six case study cities may be inventoried and analyzed. How these cities, located in various parts of the United States with very different forms of governmental systems and services, and with widely different sized populations, have organized to meet their civil defense responsibilities can be studied, the most serious weaknesses identified, and recommendations to overcome them proposed.

PART II

CASE STUDY

BROKEN ARROW, OKLAHOMA

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BROKEN ARROW, OKLAHOMA

Community Profile

Broken Arrow had a population of 5,928 in 1960 according to the United States Census. It has an area of approximately three square miles and is located in Tulsa County, about six miles southeast of the Tulsa city limits and 12 miles from the downtown business district of Tulsa. Settled soon after the Oklahoma territory was opened, Broken Arrow was, until recently, a stable, agriculturally oriented community. However, between 1950 and 1960 its population increased 82 per cent; its present population is estimated to be 7,100 and it has become primarily a satellite bedroom community.

Its Economy

A study prepared two years ago by a major automobile manufacturing firm, found that 68 per cent of the employed labor force of Broken Arrow worked in Tulsa. However, even though Broken Arrow is now primarily a Tulsa suburb, it does have an industrial and commercial base, and efforts are underway to attract new industry to the community. The six industrial firms presently located in the community are manufacturers of aluminum products, fabricated and machined metal products, and wood products. The largest producer of winches and machine gears in the United States has a division in Broken Arrow. The city established an industrial trust, as authorized by the Oklahoma Local Industrial Development Act of 1961, which constructed an addition to the winch manufacturing plant to expand production capacity. Other firms are reported to be interested in moving into the Broken Arrow area too. Agriculture still contributes to the economy of the community, however.

One railroad provides freight service to Broken Arrow. In addition to local roads, one state highway provides trucks and an interstate bus company with access to the city. The Broken Arrow expressway, which is to be completed soon, will permit rapid movement of vehicles from Broken Arrow to downtown Tulsa and to existing and proposed interstate and circumferential highways. Air service is available only at the Tulsa Municipal Airport located just outside of the northeastern Tulsa city limits, ten miles from Broken Arrow.

Its Government

Broken Arrow has a statutory council-manager form of government. The only elected officials are five councilmen elected to two-year terms of office at the city's biennial, partisan election. All councilmen are elected by voters of the entire city, but one must reside in, and run for office from, each of the four wards in the city; the fifth councilman runs for office from the city at large. A mayor and vice-mayor

are selected by council from among its members. The mayor is the ceremonial head of the city government and has neither veto power nor regular administrative duties, except that he signs all city warrants, checks, written obligations, and other official documents. As a councilman, he votes on all matters before the city council.

Responsibility for administering city government is vested in a city manager appointed by, and responsible to, the city council. The manager appoints all municipal officials and employees, including the city clerk and the municipal judge, except the city treasurer and members of the Planning Commission and Board of Adjustments who are appointed by council. For reasons of economy, the council has appointed the city clerk as treasurer.

A simplified table of organization for the city of Broken Arrow is presented on the following page. Examination of the table points up the simplicity of the city organization and, even though virtually every one in city employment reports to the manager, he does not have an unwieldy span of control.

Its Fallout Shelters

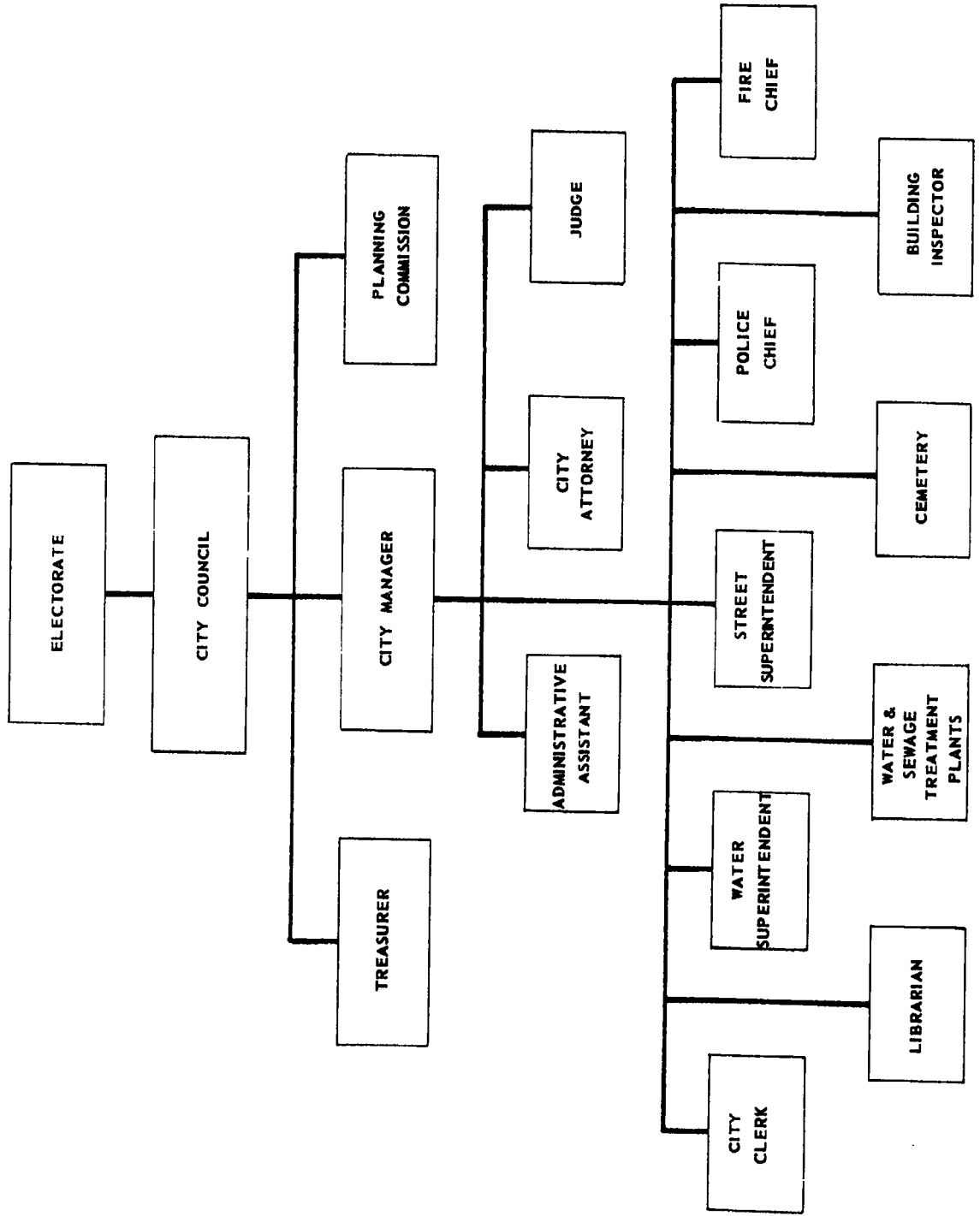
Broken Arrow has no public shelter space in Categories 2 to 8 and there are no multi-story commercial or apartment buildings that could be improved to provide such protection. There are only a few home shelters and an extensive home shelter program does not appear feasible. The city is primarily a community of single family homes; 96 per cent of its housing units are so categorized by the 1960 census. The housing units are generally of light construction and only 118, or six per cent, have basements. There are probably several hundred tornado shelters, but these do not provide adequate fallout protection, nor can they be readily adapted to provide such protection according to Tulsa City-County Civil Defense officials.

Its Special Resources

Broken Arrow, despite its size, appears to have reliable sources of water and food which would enable it to survive shelter stay and immediate post-attack periods.

The city operated municipal utility provides water to city users. The water is obtained from four springs, six artesian wells, and eight sand points located in two areas south and southwest of the city. On-site electric pumps are capable of producing 1.9 million gallons of water in a 24 hour period. The water system is a completely enclosed system from the source to the user's water tap except for a treatment plant for the removal of iron salts and hardness. Shut-off valves enable the treatment plant to be bypassed so that in the event of a nuclear attack upon the United States water could be supplied city residents without danger of contamination by radioactive fallout. The city's main pump station, serving three wells and the four springs, is located five

**BROKEN ARROW
ORGANIZATION OF CITY GOVERNMENT**



miles south of Broken Arrow. The electric pump at this station receives power by a transmission line running from a substation located just north of the city, which in turn is connected by two transmission lines to the electric utility company facilities in Tulsa. A stand-by generator capable of operating the electric pump at maximum capacity for a period of 30 hours is located at the main pump station so that in the event of a disruption of power service from Tulsa the pump station can continue to operate. At maximum capacity, the electric pump located at the pump station can produce 210,000 gallons of water in a 24 hour period. Three new wells and the eight sand points, located in an area southwest of Broken Arrow, provides the city's remaining water supply. No stand-by generator is available to operate the pump at this location in the event of a power failure. However, power to operate this pump is received by a transmission line running to a private electric utility company substation located southwest of Tulsa and a power failure resulting from a Tulsa centered disaster might not disrupt power transmission to the pump served by the substation.

The city has a one million gallon reservoir and a half million gallon reservoir, both of which are covered and on elevated ground at the northern end of the city, and a 75,000 gallon enclosed water tank in the center of the city in addition to having a completely enclosed water system and a pump, with emergency power supply, capable of providing 210,000 gallons of water daily. Thus, even with a total power failure, the generator operated pump at the wells and springs south of the city could provide each of the estimated 7,100 inhabitants with 29.5 gallons of water per day; and, if this facility should cease to operate, the stored water supply is sufficient to provide each inhabitant with over seven gallons of water a day for an entire month.

An emergency supply of food is available in the city also. Elevators operated by a farmer's cooperative have a storage capacity of 150,000 bushels of grain. It contains at the present time 112,500 bushels of milo maize and 37,500 bushels of corn, oats, barley, and soy beans. These grains, even if not supplemented by livestock from farms in the area, could sustain life during a post-attack period.

Its Problems

Broken Arrow lies near the eastern boundry, just south of the center of Tulsa County, a county which it is assumed should make civil defense preparations as a potential damaged or radioactive-damaged area. In the event of a major nuclear attack upon the United States, the primary potential target in the area is Tulsa, but military installations and industries in the vicinity also are considered to be potential strategic and tactical targets by local civil defense officials. In addition, an attack may be directed against retaliatory bases and population centers to the west and southwest which could cause radioactive fallout in Tulsa County. Consequently, Broken Arrow should give highest priority to the development of civil defense programs and operational plans which will afford the city residents fallout protection should there be a major nuclear attack upon the United States.

The total absence of public fallout shelters in Broken Arrow makes the development of such plans impossible without the expenditure of substantial sums of money by either a governmental agency or the individual residents.

Broken Arrow does not have a flexible source of electrical power or natural gas. The privately owned electric utility which provides power to Broken Arrow consumers has four major and three minor generating plants in Oklahoma, including one located in Tulsa. These plants are powered by natural gas received through underground pipelines and, consequently, the plants should be able to continue production unless affected by direct nuclear blast damage. In addition, the company has interconnected lines with neighboring electric utilities, including the Grand River Dam Authority and the Southwest Power Authority. However, electric power supplied Broken Arrow users is received at the company's substation just north of the city through two transmission lines both of which come through the city of Tulsa. No electric power would be available if the company facilities in Tulsa, or the generating plant just west of Tulsa, received direct nuclear blast damage.

The privately owned utility which supplies natural gas to Broken Arrow users has only one pipeline coming into the city. While this system lacks flexibility, natural gas would be available in Broken Arrow unless the one pipeline, or the main transmission pipeline, received direct blast damage. The risk of such damage is reduced because the pipeline system is underground.

Broken Arrow lies in the "tornado belt" which runs through the southwest and throughout the spring, summer, and fall there is an ever-present threat of damage from tornadic winds. As a consequence, the city emergency forces, the Police and Fire departments, and the city manager, who serves as civil defense director, are natural disaster, rather than civil defense, oriented.

CIVIL DEFENSE PREPARATIONS

Building the System

Continuity of Government

The statutory city charter of Broken Arrow provides for continuity of the municipal legislative, executive, and judicial functions. The charter provides that the council, "... by majority vote of its remaining members, shall fill vacancies in its own membership for the unexpired term...." Presumably, if four vacancies were created in council by a community-wide disaster, the remaining councilman could fill the vacancies. Indirectly, this provision provides for executive, administrative, and judicial succession, because the statutory charter also provides that the council shall select a mayor and vice-mayor from among its members and a city manager, who in turn shall appoint the municipal judge and all heads of municipal administrative departments and all employees, except the city treasurer.

The city "Emergency Operations Plan" established an executive line of succession which, because it goes beyond the statutory charter provisions, is of questionable legality. The plan provides that the following officials, in the order named, succeed to the office of mayor: vice-mayor, city councilmen, city manager, civil defense director, and deputy civil defense director.

All city records are kept in a fireproof vault and in a safe at City Hall. No other specific provisions have been made for records preservation. While adequate provisions appear to exist for continuity of the legislative, executive, and judicial functions, an effective records preservation program should be put into effect as soon as possible.

Emergency Powers

The Broken Arrow city council has, in the ordinance establishing a civil defense organization for the city, granted extensive powers to the city civil defense director. The ordinance provides that the director "... shall be the executive head of the office of civil defense, and shall be responsible to the mayor for carrying out the civil defense program of the city." He is to coordinate the civil defense activities of all organizations within the city, maintain liaison and cooperate with civil defense agencies and organizations of other governmental units both within and without the state in so far as permitted by legislation, and have general direction and control of the city office of civil defense. The ordinance further provides in the event of any enemy-caused emergency proclaimed by the mayor that:

... the director of civil defense, with the approval of the Mayor, may exercise during such emergency, the power to enforce all rules and regulations relating to civil defense, and acting under the authority of statutes, now in force or to be enacted, or under the authority of the Mayor as an agent of the Governor of the State of Oklahoma, may take control of all means of transportation and communications, all stocks of fuel, food, clothing, medicine and supplies, and all facilities including buildings and plants, and exercise all powers necessary to secure the safety and protection of the civilian population. In exercising such powers, he shall be guided by regulations and orders issued by the federal government and the Governor of the State of Oklahoma relating to civil defense and shall take no action contrary to orders which may be issued by the Governor under similar emergency powers.

Municipal Civil Defense Agency

The Oklahoma Civil Defense Act of 1957, as amended, authorizes and directs each political subdivision in the state to establish a local organization for civil defense. The state "Emergency Operations Plan" divides the state into eight emergency operations areas; each area is under the supervision of an area director who serves as the deputy state civil defense director for the area. The area director is responsible for coordinating all state and local civil defense activities during pre-attack and post-attack periods and exercises control of the area, for the governor, in the event of a nuclear attack. The chain of command descends from the state, to the emergency operations area, to the county, to the city.

The Civil Defense Administration is the Broken Arrow municipal agency created by ordinance "... to protect the public peace, health and safety, and to preserve lives and property, in the city ..., during any emergency resulting from enemy attack..." or natural disaster. The Civil Defense Administration is both a staff agency, responsible for the preparation of plans and the coordination of all city civil defense activities, and an operating agency, responsible for carrying out "... with the approval of the mayor..., " all emergency functions and the enforcement of "... all rules and regulations relating to civil defense...." The ordinance creating the Civil Defense Administration provides that the agency shall be headed by a civil defense director who is appointed by the city manager and responsible to the mayor. Other than this appointive power, the civil defense ordinance assigns no emergency duties to the city manager. Failure to make such assignments produced an incongruous situation which resulted in the separation of civil defense from city government because of the lack of leadership and interest of the volunteer civil defense director. This situation continued until recently, when the city manager was able to appoint himself civil defense director. By so doing, the city manager is now in a position to establish an operational civil defense agency within the normal structure of the city. It appears of utmost importance that this arrangement

be premanently and legally established by ordinance and, further, that the civil defense director should be made responsible to the city council rather than to the mayor.

Financing Civil Defense

Broken Arrow did not spend any money for civil defense purposes in fiscal year 1961-62, nor were any funds appropriated for civil defense purposes in fiscal year 1962-63.

The city's general fund, the fund from which current governmental expenses are financed, had receipts totaling \$98,095 in fiscal year 1961-62. Of this amount, only 10 per cent was derived from property taxes, while 35 per cent was from the city-owned and operated water utility. The remaining general fund revenue receipts were derived from franchise taxes, fines, permits, parking meters, and fees. The extremely low percentage of general fund receipts from the property tax result from the Oklahoma law which provides that the county tax commission not only levies the property tax, but determines the share the cities and county each will receive. There is no appeal from the decision of the tax commission. Municipalities receive no property tax monies in some Oklahoma counties as a result of placing this exclusive power in a county-controlled commission. Because the city has no control over the general property tax, and because miscellaneous receipts from franchise taxes, fines, parking meters, permits, and fees are relatively fixed sources of income, the only source of revenue available to finance expanded city programs is the municipal water utility. Because the utility is now providing 35 per cent of total general fund receipts and 71 per cent of total sinking fund receipts, as well as financing its own operations, it is improbable that city residents would permit an increase in water rates to finance an expanded civil defense program.

Program Activity

Training and Public Information

The Broken Arrow civil defense agency, as such, has not undertaken any training programs; police officers have taught first aid, however, to city employees and to the general public. Approximately 400 persons have received such training.

Tests and Exercises

Broken Arrow has participated in three county-wide alerts and several county-wide message drills. Schools have been evacuated for test and drill purposes. Attack warning sirens are sounded once a year, but the activating mechanism and compressors are tested periodically.

Shelter Program

The total absence of public shelter facilities in Broken Arrow has prevented the development of a shelter program in the city.

Facilities for Emergency Operations

Attack Warning System

Attack warning is provided Broken Arrow residents by three sirens. Tests have shown that on occasion winds have prevented all city residents from hearing the warning sirens. The civil defense director estimates that at least one additional siren should be installed to supplement the existing system.

Attack warning is received at the city police department headquarters by telephone from the Tulsa City-County Civil Defense Administration. Back-up is provided by monitoring the state highway patrol radio and by the statewide point-to-point radio net with the state highway patrol and the county sheriff. Upon receiving the attack warning, City Hall clerical employees (daytime) or the Broken Arrow police radio operator (nighttime) initiate a "fan-out" from an established call list. By this procedure the mayor, civil defense director (city manager), heads of the Police, Fire, Water and Street departments; City Hall office staff; councilmen; and auxiliary police commander are notified. Authorization to activate the attack warning system rests with the mayor or the civil defense director. In the event that these officials are unavailable, or there is insufficient time to contact them, the personnel in City Hall are authorized to activate the system.

Emergency Operations Center

The Broken Arrow emergency operations center is located in City Hall. The work areas available in the center are those normally used for everyday operations by the City Hall employees and police personnel. The center has not been stocked with either food or water and only minimal police and fire emergency equipment is available. An emergency gasoline operated generator, connected to a 1,000 gallon gasoline tank, is available in the police department area of the City Hall building. This generator is capable of lighting the building and providing power for the police radio equipment for an indefinite period. The center does not provide any appreciable degree of fallout protection and, in the event of a major attack upon the United States, this facility probably could not be safely manned for any extended period. However, there are no alternate locations within the city which would provide any greater fallout protection.

Communications

The city of Broken Arrow is licensed to operate on two frequencies in the Public Safety Radio Service Band. Both frequencies are used by the Police Department, one for dispatching and reporting purposes, and the other for point-to-point communication with the state highway patrol, county sheriff, and the police departments of Tulsa and eight small municipalities in the county. The transmitting equipment is located in the combined

City Hall-Police Department building which serves as the emergency operations center.

The Civil Defense Agency has not prepared a communications plan, nor have plans been developed to utilize communications equipment owned by three licensed amateurs who live in Broken Arrow. However, it is anticipated that these amateurs and their equipment would be available if a need existed in an emergency. Also, three members of the State Highway Patrol and two deputy sheriffs live in Broken Arrow and mobile units in the vehicles operated by these law enforcement officers could provide back-up for the city's point-to-point communications.

Fixed Radiological Monitoring Posts

Broken Arrow had neither radiological monitoring equipment nor trained radiological monitors as of February 1963, and no plans had been developed to establish any fixed radiological monitoring posts.

UTILIZATION OF MUNICIPAL FORCES AND COMMUNITY ORGANIZATIONS

Operating the System

Broken Arrow Civil Defense Survival Plan

Broken Arrow has prepared and adopted a civil defense plan to be put into effect in the event of natural or nuclear disasters. The plan is based upon state and federal guidance material and was prepared with the assistance of the Tulsa City-County Civil Defense Administration. It sets forth the civil defense mission, assumptions, and actions to be taken under various conditions, and prescribes the general civil defense organizational structure. Adopted in September 1962, the mission assigned to Broken Arrow civil defense forces is "...to provide guidance and assistance to the citizens of the entire city...during and after any civil defense emergency, to provide for and protect as many citizens as possible, and to restore property damaged to the best possible condition..." and to render "...assistance...to any evacuees who find their way to..." the city.

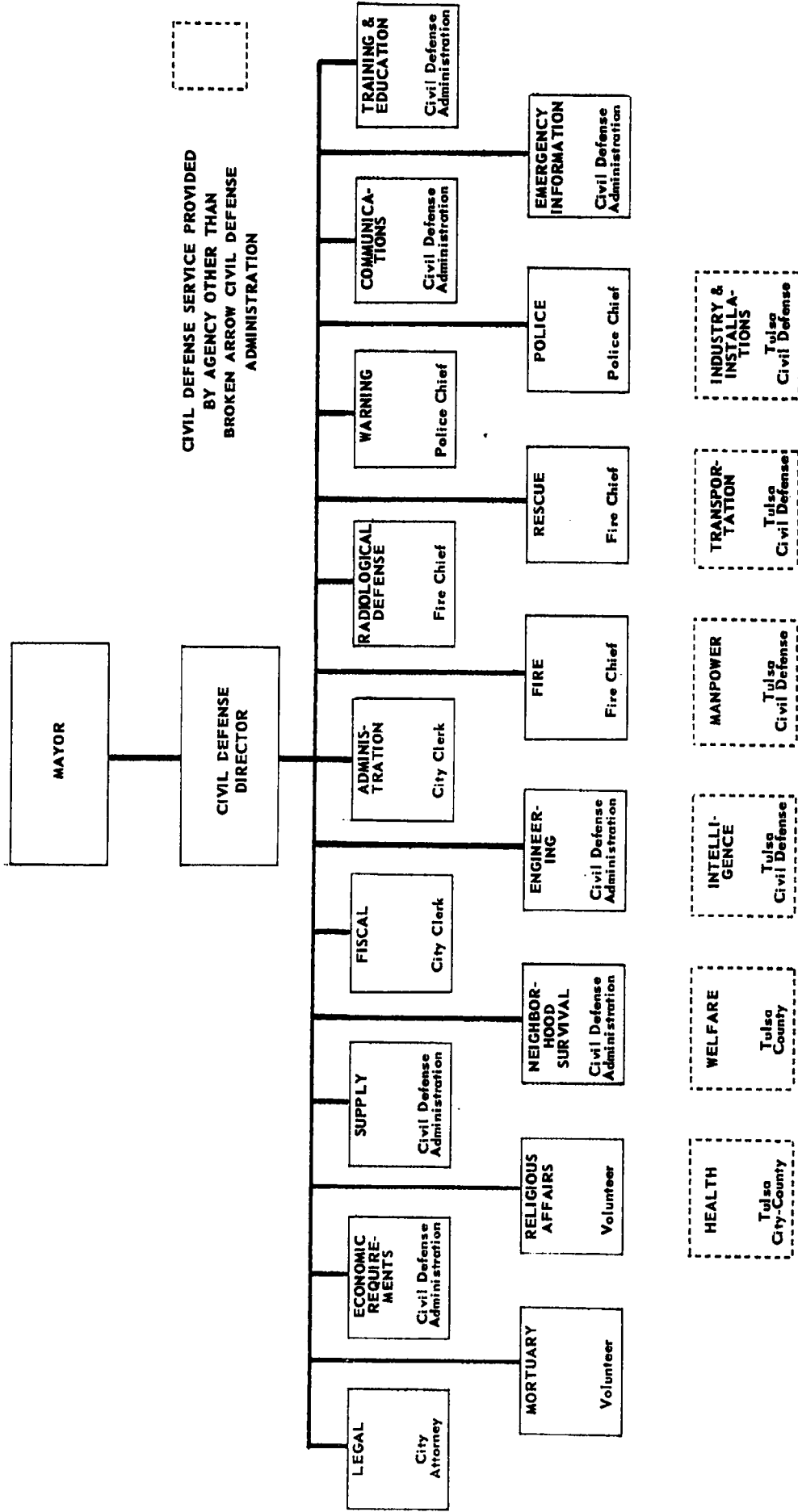
Civil Defense Organization

The "Emergency Operation Plan" provides that the civil defense agency will be organized into 23 services. A table of organization depicting the structure and chain of command of the agency is shown on the following page. Examination of the organization chart will show that four city officials are designated to lead eight different services; seven services are to be the responsibility of the Broken Arrow Civil Defense Administration; two services are to be led by volunteers; and six services are to be provided by city-county or county agencies.

The assignment of responsibility to city-county agencies for providing six of the civil defense services - Health, Welfare, Intelligence, Manpower, Transportation, and Industry and Installations - constitutes partial recognition that a city the size of Broken Arrow, with its limited resources in terms of manpower and equipment, is unable to provide the full range of civil defense services required in a large metropolitan area.

However, anticipating that Broken Arrow could staff and effectively operate the remaining 17 services is almost as ludicrous. A civil defense organization should be designed to marshal available resources to meet emergency disaster needs. It should be specialized, simplified, and rational in structure; it should not be complicated or encumbered by nonessential services and theoretical conceptions. This organizational structure represents a striking example of excessive adherence to a theoretical and idealized design, conceived in the abstract, which might have relevance to the needs of the

BROKEN ARROW CIVIL DEFENSE ORGANIZATION



131 United States cities with populations in excess of 100,000, but is completely beyond the scope, requirements, and capabilities of the more than 15,000 incorporated cities, towns, and villages with fewer inhabitants.

The basic plan indicates only in general terms the assignments of the various city officials. Detailed assignments and posts for the mayor, city council, civil defense director, city manager, and the various city department heads are not provided and annexes have not been prepared for any of the civil defense services, although the auxiliary police have prepared a manual of rules and regulations. These deficiencies should be corrected by formulation of a new civil defense plan for Broken Arrow which provides specific assignments and posts for the various city officials, and establishes an organization limited solely to those services which can be effectively administered and provided by the city government or the community. Such services include administration, police, fire, and engineering. No more than two or three additional services, which could be staffed, at least in part, by interested volunteer personnel should be established. Assignments and duties of the various services should not be relegated to service annexes, but should be incorporated in the basic plan.

Civil Defense Services Assigned to Specific City Officials

Administration and Fiscal Services

Responsibility for providing Administration and Fiscal services has been assigned to the city clerk. The Administration Service is responsible for staffing the emergency operations center; providing materials and services to civil defense personnel assigned to the center; preserving essential records; and providing for the full utilization of all government personnel, facilities, and equipment for emergency operations. The Fiscal Service is responsible for disbursing and accounting for all funds expended during emergency operations. The Office of City Clerk has a total of three employees, the city clerk, a deputy, and one other clerical employee. All three of them are to report to the emergency operations center in an emergency and they appear to be aware of their assigned duties. No records preservation program has been established for the city.

Legal Service

Legal Service is to be provided by the part-time city attorney. The Service is responsible for providing legal advice and assistance to the civil defense director, his staff, and other government executives and agencies. It is not anticipated that the city attorney will report to the emergency operations center.

Police and Warning Services

The police chief has been assigned responsibility for supervising the Police and Warning services. The Police Service is responsible for protecting life and property; enforcing laws, rules, and regulations; regulating and controlling traffic; maintaining order; preventing sabotage and subversive activities; conducting explosive ordnance

reconnaissance and radiological monitoring; and maintaining security of the emergency operations center. The Warning Service is responsible for providing prompt, adequate warning of expected enemy attack or potential natural disaster to the public, civil defense, government agencies, and key facilities.

The Police Department has a total of seven commissioned officers, including one chief and six patrolmen. The Department employs three dispatcher-clerks who are on duty during the evening and night shifts and on weekends. In addition, there are ten trained and active auxiliary policemen who regularly assist commissioned police officers and who are to be integrated into the force in the event of an emergency.

New police recruits and auxiliary police receive civil defense training, auxiliary police training, and advance auxiliary police training totaling 111 hours of instruction. These courses are sponsored by the Tulsa city-county civil defense agency. Classroom work includes 25 hours of first aid, 16 hours of civil defense training, 9 hours in traffic control and 3 hours in crowd control. One Broken Arrow police officer has received special training in police investigation procedures at the University of Oklahoma.

The police offices, radio room, and lockup are located in the City Hall building. Five city-owned vehicles are equipped with radios operating on the police reporting and dispatching frequency, including two patrol cars, one dog wagon, the automobile assigned to the city manager, and a pickup truck assigned to the city water utility. In addition, a privately owned and operated wrecker, under contract to the city, is equipped with a radio on this frequency.

The chief views the Department's civil defense duties as extensions of the normal peacetime police duties. He has some knowledge of civil defense problems but expects to rely upon the civil defense director (city manager) for advice and direction. In an emergency, he and the commander of the auxiliary police, a commissioned patrolman in the city police department, are to report to the emergency operations center.

The three dispatcher-clerks are responsible for initiating attack warning procedures during the evening, night, and weekend hours; during the hours the City Hall is normally open, employees of the Office of City Clerk are responsible for dispatching police vehicles and for initiating attack warning procedures.

Fire, Rescue, Radiological Defense Services

The city's volunteer fire chief is in charge of the Fire, Rescue, and Radiological Defense services. The Fire Service is assigned responsibility for minimizing fire damage resulting from enemy action within the city and the surrounding rural areas, and for assisting, as directed, the other civil defense services. The Rescue Service is assigned responsibility for removing people trapped under debris or in damaged structures or vehicles; rendering essential first aid and transporting the injured to

medical facilities; recovering bodies from debris and damaged structures; recovering stores of clothing, medical supplies, and food; and assisting the Engineering Service in demolition or repair of damaged structures and the removal of debris. The Radiological Defense Service is responsible for organizing, training, equipping, and directing civil defense forces necessary to monitor, plot, and report radioactive fallout; advising the civil defense director, civil defense services, and the general public of areas which are radioactively contaminated; and advising civil defense forces and the general public as to measures necessary to protect themselves, food, supplies, and water from radioactive contamination.

There are 14 persons in the Broken Arrow Fire Department, including the chief, assistant chief, a captain, and 11 firemen, all of whom are volunteers. There are no auxiliary firemen to supplement this force. Firemen attended two, 10-hour training sequences each year. Instruction is provided by two representatives from the Technical Fire Training School of the University of Oklahoma. The training program includes first aid instruction every other year, but firemen have not received any training in civil defense rescue or radiological monitoring. They are not equipped and trained to carry out the assignments of the Radiological Defense Service.

The city has one fire station, located in the City Hall building, which houses the city fire equipment. The city owns three 500 GPM pumpers and one 1,000 GPM pumper. These pieces of fire apparatus are not equipped with radios.

The chief views the Department's civil defense responsibilities as extensions of the normal peace time Fire Department duties. He has some knowledge of civil defense problems, but expects to rely upon the civil defense director (city manager) for advice and direction. In the event of a threatened tornado or other natural disaster, city fire equipment is to be dispersed; but, equipment will remain at City Hall in the event of a nuclear attack. In either event, the chief is to report to the emergency operations center.

Civil Defense Services Not Assigned to Specific City Employees

Seven civil defense services - Engineering, Communications, Emergency Information, Neighborhood Survival, Supply, Economic Requirements, and Training and Education - are assigned to all personnel in the city Civil Defense Administration. The responsibilities of these services are as follows:

Engineering Service is responsible for providing guidance to the public relative to shelter construction and how to protect facilities, equipment, and supplies from thermal and radiological effects of nuclear explosions; developing an evacuation plan; assessing damage to public and privately owned buildings and structures in the community; restoring essential engineering facilities and public utilities; and constructing temporary facilities for use by evacuees and displaced persons.

The Communications Service is responsible for providing communications during pre-attack, shelter stay, and post-attack periods for city civil defense forces through the utilization of existing facilities and personnel.

The Emergency Information Service is responsible for preparing and distributing civil defense instructions and official orders and news releases to news media for dissemination to the citizens of the community during the pre-attack, shelter stay, and post-attack periods and during natural disasters.

The Neighborhood Survival Service is responsible for assisting the public prepare for self-preservation during the pre-attack, shelter stay, and post-attack periods and assisting other civil defense services carry out their assigned duties.

The Supply Service is responsible for procuring, storing, and distributing supplies and equipment essential to the operations of the various civil defense services.

The Economic Requirements Service is responsible for locating and inventorying supplies and equipment necessary for the survival of the population of Broken Arrow in the event of a natural disaster or nuclear attack and developing and imposing controls on such commodities in order that they may be distributed in an equitable manner.

The Training and Education Service is responsible for assisting the various city departments and agencies develop training programs necessary to carry out civil defense assignments; assisting in the training of instructors; developing plans and programs for the instruction of school pupils and the general public so that they can prepare for the various problems which will be encountered during natural or nuclear disasters.

The responsibilities of these unassigned services are to be carried out by all city employees, including the civil defense director, the city clerk, the fire chief, the police chief, and the employees of the agencies they direct, and by the remaining 15 full-time employees, listed below.

Assistant City Manager	1	Street Superintendent	1
Building Inspector	1	Sexton	1
Meter Reader	1	Water and Sewage Treatment	
Water Superintendent	1	Plant Operator	1
Laborers	6	Librarian	1

The city employs one man, on a part-time basis, to care for the city park who would also be available for assignment. Four of these employees have had first aid training, but none have had any specific civil defense training. It is anticipated, however, that city police officers, volunteer firemen, and other city employees will attend radiological monitoring courses soon to be provided by the Tulsa city-county civil defense agency.

Vehicular equipment available for emergency assignment, excluding police and fire vehicles enumerated previously, is listed below.

Automobile	1	Dump Trucks	3
Backhoe Loader	1	Tractor	1
Pickup Trucks	3	Trucks (1 1/2 ton)	2
Graders	2	Bulldozer	1

The automobile, assigned to the city manager, and one of the pickup trucks, assigned to the water superintendent, are equipped with radios operating on the police dispatching and reporting frequency, as indicated previously.

In a natural or nuclear disaster, the assistant city manager, water superintendent, street superintendent, and building inspector are to report to the emergency operations center, in addition to those officials and employees previously indicated as being so assigned. The assistant city manager and the building inspector have a general understanding of their civil defense responsibilities. The assistant city manager will serve as an aide to the civil defense director and the building inspector will be responsible for maintaining city-owned electrical equipment in operating condition. The water and street superintendents and their employees have not received any specific civil defense assignments and look to the civil defense director (city manager) for guidance and direction in the event of an emergency situation.

The responsibilities and duties of the Communications Service will be performed by employees in the Office of City Clerk and by the dispatcher-clerks in the Police Department, which in both cases are extensions of their peacetime duties. However, failure to assign responsibility for carrying out the duties of the Engineering, Emergency Information, Neighborhood Survival, Supply, Economic Requirements, and Training and Education services has resulted in almost total inactivity in these areas and demonstrates again the inability of the smaller municipality to provide the full range of civil defense services suggested in civil defense guidance material. Barring substantial

blast damage, and provided with public fallout shelters, Broken Arrow could carry out effectively a basic civil defense program constructed upon the city's capabilities rather than an idealized model.

Civil Defense Services Assigned to Volunteers

Two civil defense services - Religious Affairs and Mortuary - have been assigned to volunteers. The Religious Affairs Service, assigned to the Broken Arrow Ministerial Alliance, is responsible for providing a program to meet the spiritual and religious needs of the city inhabitants during pre-attack, shelter stay, and post-attack periods and developing plans for the maximum utilization of local clergy and church facilities during the emergency period. Plans required to carry out this assignment have not been prepared.

The Mortuary Service is responsible for developing and carrying out plans for the collection, identification, and interment of dead resulting from natural disasters and nuclear attacks. A committee of five citizens - a mortician, two embalmers, and two local businessmen, one in the garage and the other in the trucking business - is responsible for this service. The members of the committee have developed plans and procedures to carry out the assignment of the Service, by locating vehicles and warehouses for the transportation and storage of the dead and developing procedures for handling, identifying, and marking bodies. Plans are designed for individual burials and the need for mass burials has not been anticipated.

Unassigned Resources and Services

Total Utilization of municipal manpower and equipment, except for the city judge, librarian, and sexton, is contemplated in the event of a natural or nuclear disaster. However, no formal plans have been prepared for the utilization of other community resources. Liaison between the electric, natural gas, and telephone utilities serving Broken Arrow is purely on an informal basis and no plans have been developed for establishment of formal working relationships between the city and these utilities in the event of a disaster.

The civil defense agency has not established liaison with the 27-bed, private hospital or the five licensed rest homes in the city. The hospital has a staff of 12 full-time and 2 part-time nurses; an X-ray technician; and 5 kitchen, 3 housekeeping, and 3 clerical employees. The hospital has one operating room and, in an emergency, could expand its facilities to hold 50 bed patients. Six local doctors including the five living in Broken Arrow, have staff privileges at the hospital. Similarly, no plans have been prepared to utilize the one registered nurse and the practical nurses at the five nursing homes; or the four dentists, three veterinarians, three osteopaths, and one chiropractor practicing in the city. Nor were these medical and ancillary medical personnel familiar with the 200-bed emergency hospital pre-positioned in the National Guard Armory in Broken Arrow, although the civil defense director reported that medical and ancillary personnel had been assigned to staff the hospital. Failure to

incorporate medical personnel into the Broken Arrow civil defense plan was attributed to the fact that the Health Service is a responsibility of the Tulsa city-county civil defense agency. However, it would appear desirable for the city to develop a standby Health Service to be activated in the event that the city-county Health Service could not provide needed medical assistance to city inhabitants in a nuclear disaster situation. At the present time, local medical services would have to be improvised.

INTERGOVERNMENTAL ASPECTS OF CIVIL DEFENSE

The School District

The Broken Arrow school district is an independent unit, governed by a five-member school board which appoints the superintendent of schools. Including the superintendent, the district has a total of 145 employees, as follows:

Superintendent of Schools	1	Mechanic	1
Supervisory Staff	6	Maintenance Employees	2
Teachers	94	Custodians	5
Clerical Employees	4	Bus Drivers (part-time)	9
Cooks	21	Sweepers (part-time)	2

None of the employees were known to have had any civil defense training, but a first aid course for adults has been taught for a number of years by home economics teachers; an estimated 15 persons complete the course each year.

The school district has neither a civil defense plan nor has it received any written instructions from the civil defense director. Pupils are retained in the school during tornado warnings and it is anticipated that in the event of a tactical warning they would take cover in those areas of the building which would provide the most protection, but in the event of a strategic warning the school population would be dismissed. The superintendent foresees the possibility that the district's five school buildings might be utilized as welfare and hospital centers following a natural or nuclear disaster to the community, although there are no plans or established procedures for such action.

The Broken Arrow school district constitutes an important untapped community resource. In addition to its 145 employees, the district owns and operates 13 buses, 3 pickup trucks, a truck, tractor, and station wagon; each of the district's five schools has a cafeteria which could be utilized for mass feeding of evacuees and displaced persons. Limited as these resources may appear in absolute number, they constitute a major increment when added to the meager civil defense resources of the community. It is imperative, therefore, that the school district develop a plan applicable to both natural disaster and nuclear attack situations in cooperation with the civil defense director. Such a plan should assign duties and posts to designated school personnel who are trained to carry out their assignments. Should a public fallout shelter construction program be undertaken in the city, school personnel could provide a pool from which shelter managers might be selected. Failure to utilize school resources in disaster planning can be attributed to the fact that welfare services are to be provided by the

County Welfare Department. It would appear extremely desirable to incorporate provisions for an alternative course of action into the school district emergency plan in the event that the County Welfare Department is unable to carry out its civil defense assignment. Because it has an independent legal status, such plans should be formalized by a mutual aid agreement between the District and the city. The Oklahoma Civil Defense Act of 1957, as amended, authorized the development of such agreements "... for reciprocal civil defense aid and assistance in cases of disaster too great to be dealt with unassisted."

Tulsa City-County Civil Defense Administration

The joint Tulsa City-County Civil Defense Administration is responsible for providing civil defense services to the city of Tulsa and the unincorporated portions of Tulsa County. The county, designated by the Oklahoma Civil Defense Act as the basic political subdivision for civil defense purposes, is responsible for assisting and coordinating civil defense activities of all jurisdictions within its boundaries. The Tulsa City-County Civil Defense Administration has a staff of six, including the director, deputy director, three professional and technical employees, and one clerical employee. The Agency does not have a protected emergency operations center, but it does have a communications van which can be moved to any location which will afford protection from fallout. The van is equipped with transmitters operating on the Tulsa city police, fire, water and sewer, and traffic engineering frequencies; on the county sheriff and county highway department frequencies; in the state Highway Patrol and Fish and Wild Life Conservation radio net; on the city-county civil defense frequency; and in RACES frequencies.

The State of Oklahoma "Emergency Operations Plan" divides the state into eight emergency operations areas. Emergency Operations Area No.2 includes the city of Tulsa, Tulsa County, and 17 surrounding counties. The director of the Tulsa City-County Civil Defense Administration has been designated by the state civil defense director as the deputy director for this emergency operations area and, in the event of a nuclear attack upon the United States, the area director is to exercise direction and control over the 18 counties in the area, subject to the orders of the governor of the state.

Considering its relatively small size, the staff of the Tulsa City-County Civil Defense Administration has been able to provide Broken Arrow, and the other incorporated municipalities in the county, valuable assistance and guidance in the preparation of civil defense plans. The Agency also assists county municipalities establish training programs and provides training aid as requested. The Agency has established and conducted, a 111-hour auxiliary police training program; approximately 1,600 residents have been trained as auxiliary police, of whom 600 are considered available for disaster assignments.

The Broken Arrow "Emergency Operations Plan," approved by the director of the Tulsa City-County Civil Defense Administration, provides that the county civil defense agency is responsible for providing Health, Welfare, Intelligence, Manpower, Transportation, and Industry and Installations services to Broken Arrow. Of these, Health and Welfare services are the most essential for the survival of Broken Arrow residents. Responsibility for Health and Welfare services has been assigned to the Tulsa City-County Health Department and to the County Welfare Department respectively. In the event of a nuclear attack upon the United States, the directors of these two agencies serve, not only as service chiefs in the city-county civil defense agency, but also as service chiefs for Emergency Operations Area No. 2.

The Tulsa City-County Health Department employs 98 persons, as follows:

Director	1	Laboratory Technicians	4
Doctor	1	Dental Technician	1
Dentist	1	Sanitarians	32
Information Officer	1	Clerks	21
Nurses	27	Custodians	9

Radiological monitoring training has been taken by nine Department employees.

The Tulsa County Welfare Department has a total of 90 employees, including a director, assistant director, 12 caseworker supervisors, 55 caseworkers, and 21 clerical employees.

The Tulsa City-County Civil Defense Administration reports that at the present time these two agencies are not prepared to carry out either the state or the county civil defense plans. The director of the City-County Health Department expressed the view that these plans are not realistic, but the Department has not prepared any alternate plans or an annex of its own. The failure of these two agencies even to attempt to carry out their assigned civil defense responsibilities is attributed by Tulsa city-county civil defense personnel to an almost total lack of interest in civil defense on the part of county officials. The City-County Health Department, for example, has just begun to prepare plans for providing medical self-help instruction.

There appears to be an urgent need for the Broken Arrow civil defense agency to develop plans to utilize the limited health and welfare resources within the city in the absence of effective City-County Health and Welfare services.

State Civil Defense Programs and Guidance

The Oklahoma Civil Defense Act of 1957, as amended, created a civil defense agency within the executive branch of state government. In fiscal year 1962-63, the agency had a staff of 13 including the director. Because of its small size, the entire state staff performed professional civil defense work in varying degrees, including three classified clerical employees under the state merit system.

The Agency has no regular field personnel to provide assistance and guidance to local civil defense directors and city officials. The Agency distributes guidance and public relations material to city and county civil defense directors and governmental officials, in the form of multicolored administrative orders, information letters, and brochures. These publications deal with state and federal civil defense policies and procedures and are based primarily on material prepared by the state agency staff, although material prepared by federal agencies is distributed too.

The state Civil Defense Agency has operated a civil defense training school in Stillwater, Oklahoma, since 1952, where it provides students with basic knowledge of all phases of civil defense activities during a week-long training session. Instruction is provided by state and municipal civil defense personnel; state health, welfare, and highway patrol personnel; municipal fire officials; Red Cross representatives; and Army officers. In addition, the state Department of Health supervises the medical self-help training program for the United States Department of Health, Education and Welfare; and the state Department of Education sponsors an adult education course in civil defense entitled "Personal Survival in Disaster." Contracts were being prepared in February, 1963, for the state university extension service to teach radiological monitoring instructors and shelter manager instructors and to hold civil defense seminars for state, county, and local government officials.

The state has constructed an underground emergency operations center between two new state capital buildings. The center was constructed with federal assistance at a cost of \$700,000 and will withstand air pressure of 30 pounds per square inch. It is equipped with radio transmitters operating in the State Highway Patrol, Highway Department, and Fish and Wildlife Conservation nets. RACES and the electric utility transmitters, as well as communications to civil defense regional offices, are also available. All equipment within the center is shock-mounted and, barring immediate blast damage, the center would be able to continue operation throughout a shelter stay period.

The Oklahoma "Emergency Operations Plan," put into effect in 1958, has not been revised in keeping with the National Fallout Shelter Program although the state Agency has fully adopted the shelter concept. The state Plan sets forth the civil defense missions establishes the state civil defense organizational structure, assigns duties and responsibilities to state officials, outlines actions to be taken and procedures to be followed under various situations, and divides the state into eight emergency operations areas and designates the civil defense agencies responsible for directing and guiding civil defense activities within these areas.

The state civil defense agency, despite its small staff, has done an outstanding job of providing printed guidance material and sponsoring its week-long civil defense

training school. However, it has not been able to provide direct field assistance and guidance to county and city civil defense directors. As a consequence, civil defense agencies designated as area agencies have had to shoulder responsibility for providing assistance and guidance to the smaller city and county agencies within their areas, as well as for developing an effective civil defense program for their own local government unit. These area agencies do not receive financial assistance from the state for carrying out this state assignment.

The State of Oklahoma, to carry out its civil defense responsibilities more effectively, should: (1) revise its "Emergency Operations Plan" so that it is in harmony with the National Fallout Shelter Program, and (2) provide substantially more guidance and direction to local civil defense directors than is now possible. This latter recommendation can be accomplished by increased appropriations for the employment of field personnel on the state staff or by grants-in-aid to civil defense agencies designated as area agencies so that these organizations can employ field personnel to assist neighboring local civil defense agencies on a full-time basis.

Federal Agencies in the Broken Arrow Area

The United States Post Office in Broken Arrow is the only federal agency with offices in the city. The Post Office employs a total of 17 full-time persons, including the postmaster and the assistant postmaster, and owns and operates one delivery van and two mailsters. Postal employees are familiar with Post Office procedures to be followed in the event of a tactical warning - safeguarding accountable paper and taking shelter wherever possible - and with their duties upon shelter emergence - registering federal employees and displaced persons, assisting local civil defense officials with manpower and equipment not required for essential postal operations, and procedures relative to the disposition of mail. In the event that the existing Post Office building was damaged by natural or nuclear disaster, alternate sites have been selected, within the City of Broken Arrow, from which postal operations could be continued.

Formal liaison between the city civil defense agency and the Post Office has not been established and no postal employees are known to have had any civil defense training. It would be desirable if such employees could be provided appropriate training and assigned to, or encouraged to join, the city civil defense forces.

PART III

CASE STUDY

MARIETTA, GEORGIA

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MARIETTA, GEORGIA

Community Profile

Marietta has a population of 25,565 according to the 1960 census, and an area of approximately eight square miles. Located in northwestern Georgia, where the Piedmont Plateau merges with the foothills of the Blue Ridge Mountains, it is 18 miles northwest of Atlanta.

First settled in the 1830's, Marietta is the county seat of Cobb County. It is in the Atlanta metropolitan area and is substantially smaller than the core city, but it cannot be considered merely a satellite community. Marietta has its own suburban fringe, primarily located to the east and to the south, almost equalling in size its own population. It has an independent social and political life and its economy, while interrelated, is not wholly dependent on its much larger neighbor to the southeast.

Its Economy

Marietta was essentially a quiet little county seat serving a predominantly agricultural county until the late 1930's. Its 1940 population was approximately 8,700. It is now highly industrialized. The threefold increase in population and the development of Marietta's economic independence is directly attributable to the construction of a major aircraft plant, employing about 25,000 persons, just outside the southern limits of the city during the industrial expansion of World War II. Approximately 13,000 persons are now employed at this one plant, only a little over half of whom live in Cobb County.

With the aircraft industry came an influx of skilled labor which attracted other smaller industries to the Marietta area. These grew in size and number and sustained the economy of the community during the five-year period after the war when the aircraft plant was shut down and they continued to expand and increase in number after the aircraft plant reopened in 1951. Major industries in the Marietta area now include aircraft, aluminum products, bottling, building materials, chemicals and paints, dairy products, electronic equipment, food processing, furniture, lumber, metal fabricating and casting, paper products, plastics, shoes, rubber and adhesive products, and textiles and wearing apparel.

Marietta is served directly by only one railroad, but two others connecting Atlanta with cities to the north and west cut across Cobb County six miles south of the city. Five major state and federal highways provide the trucking industry and five bus companies with access to the city. Located within the Marietta area are two relatively large common carrier trucking firms and several small, local trucking companies. Light and executive aircraft can land at Parkaire Field, a private airport near Marietta, but,

excluding the military installations south of the city - Dobbins Air Force Base and Atlanta United States Naval Air Station - the only facility capable of handling large commercial aircraft is the Atlanta Municipal Airport, 27 miles to the south. Two commercial radio stations located in Marietta provide the city with broadcast facilities not always found in a city of this size.

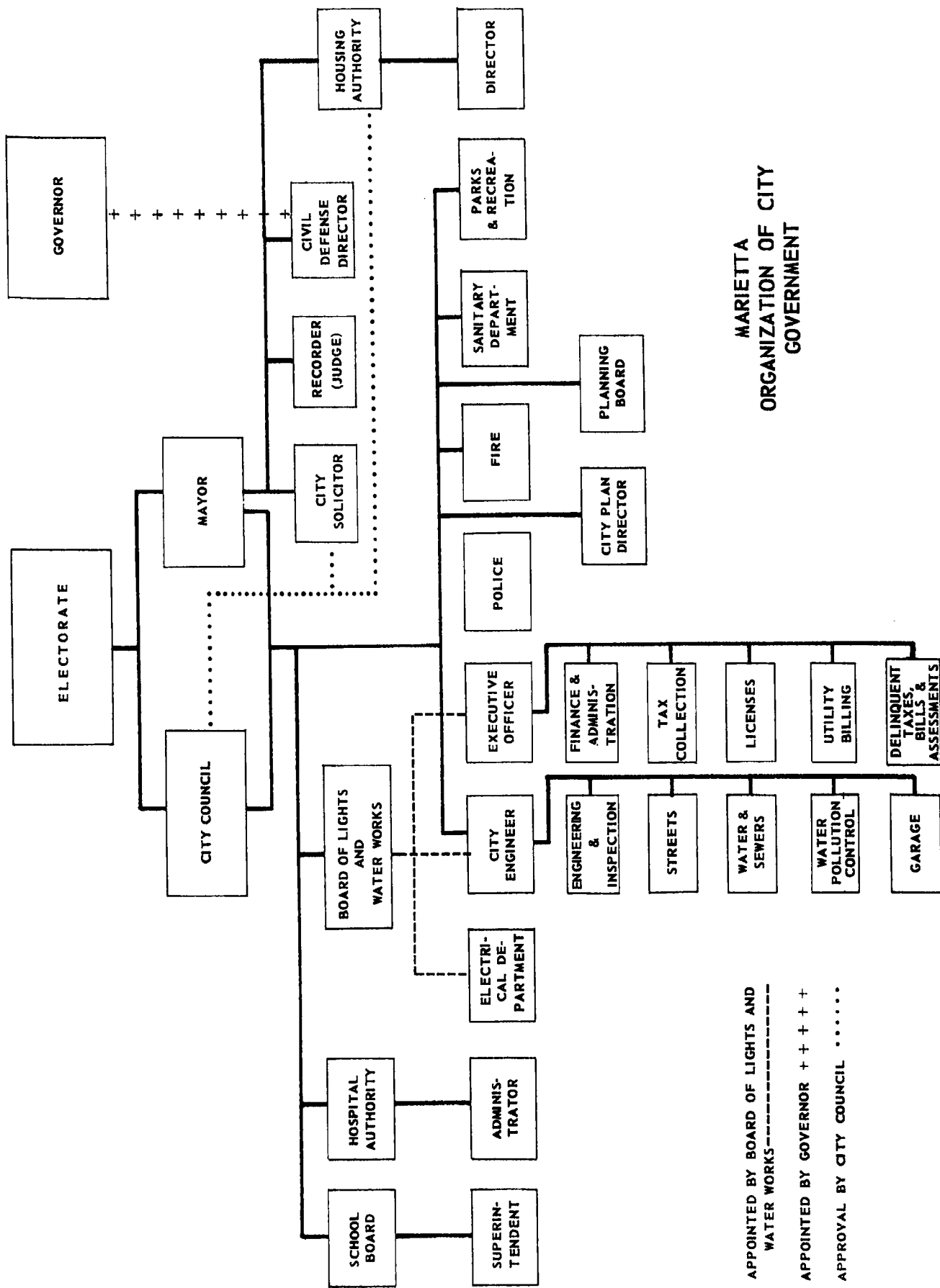
Its Government

Marietta has the weak mayor-council form of government common to many Georgia cities. Unlike most weak mayor-council city governments, which usually have a large number of legislative and administrative officials elected to short terms of office, the only elected officials in Marietta are the mayor and seven councilmen, all of whom are elected at-large to four-year terms of office at the quadrennial, non-partisan municipal election.

Typical of this form of municipal government, however, is the almost complete absence of executive power in the office of mayor. The mayor presides at council meetings and may vote in case of a tie, but he has no veto power. He appoints the city recorder or judge, or if he chooses, he may serve in that judicial capacity; he nominates the civil defense director, who is officially appointed by the Governor; and he appoints, subject to council approval, the city solicitor and members of the Marietta Housing and Urban Renewal Authority.

Administrative responsibility and control over all but two of the municipal operating agencies is shared by the mayor and council acting jointly. The city engineer, superintendent of sanitation, executive officer (city clerk), police chief, fire chief, city planner, and superintendent of parks and recreation are appointed by, and report to, the mayor and the seven councilmen as a body. As a consequence, the council has predominant influence over activities of the municipal operating agencies and department heads tend to look to the chairmen of council committees for guidance. Such advisory, appeal, and examining boards and the Planning Board, Board of Adjustment (zoning), Board of Tax Assessments, Plumbers Examining Board, and Electrical Examining Board are appointed in the same manner. However, the mayor and council appoint one of the three members of the Civil Service Board; the second member is appointed by members of the police and fire departments; and the third is appointed by the other two appointees. The three members of the Park Board which administers the joint city-county park, are similarly appointed, one by the mayor and council, one by the county commissioners, and one by the other two appointees.

Although ultimate administrative responsibility is vested in the mayor and council as a body, semi-autonomous boards are interposed between this body and two operating agencies. The five-member Board of Lights and Water Works, composed of the mayor and the chairman of the Council Light and Water Committee serving ex-officio and three citizens appointed by the mayor and council, is responsible for the operations of the municipal electrical and water distribution systems and the sewerage system. To carry



**MARIETTA
ORGANIZATION OF CITY
GOVERNMENT**

APPOINTED BY BOARD OF LIGHTS AND
WATER WORKS-----

APPOINTED BY GOVERNOR + + + + +

APPROVAL BY CITY COUNCIL

out these utility operations, the board appoints a city electrical engineer, a water and sewer engineer, and a finance officer. For reasons of economy, the board traditionally has appointed the city engineer as water and sewer engineer and the executive officer (city clerk) as finance officer.

The Marietta Hospital Authority, composed of nine citizens appointed by the mayor and council, is responsible for operations and policies of the municipal hospital. The hospital administrator is appointed by, and responsible to, the members of the Authority.

The city's merit system, applicable only to members of the police and fire departments exclusive of the chiefs, appears to be effectively administered.

A simplified table of organization for the City of Marietta is presented on the following page. Examination of the table points up, in addition to the weakness of the mayor and the preponderance of councilmanic influence, two somewhat unusual features of Marietta's city government. The six member School Board is appointed by the mayor and council acting jointly. However, the Board, after appointment, is independent of municipal control. The Board establishes its own budget and policies and appoints the school superintendent. The city council must officially levy the school tax, but it has no power to alter the rate established by the Board.

The second unusual feature of the Marietta weak mayor-council government, is the position of executive officer filled by the city clerk. As executive officer, the city clerk serves as finance officer, budget officer, treasurer, tax collector, personnel officer, purchasing agent, as well as clerk of council. Combining these functions in one office is an apparent attempt to achieve greater efficiency and economy by centralizing administrative control over these housekeeping operations.

Its Fallout Shelters

Marietta has no shelter spaces of Category 4 or better, and only 301 spaces, located in the city's high school, of Categories 2 and 3. There are no large multi-story buildings within the city limits of Marietta, other than the city hospital, even though only 65 per cent of the dwelling units are classified as single family units by the 1960 census. The new Marietta Post Office, under construction in February, was built without a basement despite efforts of the civil defense director to have one included in the building.

While there is a paucity of shelter spaces within the city limits, there are reported to be 20,000 shelter spaces located in the aircraft plant just south of the city. Use of these facilities has been denied Marietta for security reasons.

Its Special Resources

Marietta appears to have flexible sources of electric power, natural gas, and water which would contribute to its capability to survive shelter stay and immediate post-attack periods.

Electric power, supplied by Georgia Power Company, enters the city's distribution system at five sub-stations. The Company operates 22 hydro-electric plants, including one approximately 30 miles east of Marietta on the Chattahoochee River, and 6 steam generating plants. The combined capacity of these generating plants is in excess of 2,000,000 kilowatts. Georgia Power is part of the integrated Southern Company System and in addition it has direct innerconnected lines with 11 power generating companies, the Tennessee Valley Authority, and the Southeastern Power Administration. Indirectly it is connected with electric power producing companies from as far west as Missouri and as far north as Pennsylvania.

Natural gas is distributed to Marietta by the Atlanta Gas Light Company. The gas, obtained primarily from Southern Natural Gas Company, enters the utility's Marietta distribution system at three points, two fed by pipelines from Atlanta and one fed by a pipeline from Rome, Georgia. During peak use periods additional natural gas, obtained from Transcontinental Gas Line Corporation, is fed into the utility's system at Atlanta. In that city the Company has storage facilities with the capacity of 10 million cubic feet and two stand-by plants which mix propane with natural gas during peak use periods.

Marietta maintains and operates the distribution system which provides water to about 40,000 people in the city and its suburbs. The water is obtained from the Marietta-Cobb County Water Authority which serves the towns and urban areas in the county. The Authority is capable of pumping and treating 24 million gallons of water a day. In an emergency, well water can be pumped directly into the city's quarter million gallon reservoir, one million gallon elevated, covered storage tank, and a small storage tank located on top of the municipal hospital. Two wells, formerly used to provide the city with water, are maintained in a stand-by condition and the electric pumps are tested periodically. Emergency generators are not now available at the pump sites. The two wells have a maximum combined capacity of 100,000 gallons per day, substantially more than the basic survival requirements of the area served by the city's water distribution system.

Its Problems

Cobb County, lying within the Atlanta metropolitan area, may be assumed, for civil defense planning purposes, as a potential damaged or radioactive-damaged area. In addition to the population of the metropolitan area, the county contains a number of potential targets including Dobbins Air Force Base, a secondary SAC Base. However, even if the Atlanta metropolitan area should not be targeted, Cobb

County's geographical location is such that substantial radioactive fallout might be received from targets to the west and north. Consequently, the highest priority should be given to the development of civil defense programs and operational plans which will afford the city's residents adequate protection should there be a major nuclear attack upon the United States.

The paucity of public fallout shelters in Marietta makes the development of effective plans impossible without the expenditure of substantial sums of money by either a governmental agency or the individual residents. Provisions for fallout facilities in the new Marietta Post Office would have contributed substantially to the city's capabilities. Failure to provide such facilities points up the need for greater coordination and cooperation at the federal level if a truly effective shelter program is desired by the federal government.

Food sources immediately available to Marietta are not as extensive or as flexible as water and power sources. In the ten year period from 1950 to 1959, acreage devoted to agriculture in Cobb County decreased by 50 per cent. Slightly less than 30 per cent of Cobb County is now devoted to farm production. Major farm activity is concentrated in poultry, live stock and dairy products.

These products are not as readily transported or stored as are grain, legume, and tuberous crops. Grain and hay crops are produced to only a limited extent for poultry and live stock feed. Consequently, Marietta is dependent upon the transport industry for its food supply. There are located within the city two wholesale grocery firms and two meat-packing plants that could supply food to the community for only a limited time.

Negroes constitute 16 per cent of the population of Marietta and only 7 per cent of the population of Cobb County. In comparison to the large industrial cities of the north and east these percentages are rather low. The civil defense director anticipates no problems arising from the presence of Negroes in shelters. The city's civil defense agency provided, on a segregated basis, basic civil defense and basic rescue courses for the city's Negro population. Interest, while at first good, declined quickly and no one completed the courses.

CIVIL DEFENSE PREPARATIONS

Building the System

Continuity of Government

Marietta has made no specific legislative provisions for continuity of the executive function. However, the city charter provides that in the absence, disability, or death of the mayor, the mayor pro tempore, designated by the mayor from among the members of council, shall carry out the duties and functions of the mayor. In the event that both the mayor and the mayor pro tempore are unable to serve, the council is empowered to select from among its members an assistant mayor pro tempore. The city "Operational Plan" establishes a line of succession to the office of mayor - mayor pro tempore, assistant mayor pro tempore, civil defense director, and assistant civil defense director - which is of questionable legality because it goes beyond the charter provisions. However, the charter makes no provision for the filling of vacancies among the members of council other than by a special election. No provision has been made for judicial succession, but none is needed since the position of municipal judge is filled by the mayor or his appointee.

No line of succession has been established to fill disaster-created multiple vacancies among the heads of city agencies, but this does not constitute a serious omission. All major agencies have established lines of succession based upon rank or seniority, everyday practice, or regulation or ordinance; and, if necessary, vacancies can be filled by appointment of the mayor and the city council acting jointly. Succession to civil defense posts is provided for in the city civil defense plan.

Marietta has not established a records preservation program. All city records are maintained in fire-resistant file cabinets and in two vaults at city hall. Only one agency, the Electrical Department, has pre-positioned copies of their plats and engineering plans in the city emergency operations center.

The city should take immediate steps to assure continuity of municipal government by providing for emergency filling of vacancies in city council and by establishing an effective records preservation program.

Emergency Powers

The civil defense director has been granted limited emergency powers by the city council in the ordinance creating the civil defense agency. This ordinance provides that in periods of emergency the civil defense director is authorized "...to obtain

vital supplies and equipment... needed for the protection of the lives and property of the people and bind the city for the value thereof...." Although the ordinance provides that the civil defense director is appointed by the mayor and represents him in all matters pertaining to civil defense and that the director is "... to require and direct cooperation of city officials in the preparation and implementation of civil defense plans..., "the mayor is not granted emergency powers to direct and administer city forces. In the absence of such authorization, ultimate responsibility and authority apparently still rests in the mayor and city council acting jointly. It would appear extremely desirable to provide the mayor with emergency administrative authority, by charter amendment, or, if possible, by ordinance. Such authority readily could be provided the mayor at a special council meeting subsequent to any disaster, because ordinances adopted by council take effect immediately, unless another date is specified.

The Marietta civil defense ordinance establishes a Council of Defense composed of the mayor, civil defense director, police chief, fire chief, city engineer, council welfare officer, American Red Cross representative, and representatives of business, labor, civic and patriotic organizations appointed by the city council. The Council of Defense has only pre-attack advisory responsibilities including the preparation and recommendation to the city council of ordinances necessary to implement the civil defense plan. The Council has not carried out this assignment, nor has it actively participated in the civil defense affairs of the city. Efforts should be made to revitalize the Council so that it can carry out its assigned responsibilities relative to the preparation and recommendation of ordinances granting emergency powers to the mayor which it may determine necessary for the implementation of the city civil defense plan.

Municipal Civil Defense Agency

The Georgia Civil Defense Act of 1951, as amended, authorizes and directs each city in the state, having a population of 1,000 or more, to establish a local organization for civil defense. The state "Operational Survival Plan" divides the state into six Civil Defense Areas. Each area is headed by a civil defense area director, a state employee appointed by the state civil defense director, who is in charge of all coordinating all state and local civil defense activity during pre-attack and post-attack periods. The chain of command descends from the state, to civil defense area, to county, to city.

The Office of Civil Defense is the Marietta municipal agency created by ordinance "... to mobilize, organize and direct the civilian populace and necessary support agencies in preventing or minimizing the effects of...." natural disaster, "... as well as the effects of enemy... activities against the populace, community, industrial plants, facilities and other installations..." It is a staff agency headed by a director who is nominated by and responsible to the mayor, although officially appointed by the state governor. The director is charged with responsibility for organizing, administering, and operating the local civil defense agency, subject to the direction and control of the

mayor. He is to represent the mayor on all matters pertaining to civil defense; develop a civil defense plan, in cooperation with city officials, which provides for the effective mobilization of all resources of the city, both private and public; recommend appropriate emergency action to the mayor; direct city civil defense forces; and obtain supplies and equipment needed for the protection of life and property.

The Marietta civil defense agency has no staff at the present time other than the part-time director. An assistant director was employed on a full-time basis until a year ago. The director has participated in civil defense work as the city's part-time director for approximately five years. He has taken courses in basic civil defense and basic rescue, taught by state civil defense personnel, and first aid, taught by the American Red Cross. The civil defense agency operates five vehicles, including a station wagon, a jeep, a "duck" (landing vehicle), a tractor and trailer, a fork-lift, and a truck (6x6). The station wagon and the "duck" are equipped with Citizen Band radios. All of these vehicles, except the station wagon, were obtained through the surplus property program and are housed at the city garage. In addition, the city Fire Department has four vehicles obtained through the surplus property and hardware matching fund program, including a crash rescue truck, a 2,000 gallon trailer tank truck, and a 750 GPM pumper.

Financing Civil Defense

Marietta spent \$3,883 for civil defense activities in fiscal year 1961-62, the equivalent of 15 cents per city resident. The city budgeted \$5,000 for fiscal year 1962-63, but in the first half of the year, expenditures totaled \$10,733. The greater portion of this 115 per cent half-year increase was the city's share of a combined city-county emergency operations center built in the basement of the city's new fire department headquarters at the height of the Cuban Crisis. If civil defense expenditures for the remainder of the fiscal year revert back to the budgeted level, the city will spend approximately \$13,200 during fiscal year 1962-63, the equivalent of 52 cents per city resident. Perhaps this is indicative of what can be done at the local level if a clear and imminent danger is recognized.

Civil defense activities are financed out of the general fund, the fund which finances the city's current operations. Total city expenditures, however, are substantially greater than general fund expenditures. Special funds are established for the Board of Lights and Water Works, Hospital, Recreation, Library, as well as various bonded debt purposes. All of these special funds, except the Board of Lights and Water Works, are financed in large part by a general ad valorem property tax. Only 13 per cent of Marietta's general fund receipts are derived from the property tax, however. The other major sources of general fund revenue are fees, licenses, fines, the beer tax, and transfers from the revenues of the Board of Lights and Water Works which is the largest single source of income, contributing 29 per cent of the total general fund receipts.

Increased expenditures for civil defense activities could be financed by one or both of two methods. The city's general fund tax rate is 4.45 mills, .55 mills less than the state imposed maximum rate of 5.00 mills. If the legal maximum were levied general fund revenues would be increased by approximately \$20,400. Another source of revenue to finance increased civil defense activities would be the establishment of a special tax fund. The state of Georgia has authorized municipalities to levy an ad valorem property tax, not to exceed one mill, to finance civil defense activities. If this tax were levied in the full amount, it would produce just over \$37,000 on the basis of the city's 1962 assessed valuation. The total property tax rate in Marietta, excluding state and county rates, is 19.00 mills. This appears to be a relatively low tax rate considering that it includes both city and school taxes but in the absence of reliable data on the ratio of assessed to market value, the precise burden of taxes on property owners cannot be determined.

Program Activity

Training and Public Information

The Marietta Office of Civil Defense has been very successful in conducting or sponsoring civil defense training courses in spite of the lack of a full-time professional civil defense staff. Particular emphasis has been placed upon training courses in auxiliary police, basic, rescue, and radiological defense monitoring. The agency is sponsoring a new training program for 50 recently recruited auxiliary firemen. In addition to the auxiliary firemen course, courses in auxiliary police, basic rescue, first aid, and radiological defense monitoring are being held this year. The various courses given or sponsored by the Agency, and the estimated number of persons who have completed them, are indicated in the table below:

Civil Defense Training in Marietta

<u>Course</u>	<u>Trainees</u>	<u>Course</u>	<u>Trainees</u>
Auxiliary Police	80	Industrial Survival	10
Basic Civil Defense	70	Radiological Defense Monitoring	40
Basic Rescue	70	Family Survival	160
First Aid	22	Water Rescue	13

Volunteers in the various civil defense services generally have conducted the civil defense training. However, the state Highway Patrol provides instructors for the auxiliary police course and the state civil defense personnel teach basic rescue. First aid courses have been provided in cooperation with the American Red Cross.

The Agency does not publish any civil defense material but does distribute federal and state brochures and pamphlets to interested persons. Public awareness of the civil defense program is maintained by personal contacts and by speaking engagements before business, professional, school, and church groups by various volunteer civil defense workers.

Tests and Exercises

In recent years, Marietta has conducted two civil defense tests each year which involved the participation of all volunteer and city civil defense forces. Warning sirens are tested once each month.

Shelter Program

Establishment of an effective public shelter program in Marietta is not possible at the present time. The Phase II Shelter Survey found only 301 shelter spaces of Categories 2 & 3, and none of Category 4 or better. This does not provide even a nucleus about which a shelter program could be constructed. However, it appears highly probable that additional shelter spaces do exist in the city. The Phase I report indicated that there were 3,433 spaces in the city. For no apparent reason, all but the 301 spaces located in the city's high school were eliminated in Phase II including approximately 3,000 spaces in the city's four story brick hospital. The Marietta civil defense agency has been offered neither an explanation as to why these spaces were eliminated nor given instructions as to how the facilities could be upgraded and made acceptable. In addition to the spaces located during the shelter surveys, Marietta residents dug out a basement under one of the elementary schools during the Cuban Crisis. It is estimated that this facility, which has never been surveyed, could shelter approximately 1,000 persons. If all of these spaces were upgraded and made acceptable, there would be enough spaces in Categories 2 & 3 to shelter approximately 17 per cent of the city's resident population. Even with this increase, the number of public shelter spaces falls short of the number needed to provide a basis for establishing an effective public shelter program. Under the circumstances, responsible city officials found it extremely difficult to understand and accept the Post Office Department's refusal to provide for the construction of a basement in the new Marietta Post Office.

The Marietta civil defense director has obtained licenses for the use of the city hospital, two elementary schools, and the high school as public shelters. The high school, which contains the only acceptable spaces, is marked, but it has not been stocked because there is no room to store supplies.

A home shelter program would be of only limited feasibility. While brick construction is relatively common, only 24 per cent of the 7,915 dwelling units have basements. However, a relatively large number of home shelters, possibly as many as 100, are believed to have been constructed during the Cuban Crisis according to estimates of the civil defense director, although only four building permits for shelter construction had been issued as of February, 1963.

Despite the efforts of the city's residents to provide public shelter, as well as private shelter, it is obvious that over 75 per cent of Marietta's population would

have no shelter protection equal to Category 2 or better in the event of a major nuclear attack upon the United States. Only an extensive public shelter construction program could provide the needed shelter facilities. Such a program would be too costly even to be considered in the absence of another Cuban Crisis and, even if undertaken in such a crisis, might not be completed in time to save the lives of an appreciable number of persons. A partial solution is available now. There are reported to be approximately 20,000 shelter spaces located in the aircraft plant just south of the city, which, for security reasons, are not available to the public. Even if a nuclear attack should come during the working day, there could be as many as 7,000 unused shelter spaces in this plant. It does not appear reasonable to exclude the civilian population from a plant when sabotage or a breach of security would be damaging to the war effort only in the event of extended hostilities. These shelter spaces, combined with the probable number of spaces now existing in the city, would provide a nucleus about which a public shelter program could be constructed and at the same time reduce substantially the cost of such a program.

Facilities For Emergency Operations

Attack Warning System

Attack warning is provided Marietta residents by two sirens. Tests have shown that this is not a sufficient number to provide warning to all city residents. The civil defense director estimates that seven additional sirens should be installed. To supplement the warning sirens, ambulance sirens have been sounded during civil defense tests.

The attack warning is received at the city police department headquarters. Upon receiving the attack warning, the Marietta police radio operator initiates a "fan-out" from an established call list. The mayor, civil defense director, city officials, schools, hospital, and civil defense volunteers are notified by this procedure. Authorization to activate the attack warning system rests with the mayor or the civil defense director, but procedures have been established for activation of the warning system in event that these officials are unavailable or there is insufficient time to contact them. However, the lack of an adequate warning system jeopardizes the attack warning procedures and the lives of the city's population. The necessary number of additional sirens should be procured as soon as possible.

Emergency Operations Center

The Marietta emergency operations center, constructed jointly by the city and Cobb County during the "Cuban Crisis", is located in the basement of the new Fire Department headquarters building. The basement is at ground level at the rear of the building, but by the erection of baffling walls of sand-filled cement blocks a Protection Factor of 100 has been achieved. The protected portion of the basement has been divided into

two rooms, one for the use of city officials and civil defense personnel and one for the use by the county. Both rooms have been equipped with desks and chairs for the personnel who are to report to the center. Emergency power is provided the center by a diesel operated generator located in fire headquarters and sufficient fuel is available to operate the generator for two weeks. The police headquarters building, located 100 feet behind fire headquarters, is equipped with a gasoline operated emergency generator, also with a two week supply of fuel, capable of lighting the police headquarters building and operating the police transmitter.

Communications

The city of Marietta is licensed to operate on four frequencies in the Public Safety Radio Service Band. The Police Department uses two frequencies, one for dispatching and reporting purposes and one for point-to-point communication with the State Highway Patrol and the county sheriff. The third frequency is used by the Fire Department for dispatching and reporting purposes, and the last frequency is used by the Electrical, Water, and Sewer Divisions of the Board of Light and Water Works and by the city's Engineering Department.

Remotes operating on the two police frequencies and the fire frequency are located in the emergency operations center, as is a transmitter operating in the Citizen Band. In an emergency, radio equipped mobile units belonging to one of the two local radio stations and to the Atlantic Gas Light Company are to be driven to the emergency operations center to provide communications with the news media and with one of the local utilities. It is planned to install a transmitter operating on the Engineering Frequency in the near future. In addition, the county has a transmitter operating on the frequency used by the county sheriff. No RACES equipment is located in the center, but an amateur radio operator in Marietta has both fixed and mobile transmitting equipment and is to provide RACES communications for the civil defense agency. The fixed transmitting equipment is located in a protected facility in the amateur's basement, and an emergency generator capable of providing power for 36 hours of continuous operation is available. Communication between the emergency operations center and this radio amateur is by land-line under line-load control.

The emergency operations center has a direct land-line to the aircraft plant just south of the city. One trunk line telephone is installed and in operation; stand-by telephones are located at each civil defense service desk in the center and will be connected by the telephone company on short notice.

The Citizen Band radio provides communication with the city hospital, 40 trained radiological monitors, 16 members of the Communication Service, 4 members of the Rescue Service, 2 ambulances operated by two local funeral homes, and a local taxi cab company. In addition to the Citizen Band radio, the hospital has a Police Department monitor.

Upon the installation of a transmitter operating on the Engineering Department frequency, the city's center should have an adequate communications capability for a city of 25,000 population. The only weakness is the heavy reliance upon Citizens Band equipment and the somewhat uncertain RACES capability. However, while Citizens Band frequencies may be limited to military use in the event of a war of extended duration, it is entirely possible that during pre-attack, shelter stay, and immediate post-attack periods these frequencies may remain available to civil defense agencies. It would be desirable, of course, to replace the Citizen Band equipment with trans-receivers operating in the RACES frequencies.

Fixed Radiological Monitoring Posts

The city had established only one fixed radiological monitoring post in an area of the city hospital with a Protection Factor of 100 or better as of March, 1963. The city's three other monitoring sets, also stored at the hospital, were to be assigned to train radiological monitors as soon as the monitors completed home shelters with a Protection Factor of 100. The city and the county radiological defense services have worked in close cooperation on an informal basis. It was anticipated that their respective fixed radiological monitoring posts would supplement each other. As of February, the county had established only two monitoring posts, one at the aircraft plant, and one in the home fallout shelter of the county radiological defense chief. Of the county's remaining monitoring sets, two were located at the emergency operations center and two were located at the city hospital. The failure of both the city and the county to establish an effective monitoring network can be attributed to the severe shortage of shelter facilities. While monitoring posts have not been established, provision has already been made for communication between the monitors and the emergency operations center by Citizens Band radio.

UTILIZATION OF MUNICIPAL FORCES AND COMMUNITY ORGANIZATIONS

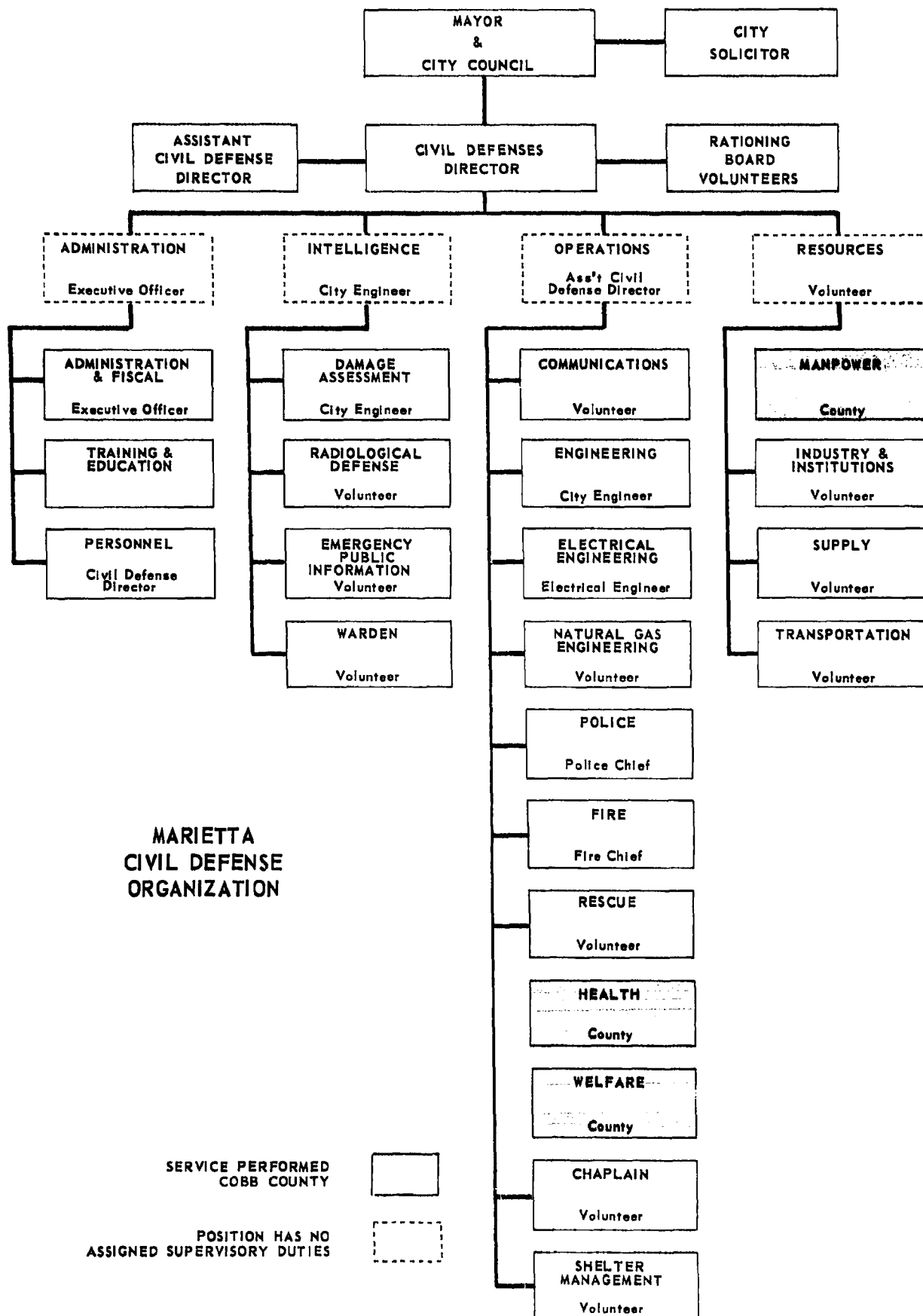
Operating the System

Marietta Civil Defense Survival Plan

Marietta has prepared and adopted a civil defense plan to be put into effect in the event of natural or nuclear disasters. The plan, based upon a state civil defense agency publication entitled "If Attack Comes: A Guide for Local Government in Organizing Civil Defense," sets forth the civil defense mission, assumptions, policies, and general organization of the city agency. Adopted in February 1962, the stated mission of the civil defense plan and agency is "... to promote a shelter program for the protection against radioactive fallout or natural disaster for ..." city residents and to "...promulgate plans for the continued effective use of city services ...in the event of a disaster..."

Civil Defense Organization

The "Operational Plan for the City of Marietta" provides that the civil defense agency will be organized into four divisions as follows: Administration, Intelligence, Operations, and Resources. Each Division is headed by a deputy civil defense director appointed by the civil defense director and responsible to the mayor and city council through the civil defense director. Various civil defense services are assigned to the four divisions. As presently organized, 3 services - Administration and Fiscal, Training and Education, and Personnel--are assigned to the Administration Division; 4 services - Damage Assessment, Radiological Defense, Emergency Public Information, and Warden - are assigned to the Intelligence Division; 11 divisions - Communications, Engineering, Electrical Engineering, Natural Gas Engineering, Police, Fire, Rescue, Health, Welfare, Chaplain, and Shelter Management - are assigned to the Operations Division; and 4 services - Manpower, Industry and Institutions, Supply, and Transportation - are assigned to the Resources Division. Each of these services is headed by a chief appointed by the civil defense director. The basic Plan and its annexes establishes lines of succession to the mayor, civil defense director, and each service chief. Examination of the civil defense organizational structure and chain of command as described, and as schematically depicted on the following page, makes it appear that the 21 service chiefs are responsible to the civil defense director through the respective deputy civil defense directors in charge of the divisions. However, in actual operation, and as provided in each of the service annexes, the service chiefs are responsible to the mayor and city council through the civil defense director, thus bypassing completely the four deputy civil defense directors. Therefore, while the plan at first glance is straightforward and easily manageable, it is actually unwieldy because of this wide and burdensome span of control.



The existing organizational structure has another defect; it does not conform to the "Operational Plan." Subsequent to the adoption of the Plan, services have been transferred from one division to another and two new services, Damage Assessment and Personnel, have been created. Also, the Plan, as originally adopted, assigned no civil defense duties to the city solicitor. The civil defense agency's table of organization, revised for fiscal year 1963, shows the solicitor as legal advisor to the mayor and city council. The solicitor is not aware of this assignment and the civil defense plan itself has not been revised to reflect this additional position in the organization.

The basic Plan itself, while short, straightforward, and unencumbered by unnecessary verbiage, is defective in that it does not spell out clearly the responsibilities of the mayor, city council, civil defense director, and the deputy civil defense directors. The only relevant provision in the Plan states that the civil defense director acts as "chief coordinator" of civil defense activities within the city. Only by examination of the over-all table of organization is it apparent that he is responsible to the mayor, and only examination of the various service annexes indicates that ultimate responsibility lies in the mayor and city council acting jointly.

Annexes have been prepared for 17 of the 22 civil defense services, a good percentage considering that 15 services are headed by volunteer chiefs. However, while the stated mission is "...to promote a shelter program...", several service annexes were apparently prepared prior to the institution of the National Fallout Shelter Program and either not revised, or only partially revised, to conform to the shelter concept.

These deficiencies should be corrected by formally amending the Plan so that it conforms to the actual civil defense organization, is internally consistent with respect to the shelter concept, and spells out clearly the civil defense responsibilities of the mayor, city council, and civil defense director. Such revision should provide that service chiefs report to the deputy civil defense directors in charge of the divisions to which they are assigned, and, also, consideration should be given to reducing the number of civil defense services. The existence of a large number of services has required heavy reliance upon volunteer civil defense personnel to serve as service chiefs and, even though the civil defense director has given generously of his time and effort, he has been unable to supervise adequately the various service chiefs on a part-time basis. As a consequence, duties and responsibilities assigned to many services, even those assigned to city officials, are not being carried out.

Administrative Division

Three services - Administrative and Fiscal, Training and Education, and Personnel - are in the Administrative Division. The city's executive officer (city clerk) is in charge of this Division and also serves as chief of the Administrative and Fiscal Service.

Administrative and Fiscal Service

The Administrative and Fiscal Service is responsible for establishing a records preservation program for the city and maintaining civil defense fiscal accounts. No service annex to the civil defense plan has been prepared to date. The city has not established a records preservation program; all city records are maintained in locked file drawers and in two vaults at City Hall. The executive officer, as chief fiscal officer for the city, prepares and maintains records of all expenditures and receipts for civil defense purposes as a part of his normal duties. While the executive officer serves as chief of the Administrative and Fiscal Service, and is to report to the emergency operations center in the event of a disaster, none of the 43 city employees under his supervision have been assigned to the Service and the only line of succession is that which is in effect for normal operations.

Training and Education

The Training and Education Service is responsible for preparing and implementing a general training program for all civil defense services, providing an educational curriculum for the public schools which will include civil defense and home survival instruction, and establishing an educational program for the general public. The chief of this Service is the superintendent of the Marietta school district. A Service annex has been prepared and the superintendent is aware of its existence, but he has not taken any action to implement any of the duties assigned. A number of school district teachers have conducted the adult education course, "Personal Survival in Disaster," for the state Department of Education. The civil defense director reports that volunteer civil defense personnel in the agency are disgruntled because they have taught essentially the same course without receiving any monetary compensation. Civil defense training courses have been organized and conducted by staff personnel of the various civil defense services, because the Training and Education Service has not carried out its assigned duties.

Personnel Service

The Personnel Service is responsible for recruiting volunteers to staff the various services and the emergency operations center. No annex to the civil defense plan has been prepared for this Service and the civil defense director has assumed responsibility for carrying out recruitment.

Intelligence Division

Four services are now assigned to the Intelligence Division - Damage Assessment, Radiological Defense, Emergency Public Information, and Warden. The city engineer serves as deputy civil defense director in charge of the Division and he also serves as chief of the Damage Assessment Service.

Damage Assessment Service

The Damage Assessment Service is responsible for analyzing, interpreting, and plotting all intelligence and informing the civil defense director and the operating agencies of its findings and conclusions. No annex to the civil defense plan has been prepared by the Service. The present city engineer, who serves as service chief, is no longer active in civil defense.

Radiological Defense Service

The Radiological Defense Service is responsible for establishing and manning fixed radiological monitoring posts, plotting and analyzing radiological readings, and training radiological monitors. The Service is under the supervision of a radiologist employed at the city's hospital. The service annex to the city's Operational Plan provides that the Service will have a staff of 14 persons - a chief, a deputy chief, and six teams of two men each. In the event of a nuclear disaster the chief and deputy chief are to report to the emergency operations center and the six teams are to report to designated monitoring posts. However, as of February, 1963, no monitoring teams had been created, although one post had been established at the city hospital and 40 persons had been trained as radiological monitors. The paucity of shelter space within the city has prevented the acquisition of sufficient monitoring sets to equip the teams and has prevented the establishment of the monitoring posts called for in the Plan.

Emergency Public Information Service

The Emergency Public Information Service is responsible for providing information to the public on civil defense plans and programs during the pre-attack period and providing emergency information to the public during the shelter stay and shelter emergency periods. The chief of the Emergency Public Information Service is an executive in the local commercial radio station which serves in the CONELRAD system. Three other employees of the radio station serve as deputy and assistant chiefs. In the event of a nuclear attack the chief is to report to the emergency operations center with the radio station's mobile transmitting equipment. The station's main transmitter has an emergency source of power, but it does not provide adequate fallout protection. Personnel in the Service are familiar with their disaster assignments, although no regular effort is made to keep the public informed of current civil defense developments.

Warden Service

The Warden Service is responsible for establishing an organization which will assist the local population develop self-protection measures and for providing assistance to the

other civil defense services. The city's Plan, as adopted, provided that the Warden Service would be in the Operations Division. It has subsequently been transferred to the Intelligence Division and now has the responsibility for reporting information relative to the damage suffered by the city to the damage assessment chief. The Service is staffed by a chief, two deputy chiefs, and seven area wardens, all of whom are volunteers. Since the adoption of the shelter concept, interest in this Service has dwindled. Assignment of damage reconnaissance duties has not revived interest and the director is contemplating eliminating the Service.

It would be desirable for the Damage Assessment Service to absorb this Service and recruit new personnel.

Operations Division

There are presently 11 services in the Division of Operations - Communications, Engineering, Electrical Engineering, Natural Gas Engineering, Police, Fire, Rescue, Health, Welfare, Chaplain, and Shelter Management. The Plan, as originally adopted, provides for nine services. Subsequent to adoption, the Warden Service was transferred to the Intelligence Division; Shelter Management was transferred from the Resources Division to this Division; and two new services, Electrical Engineering and Natural Gas Engineering, were created. The assistant civil defense director, when recruited, is to serve as deputy civil defense director for this Division.

Communications Service

The Communications Service is responsible for developing a plan for the "...effective utilization of available radio communications facilities of the Citizen Band and Amateur Civil Defense Emergency Service..." during natural disaster or nuclear attack. The Service is also responsible for training necessary personnel. To carry out this assignment the Service is to include broadcast (commercial) radio and land-line facilities in its organization, as well as Citizen Band and RACES equipment. Communication equipment operated by the city agencies, Police, Fire, and Engineering, are to be under the control of the counterpart civil defense services and are not under the supervision of this Service.

The Communications Service is staffed by a chief, deputy chief, 15 persons owning Citizen Band radios, and two licensed amateurs, one of whom lives in the city of Atlanta. All members of the Service are volunteers. It is estimated that there are 60 to 80 Citizen Band operators in the Marietta area who could be called upon to supplement the existing Service personnel if needed. In an emergency, the service chief and his deputy are to report to the emergency operations center. All other service personnel are to take their radio equipment and seek shelter wherever available. It is anticipated that each member of the Service owning a Citizen Band radio will be assigned to a public shelter, when such shelters are available and licensed, and in the event of a nuclear

attack they will report to these assigned posts. On shelter emergence, Communication Service personnel will be assigned to rescue and reconnaissance teams in order that these operations may be coordinated from the emergency operations center. Among the persons assigned to the Communications Service, ten have had rescue training and one has had radiological monitoring training.

The actual anticipated use of the Communication Service personnel differs from the duties assigned by the communication annex in the city's Operational Plan. No attempt has been made to include land-line or broadcast (commercial) radio operations within the activities of this Service. In actual operation, land-line equipment will be manned by the various services located at the emergency operations center and broadcast radio will be utilized by the Emergency Information Service. The limited use of RACES results from the lack of amateur radio operators and equipment in the community. The Plan assumed that RACES would provide communications with the county and area. State Plans now contemplate such communications to be conducted through the point-to-point frequency available to municipal police departments and county sheriffs. These modifications and the heavy reliance upon Citizen Band communications constitute pragmatic recognition of the community's existing capability. The civil defense agency should endeavor to replace the Citizen Band communication with RACES as soon as possible and centralize control of the operations of all communications systems, including, police, fire, and engineering, in the Communication Service.

Engineering Service

The Marietta civil defense plan as originally prepared and adopted, established one Engineering Service. Subsequently, it was decided to establish two separate utility services - Electrical Engineering and Natural Gas Engineering. This modification was made to recognize the independent status within the city government of the Electrical Department. Although practical political considerations may have made this fragmentation expedient, it was unfortunate to sacrifice the greater coordination and cooperation possible with one integrated and comprehensive Engineering Service.

The Engineering Service, as reorganized, is responsible for maintaining and repairing roads and streets, maintaining and restoring the water and sewerage systems, repairing and demolishing buildings, removing debris and refuse, constructing and maintaining reception area facilities, supervising heavy rescue operations, and providing graves for mass burials. The Service is to prepare plans for the utilization of all engineering equipment and personnel in the community, both public and private; to assist in the organizing, equipping, and training of heavy rescue teams; and to conduct such training as is necessary to insure the operational capability of the Service. The Engineering Service is under the city engineer who serves as Engineering Service chief. The Service is divided into five sections - Roads, Bridges, and Structures; Water and Sewage; Sewage Treatment; Sanitary and Mass Burials; and Supply. Personnel and equipment for these sections are obtained from the divisions of the city Engineering Department - Engineering and

Inspection; Streets; Water and Sewer; Water Pollution Control; and Garage - and from the city Sanitary Department. The Engineering Service chief and three deputy chiefs are to report to the emergency operations center in the event of a disaster. All other city personnel in this Service are to take shelter until assignments are received from the Engineering Service chief. The city engineer is the only member of this Service who appears to have read the service annex. The other 78 city employees under his supervision understand only that they are to take shelter and await his direction. The sanitary superintendent and the 38 Sanitary Department employees under his supervision, who are to staff the Sanitary and Mass Burial sections, have no knowledge of any civil defense assignments. The Engineering Service has no records preservation program; records are maintained at the Engineering Office in City Hall and at the garage. Only four employees under the supervision of the city engineer have received rescue training, and this was received on their own initiative as civil defense volunteers. Engineering equipment and personnel in the community has not been inventoried nor have the owners of such equipment been contacted relative to the use of the equipment in the event of an emergency. In a city as small as Marietta, this is probably unnecessary since all such persons are known to the city engineer. However, the lack of planning, preparation, and training of city engineering personnel is indicative of the lack of interest in civil defense by the city engineer. They should receive adequate civil defense training and be informed of their disaster assignments.

Personnel and equipment of the city Engineering and Sanitary departments are listed in the following tables. Approximately 90 per cent of the vehicles operated by the Engineering Department are radio equipped; none of the Sanitary Department vehicles are radio equipped, however.

Engineering and Sanitary Department Vehicular Equipment

Automobiles	4	Street Sweeper	1
Station Wagons	2	Tractor (Front End Loader)	1
Pickup Trucks	11	Jeep (Civil Defense)	1
Dump Trucks	10	Duck (Civil Defense)	1
Stake Trucks	6	Tractor Cab & Traller (Civil Defense)	1
Flat Bed Trucks	2	Fork Lift (Civil Defense)	1
Utility Trucks	4	Truck, 6x6 (Civil Defense)	1
Garbage Trucks (Packer Type)	11		

Engineering and Sanitary Department Personnel

City Engineer	1	Treatment Plant Operators	10
Assistant City Engineer	1	Mechanics	7
Sanitary Superintendent	1	Welder	1
Asst. Sanitary Superintendent	1	Carpenters	2
Superintendents	4	Painters	2
Foremen	6	Electrician	1
Surveyors	2	Masons	2
Draftsmen	3	Treatment Plant Fireman	1
Building Inspector	1	Meter Servicemen	3
Plumbing & Heating Inspector	1	Meter Repairman	1
Utilities Inspector	1	Clerks	3
Equipment Operators	2	Night Watchmen	2
Machine Operators	10	Laborers	31
Drivers	12	Street Sweepers	6

Electrical Engineering Service

The Electrical Engineering Service is responsible for maintaining and repairing all city electrical and communication facilities, including: the attack warning system, fire alarm system, street lighting system, electrical distribution system, and the emergency generation and communication facilities in public shelters and at the emergency operations center and the city hospital. The city electrical engineer serves as electrical engineering service chief. The Service is divided into seven sections, as follows: fire alarm, street lighting, communications, attack warning, electrical distribution, public shelter wiring and emergency generation, and supply. These sections exist only on paper to organize and delineate the assignments of the Service. In actual operations, employees of the city Electrical Department will be utilized where needed. It is acknowledged by the Service annex that personnel and equipment are insufficient to cope with a major disaster situation. All employees in the city Electrical Department are assigned to the Electrical Engineering Service and include the following:

Electrical Engineer	1	Foremen	5
Assistant Electrical Engineer	1	Linemen	5
Draftsmen	2	Servicemen	8
Electrical Inspector	1	Clerical	4

All Electrical Department vehicular equipment is radio equipped and includes the following:

Automobile	1	Jeep	1
Service Trucks	3	Fork Lift	1
Aerial Ladder Trucks	2	Wire Wheel Trucks	2
Heavy Duty Line Trucks	2	Poll Trailers	3
Materials Trucks	3		

The Electrical Engineering Service chief and the four assistant chiefs are to report to the emergency operations center in an emergency. All other personnel are to take the nearest available shelter until such time it is safe to emerge. Reassembly of Service personnel on shelter emergence will be accomplished by radio and land-line. The only civil defense training was that taken in basic rescue by four men on a volunteer basis. Copies of the Service annex are available in the office of the city electrical engineer and employees apparently are familiar with their assignments. Department Engineering records have been pre-positioned in the emergency operations center and lists of electrical contractors and suppliers have been prepared. Within the limits imposed by available manpower and equipment this Service appears capable of carrying on its assigned tasks. However, all Electrical Department personnel should be trained in basic rescue and in radiological monitoring and the Service should be equipped with monitoring sets.

Natural Gas Engineering Service

The Natural Gas Engineering Service is assigned responsibility for providing and maintaining the natural gas distribution system in the Marietta area. The Service is headed by the manager of the gas company's Marietta office. The Service annex provides that the manager, as chief of the Service, is responsible to the mayor, through the civil defense director, during any emergency. This responsibility is qualified, however; the annex recognizes that the activities of the company's local office will be coordinated and directed by the main office in Atlanta, and that the primary responsibility of the Service is the restoration of company facilities. All personnel operating out of the Marietta office are in the Service. No nuclear disaster plan has been prepared, but a natural disaster operational plan is considered adaptable and employees are fully informed of their assignments. The Service annex provides that the service chief will report to the emergency operations center in the event of a disaster with one of the company's 11 radio equipped vehicles assigned to the Marietta office. All other employees are to seek the nearest available shelter until such time as they are ordered to reassemble by commercial radio, company radio, or land-line. The natural gas distribution system has emergency cut-off points within the area and the employees assigned to the Marietta office are sufficient in number to handle all emergency situations other than one caused by direct effects of a nuclear weapon.

Police Service

The Police Service is responsible for protecting life and property, critical facilities, installations, and structures; assisting in rescue operations and the transporting of casualties to medical facilities; providing traffic control; conducting explosive ordnance reconnaissance; enforcing laws and regulations; as well as providing attack warning and radio communication, by point-to-point, with the State Highway Patrol and the civil defense area headquarters. The city's Police Department has been assigned responsibility for carrying out the duties of the civil defense Police Service. The chief of police is in charge of the Police Service. There are 38 commissioned police officers in the Department, one for every 675 Marietta residents, as indicated in the table on the following page.

Police Department Personnel

Chief	1	Sergeants	3
Assistant Chief	1	Detectives	3
Captains	3	Patrolmen	24
Lieutenants	3		

The Department has four full-time civilian employees - two clerical, a jailer, and a cook - and 12 part-time crossing guards. In addition, there are 24 trained and active auxiliary policemen who are to be integrated into the Police Department in the event of a disaster.

The city does not operate a police academy. New recruits receive 113 hours of training on an in-service training basis, including: 10 hours of civil defense, 18 hours in first aid, 30 hours in traffic control, 5 hours in crowd control, and 50 hours in fire-arms. A 40 hour in-service training program is provided twice a year for all officers. Marietta has sent two officers to the Federal Bureau of Investigation National Academy and five officers to the police course given by the Institute of Continuing Education, University of Georgia. Three officers have received special training in arson and bombing, ten in fingerprinting, and three in photography. Auxiliary police are invited to attend the in-service training programs provided commissioned officers and they are urged to attend the auxiliary police course taught by the Georgia State Highway Patrol. Auxiliary police receive practical experience at traffic posts during parades and at other civic functions. The Police Department has only one building, a headquarters containing offices, the city jail and workhouse, records room, radio room, locker room, and the civil defense office. Emergency power is available from a diesel powered generator capable of operating the lighting system and the police radio transmitting equipment located in the headquarters building. Sufficient fuel is available in the headquarters building to operate the generator for a period of 14 days. The Department has seven automobiles and four motorcycles, all radio equipped.

In the event of a nuclear attack the chief, assistant chief, and three officers are to report to the emergency operations center. All other officers are to assist and direct Marietta residents to shelter, or to direct evacuation, until such time as it is necessary to take shelter. Officers have no specific assignments during the shelter stay period, but it is assumed that they will assist shelter managers maintain order in the shelters. Commissioned officers and auxiliary police will be recalled to active duty upon shelter emergence by commercial radio, police radio, and land-line. The civil defense disaster assignment is an extension of the normal peace time police duties. However, recruitment of additional auxiliary police and more extensive civil defense training could substantially improve the Department's capability to carry out its disaster duties.

Fire Service

The Fire Service is assigned the responsibility of minimizing fire damage; preventing, confining, and extinguishing conflagrations; conducting rescue operations; and assisting in radiation detection, monitoring, and decontamination. The city's Fire Department has been assigned the responsibility for carrying out the duties of the civil defense Fire Service and the fire chief serves as chief of the Service. The city has a total of 40 uniformed firemen, as indicated in the table below:

Fire Department Personnel

Chief	1	Captains	5
Deputy Chief	1	Lieutenants	6
Assistant Chiefs	2	Fire Fighters	25

In addition, there is one civilian clerical employee in the Department. At present there are no auxiliary firemen, but the Department is in the process of organizing an auxiliary unit of 50 men who would serve only in the event of major fires or disasters.

Fire Department recruits are given 80 hours of classroom instruction in the Department's new headquarters building. It is planned to construct a fire tower and laboratory building in the near future. Training received by new recruits includes standard and advanced first aid and 16 hours of aircraft fire fighting at the military air bases south of the city. In addition, every fireman has taken the civil defense rescue instructor course given by the state civil defense agency and continuous in-service training programs are carried on in fire fighting techniques. The city has sent 30 firemen to the Georgia Fire Institute at the Georgia Institute of Technology and 7 firemen have been sent to arson and bombing school. However, no firemen are known to have had radiological monitoring training.

The city Fire Department has a large, new fire headquarters station and two smaller district stations. Only the new headquarters building, which houses the city's emergency operations center, provides a Protection Factor of 100 or better. An emergency gasoline operated generator, with a 21 day supply of fuel, is located within the headquarters building. The generator provides sufficient power to operate the lighting system and the fire and civil defense radio communication equipment located in the building. Vehicular equipment operated by the Department includes the following:

Pumpers		Aerial Ladder, 55'	1
1,000 GPM	2	High Pressure Booster	1
750 GPM	3	Rescue Truck (Civil Defense)	1
500 GPM	2	Tank Truck, Water (Civil Defense)	1
Pumpers (spare)		Jeep (Civil Defense)	1
740 GPM (Civil Defense)	1	Automobiles	2
500 GPM	1	Station Wagon	1

The Department performs no civil defense duties in a pre-attack period. It does conduct a fire prevention program which includes home inspections and public speaking before schools, business, and professional groups. In the event that public shelters are constructed or existing facilities are upgraded to provide fallout protection, it would be possible for fire personnel to check the security of shelter supplies on their normal inspections.

Fire Department personnel assisted in the preparation of the fire annex to the city's operational plan and appear to be familiar with its contents. The annex was apparently prepared prior to the institution of the National Fallout Shelter Program and subsequently revised to conform with the shelter concept. However, the revision was not carried out completely and the annex is therefore contradictory. The Department now plans to move all men and equipment into the basement of the headquarters building and sandbag the fire apparatus garage doors. Sand and empty bags have been pre-positioned for this purpose. The chief and the deputy chief are to report to the emergency operations center located in the Fire Department headquarters building. It is planned that when the auxiliary firemen have been recruited and trained, that they will report to the headquarters building too.

When the auxiliary fire unit has been fully staffed and trained, and if firemen are provided radiological monitoring training, the Department should be capable of carrying out its civil defense assignments.

Rescue Service

The Rescue Service is assigned responsibility for organizing and coordinating efforts to rescue persons entrapped or isolated as a result of natural or enemy caused disasters. There is a total of 32 persons in the Service, including a chief and a deputy chief. All serve in a voluntary capacity, although eight are employees of the city - four from the Electrical Department and four from the Water and Sewer Division of the Engineering Department. The Service has two teams of four men; the remaining 26, including the chief and deputy chief, are not divided into teams at the present time, but it is anticipated that they will operate as teams in an emergency. All Service personnel have had basic and light rescue training and three members of the Service are qualified instructors. In addition, 5 members have had first aid training, 26 have taken the medical self-help course, and 13 have had water rescue instruction provided by a local scuba club, but none of the members of the Service have had RADEF training. Four members have Citizen Band radios. In the event of a nuclear attack, the chief and the deputy chief are to report to the emergency operations center; all other personnel are to take shelter wherever available. Communications between the emergency operations center and the sheltered Service personnel will be by Citizen Band radio and land-line, although primary reliance will be placed upon the local CONELRAD station. Two rendezvous points have been established for assembling Service personnel upon shelter emergence. The Service has five emergency generators - three 110 volt, one 12 volt and one 28 volt - used to power floodlights used during night operations. Service personnel meet once a month for training and orientation purposes.

and they appear to be familiar with their civil defense assignments.

Health Service

The county civil defense Health Service is responsible for providing medical care to all county residents and evacuees from target areas; controlling communicable diseases; establishing environmental sanitation procedures; initiating and carrying out radiological, chemical, and biological warfare defense measures; and providing for the evacuation and relocation of persons determined to be in radiologically, chemically, or biologically contaminated areas. The Cobb County Public Health Department is responsible for carrying out the duties of the Service. Marietta's assistant civil defense director, or the civil defense director until such time as an assistant director is appointed, is responsible for keeping the County Health Service informed as to the medical needs of the city and assisting the County Health Service carry out its mission within the city.

Welfare Service

The county civil defense Welfare Service is responsible for providing, the necessities of life to all county residents and to evacuees, assisting in the reuniting of families, establishing and operating welfare centers necessary to house and care for evacuees, and assisting in the rehabilitation of the people. The Cobb County Public Welfare Department is responsible for carrying out the duties of the Service. Marietta's assistant civil defense director, or the civil defense director until such time as an assistant director is appointed, is responsible for keeping the County Welfare Service informed as to the welfare needs of the city and assisting the County Welfare Service carry out its missions with the city.

Chaplain Service

The Chaplain Service is responsible for rendering comfort and aid to the distressed, sick, and injured. The chief of this Service is a local minister who serves on a volunteer basis. He has appointed a three man committee, all of whom are ministers, to assist him, but as yet no service annex has been prepared and plans to establish a service organization have not been carried out.

Shelter Management Service

The Shelter Management Service is responsible for promoting, locating, planning, and inspecting public and home fallout shelters and for training public shelter management personnel. The chief of this Service is a volunteer. The Service, formally designated the Shelter Planning Service, has only recently been reorganized and has not begun to carry out its assigned duties; nor has it prepared a revised Service annex in keeping with its newly assigned duty of training shelter managers. Until such time as public shelters become available in Marietta, there is little likelihood that this service will assume an active civil defense role.

Resources Division

Four services are assigned to the Resources Division - Manpower, Industry and Institutions, Supply, and Transportation. The deputy civil defense director in charge of this Division is a volunteer who also serves as chief of the Supply Service.

Manpower Service

The County Manpower Service is responsible for establishing, for the entire county, a program which will provide the maximum utilization of all manpower resources in the county in the event of disaster or nuclear attack upon the United States. The Cobb County Office of the Georgia State Employment Service is responsible for carrying out the duties of this Service. The civil defense director has appointed a permanent manpower coordinator for Marietta who is to serve as the city's liaison with the state Employment Service. The city coordinator has not prepared an annex to the civil defense plan and his duties and assignments have not been detailed.

Industry and Institutions Service

The Industry and Institutions Service is assigned responsibility for assisting in the formulation of industrial civil defense plans which provide for continuity of management, protection of vital records, plant security, and sheltering of employees; assisting in the development of civil defense plans for schools and institutions; and establishing training programs to instruct employees in civil defense procedures, first aid, and fire prevention. This Service has a staff of six persons, including a chief, deputy chief, and four assistants. Service personnel have met with business leaders and manufacturers and informed them of civil defense problems and advised and assisted in the preparation of civil defense plans. No training programs have been established specifically for employees of such firms, but notification of available civil defense courses have been provided. The school district has not requested, nor been provided, any assistance.

Supply Service

The Supply Service is responsible for providing the operating services with specialized equipment, medical supplies, food, fuel, and materials necessary to carry out civil defense operations and to establish records and maintain inventories of such supplies located within the community. The chief of the Service, the deputy chief, and four assistants are all volunteers. Inventories of food, fuel, and clothing have been made. However, because of rapid turnover of personnel in this Service, this information is no longer current. As an adjunct to the Service, a rationing board, composed of local business men serving on a voluntary basis, has recently been created and an "understanding" has been reached with wholesalers in Marietta not to distribute food, fuel, or clothing without the authorization of the Civil Defense Agency in the event of a nuclear attack. It would be desirable if such agreements between the city and the vendors could be given legal sanction by ordinance.

Transportation Service

The Transportation Service is responsible for providing the vehicles necessary to accomplish a complete evacuation of the area and for providing transportation equipment requested by the various operating services. This Service annex was prepared prior to the National Fallout Shelter Program and has not been revised to conform to that program. Such revision should be undertaken so that there will be no conflict within the civil defense plan. The chief of the Transportation Service is an executive in a local trucking firm who serves on a volunteer basis. He is assisted by a deputy chief and three assistant chiefs, all of whom are either in the transportation business or are familiar with warehousing. Lists have been prepared of vehicular equipment located within the community and drivers who would be available, but no written agreements have been made with the owners of such equipment although it is understood that such equipment would be available in a disaster situation. The chief and the deputy chief are to report to the emergency operations center in the event of a disaster.

Unassigned Resources and Services

Civil defense assignments have been made to all major city officials and agencies except the recorder (city judge), city plan director, Department of Parks and Recreation, Housing Authority, and Hospital Authority.

Failure to assign any civil defense duties to the recorder cannot be considered significant. This official might serve, with the city solicitor, as a legal advisor to the mayor and council; but, since a future mayor may elect to assume the duties of recorder as authorized by state law, such an assignment would be a superfluous expansion of the civil defense organization.

The position of city plan director has been created and filled only recently and the director has not been authorized any staff assistance. While the development of shelter utilization plans might properly be an assignment of city planners, it would be futile to make an assignment in Marietta in the absence of either a planning staff or shelter facilities. However, the city plan director has been requested orally, by the civil defense director to report to the emergency operations center in the event of a disaster situation.

Department of Parks and Recreation manpower and equipment could increase only slightly the capability of the Engineering Service. The Department has only eight full-time employees and its equipment is limited to one pickup truck. County park employees and equipment assigned to the city-county park properly belong in the county civil defense agency rather than the city. However, it would be desirable to assign city park personnel and equipment to the Engineering Service even though failure to do so does not constitute a significant omission.

Housing and urban renewal personnel and equipment could make a significant contribution to the Engineering Service and should be so assigned as soon as possible. The Authority employees 52 persons, including 30 in the building trades and 7 laborers, and operates a number of vehicles, as follows:

Automobiles	2	Dump Trucks	1
Pickup Trucks	5	Stake Trucks	3
Carry-All	1	Tractors	2

The assignment of county-wide health responsibility to the Cobb County Civil Defense Agency precludes official assignment of civil defense duties in the city organization to Marietta's Kennestone Hospital, although Hospital personnel do serve on a volunteer basis in the city civil defense Radiological Service. The Hospital has prepared an emergency plan providing for various disaster situations, including war-caused disasters. The plan is based upon the assumption that the Hospital will work in conjunction with the Cobb County civil defense organization and details specific posts and assignments for the approximately 50 physicians on the staff of the Hospital and the Hospital's 558 employees listed below.

Kennestone Hospital Personnel Marietta, Georgia

Administration and Clerical	92	Laboratory	23
Registered Nurses	85	X-Ray	14
Licensed Practical Nurses	39	Physical Therapy	3
Nurses Aides	134	Dietary	35
Orderlies	28	Housekeeping	46
Pharmacy	3	Laundry	21
Technicians	23	Maintenance	12

The failure of the county civil defense Health Service to establish an effective organization should not detract from the well-conceived plan and facilities of the Hospital to provide emergency medical care in a disaster. The Hospital and the city civil defense agency have had a close working relationship which unquestionably would continue in the event of a disaster.

Other Community Resources

The Cobb County Unit of the Atlanta Metropolitan American Red Cross Chapter, located in Marietta, has not been given any civil defense assignment by either the city or the county. The Unit has four full-time professional staff members, but is assisted by approximately 300 volunteer women who participate in Red Cross activities in the Marietta area. The Unit has no equipment or facilities which would be of use in the event of a disaster, other than one station wagon. All such equipment is located at the

regional office in Atlanta. Despite its limited resources, the Unit should be incorporated into the county civil defense Welfare Service.

The Marietta office of the Southern Bell Telephone Company has not been integrated into the city's civil defense plan or organization, nor has liaison between the civil defense organization and the Company officially been established. In an emergency, the Telephone Company has agreed to provide telephone communications at the emergency operations center on short notice, and it is prepared to place telephones designated by the civil defense director under line-load control. The Company has prepared an emergency plan which provides for both natural and man-made disasters, however, the nuclear disaster portion of the plan has not been distributed to the Marietta office as yet. Administrative personnel in the office are aware of the problems which would be encountered and apparently understand the action which must be taken in such a situation, however. The Company has three installations in Marietta - a switching equipment building, office building, and storage and yard facilities. Basements in the switching equipment building and office building provide fallout protection, but will be used only by Company employees. A new building is to be built in Marietta in the near future, and switching equipment is to be installed in a protected basement area of that building. At the present time there are two diesel generators in the switching equipment building which can operate the telephone system for a minimum of two days. The office building shelter has been stocked with food, water, and monitoring equipment; one employee has had radiological monitoring instruction. While the Marietta office is prepared to provide the emergency operations center with the planned land-line communication on short notice, it would be desirable to establish formal liaison between the local Company office and the city civil defense agency.

INTERGOVERNMENTAL ASPECTS OF CIVIL DEFENSE

Development of an effective civil defense agency in Marietta is not complicated by the existence of numerous overlapping governmental jurisdictions. Only the Marietta School District, Cobb County, and the state have responsibility within the city; the only federal agency located in Marietta is the United States Post Office. While few in number, these units have several significant civil defense assignments - assignments which, for the most part, have not been given the attention they require. Failure to carry out such assignments jeopardized the survival potential of the entire community.

School District

The Marietta School District is coterminous with the city. School Board members serve six year, overlapping terms. Although appointed by the mayor and city council, the Board has complete control over its budget and financial affairs and appoints the school superintendent. The District operates two high schools, one of which contains the city's only public shelter, and 11 elementary schools; it employs 328 persons including 15 administrators, 217 teachers, 65 dietary personnel, 5 clerks, 25 custodians, and one nurse; and it operates two buses, one stake truck, one pickup truck, and one tractor.

The superintendent of schools has been appointed chief of the city civil defense Training and Education Service, but has not carried out any organized training programs, although some of the District's teachers are instructing family survival courses.

The District has not developed an emergency plan for either natural or nuclear disaster; no line of succession has been established; and, in the absence of the superintendent, each school principal is responsible for deciding whether to shelter the pupils in the schools or send them home in the event of an attack warning. No plans or arrangements have been made to open the high school containing the public shelter in the event of an attack warning at night or in the summer when schools are locked and unattended.

The School District and its personnel should assume a more active and planned role in civil defense. Marietta has very limited resources. The School District, therefore, could provide much needed assistance, not only by carrying out its assigned training duties, but by providing civil defense education to students, by providing for the mass care and feeding of evacuees, and by providing supplemental assistance to various city civil defense services, such as Engineering, Radiological Defense, and Transportation. Despite the discouraging lack of shelter facilities, the school district should prepare an emergency plan for natural and nuclear disasters which provides for a line of succession and establishes policies and procedures to be followed by each of the schools in the District.

Cobb County

Cobb County has about 114,000 inhabitants and an area of 348 square miles. The County is an administrative subdivision of the state and does not have corporate status. It is governed by a board of three commissioners headed by the commissioner of roads and revenues. The County has a part-time civil defense director and a full-time assistant director who has had training at the Civil Defense Staff College in Battle Creek, Michigan. The County has adopted a civil defense plan based upon the state civil defense agency publication entitled "If Attack Comes: A Guide For Local Governments in Organizing Civil Defense." County officials have made little progress implementing the plan, and, except during the Cuban Crisis, activity has been at a minimum. The official attitude toward civil defense has only been a reflection of that of county residents, as indicated in the Cobb County civil defense "Progress Report" dated January 8, 1963.

Very little interest has been shown in building a community shelter. The people have lost their interest in civil defense again, since the Cuban Crisis has quieted down. We are not getting more than ten inquiries a month about civil defense for home shelters.

Disinterest in civil defense at the county level is critical to Marietta since the county civil defense agency is responsible for providing civil defense health and welfare services throughout the entire county.

The director of the County Health Department is chief of the county's civil defense Health Service. The Department has 32 employees, as follows:

Doctor	1	Sanitarians	6
Dentist	1	Social Worker	1
Nurses	14	Clerks	7
X-Ray Technician	1	Custodian	1

The Department operates one vehicle, a mobile x-ray van. The Health Service annex to the county civil defense plan is applicable solely to a post-attack situation requiring the establishment of medical aid stations and emergency hospitals for the receipt of injured evacuees from a target area. No duties or posts are assigned for pre-attack or shelter stay periods. Lists of doctors and nurses in the county have been prepared and attached to the Health Service annex, however, liaison with the County Medical Society had not been established and no agreement had been made with local retail and wholesale drug firms relative to the distribution of drugs in the event of a disaster. Detailed plans and procedures necessary to implement the Health Service annex have not been prepared.

The director of the county Welfare Department is chief of the county civil defense Welfare Service. The Welfare Department has a staff of 23 persons, as follows:

Director	1	Clerks	4
Supervisors	2	Custodians	1
Case Workers	15		

The Department has prepared a Welfare Service annex to the county civil defense plan. The annex is post-attack oriented and assigns the Service responsibility for establishing mass care and feeding facilities for evacuees and displaced persons. Detailed plans and procedures for locating mass care and feeding stations have not been worked out, although it is anticipated that schools would be utilized; and no formal plans and assignments have been made to augment the county Department's limited staff with volunteers and local welfare agency personnel, although it is understood that such personnel would cooperate with the Welfare Department.

Mutual Aid Agreements

The Georgia Civil Defense Act of 1951, as amended, provides that local civil defense organizations "...may, in collaboration with other public and private agencies within this state, develop...mutual aid agreements for reciprocal civil defense aid and assistance in case of disaster...and in time of emergency it shall be the duty of each local organization for civil defense to render assistance in accordance with... such mutual aid agreements..." Marietta has made no such mutual aid agreements, but the city and Cobb County have informally agreed to coordinate their civil defense plans and activities. The Marietta Fire Department has mutual aid agreements with nine fire departments in the city of Atlanta, and the aircraft plant and military installations south of the city. The State Civil Defense Act provides that the governor may require each local civil defense organization to provide assistance - in the form of employees, property, or equipment - anywhere in the state determined to have a priority need, or outside the state under certain circumstances.

State Civil Defense Program and Guidance

The Georgia Civil Defense Agency is a division within the state Department of Defense and the commanding general of the Department serves ex officio as the state civil defense director. He is appointed by, and directly responsible to, the governor. The Agency had a full-time staff of 56 persons in fiscal year 1962-63, including the ex officio director, deputy director, 17 professional and technical employees, an area coordinator and 7 area directors, 6 liaison officers with state agencies, and 20 clerical and 3 building maintenance employees. All but the director, three maintenance employees, and two professional employees were in the personnel and administration matching fund program.

The Agency distributes substantial guidance material to city and county directors, primarily in the form of information memorandums. These communications deal with state and federal civil defense policies and procedures and are based primarily on civil defense material distributed by federal agencies, as well as material prepared by the state agency. In addition, the agency has prepared and published a number of handbooks and manuals, including "If Attack Comes: A Guide for Local Government in Organizing Civil Defense," "New-Clear Survival Methods," and "Basic Handbook for Monitors." A basic handbook for shelter managers is being prepared. The Guide designed to assist local governments organize civil defense agencies is well prepared and, with guidance from the area coordinators, it has been of assistance to local civil defense directors in the preparation of local plans. However, there appears to be a tendency to follow the Guide too slavishly and thereby establish more civil defense services than are needed or can be manned effectively. This occurred in Marietta, and presumably in other local governmental jurisdictions, even though the city made numerous modifications to meet local conditions and capabilities.

The state Civil Defense Agency has conducted courses in basic civil defense, rescue, communications, and radiological monitoring. In addition, the state Department of Health is supervising the medical self-help training program for the United States Department of Health Education and Welfare; the state Department of Education is sponsoring an adult education course in civil defense entitled "Personal Survival in Disaster;" the University of Georgia County Extension Service is conducting rural civil defense courses for the United States Department of Agriculture; and the state Highway Patrol conducts auxiliary police training. Contracts are being prepared for the state University Extension Service to teach radiological monitor instructors and shelter manager instructors.

The Civil Defense Agency has an emergency operations center located in the basement of its office. The Center is equipped with transmitters operating on the various state agency networks and it has communications with the federal civil defense region office. The center is reported to have a Protection Factor of 100 or better, however, because it is located in Atlanta, a probable target in the event of a major attack upon the United States, consideration is being given to establishing alternate emergency operations centers. Definite locations for these proposed alternate centers have not been selected.

The Georgia "Operational Survival Plan," completed and put into effect in 1958, has not been revised in keeping with the National Fallout Shelter Program although the state Agency has fully adopted the shelter concept. The state Plan sets forth assumptions and established policies, procedures, the state civil defense organizational structure, and lines of authority, assigns duties and responsibilities to state officials, employees, and the civil defense agency staff; establishes jurisdictional areas and organizations; and provides substantial informational material relative to the effects of weapons.

The Georgia Plan divides the state into seven civil defense areas each under the command of a civil defense area director. Area headquarters have been located in state

Highway Department garages which are equipped with transmitters operating on the state Highway Department frequency. It is planned that transmitters operating on all state frequencies will eventually be installed in each of the area centers as will transmitters operating on the point-to-point frequency which will be used to communicate with county and municipal agencies. At the present time there is no method of communicating between county and city agencies other than land-line and the area centers do not provide any appreciable degree of fallout protection.

Modifying the state Plan by incorporating the shelter concept, establishing alternate emergency operations centers outside of probable target areas, and equipping and hardening the civil defense area centers should provide the state with an adequate structure to develop an effective state civil defense program. The civil defense area coordinating officers appear to have provided local civil defense directors with substantial assistance in setting up local agencies. However, the state Agency, and the coordinating officers, should now devote substantial effort to assisting local directors provide information to municipal and county officials so that they will have a better understanding and appreciation of the need for civil defense.

Federal Agencies in the Marietta Area

The United States Post Office in Marietta is the only federal agency with offices in the city. It employs a total of 101 persons and owns and operates 10 mailsters, 9 delivery trucks, 2 parcel post trucks, and a station wagon. The "Defense Plan" of the Marietta Post Office provides that upon warning employees shall take the necessary steps to safeguard accountable paper and either evacuate or take cover as directed by the local civil defense director. Employees are to report to the Post Office building in the event that the take cover order is given, if there is sufficient time. The old Post Office building, still in operation in February, 1963, has a basement which could provide substantial protection if the windows were sand bagged. The use intended for the old Post Office building after operations are transferred to the new building, is not known. The "Defense Plans" establishes procedures to be taken by postal employees in the post attack period relative to the disposition of new and old mail, postal services, funds, Postal Registration and Information Program, and rendering of assistance to municipal and civil defense rescue and survival efforts. The Plan also provides a line of succession. In the event that postal operations can not be continued from the Marietta Post Office, Postal employees are to report to two designated alternate locations in neighboring municipalities. No postal employees are known to have had any civil defense training. It would be desirable if Post Office employees could be provided appropriate civil defense training and be assigned officially to such civil defense services as Police, Transportation, and, in the event that public shelters are developed, Shelter Management.

Dobbins Air Force Base and the Atlanta Naval Air Station are located just south of Marietta. The city's Fire Department has a mutual aid agreement with these military installations and the city civil defense director has close personal relationships with ranking officers on the bases. It is probable that the city would receive whatever assistance these installations could provide without endangering their primary mission.

PART IV

CASE STUDY

SPRINGFIELD, ILLINOIS

Springfield

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SPRINGFIELD, ILLINOIS

Community Profile

Springfield has a population of approximately 83,000 persons and an area of about 22 square miles. It is located in the central part of the state, 100 miles north-east of St. Louis and 185 miles southwest of Chicago, near the southern edge of the middle west's rich farmbelt which runs through the state. A growing suburban fringe surrounds the city, but it still hugs the city's boundaries and a rapid transition is made from an urban to a rural environment once the city limits have been crossed.

Springfield, the capital city of Illinois, is an important political center for the entire state. In it are located the headquarters of almost all state agencies, and district offices of such federal agencies as Internal Revenue, Department of Agriculture, Department of Commerce, Veterans Administration, and Social Security Administration.

Its Economy

Springfield has a diversified commercial, industrial, and transport economy although in a predominantly agricultural area; it is the commercial and industrial center for an 11-county area in central Illinois. Major industries in Springfield include automotive equipment and supplies, building material products, electronic equipment, food processing, leather products, livestock and poultry feeds, metal fabricating and casting, milk products, paint, paper products, and printing. The home offices of six insurance companies are located in the city, as are the down-state area headquarters of three private utilities.

The city is served by six railroads, six intercity bus companies, and one airline. Its airport has the second longest runway in the state, exceeded only by Chicago's O'Hare International Airport. Approximately 50 trucking firms have offices and facilities in the city; 36 with interstate franchises. Five major state and federal highways, including the interstate route from Chicago to St. Louis, provide vehicular traffic with access to Springfield.

Coal mining was a major industry contributing to the city's economy in the past, but the deposits can no longer be economically recovered. Sand, limestone, gravel, and clay quarrying have declined in recent years also. However, new oil fields, 18 miles southeast of Springfield, produced two million barrels of oil in 1961.

Its Government

Springfield has a statutory commission form of government with executive and legislative powers vested in a mayor and four commissioners who, together, constitute

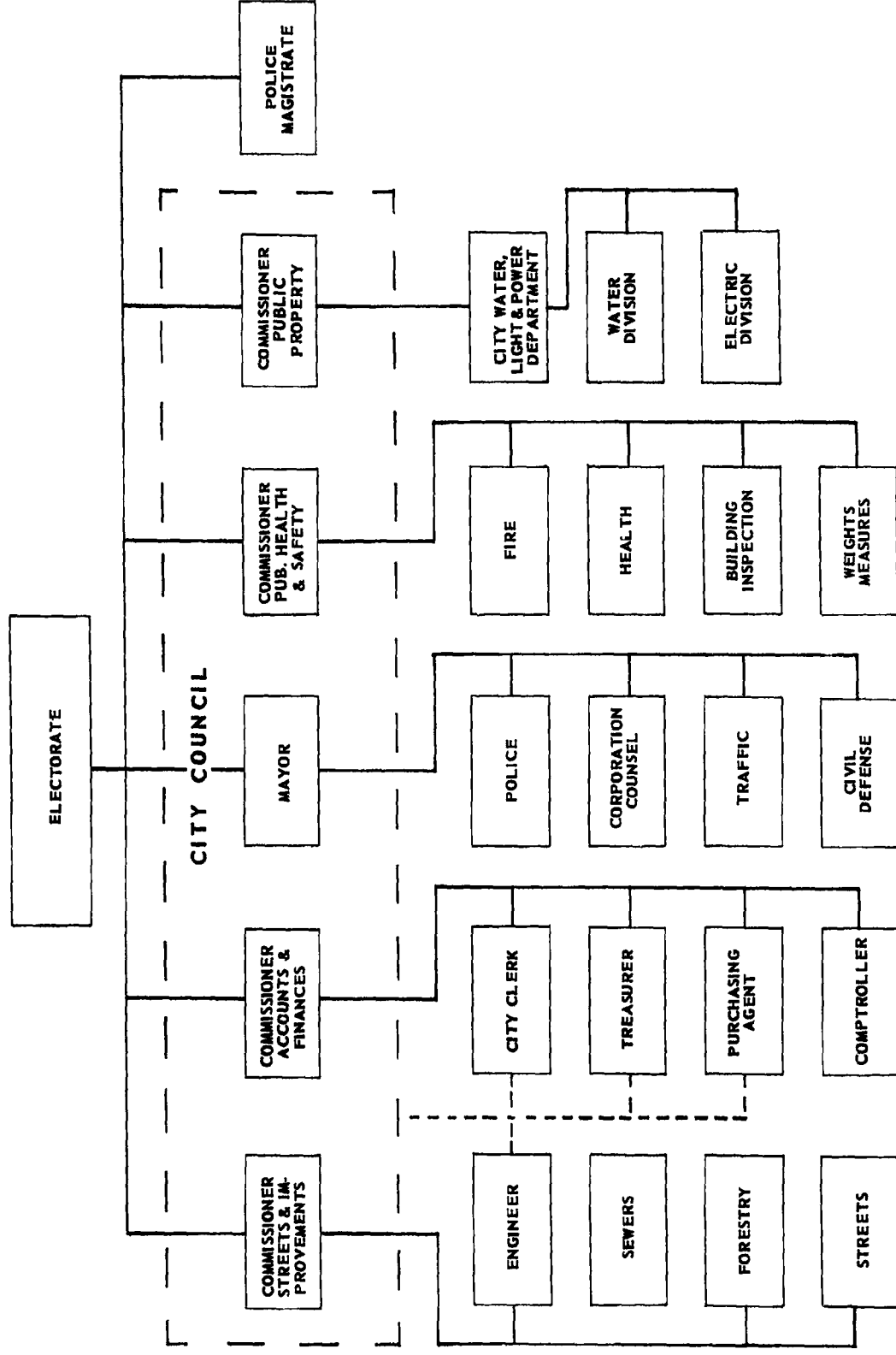
the city council. These officials, and a police magistrate, are elected at large to four-year terms of office at the quadrennial, nonpartisan municipal election.

All city governmental agencies are located within five departments. By state statute, the mayor is in charge of the Department of Public Affairs. Upon taking office after election, the new city council assigns to each of its four commissioners responsibility for administering one of the other four departments — Accounts and Finance, Public Health and Safety, Streets and Public Improvements, and Public Property. The city agencies are assigned to departments by council action, except the Division of Police and the Office of Corporation Counsel which, by statute, are assigned to the Department of Public Affairs. All employees in a department are appointed by the commissioner in charge, except that the city clerk, city treasurer, city purchasing agent, and city engineer are appointed by the council as a whole.

Springfield has adopted the civil service provisions contained in the Illinois Municipal Code which provide that all municipal employees in the classified service are under the merit system and shall be appointed and promoted on the basis of fitness and merit. Employees in the system cannot be suspended for more than 30 days, reduced in pay, or removed except upon written notice and, if requested, after review by the Civil Service Commission. Approximately 90% of the city's employees are covered by these provisions. Persons in the unclassified service, and excluded from the merit system, include elected officials, officials appointed by the city council, heads of divisions within departments, members of boards and commissions, employees of the school district, police officers above the rank of captain (supervisor), seasonal employees, administrative assistants and one private secretary to each commissioner, and the corporation counsel and city attorney and their assistants.

Springfield is an extremely politically conscious city despite its nonpartisan elections. This political orientation, attributed locally to tradition, the influence of the state capital, and to the city's commission form of government, extends throughout all municipal agencies. As a consequence, the city's merit system has been reported to be ineffective except as it applies to appointments and promotions below the rank of supervisor in the Police Bureau and below deputy chief in the Fire Bureau. Another factor which may well decrease the effectiveness of the system is that there is no adequate professional personnel staff in the city, only a secretary to the Civil Service Commission and a part-time examiner.

In addition to the departmental operating and staff agencies, there are 22 independent or semi-independent administrative, advisory, examining, and appeal boards within the city government. Most important among these are the Civil Service Commission, Playground and Recreation Commission, Zoning Board of Appeals, Lincoln Library Board, Plan Commission, Housing Authority, and Election Commission. The Civil Service Commission is, by state statutory requirement, appointed by Council. The members of 12 boards, including the Playground and Recreation Commission, Zoning Board of Appeals, and Lincoln Library Board, are appointed by the mayor; three others, including the Plan Commission, are appointed by the mayor subject to councilmanic



SPRINGFIELD ORGANIZATION OF CITY GOVERNMENT

APPOINTED BY CITY COUNCIL - - - - -

approval. Members of The Housing Authority are appointed by the mayor subject to approval by the State Housing Board. Election Commission members are appointed by the county judge. Members of the remaining boards are selected by more than one appointing authority.

A simplified table of organization for the City of Springfield is shown on the following page. Examination of the chart indicates that the agencies have been grouped in a logical manner under appropriate departments except that Police is in the Department of Public Affairs, as required by law, rather than in the Department of Public Safety. Thus administration of city activities is not noticeably encumbered by the problems sometimes resulting from grouping unrelated functions in one department, such as overemphasis of one service over another and inadequate or ineffective channels of communication between agencies performing related services in other departments.

However, organizational and administrative lines of control are complicated by the legal requirement that the heads of certain agencies be appointed by the city council rather than by the head of the department to which they are assigned. This clearly creates potential problems of loyalty and compliance to the official responsible for overall departmental operations, particularly in a city as politically sensitive as Springfield.

The rational grouping of agencies within departments, not always found in a commission city, can be attributed primarily to three factors. Some services frequently provided by city operating agencies are not provided by Springfield; refuse collection and disposal and hospital facilities are both left to private agencies. Assessing and welfare, as is the case in most parts of the country, are county functions. Other services are provided by semi-independent boards within the city government, such as the Playground and Recreation Commission. Still other services are provided by four special districts that overlap the city and serve and exercise jurisdiction in the city and surrounding area. These four districts are School District 186, Springfield Airport Authority, Springfield Sanitary District, and Pleasure Driveway and Park District of Springfield. The latter duplicates to a limited extent the activities of the city's Playground and Recreation Commission.

However, while these independent and semi-dependent boards and special districts contribute to the simplification of the city's departmental organization, they complicate very substantially the total local governmental structure, both for the voter and for organizing and mobilizing local government resources for civil defense.

Its Fallout Shelters

There are somewhat over 80,000 shelter spaces located within Springfield, almost enough to shelter the city's resident population. Included in this figure are 39,298 shelter spaces in Category 4 or better of which 27,579 spaces have been licensed. In

addition, 34,202 shelter spaces of Categories 2 & 3 have been licensed. These 61,781 licensed shelter spaces are located in 139 buildings.

In addition to the public shelters, the telephone company has established shelter facilities and a control center for the restricted use of a substantial number of their employees. The two privately owned electric utilities, with headquarters in Springfield, are in the process of establishing control centers which would shelter a limited number of their employees.

The relatively large number of shelter spaces can be attributed to the presence of the state capital office buildings in the city. It is unlikely that a city of this size, even with a diversified economy, would have as many shelter spaces as does Springfield without the advantage of these buildings. In addition, the presence of the capital was doubtless a factor contributing to the selection of Springfield as a site for business, utility, and federal office buildings which also contribute substantially to the number of shelter spaces available.

Although no applications have been made for the construction of home fallout shelters, it is probable that a limited home shelter program would be practical. Most homes in this area have basements, and, while older homes are primarily of frame construction, brick construction predominates in the newer sections of the city.

Its Special Resources

Springfield appears to have flexible and reliable sources of electric power, water, and food supply which would enable it to survive a shelter stay and immediate post-attack periods.

Electrical power is supplied the city by the Central Illinois Light Company and by the Electrical Division, Department of Public Property (City Water, Light and Power Department). Central Illinois Light, a multi-purpose utility operating primarily in central Illinois, provides approximately 65 per cent of the power requirements of greater Springfield. It has two steam generating plants in the north central part of the state and maintains sufficient coal at the plants to operate for a period of three months. It has direct interconnected lines with City Water, Light and Power Department and with two major electrical generating and distributing utilities within the state; and, through these, it is tied indirectly to electrical generating and distributing utilities operating throughout Illinois, Indiana, Michigan, Missouri, and Ohio. The Electrical Division of City Water, Light and Power, the city owned and operated utility, provides the remaining power requirements of greater Springfield. It has a steam generating plant located just south of the city on Lake Springfield where sufficient coal is maintained to operate the plant for a three month period. In addition to its direct connection with Central Illinois Light Company, it is tied to a small municipal utility located about 25 miles west of the city. A second privately owned electric utility,

with area headquarters in Springfield, serves a very substantial area just outside greater Springfield although it does not serve the city.

City Water, Light and Power provides water to the city and the surrounding suburbs from man-made Lake Springfield. The lake has a reserve capacity of 21 billion gallons, more than enough for the city's needs. In the event of a nuclear attack upon the United States this reserve, of course, is subject to contamination from radioactive fallout. However, this city does have covered storage tanks with a capacity of two million gallons which should provide, by severe rationing, sufficient potable water for Springfield residents for approximately three months. In addition, there are thirty wells in the city, once used to supply the city's water, which might be usable in an emergency. Thus, while the supply of water in Lake Springfield might be contaminated by radioactive fallout, the city appears to have a sufficient reserve supply, and possible alternate sources, to meet its needs under emergency conditions.

Springfield's location in the rich Illinois farmbelt and the presence of large food processing firms and their storage facilities within the city, assures Springfield of an adequate emergency food supply.

In addition to providing a large number of shelter spaces, the various state agencies located in Springfield employ many persons with engineering and scientific training and have a large fleet of automotive equipment. According to state civil defense plans, state manpower and equipment will be available to the city in which they are located if there are no more pressing needs elsewhere.

The natural gas supply, also distributed by the Central Illinois Light Company, does not appear to be too reliable. The gas, obtained from Panhandle Eastern Pipe Line Company, enters the Central Illinois Light Company distribution system at two locations. The company owns and operates a propane plant to supplement the natural gas supply during peak use periods. This plant can produce at most only 1.5 million cubic feet a day for a five or six day period, while peak natural gas demands of the city during wintertime are about seven million cubic feet a day.

Its Problems

Springfield is not assumed to be a probable target area despite the fact that it is the capital of Illinois. However, because of its geographical location it is anticipated that the city will be in a radioactive area in the event of a major attack against the United States. Such an attack would presumably include strikes against retaliatory bases and population centers west and southwest of the city in Colorado, Kansas, Oklahoma, and Missouri. Civil defense readiness programs and operational plans for such contingency, consequently, should be of highest priority.

The city also faces another problem as a direct result of its geographical location. It lies in the "tornado belt" which runs through the southwest and middle west

and, therefore, throughout the spring, summer, and fall there is the ever present threat of tornadoes. For this reason, the Springfield Civil Defense Agency is, in large part, natural disaster oriented. It has effectively developed a warning and information system, in cooperation with the Weather Bureau, which is put into effect in the event of a severe weather warning or forecast. On those occasions when there has been damage from tornadic winds, the full-time and volunteer personnel of the Civil Defense Agency have provided prompt and effective assistance to operating city agencies. As a consequence, city officials and citizens are more receptive to continued expenditures for an effective civil defense agency than they would be if the nuclear threat was their sole concern.

CIVIL DEFENSE PREPARATIONS

Building the System

Continuity of Government

Springfield has made specific provisions for continuity of the executive function. A line of succession to the mayor has been established by an ordinance which provides that in the event of his death, absence, or disability, and until the office is filled by election as prescribed by law, the commissioner of accounts and finance, commissioner of public health and safety, commissioner of public property, commissioner of streets and local improvements, chief of police, fire chief, and civil defense director shall succeed, in the order named, to the duties and functions of the mayor.

This ordinance also provides indirectly for legislative continuity. The Illinois Municipal Code provides that in cities with commission government vacancies in city council, resulting from death or disability, may be filled by the remaining members of council. By establishing succession to the duties and functions of the mayor, who is a member of council, legislative succession has also been provided. For the mayor in conjunction with the other councilmen, or the mayor alone, if the only surviving member of council, could fill any vacancies.

The city has made no provisions for continuity in the office of police magistrate, the only city judicial officer. However, the Illinois Municipal Code provides that the county judge may fill vacancies in this office with justices of the peace upon request of the city council.

No line of succession has been established to fill disaster created, multiple vacancies among the heads of city agencies. This does not constitute a serious omission. All major agencies have long established lines of succession based upon rank or seniority, every day practice, or regulation or ordinance. Succession to civil defense posts has been provided for in the city's civil defense plan. A serious deficiency in Springfield's emergency planning is in the field of records preservation. The city has no centralized record keeping agency, each separate agency is responsible for maintaining its own records, and all major city agencies have walk-in vaults or filing cabinets which will withstand temperatures of 1,700 degrees Fahrenheit for approximately one hour. In addition, maps, plans, and plats of the Department of Public Property and the Department of Streets and Public Improvements are located at both City Hall and at decentralized departmental facilities. Consideration has been given to a microfilm program, but no action has been taken to date. This deficiency should be corrected as soon as possible by installation of an effective records preservation program for all city agencies.

Emergency Powers

The Springfield city council has not granted the mayor any significant emergency civil defense powers despite the fact that the city's Civil Defense Plan states that "...the mayor is responsible for civil defense activities..." The Springfield ordinance creating a civil defense agency does permit the mayor "...to procure such services, supplies, equipment, or material as may be necessary..." in the event of enemy caused or natural disaster "...without regard to the statutory procedures or formalities normally prescribed by law pertaining to municipal contracts or obligations..." (This power is granted municipalities by the Illinois Civil Defense Act of 1951, as amended.) However, the council's authorization is limited by the further provision that, if the council is available, the mayor "...shall act subject to the direction and restrictions imposed by that body..." Three of the four councilmen expressed the view that, as independently elected administrative as well as legislative officials, they were responsible for the administration and operation of the agencies under their control. Therefore, they intended to administer these agencies, in the event of a nuclear attack, in the manner which seemed most appropriate under the circumstances.

The apparent aversion of the commissioners to relinquishing control of the agencies under their direction clearly points up one of the most serious impediments to the establishment of an effective civil defense agency in a city with a commission form of government — the lack of a single executive. This problem is aggravated by the political climate of the city. Although Springfield does not have a party system, there are a number of political factions, each organized to support a single candidate. Presumably, a mayor in a city with the commission form of government could develop a strong political following and thus influence, if not control, the other commissioners. However, in the absence of partisan elections, and any degree of party responsibility, it is unlikely that any Springfield mayor could become such a leader. In the last 20 years not one of the city's mayors has been able to organize any strong, consistent political support. During this period, no mayor has served two consecutive terms, although a former mayor has just been re-elected to the office after a term out of office.

While the council apparently has been unwilling to provide the mayor with emergency civil defense powers, it has adopted a resolution establishing procedures to be put into effect in the event of a severe weather warning, or forecast, or natural disaster which provides that the mayor, "...as chief executive, shall create a team or teams consisting of superintendents of various city departments to survey the affected area and to report to him..." and, "...after receiving these surveys, he shall determine the priority of emergency operations..." Considering the independence of the commissioners, and the jealousy with which they guard their privileges, this is an unprecedented grant of power to the mayor. It is indicative of the greater concern held by Springfield officials and residents for natural disasters than for possible nuclear disasters.

It is imperative that the mayor of Springfield be granted authority to assume command of all municipal forces and to take such action he deems necessary, within the limits established by state law and without restrictions of council, in the event of a nuclear attack upon the United States. It is possible for the council to grant such authority at the time of such emergency. Emergency ordinances for the preservation of the public health and safety, not involving expenditures of city monies (this limitation is abrogated in large part by the Illinois Civil Defense Act of 1951, as amended) or the imposition of fines or penalties, is authorized by state law. Such an ordinance, stating the cause of the emergency and passed by four of the five councilmen, takes effect immediately upon adoption.

Municipal Civil Defense Agency

The Illinois "Operational Survival Plan," in accordance with the State Civil Defense Act of 1951, as amended, directs all cities, towns, and villages with over 1,000 population and all counties to establish a civil defense organization. The plan provides that the county organization shall be the basic operating unit and all municipal civil defense agencies shall be under the control of the county unit, except thirteen cities which are designated as "exempted cities." The plan divides the state into seven Mutual Aid Areas and two Reserve Mutual Aid Areas and provides that the chain of command shall run from the state to mutual aid area to county to municipality, except that the thirteen exempted cities report directly to the state.

The Office of Civil Defense is the Springfield municipal agency created by ordinance "...to prevent, minimize, repair, and alleviate injury or damage..." resulting from natural or man-made disaster. The agency, located in the Department of Public Affairs, is headed by a director who is appointed by and is responsible to the mayor. The director is charged with the responsibility of organizing, administering, training, and operating the civil defense organization, subject to the direction and control of the mayor.

The director, by appointment of the Sangamon County supervisors, is also civil defense director of the county. Thus, while it is not properly a city-county civil defense agency it has, through this dual assignment of its director, jurisdiction and responsibility in both the city and the county. The director has a third, part-time, assignment. By appointment of the state director of civil defense, he is mutual aid coordinator for the six-county Central Illinois Mutual Aid Area. As such, he provides assistance and guidance on civil defense matters to all executives, legislative bodies, and civil defense directors in the area; and communications and reports to and from all such civil defense directors and state headquarters are routed through him. Thus, the civil defense director of Springfield has, by virtue of these appointments, a direct line of communication with the state civil defense headquarters. These two additional appointments, as county director and mutual aid coordinator, have been made to the Springfield director as an individual and are not appointments ex officio.

The staff of the Springfield civil defense agency consists of four full-time persons; a director, an assistant director, and two clerical employees. The two professional

and one of the clerical staff members are city employees; the other clerical position is filled by a county employee. Only the three city positions are in the Federal Personnel and Administration Matching Funds Program. The director has had rather extensive training and experience in civil defense. He has actively participated in civil defense work for ten years, the last five as the city's full-time director. He has had courses in radiological defense, medical self-help, auxiliary police, and basic rescue. The assistant director has had two years of civil defense experience, all in that position, and courses in radiological monitoring, shelter management, and shelter evaluation.

Eight vehicles are operated by the civil defense agency, as indicated below:

Station Wagon	1	Communication Truck	1
Automobile	1	Casualty Aid Truck	1
Rescue Truck	1	Jeep	1
Station Wagon (Rescue)	1	1/2 Ton Carryall	1

All are equipped with radio, except the automobile and casualty aid truck. The station wagon has radios on the Police Frequency and the County Fire Disaster Net; the rescue station wagon and truck have radios on the County Fire and Disaster Net, State-Wide County Sheriff Net, and State Police Net; the communication truck is equipped with transmitters on the Liaison Radio Net and County Fire and Disaster Net; the jeep has a radio operating on the police frequency; and the carryall has a radio on the city fire frequency. In addition, there is one county civil defense automobile, without radio.

Financing Civil Defense

Springfield budgeted \$49,050 for civil defense purposes in fiscal year 1961-62. Revenues to finance these appropriations were derived from a property tax (\$21,549), state and federal contributions (\$13,362), and unappropriated surpluses from prior years (\$4,189). Actual expenditures for the year totaled \$39,100. For fiscal year 1962-63, Springfield budgeted a total of \$46,350, with anticipated revenues to be derived from the same three sources.

The Illinois Civil Defense Act of 1951, as amended, provides that a political subdivision may appropriate monies for civil defense purposes from the fund from which general expenses are financed. It may levy a tax to be used solely for civil defense purposes, also. The corporate fund, which finances general government operations in Springfield, derives approximately 31 per cent of its total receipts from the general property tax. The remaining 69 per cent is derived primarily from such miscellaneous sources as the state collected sales tax, business licenses, permits, parking meters, and fines. The relatively small percentage obtained from the general property tax results from the corporate fund tax rate limit imposed by the state legislature. Authorization to exceed the statutory limit can only be granted by the voters.

The present limit, imposed 13 years ago, is clearly unrealistic. Springfield has levied the maximum allowable rate in 12 of these years. While miscellaneous sources provide the bulk of corporate fund receipts, the amounts received are relatively static, and, consequently, the property tax limit imposes a real impediment to municipal expenditures. Curiously, the state legislature authorizes municipalities to circumvent the purpose of the property tax limit by permitting them to establish certain special purpose funds which are financed by property taxes not to exceed specified rates. Springfield has taken advantage of such authorizations and established 13 special funds including the civil defense fund. The Civil Defense Act provides that the amount of money derived from the special property tax to finance civil defense cannot exceed .05 per cent of the city's assessed valuation (.5 mills per dollar) or \$0.25 per capita whichever is smaller. On the basis of Springfield's 1961 assessed valuation of \$255,696,879 and its 1960 population of 83,271, as determined by the United States census, the city levied a tax of .082 mills in 1961, which would produce an estimated \$20,967 when collected in 1962. This amount is equivalent to \$0.2518 per capita. While Springfield may not be spending as much for civil defense as it can financially afford, it is spending slightly in excess of the legally authorized maximum, which is the most that can be reasonably expected. To spend more for civil defense would require appropriations from the corporate fund, which could only be done by the city council cutting back municipal services or by the voters approving an increase in the corporate fund tax rate limit. It is extremely unlikely that either of these alternatives would occur in the absence of an immediate nuclear threat.

It is interesting to note that although Springfield is levying the maximum civil defense tax rate, this rate is less than the rate imposed by the city for all but one of the other 12 special funds, being exceeded even by the tax rate levied for the municipal band.

Program Activity

Training and Public Information

The Springfield Office of Civil Defense has carried out extensive training programs during the last ten years. Particular emphasis has been placed upon auxiliary police; basic and advanced fire fighting; medical self-help and advanced first aid, in cooperation with the local chapter of the American Red Cross; and radiological monitoring. A shelter manager course, only recently available, is now being emphasized. A very substantial number of citizens have been given the basic civil defense course and the home protection course. In addition, the agency has provided special instruction and training for civil defense volunteers in order that they will be prepared to carry out their emergency assignments. These special courses are: communication (radio) operator procedure, control center procedure, radiological plotting, and weather reporting in cooperation with United States Weather Bureau personnel. The agency has also sponsored a course in shelter evaluation. Courses in progress, or scheduled, as

of March of this year included: auxiliary police, communication (radio) operator, manager, radiological monitoring, medical self-help, and light rescue. The various courses, given or sponsored by the agency, and the estimated number of persons who have completed them is indicated in the table below:

Civil Defense Training in Springfield

<u>Course</u>	<u>Trainees</u>	<u>Course</u>	<u>Trainees</u>
Auxiliary Police	300	Radiological Monitoring	160
Basic Civil Defense Course	3,500	Radiological Instructor	18
Communication (Radio)		Radiological Plotting	25
Operator	150	Rescue, Basic, Light and	
Control Center Procedure	50	Heavy	50
Fire Fighting, Basic and Adv.	250	Shelter Evaluation	50
First Aid, Standard and Adv.	350	Shelter Management	19
Home Protection Course	3,500	Weather Reporting	75
Medical Self-Help	350		

The various civil defense service divisions are generally responsible for teaching courses in their specialties, because the full-time civil defense staff is so small. Staff and volunteer personnel of the Springfield Office of Civil Defense have prepared training manuals for the rescue course, communications (radio) operator course, weather reporting course, and shelter management course. The latter, 28 pages long, is the most recent.

The agency publishes a monthly newsletter which is distributed to elected and appointed Springfield officials and to volunteer civil defense personnel. It reproduces state, region, and federal news releases and information bulletins considered of particular interest. These latter items are distributed to the news media as well as to city officials and civil defense personnel. Occasional press releases are given to the news media, but the agency has made no systematic effort to keep the public informed of civil defense activities. However, the director and assistant director speak frequently before school, business, and professional groups.

Tests and Exercises

Springfield has participated in all the OPAL exercises. The agency has conducted two mock airplane crash exercises and, in each of the last two years, disaster exercises have been held which involved the two private hospitals; state, county, and city police; adjacent volunteer fire departments and the city fire forces; the civil defense rescue squad and communications unit; and private trucking and ambulance firms. Radiological exercises are held and attack warning sirens are tested each month. In 1955, a traffic evacuation plan and evacuation routes were established, but the plan has never been tested. The city's operations center is manned continually during severe weather warnings and forecasts, and it was manned on a 24-hour basis for 10 days during the Cuban Crisis.

Shelter Program

Springfield has made substantial progress in its shelter program. By March of this year, 139 buildings, containing approximately 75 per cent of the city's shelter spaces of Category 2 or better, had been licensed and the buildings and shelter areas had been marked. This progress can be attributed to the complete acceptance of the shelter program by the professional civil defense staff and to the fact that Springfield was a pilot study city for the shelter program.

The procedure for securing building licenses has been personal and follow-up visits by the assistant director, as well as follow-up letters. Facilities have been marked by the assistant director as licenses are secured.

As of the middle of March, no shelter spaces had been stocked under the current shelter program. However, 8,208 shelter spaces were stocked during the pilot study. Welfare recipients, provided with haircuts from the local barber college and with civil defense coveralls and clip-on bow ties, were used to move these supplies into shelters. The civil defense director anticipates using these same "recruits" to stock shelters under the current program because there is little likelihood that municipal employees will be available for this task. Personnel in the police force, the only agency under the mayor with a large number of employees, cannot be spared for this purpose, and it is highly improbable that any personnel can be obtained from the agencies under the other commissioners.

There are no plans to upgrade potential shelter areas to increase the number of available shelter spaces although the agency has information indicating what alterations or improvements are required.

Facilities for Emergency Operations

Attack Warning System

Attack warning is provided Springfield residents by 18 sirens geographically distributed throughout the city. The rated sound output of six of the sirens is 125 decibels, the other 12 sirens have a rated sound output of 115 decibels. Each siren is powered by a 10 horsepower electric motor activated by impulse from the police radio room. In the event of a power failure, the emergency generator located at police headquarters is capable of providing sufficient power to activate the warning system. Tests of the warning system indicate that the sirens can be heard throughout the city.

The District Attack Warning Point is in a state police district station located just outside the city. Upon receiving a warning over the national warning system (NAWAS), the District Warning Point notifies the Springfield police radio room as well as the Sangamon County sheriff's office, also located in Springfield. Upon receiving the

attack warning, the Springfield police radio operator initiates a "fan-out" from an established call list. By this procedure the mayor, civil defense director, all city officials and operating departments, schools, hospitals, Red Cross, civil defense volunteers, the news media, private industries, and other governmental agencies are notified.

Authorization to activate the attack warning system rests with the mayor or the civil defense director. Reliable and flexible procedures have been established for activation of the warning system in the event that these officials are unavailable or there is insufficient time to contact them.

Emergency Operations Center

The Springfield civil defense headquarters and emergency operations center are located on the second and third floors of the three-story police headquarters building. The emergency operations center is equipped with work areas for radio and telephone personnel, civil defense personnel including weather watch, and city officials. It has not been stocked with either food or water, but eight radiological monitoring sets and 100 blankets have been positioned in the center. Emergency power is available from the police forces' gasoline operated generator. There is only sufficient fuel within police headquarters to operate the generator for 10 hours, but a 7,000 gallon storage tank is located 100 feet away at the main fire station.

Neither the emergency operations center or civil defense headquarters provide any degree of fallout protection and, in the event of a major attack on the United States, these facilities probably could not be safely manned. However, two plans are now under consideration for the relocation of the center, either in the basement of the new City Hall or in a new structure built specifically for this purpose. The City Hall basement has a Protection Factor of 100 or better and a portion of it could be converted into an operations center at relatively little cost. However, the city's Building Commission appears to oppose the plan because it is believed construction of antennas on the new City Hall would be aesthetically undesirable. It is contemplated that if a new facility is constructed specifically as an emergency operations center that it would be located on county owned land, just north of Springfield, adjacent to existing county antennas and transmitters. Considering that Springfield probably will not receive blast damage, either one of these alternatives would provide the city with an operational capability which it does not now have.

Communications

The city of Springfield is licensed to operate on three frequencies in the Public Safety Radio Service Band. These frequencies are used by the Police Bureau, Fire Bureau, and City Water, Light and Power Department for purposes of dispatching and reporting. Remotes operating on the three city frequencies are located in the city's emergency operations center enabling the civil defense agency to communicate directly

with police headquarters; fire stations; City Water, Light and Power shops, generation plant, and pumping station; and radio equipped mobile units operated by these agencies. Eight transmitters used solely for various civil defense and disaster purposes are located in the emergency operations center also. These transmitters permit the agency to communicate on the following radio nets:

1. Liaison Radio Net (6 meter band) - communication truck; city police radio room, fire radio room, street department garage, and electrical division sub-station; United States Weather Bureau; Central Illinois Light Company; and two major manufacturing firms.

It is anticipated that eventually this net will include the county sheriff's office; state police district station; state highway department district garage; county highway department garage; three commercial radio stations, including the two CONELRAD stations, and one television station; the telephone company; the two private hospitals; and the electrical utility serving the area outside greater Springfield.

2. Command Radio Net (6 meter band) - the seven city zone headquarters, and amateurs in three neighboring towns.

It is anticipated that eventually this net will include city hall and amateurs in two other neighboring towns.

3. County Fire and Disaster Net (Public Safety Radio Service Band) - communication truck, county sheriff, civil defense rescue squad, and six volunteer fire departments.

4. Weather Watch Net (Citizen Band) - 20 mobile units operated by personnel in the weather watch.

5. Central Illinois Mutual Aid Area Net (2 meter band) - one of six counties in the central Illinois municipal aid area.

A second county is in the process of purchasing equipment and it is anticipated that the other four will eventually join this net.

6. Mobile Net (2 meter band) - mobile units in the Central Illinois Mutual Aid Area.

7. Illinois Mutual Aid Net I (40 and 75 meter band) - state civil defense headquarters and seven mutual aid and reserve area headquarters.

8. Illinois Mutual Aid Net II (40 and 80 meter band - code and 75 meter band - voice) - state civil defense headquarters and seven mutual aid and reserve area headquarters .

An alternate net control station located at the local chapter of the American Red Cross has transmitters operating in the Liaison Radio Net, Command Radio Net, and Illinois Mutual Aid Nets I & II.

This extraordinary communications capability results from the fact that the Springfield civil defense director serves as the Sangamon County civil defense director and as the coordinator for the Central Illinois Mutual Aid Area . The Liaison Radio Net is clearly a city system and the County Fire and Disaster Net is primarily a county system . However, the Command Radio Net and the Weather Watch Net are combined city-county systems . The need for the Central Illinois Mutual Aid Area Net, Mobile Net, and Illinois Mutual Aid Nets I & II results from the directors position as mutual aid area coordinator .

Extensive provisions have been made for landline communications also . In the civil defense director's office on the second floor of the police station there are two central office trunk lines with extensions and an intercom to the emergency operations center . In the center there are three direct lines to the city power plant, one direct line to City Water, Light and Power Department headquarters, a leased line to state civil defense headquarters, and three extensions to the police department switchboard . The telephone company is prepared to connect 10 other central office trunk lines on short notice . In addition, police telephone communications would be available to the emergency operations center in an emergency even without the three extensions . The police switchboard has nine central office trunk lines and direct lines to the Department of Streets and Public Improvements, Fire Bureau switchboard, and City Hall switchboard . Telephone communications also appear to be fully adequate for the city's needs .

At present, the only method of communicating with the two CONELRAD stations is by landline . It would be desirable to provide the radio backup as planned . Otherwise, it would appear that Springfield has more than adequate communications capability for virtually any possible contingency .

Fixed Radiological Monitoring Posts

Fixed radiological monitoring posts have been established in 20 geographically distributed public shelters . Personnel to man the posts have been trained and assigned; monitoring equipment is now being stocked . Previous plans to utilize fire stations and the city's seven civil defense zone headquarters have been discarded because these facilities afforded no fallout protection . At the present time the only method of communicating between the fixed radiological monitoring posts and the emergency operations center is by landline . Consideration is being given to assigning amateur radio operators with mobile equipment to the 20 monitoring posts .

Zone Headquarters

The city has been divided into seven zones for civil defense purposes and a headquarters has been established in each zone. Four zone headquarters are located in fire stations; one is located in a City, Water, Light and Power shops building; one at the Central Illinois Light Company warehouse; and one is located just north of the city in the state-owned Fairgrounds. Each of the zone headquarters has been equipped with a radio operating on the Command Radio Net frequency and personnel have been assigned to man this equipment. It was originally planned to operate these installations throughout the disaster period, but because they provide no shelter protection, plans now call for them to be used only during recovery operations upon shelter emergence. Considering the probable conditions under which Springfield will be operating in the event of a major attack upon the United States, fallout but no blast damage, it would appear desirable to discard this zone concept and transfer the radio equipment to the shelters that are to serve as fixed radiological monitoring posts.

UTILIZATION OF MUNICIPAL FORCES AND COMMUNITY ORGANIZATIONS

Operating the System

Springfield Civil Defense Survival Plan

Springfield has adopted, with slight modifications, the model City Civil Defense Plan prepared by the Illinois state civil defense agency. The Springfield Civil Defense Plan sets forth the civil defense mission, assumptions, policy, and general organization of the city agency. Prepared prior to the adoption of the National Fallout Shelter Program, the Plan is based upon the policy of pre-attack strategic and tactical evacuation of target areas and post-attack remedial evacuation of target and non-target areas, insofar as possible or necessary, to reduce loss of life from radioactive fallout. Although the Plan has not been revised, it is now the policy of the Springfield civil defense agency to plan and prepare for the sheltering of city residents and, to a limited extent, to receive evacuees from target areas.

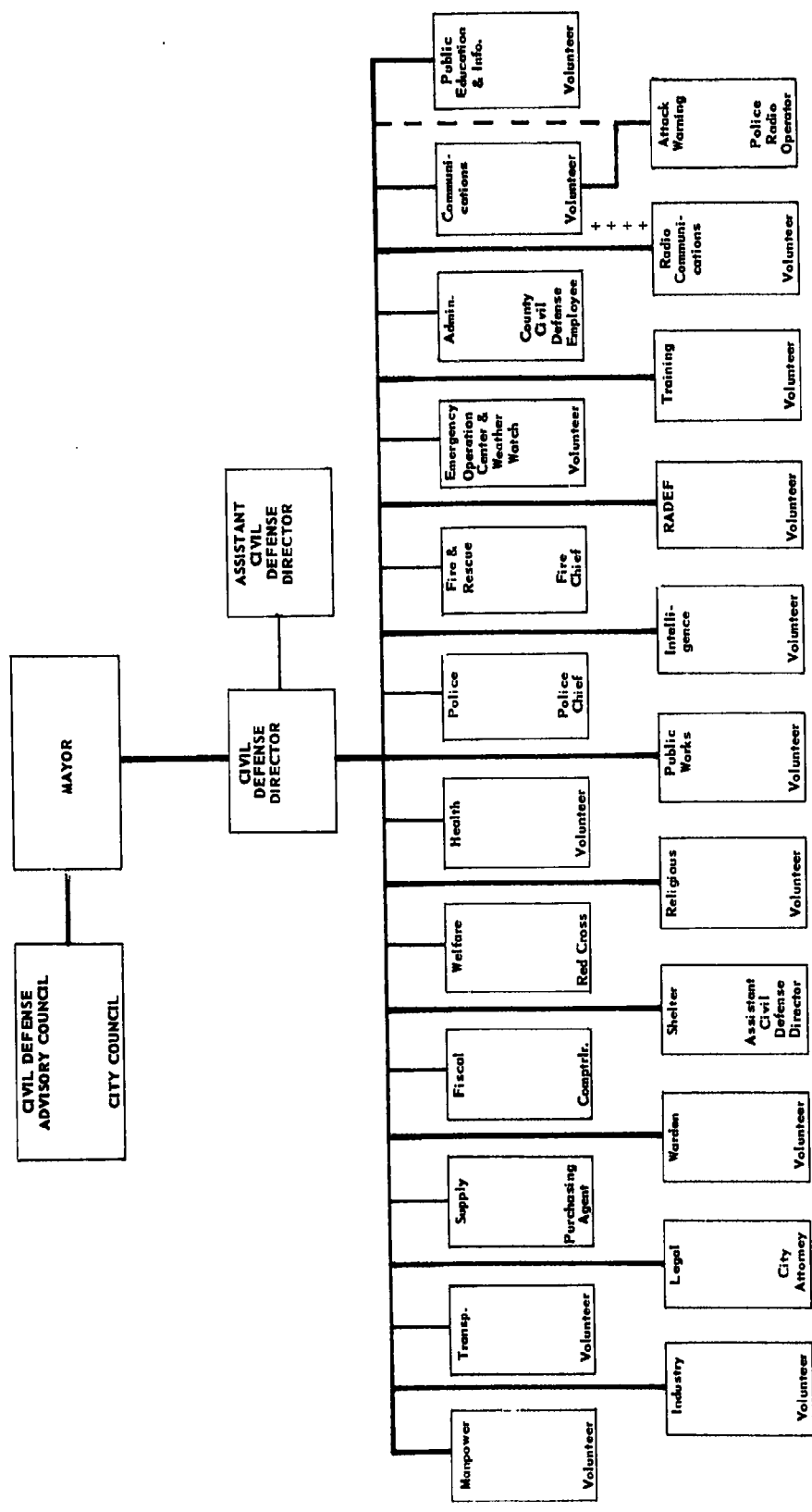
Civil Defense Organization

The Plan charges the mayor with responsibility for civil defense activities. He is to be advised and assisted by a Civil Defense Advisory Council, composed of the members of city council, and by the civil defense director. The director, who is appointed by and responsible to the mayor, has immediate responsibility for organizing, administering, training, and operating the civil defense agency. In an emergency period, the director is to put the civil defense plan into operation and to assume full charge and direction of the situation, subject to the direction and control of the mayor.

The Plan provides that the civil defense agency will be organized into 22 divisions, each headed by a deputy director appointed by and reporting to the civil defense director. However, appointments are made subject to approval by the mayor. A schematic table of organization depicting the structure and chain of command of the agency is shown on the following page.

The organization has three distinctive features. First, as mentioned above, there are 22 divisions and each is headed by a deputy director. Because of this wide and burdensome span of control, it is unwieldy and difficult to manage as evidenced by the fact that only three divisions have prepared their own annexes and only a little over half of them are carrying out their assigned duties to any degree.

Second, staffing and implementation of the Plan has been carried out primarily with volunteers. The only service divisions headed by city employees are Fire and Rescue (fire chief), Fiscal (comptroller), Legal (corporation counsel), Police (police chief), Shelter (assistant civil defense director), and Supply (purchasing agent).



SPRINGFIELD CIVIL DEFENSE ORGANIZATION

Reports to Civil Defense Director - - - - -
Liaison + + + + +

Three interrelated factors have produced these two features. The model City Civil Defense Plan, prepared by the state civil defense agency and adopted by Springfield, duplicates the organization and 21 service divisions found in the state Operational Survival Plan. The model Plan does not recommend that each division be headed by a deputy director, but it is implied. Nor does the Plan require that cities establish all divisions, only nine are mandatory. When Springfield adopted the Plan, only the mandatory divisions were established and it seemed desirable, and reasonable, to have each headed by a deputy director. As need arose for additional service divisions, including two not in the model Plan, the easiest procedure to provide them equal status with those already in existence was to place them under a new deputy director.

The heavy reliance upon volunteers to staff the organization can be attributed to Springfield's commission form of government. The absence of a single executive administering all city agencies, the independence of the commissioners and their unwillingness to turn over control of their assigned agencies to the direction and control of the mayor, and the mayor's obvious lack of "job security" which prohibited his taking a firm position in opposition to the commissioners, necessitated the appointment of volunteers rather than city officials to administer the various civil defense service divisions. This dependence upon volunteers to head the various divisions in turn contributed to the perpetuation of the large number of deputy directors. It has been found that the more prestigious the title the easier it is to fill a position. Also, if the duties assigned to a division were not being carried out, rather than remove the deputy director it was easier to create a new division, (and a new deputy director) and reassign the duties.

The third distinctive feature of the Springfield civil defense plan is not apparent from the table of organization. Volunteer personnel staffing city service divisions also staff the county service divisions. This, of course, is a direct result of the city's civil defense director serving in the same capacity for the county. In two divisions, volunteers in subordinate positions in the city organization serve as deputy directors in the county organization. Thus, they are in the position of directing their city superiors in the event that the county, the basic civil defense operating unit in Illinois, takes charge in a disaster. In the absence of a single, agreed upon agency for the city and the county, this organizational relationship leads to confusion, and has a potential for conflict and possible breakdown. It has been manageable because the county government has shown very little interest in civil defense. In an emergency situation, conflict could result if it appeared that the interests of the city and the county did not coincide.

Disregarding any possible city-county conflict, certain organizational changes should increase the effectiveness of the agency. For example, in the absence of an administrative staff to the director, it would seem desirable to group those service divisions performing related functions under a single deputy director and to eliminate others by reassignment of duties. For purposes of discussion, related service divisions are organized into nine principal groups — advisory, staff, support, engineering,

police, fire, health, welfare, and shelter. In the assignment of divisions to a particular group an attempt was made to follow, insofar as practicable, services and assignments outlined in the model City Civil Defense Plan.

Advisory Services Divisions

Two divisions, now under the civil defense director, clearly have advisory duties only indirectly related to disaster operations. These two divisions, Legal and Fiscal, should be removed from the supervision of the director and placed in direct advisory position to the mayor. Legal and financial advice might be of only theoretical interest in the event of a nuclear attack. Not only would this eliminate two divisions from the director's span of control, but it would restore a normal peace time relationship between the corporation counsel and the mayor and more nearly approximate the normal relationship between the comptroller and the mayor.

Fiscal Division

The Fiscal Division is responsible for establishing procedures and operating instructions for the collection, accounting, expenditure, and auditing of civil defense funds. The city comptroller is head of the Division. He is not cognizant of his civil defense assignment and he anticipates reporting to the City Hall basement in the event of an attack. He has established accounting and auditing procedures for the special civil defense fund, but only in the course of his normal, daily operations. The Office of Comptroller has a staff of five persons: the comptroller, assistant comptroller, and three clerical employees. In the event that the comptroller is unable to serve, the assistant comptroller is empowered to act in his place.

Legal Division

The Legal Division is responsible for advising and guiding city officials during an emergency to insure that the actions taken will be consistent with federal, state, and local government statutes, ordinances, proclamations, and regulations. The city's part-time corporation counsel is to serve as head of the Division. He and his staff of five assistant corporation counsels, also part-time, have given little thought to their civil defense duties, because: (1) the Division has been established only recently, and (2) the part-time nature of their employment. For normal operations a line of succession exists from the corporation counsel to the assistant corporation counsels on the basis of seniority.

Staff Services Divisions

At present, six divisions, each under a deputy civil defense director, provide staff services to the civil defense director and to the operating divisions. Logically these Divisions -- Administration, Emergency Operations Center, Communications and Attack Warning, Radio Communications, Training, and Public Education and Emergency

Information — should be placed under the direction of one deputy civil defense director. In addition, two divisions, Administration and Emergency Operations Center, should be combined into one Division. Justification for retaining two communications divisions, Attack Warning and Radio, exists only because the matching funds accreditation requirements of the State of Illinois require such separation. Continued separation of the Public Education and Emergency Information and the Training divisions is desirable only because, in the absence of a larger professional civil defense staff, there is need to staff these divisions with volunteers.

Administration Division

The Administration Division provides clerical staff assistance to the civil defense director and to personnel assigned to the emergency operations center. The secretary to the director (the only full-time county civil defense employee) serves as head of the Division and the staff consists of five City Hall clerical employees serving on a voluntary basis. In an emergency all personnel in this Division are to report to the emergency operations center.

Emergency Operations Center and Weather Watch Division

This Division is divided into two sections, Emergency Operations Center Section and Weather Watch Section. The Emergency Operations Section is responsible for the operation, management, and staffing (except for radio communication and clerical personnel) of the emergency operations center. It establishes message handling procedures and provides liaison between the various civil defense divisions operating within the center. During severe weather warnings or forecasts members of this Section report to the United States Weather Bureau Station at Capital Airport, where they provide liaison and direct communications between the center and the United States Weather Bureau. Personnel so assigned also provide special mapping and charting assistance to the chief weather forecaster. The Weather Watch Section is responsible for patrolling Sangamon and, on occasion, surrounding counties in private vehicles and reporting weather observations to the center. Information so reported is mapped at the center, relayed to the Weather Bureau where it is again mapped by Weather Watch personnel for the use of the Bureau personnel.

This Division is headed by a volunteer recruited from the State Highway Department. There are approximately 75 volunteers in the Division's two sections — 50 in the Emergency Operations Center Section and 25 in the Weather Watch Section, including 20 with citizen band radios in their automobiles. All have taken the special weather reporting course and approximately two-thirds have taken the control center procedure course offered by the civil defense agency. Weather Bureau personnel consider this a highly successful adjunct to their operations. In the event of a nuclear attack, only members of the Emergency Operations Center Section are to report to the emergency operations center. Weather Watch personnel are to seek shelter as any other private citizen. Consideration might be given to assigning them to the city's 20 monitoring stations despite the fact that their radio equipment is in the citizen band.

Communications and Attack Warning Division

The Communication and Attack Warning Division theoretically has responsibility for all civil defense communications equipment. In actual operations, responsibility for manning telephones has been assigned to the Emergency Operations Center Division and responsibility for planning, maintaining, and operating radio equipment has been assigned to the Radio Communications Division. The Attack Warning Section of the Communications Division is staffed by eight city policemen who have been trained in civil defense procedures and report directly to the civil defense director. Excluding the Attack Warning Section, the only member of the Communications Division is the volunteer recruited from the telephone company who is the nominal head of the Division but whose only function is to serve as liaison between the civil defense agency and the telephone company. The assignment of actual communications responsibilities to other divisions resulted from the failure of this volunteer to carry out his assigned duties. His presence in the civil defense organizational structure is continued in the hope that it will facilitate rapid installation of telephone equipment in the event of an emergency situation. He is to report to the emergency operations center; the Attack Warning Section is located in the center (police headquarters).

Radio Communications Division

The Radio Communications Division is responsible for planning, maintaining, and operating all civil defense radio equipment, with the exception of citizen band used by the Weather Watch. The staff of this Division includes volunteer deputy and assistant deputy civil defense directors, deputy director, assistant deputy director, and amateur radio operators and dispatching personnel from the city's bureaus of Police and Fire and the City Water, Light and Power Department. In the event of an emergency, the deputy director, assistant deputy director, and five RACES operators are to report immediately to the emergency operations center. Additional RACES operators and city dispatching personnel are to report as needed. The Division estimates that 30 radio operators are needed to man the radio equipment effectively on a 24-hour basis, although it could be done with as few as five. Approximately 150 persons have taken the communications (radio) operator course and about 70 are considered "available" to man equipment. The Division has prepared, and had approved by the Federal Communications Commission, civil defense communication's plans, including RACES, for Springfield and Sangamon County and for Central Illinois Mutual Aid Area. In addition, the Division has prepared its own training manual to be used to instruct radio operators in the uses and procedures of civil defense radio equipment.

Public Education and Emergency Information Division

The Public Education and Emergency Information Division is assigned the task of keeping the general public informed of civil defense activities and the need for civil defense. It is to provide CONELRAD stations and other public information media with information and instructions pertaining to civil defense during the pre-attack and post-attack periods.

This Division is under the supervision of a volunteer recruited from the Springfield staff of an up-state newspaper. He is assisted by six other volunteers recruited from the various information media. No continuing effort has been made to keep the general public informed and interested in civil defense. The deputy director does assist the civil defense director in the preparation of the occasional news releases distributed to the various local information media and in the editing of the newsletter distributed to city officials and civil defense workers. In an emergency he is to report to the emergency operations center where he is to provide liaison with press, radio, and television.

Training Division

The Training Division is assigned responsibility for developing training programs for the various divisions in conjunction with the divisions; and for providing instructors for training programs and speakers for local organizations and groups. This Division is headed by a volunteer long active in civil defense. He has had substantial training and experience, including courses in radiological monitoring, first aid (standard and advanced), shelter management, home protection, and communications (radio) operator. He was the assistant civil defense director before the agency employed a full-time civil defense staff. For business reasons he is unable to devote much of his time to civil defense and, as a consequence, training programs generally are conducted by the separate divisions. He still acts, on occasion, as instructor in the adult education and the home protection courses and serves as a speaker before business, professional, and school groups. A dedicated civil defense worker of long standing, he has, to a great extent, lost contact with the current civil defense program which emphasizes technical skills and knowledge and requires a full-time staff. Although he should be replaced, he is retained in deference to his past devoted service. In an emergency he is to report to the emergency operations center to assist in whatever way possible.

Support Services Divisions

Four divisions have been established solely to support the operating divisions. In addition, the assignments and duties of these divisions — Supply, Transportation, Manpower, and Industry and Installations — are interrelated. Placing them under the immediate direction of one deputy civil defense director would not only reduce by three the number of persons reporting directly to the civil defense director, but it would permit more effective coordination of the efforts of these divisions.

Supply Division

The Supply Division is responsible for procuring, safeguarding, and providing essential supplies, equipment, and facilities required for civil defense activities. It is to seek the cooperation of manufacturers, wholesalers, retailers, trade associations, and farm organizations in locating and inventorying food and storage facilities, determining distribution routes, and distribution points. Lists of strategic supplies and

equipment are to be obtained from the various civil defense divisions and the Division is to locate and inventory such supplies so that they will be readily available in the event of a disaster. The Division is to stockpile strategic commodities and to make agreements with owners of critical supplies in order to insure their availability. Provisions are to be made for radiological inspection and guarding of supplies.

The city purchasing agent is in charge of the Division and, although he has a city staff consisting of an assistant purchasing agent and two clerical employees, he has no civil defense staff. A three man Committee on Resources, consisting of managers of a retail store, a wholesale food distributor, and a bulk gasoline storage company, has assisted the purchasing agent locate and inventory gasoline, fuel oil, and non-perishable food supplies. The Committee is now in the process of surveying blankets, clothing, and cots. No contracts or agreements have been made with manufacturers, wholesalers, or retailers relative to the distribution of strategic materials in the event of a disaster; and, except for 100 blankets and emergency medical supplies for 165 people, no stock-piling program has been undertaken. In an emergency the purchasing agent is to report to the emergency operations center.

Transportation Division

The Transportation Division is responsible for organizing, scheduling, and providing transportation for the expeditious movement of civil defense personnel and material for emergency operations. The Division is to locate and inventory all available means of transportation within the city and keep such inventories current. It is to establish an evacuation plan, including the location of routes to be taken and evacuation assembly centers.

The volunteer head of the Division is an executive in a local common carrier trucking firm and he is assisted by one of his employees. In 1955, the Division prepared an evacuation route plan, but the plan was never tested. In 1957, lists were prepared of transportation equipment owned and located in the city by trucking, bus, and ambulance service firms; the utilities; and the approximate number of railroad cars usually found in the city. Availability of such equipment at various times of the day was also determined. The Teamsters Union Local was contacted and agreed to supply drivers in the event of emergency. These lists have not been kept current and are now of little value. The extensive preparations and studies of the Division were directed toward evacuation. Since the adoption of the National Fallout Shelter Program, the head of this Division has to a great extent lost touch with the civil defense program. In an emergency he is to report to the emergency operations center.

Manpower Division

The Manpower Division is assigned the responsibility of providing supplemental manpower needed for civil defense activities. This Division, in conjunction with the operating divisions, is to determine the probable manpower requirements, locate and

catalogue such manpower, and establish manpower assembly points.

The director of the Springfield Office of the Illinois State Employment Service serves as head of this Division and he is assisted by three members of his office staff. The Division is to work with the Public Education and Emergency Information Division for the recruitment of needed personnel. These assignments have not been carried out except through the maintenance and preparation of records normally maintained by the State Employment Agency. The director and the three members of his staff are to report to the emergency operations center. The civil defense line of succession follows that of normal operations.

Industry and Installations Division

The Industry and Installations Division is responsible for assisting industries and installations formulate plans for sheltering and safeguarding personnel, resources, and equipment; minimizing hazards which may develop upon plant shutdown; and providing counter sabotage and security measures. It is also assigned the responsibility of obtaining cooperation of industries in order to coordinate their productive capacities, facilities, resources, and personnel during emergency periods. This latter assignment is clearly a state and federal responsibility beyond the scope of the average city and only appears in the Springfield Plan because the model Plan was copied from the state Plan.

This Division, headed by a volunteer recruited from a local electrical manufacturing firm, has not carried out any of its assigned duties. No other staff has been recruited.

Engineering Divisions

In actual practice the Springfield civil defense agency does not have an operating Engineering Division. The city's engineering and public works activities are performed by two separate departments, one under the commissioner of streets and public improvements and the other under the commissioner of public property. Neither of these departments has been fully integrated into the civil defense organization, presumably because the commissioners in charge are unwilling to relinquish control of the agencies under their supervision. However, three civil defense divisions — Public Works, Radiological Defense, and Intelligence — provide staff and liaison services to the civil defense director, to the two city departments performing engineering and public works functions, and to the public utility companies serving the city. Despite their dissimilar titles, the civil defense duties of these three divisions are interrelated and, consequently, they should be placed under a single deputy civil defense director. They should retain their separate divisional status, however, to conform to the accreditation requirements of the state civil defense agency. Such action would reduce by two the number of persons reporting to the civil defense director.

At the same time, it would be desirable to integrate the Department of Streets and Public Improvements and the Department of Public Property into the civil defense

organization as a new Public Works Division. If such integration were to occur, the existing Public Works Division should be renamed to correspond more nearly with its actual duties.

Public Works Division

The Public Works Division, according to the city's Civil Defense Plan, is responsible for repairing and restoring facilities and essential utilities, maintaining highways, providing emergency construction, repairing or demolishing damaged structures, and providing heavy rescue equipment and engineering support to civil defense activities. In actual operation this Division is responsible for analysing, interpreting, and plotting all intelligence, including radiological, damage assessment, and population injury; recommending priorities of action to the civil defense director, the city's engineering and public works departments, and the privately owned public utilities; and providing liaison between these agencies.

The Division is headed by a volunteer who is an engineer employed by the state. There are 12 other engineers under his supervision in the Division and all have received radiological plotting training provided by the civil defense agency. In the event of a tactical warning all personnel in this Division are to report to the emergency operations center.

Radiological Defense Division

The Radiological Defense Division is assigned responsibility for training radiological monitors, manning fixed radiological monitoring posts, and reporting readings to the Public Works Division for analysis, plotting, and interpretation in order to provide the civil defense director, the various civil defense divisions, and the general public with advice and guidance.

This Division is under the supervision of a volunteer recruited from an electrical manufacturing firm. The Division has trained approximately 175 radiological monitors, 40 of whom have been assigned to the city's 20 geographically distributed fixed radiological monitoring posts. In an emergency, the remaining unassigned personnel are to report to the various posts and fill in where vacancies exist. The head of the Division is to report to the emergency operations center.

Intelligence Division

The Intelligence Division is assigned the responsibility for collecting and receiving factual information relative to the injury or death of city inhabitants and property damage resulting from natural or man-made disasters. Such information is to be immediately passed on to the Public Works Division for analysis and interpretation.

The head of this Division is a volunteer recruited from a local newspaper. He has a staff of ten persons all of whom are insurance adjusters. Persons experienced

and trained in damage assessment were selected purposefully to insure, insofar as possible, that damage assessment intelligence would be accurate. The head of this Division is to report to the emergency operations center upon the receipt of a tactical warning. The Division's 10 investigators are to remain in shelter until radiological readings indicate that it is safe to emerge for limited periods of time.

Police Division

The civil defense Police Division is assigned the responsibility for maintaining law and order, enforcing emergency rules and regulations, protecting life and property, regulating and controlling vehicular traffic, preventing or controlling panic, directing citizens to shelters, and protecting vital installations and stocks of essential supplies.

The city's Police Bureau has been assigned responsibility for carrying out civil defense police duties. The deputy director in charge of the Police Division is the chief of police who, in peace time, is appointed by and responsible to the mayor. There are a total of 96 commissioned police officers, one for every 850 Springfield residents, and 41 civilian employees in the city Police Bureau, as indicated in the table below.

Police Bureau			
Commissioned Personnel			
Chief	1	Sergeants	11
Assistant Chief	1	Detective Sergeants	2
Supervisors	4	Detectives	10
Lieutenants	5	Patrolmen	62
Civilian Employees			
Dispatchers	4	Clerical	12
Meter Maids	5	Crossing Guards	19
Matron	1		

In addition, there are 80 active, trained auxiliary policemen who are available and will be integrated into the civil defense Police Division in the event of a disaster.

The city does not operate a police academy. New recruits receive 40 hours of classroom training and spend six weeks working in the police lockup and records room and riding with experienced radar and patrol officers. All commissioned officers receive 50 hours of in-service training each year in such subjects as evidence, patrol functions, handling disturbed persons, photography, fingerprinting, court procedure, narcotics, juveniles, community relations, and law. The city has sent one officer to the Federal Bureau of Investigation's National Academy, five officers to the Northwestern University Traffic Institute, 14 officers to the University of Illinois general police course, and two officers to Ohio State University homicide course. Auxiliary police receive 40 hours of classroom training using the prescribed civil defense

auxiliary police manual prepared by the state civil defense agency. Subjects covered include: first aid (standard and advanced), police reporting, weapons, traffic control, public relations, and civil defense functions. All auxiliary police repeat this basic course each year. Auxiliary police receive practical experience in traffic and crowd control during parades, at the state fair, and at civic functions. Only in natural disaster emergencies have auxiliary police been assigned to ride with commissioned police officers.

The city Police Bureau has only one building, a headquarters containing offices, lockup, records room, radio room, locker room, and the civil defense office and emergency operations center. Emergency power is available from a gasoline powered generator which is capable of operating the lighting and radio equipment in the headquarters building. Vehicles assigned to the Bureau include 14 patrol cars, 1 wagon, 3 two-wheel and 3 three-wheel motorcycles, 1 scooter, 1 dog wagon, and 1 car operated by the city's traffic engineer. All of the vehicles, except the scooter, are radio equipped.

The Bureau has not prepared a police annex to the city's Civil Defense Plan nor have officers been given assignments for a shelter stay period. The chief views the Bureau's civil defense duties as an extension of the normal peacetime police duties. He has some knowledge of the civil defense problems but expects to rely upon the civil defense director for advice and direction. In an emergency he is to report to the emergency operations center.

Fire and Rescue Division

The Fire and Rescue Division is assigned the responsibility of minimizing fire damage caused by enemy attack or natural disaster, protecting life and property, and locating and releasing persons trapped in structures, vehicles, and rubble.

The city's Fire Bureau has been assigned the responsibility for carrying out the duties of the civil defense Fire and Rescue Division and the fire chief directs the Division. For rescue operations, the Division receives supplemental assistance from the volunteer civil defense Rescue Squad. The city has a total of 107 uniformed firemen, as indicated in the table below.

Fire Bureau			
Chief	1	Captains	30
Assistant Chief	1	Engineer - Drivers	33
Deputy Chiefs	6	Fire Fighters	36

In addition, there are seven civilian employees: one secretary, one mechanic, and five telephone operators.

The Bureau does not have a fire auxiliary. It was reported that the mayor requested the commissioner of public health and safety to institute an auxiliary fire

program, but opposition by the politically active firemen's union prevented the formation of such an auxiliary, although the commissioner was at first favorably disposed to the request.

The Bureau does not operate a training school. Recruits are given on-the-job training which reportedly includes 450 to 500 hours of in-service training each year. They receive practical experience operating fire equipment at the State Fairgrounds north of the city and at Lake Springfield. Six fire fighters have been sent to arson and bombing school at the University of Illinois and six have received aircraft fire fighting training with the Air National Guard Unit located at Capital Airport.

The city Fire Bureau operates seven fire stations, including a headquarters building containing the Bureau's shops and radio dispatching equipment. None of these facilities provides a Protection Factor of 100 or better. There is no emergency source of power to operate the Bureau's transmitter, although there are wet-cell batteries to provide emergency power for the fire telephone alarm system between the 7 stations and 10 downtown alarm boxes. The chief recognizes the need for an emergency generator and hopes to have funds appropriated in the next year's budget for this purpose. Vehicular equipment operated by the Bureau includes the following:

Pumpers		Aerial Trucks	
750 GPM	2	75'	1
1000 GPM	5	100'	1
1250 GPM	1		
Snorkel 65'	1	Cars	2

The Bureau has no civil defense duties in a pre-attack period. It does conduct a fire prevention inspection program covering all schools, rest homes, apartment buildings, hospitals, and all commercial establishments. It would seem that during such inspections Fire Bureau personnel could check the security of shelter supplies, since the types of structures inspected are those most likely to have fallout shelter facilities.

The Bureau has not prepared a fire annex to the survival plan but the chief stated that he anticipates assigning all fire fighting personnel to predesignated fallout shelters; equipment would be left in the stations. It would be expected that the families of the fire fighters would report to the same shelters. In shelter, fire fighters would have no specific assignment, but it is assumed that they would carry on fire prevention activities. Upon shelter emergence they would report back to their engine houses. The chief expects to go to the city's emergency operations center.

Interestingly, the chief indicated that in the event of a nuclear attack he would report to and take orders from the mayor. This is contrary to the expectations of his peace time superior, the commissioner of public health and safety.

The civil defense Rescue Squad is under the direction of a volunteer who serves as both assistant deputy director of the city civil defense Fire Division and deputy director in charge of the county civil defense Fire Division. The squad is staffed by 26 other volunteers, some of whom are city employees. The squad is highly trained and each year all 27 members repeat the basic, light, and heavy rescue courses and standard and advanced first aid courses. All 27 members of the squad have attended the University of Illinois Firemanship Training School, and all have taken the auxiliary police training course. Six members have taken the radiological monitoring course, three have taken the rescue command course, and three have taken the explosive ordnance reconnaissance course.

The Squad operates the one-ton, panel civil defense rescue truck equipped for heavy rescue operations; a station wagon (loaned by a local car dealer as a "courtesy car") equipped for light rescue operations; and a third truck equipped with a 10 KW gasoline operated generator with fuel for 14 hours. All three of these vehicles are equipped with radios operating on the County Fire and Disaster Net, the state-wide Sheriff Net, and the State Police Net. In addition, the squad has a trailer-mounted three KW gasoline operated generator with fuel for 36 hours and two boats and two 18 horsepower outboard motors. Two members of the squad have equipped their own automobiles with radios operating on the Sheriff Net and State Police Net and six members of the squad have equipped their automobiles with radios operating on the County Fire and Disaster Net. Automobiles belonging to 18 squad members have been equipped with receivers on the County Fire and Disaster Net.

The rescue squad has prepared its own annex to the city Civil Defense Plan. The annex establishes a line of succession for the Rescue Squad and operating procedures for the natural disaster and various nuclear attack situations. In addition, the Squad has located sources of equipment and material with which to supplement its already extensive rescue equipment, and it has established primary and alternate rendezvous and shelter points to which members and their families are to proceed in the event of a nuclear attack. For such an event, the members of the Squad have also stocked food and emergency supplies in their private automobiles.

The relationship between the fire chief and the Rescue Squad is good. However, there has been some ill-feeling toward the Rescue Squad on the part of the city's fire fighters in the past because it was felt that this volunteer organization was attempting to take on some of the duties of the professional city forces. This attitude has apparently changed as the two organizations have had an opportunity to work together during several natural disasters.

Health and Medical Division

The Health and Medical Division is responsible for providing medical care and treatment to civilian casualties of natural or man-made disasters; establishing casualty collection stations; training welfare personnel in medical and psychiatric first aid;

establishing procedures for the maintenance of public health in disaster periods; minimizing effects of radiological, biological, and chemical attack; and providing procedures for the collection, identification, and disposal of the dead.

The leader of this Division is a doctor serving on a volunteer basis. In addition to his civil defense duties, he also is chairman of the Sangamon County Medical Society Disaster Committee and chairman of the disaster committees of the two hospitals in the city. The Division is staffed by volunteers which, in the opinion of the deputy director, is the Division's greatest weakness since volunteers are of questionable reliability. However, there are 6 doctors, 25 nurses, and 32 litter bearers in the Division who are considered reliable and have been trained as teams to set up casualty aid stations and to use the civil defense disaster medical truck.

The Division is primarily natural disaster oriented, although it has prepared an annex to the city's Civil Defense Plan. The annex establishes a line of succession and procedures to be followed under various natural disaster or civil defense situations. Because of the deputy director's close relationship with the two hospitals, an excellent working relationship exists between the Division and these institutions as evidenced by the participation of the hospitals in disaster drills in the last few years.

The two hospitals have a combined capacity of 1,056 beds. Their combined staff, excluding residents, interns, and students, is shown in the table below.

Hospital Personnel

Memorial and St. Johns Hospitals

<u>Personnel</u>	<u>Full-Time</u>	<u>Part-Time</u>	<u>Personnel</u>	<u>Full-Time</u>	<u>Part-Time</u>
Nurses (R.N.)	322	81	Medical and Histol- Technicians	54	11
Practical Nurses	53	6	Dietitians	9	1
Nurses' Aids and Orderlies	432	80	Dietary Aids	14	0
Anesthetists	20	3	Maintenance	56	6
Pharmacists	10	3	Housekeeping	196	24
Inhalation Therapists	11	0	Clerical	197	71
E.E.G. Technicians	3	0	Dietary	145	40
X-Ray Technicians	19	2	Others	101	21

Neither hospital has radio communications with civil defense headquarters, but one does have radio communications with a private ambulance firm. In the event of a disaster it is understood that amateur radio operators are to report to the hospital. The hospitals do not have emergency source of power, but they both can receive power

from either City Water, Light and Power Department or Central Illinois Light Company. Also, both hospitals maintain sufficient drugs and medical supplies for a one month period.

There are no 200 bed emergency hospitals pre-positioned in Sangamon County and no Medical Division or hospital personnel are known to have been trained in their use. The disaster plans of the two hospitals, prepared with the assistance of the civil defense Health and Medical Division, are natural disaster oriented and no plans have been prepared for sheltering patients although the subject has been discussed by hospital personnel. Both hospitals maintain lists of doctors, nurses, and technicians who can be called in the event of an emergency; neither the Health and Medical Division nor the hospitals have attempted to make arrangements with retail or wholesale drug firms relative to the distribution of drugs in the event of an emergency.

The doctor in charge of the Division is to report to the emergency operations center in the event of a nuclear attack; however, a change of orders is being considered to have him report to the radio station to provide information and advice to the general public.

Welfare Services Divisions

Two divisions provide services of a welfare nature — the Welfare Division and the Religious Affairs Division. Because of their related activities, both of these divisions should be placed under one deputy civil defense director thus reducing by one the number of persons reporting to the civil defense director. Also, it would be desirable for the head of Welfare Services to serve in a dual capacity as chief of the Welfare Division, since its staff and operational assignments are the more comprehensive of the two divisions.

Welfare Division

The Welfare Division is responsible for providing food, lodging, clothing, and other essentials necessary to maintain minimum living conditions in disaster periods for dispossessed and relocated persons, evacuees, and civil defense personnel; providing information and guidance to relocated persons and evacuees; registering such persons and aiding in the reuniting of families; and providing financial assistance and other related welfare services.

The manager of the Sangamon County Chapter of the American Red Cross serves as deputy civil defense director of the Division on a volunteer basis. Excluding the manager, the chapter has a full-time paid staff of six persons, three professional Red Cross employees and three clerical employees. There are between 100 and 200 volunteer Red Cross workers who assist the chapter when needed. Civil defense training has been minimal, the Red Cross employees and approximately 25 volunteer workers have taken the basic civil defense course. Located at the chapter is a radio transmitter

operating in the National Red Cross Net and, because the Chapter's building serves as alternate civil defense radio control center, transmitters operating in the Liaison Radio Net, Command Radio Net, and Illinois Mutual Aid Nets I & II. Located in the building is a 10 KW emergency gas operated generator and a portable 5 KW gasoline operated generator.

Chapter personnel have carried on first aid training courses for the civil defense agency and they maintain lists of registered nurses in the county who would be available in the event of a disaster. However, no welfare annex to the city's Civil Defense Plan has been prepared and no assignments have been given for the attack, shelter stay, or shelter emergence periods. It is anticipated that upon shelter emergence the Red Cross would assist the civil defense agency in whatever way possible. The Welfare Division has not carried out its assigned duties and the civil defense director is in the process of arranging for the Sangamon County Department of Public Aid to serve as the county and city Welfare Division.

Religious Affairs Division

The Religious Affairs Division is responsible for maintaining public morale by providing effective spiritual ministrations to the people in time of an emergency and developing plans for the utilization of clergymen and church facilities.

The Division is headed by a minister who is assisted by a seven man committee of ministers, containing representatives from the religious faiths in Springfield. None of these clergymen have received any civil defense training, but the civil defense director hopes to send four ministers to the civil defense staff college at Battle Creek in the near future. To date, the Division has not taken an active role in civil defense affairs and no annex to the city's Civil Defense Plan has been prepared.

Shelter Management Division

A Shelter Management Division was added to the Springfield Civil Defense Plan (and the state's Model City Plan) in about February of 1963. This division is assigned responsibility for developing and instituting a complete shelter program, including: locating, marking, and stocking available shelters; conducting a program to develop additional shelters, both public and private; developing shelter utilization plans; assisting in the selection of shelter managers and staffs; developing and conducting programs for training shelter management personnel; developing and instituting a shelter inspection program to insure that shelters, stocked supplies, and other equipment and facilities are in proper usable condition; and to coordinate activities with other divisions having shelter assignments or responsibilities.

The assistant civil defense director serves as head of the Shelter Management Division. This is a logical choice since the assistant director has had primary responsibility for obtaining licenses and marking the city's shelters and he has received training in shelter management instruction and in structural evaluation.

The Division has not prepared an annex to the city's Civil Defense Plan as yet, but it has prepared a shelter manager training manual and by March 1963, 19 shelter managers had been trained. Additional shelter manager courses were scheduled to begin near the end of that month, and it was expected that by the end of June an additional 100 shelter managers would be trained. Selection of personnel to serve as shelter managers was left to the building owners. A shelter utilization plan and shelter inspection program were being developed; and, in cooperation with the radiological defense division, monitoring personnel are being assigned to shelters.

Warden Division

The Warden Division is assigned responsibility for providing a direct channel of communication between the public and civil defense agency; exercising civil defense leadership at the grass roots level; informing and assisting the public so that they will be prepared to meet emergency situations; assisting the police forces during evacuation or shelter movement periods; and assisting rescue and reconnaissance personnel during shelter emergence periods.

The head of this Division is an executive in a subsidiary of a national manufacturing firm. He and the 1,500 persons in the Division serve on a volunteer basis. The Division has been geographically organized into zones, neighborhoods, and blocks. Two wardens are assigned to each of the seven zone headquarters where they have radio communication with the emergency operations center on the Command Radio Net. In the past, members of this Division were extremely active in civil defense and had three major assignments: keeping the public informed of civil defense activities, assisting the police force during evacuation, and assisting in post-attack recovery and rescue operations. With the adoption of the National Fallout Shelter Program the need for this Division, to a great extent, disappeared. Consequently, the civil defense director, in order not to lose this large body of trained and dedicated civil defense workers, is attempting to retrain and transfer as many persons as possible to other divisions, such as radiological defense and shelter management, where they can continue to contribute to the civil defense effort.

The transfer of Warden Division personnel to these other divisions appears to be highly desirable considering the relatively little useful purpose they now serve. After all of these persons have been assimilated into these other divisions it would seem desirable to eliminate the Warden Division completely, assign its public relations function to the Shelter Management Division, and thus reduce by one the number of persons reporting to the civil defense director.

Unassigned Resources and Services

The municipal resources of Springfield, in terms of manpower and equipment, barely have been tapped for civil defense purposes. Over 60 per cent of the city's full-time employees — including all engineering, public works, and public utility personnel — have no civil defense assignment, as indicated in the table on the following page.

Major City Agencies Without Civil Defense Assignments

Department of Public Affairs		Department of Public Property	354
Traffic Engineering	9	Department of Health and Safety	
Department of Accounts and Finances		Health	11
City Clerks	3	Licenses and Inspections	9
Treasurer	9	Vital Statistics	2
Comptroller	4	Planning Commission	7
Purchasing	3	Housing Authority	25
Department of Streets		Playground and Recreation Commission	12
and Public Improvements	66	Library Board	37

Failure to utilize employees from some agencies, such as Library, Vital Statistics, and the offices of City Clerk and Treasurer, is not too significant. However, if personnel in the Treasurer's Office were added to the unutilized personnel from the comptroller's staff, the Fiscal Division would have less difficulty carrying out its assignments. Also, it would appear desirable to assign the city clerk's staff to the Administration Division, particularly if an effective records preservation program were instituted.

Failure, or inability, to bring Traffic Engineering, Planning, and the departments of Streets and Public Improvements and Public Property into the civil defense organization is most serious. Every effort should be made to integrate these two agencies into the civil defense organization as soon as possible. Traffic Engineering and Planning Commission staffs could provide valuable assistance in the preparation of a shelter utilization plan. The services of the departments of Streets and Public Improvements and Public Property are absolutely necessary for maintenance or restoration of basic utility services and for removal of debris. These two departments have the following vehicular equipment:

Automobiles	31	Platform Trucks	2
Travelall	2	Aerial Ladder Truck	1
Pickup Trucks	21	Pole Derrick Truck	1
Panel Trucks	3	Wrecker	1
Van Truck	1	Trencher	1
Trucks, 1 1/2 Ton	9	Ditcher	1
Trucks, 2 1/2 Ton	8	Back Filler	1
Trucks, 5 Ton	3	Tractors	3
Dump Trucks	3	Front End Loaders	3
Utility Trucks	9	Sweepers	2
Stake Trucks	3	Sand Spreaders	2
Line Trucks	3		

In addition, these two departments have portable equipment, such as paving breakers, electric hammers and saws, portable generators, and compressors.

Neither of these two departments have prepared any plans which would be put into effect in the event of a nuclear attack upon the United States and employees have no pre-attack, shelter stay, or post-attack assignments. It is anticipated that during shelter emergence period, every effort would be made to restore any damaged facilities in order to put the water, electric, and sewerage systems back in operation as soon as possible. During the OPAL exercises, liaison personnel from the Department of Streets and Public Improvements and from the Electrical and Water divisions of the Department of Public Property have reported to the emergency operations center. However, this was an informal relationship; no employee in these agencies has been given the specific assignment of serving as such a liaison link. It would appear of utmost importance for the Department of Streets and Public Improvements and the Department of Public Property to be fully integrated into the civil defense organization as its respective Public Works Division and Public Utilities Division.

The city's Bureau of Health is under the immediate supervision of a doctor serving on a part-time basis. This agency is too small to serve even as a nucleus for the civil defense Health and Medical Division, but the city's six nurses and one bacteriologist should be assigned officially to that Division.

The remaining miscellaneous city employees might be utilized as follows: Licenses and Inspections personnel — Shelter Management Division; employees of the Playground and Recreation Commission — divisions of Welfare, Shelter Management, and Public Works (proposed); and employees of the Housing Authority — divisions of Welfare and Public Works (proposed). The Housing Authority and Playground and Recreation Commission have two pickup trucks, one 1 1/2 ton truck, one refuse collection truck, and three tractors, which could be added to the pool belonging to the departments of Streets and Public Improvements and Public Property.

The telephone company and the private utility providing electricity and natural gas to greater Springfield have not been integrated into the civil defense organization. These two utilities have sent liaison personnel to the city's emergency operations center during OPAL exercises and they have cooperated fully with the Agency during such exercises and at the time of severe weather forecasts. It is assumed that they would establish liaison with the Agency in the event of an attack upon the United States. It is probable that this is all that can be expected since both utilities state that their primary concern is the maintenance or restoration of their services. This is particularly true of the telephone company because of its commitments to the armed forces and the resulting concern for problems not immediately related to those of Springfield.

The telephone company's emergency plan apparently provides for civil defense, as well as natural disaster, emergencies. The company has established an emergency operations center in the city for designated company employees, and it has trained RADEF personnel and is in the process of training shelter managers. The emergency operation center has emergency power and presumably ample land-line communication facilities.

The disaster plan of the electric-gas utility apparently does not deal specifically with nuclear attacks but it is considered adaptable to such a situation. The utility is in the process of setting up an emergency operations center for designated company employees. It has six trained RADEF personnel and four trained shelter managers. The emergency operations center has an emergency generator, radio and land-line communications with its district and producing facilities throughout the state, and a transmitter operating on the civil defense Liaison Radio Net.

These two utilities appear to be well prepared for emergency situations, but it would be desirable to formalize their relationships with the civil defense agency.

The Salvation Army has not been requested to participate in civil defense planning or operations in Springfield. The Army's Spiritual Corps and Men's Social Service Center have a total of 10 ministers and eight full-time clerical employees, plus approximately 85 men in residence at the Social Service Center and approximately 100 members of the church. These two Army units have 1 station wagon, 1 automobile, and 12 trucks. Two facilities operated by the Army are the Spiritual Corps Headquarters, including chapel, offices, auditorium, and kitchen, and the Social Service Center which includes dormitory, kitchen, offices, and warehouse facilities. A new men's residence building under construction is to have dormitory facilities for about 115 men and kitchen and dining facilities for 150 to 225. It is to have fallout shelter facilities in the basement for approximately 325 people. Stored at the Men's Social Service Center are eight tons of clothing, shoes, and blankets. Although the Army has been given no civil defense assignment, and has received no civil defense training, its facilities, equipment, and manpower would be put at the disposal of the civil defense director in the event of an emergency. When Welfare Division plans and organization are developed, they should provide for the utilization of the Army's resources.

INTERGOVERNMENTAL ASPECTS OF CIVIL DEFENSE

Seven separate, overlapping governmental units exercise jurisdiction in Springfield — the City of Springfield, Sangamon County, School District 186, Springfield Airport Authority, Pleasure Driveway and Park District of Springfield, Springfield Sanitary District, and the State of Illinois. An eighth unit, Capital Township, is coterminous with the city but provides no governmental services. The separate existence of these units — each providing services and having taxing and regulatory powers — complicates and makes difficult the development of an over-all civil defense plan and organization based upon the full and effective utilization of governmental resources.

Sangamon County

Sangamon County has about 147,000 inhabitants and an area of 880 square miles. The county does not have corporate status, but it is an administrative subdivision of the state. It is governed by a 47 member board of supervisors elected by townships. In addition to the supervisors, elected officials include: the auditor, recorder, coroner, state's attorney, county clerk, treasurer, superintendent of schools, and sheriff.

The county is the basic civil defense unit in Illinois. The Sangamon County "Civil Defense Plan," based upon the model "County Civil Defense Plan" prepared by the state civil defense agency, is almost an exact duplicate of the Springfield Plan. While "on paper" the city and the county civil defense agencies and organizations are separate entities, they are in fact essentially the same. The county's plan differs from that of the city in only two respects: it has an additional service division, Economic Requirements and Control, and the deputy directors in charge of the divisions of Fire and Rescue, Fiscal, Legal, Police, and Supply are county officials, or volunteers as in the case of Fire and Rescue, rather than city employees. All other county civil defense deputy directors hold corresponding appointments in the city organization. The similarity between the two plans and organizations occurs because one person serves as both the city and county civil defense director. The county, however, has not shown as much interest in civil defense or provided as much financial support as has the city. The county's only regular contribution to the civil defense organization is the salary of one secretarial employee. Occasional special appropriations are made for vehicular or communication equipment.

This city-county civil defense relationship has proved satisfactory in the past and presumably it would be workable in a disaster situation. However, there is a potential for breakdown if a conflict of interest should appear to exist in a disaster situation. To avoid the possibility of such a breakdown, the two agencies should be unified into one. Assuming either a continuation of the existing city-county relationship, or the formation of a joint civil defense agency, the county could make an important contribution to the development of an effective civil defense agency by: (1) increasing its financial

contribution for the purpose of constructing an adequate joint emergency operations center and (2) assigning to the county Department of Public Aid the responsibility for carrying out the duties of the civil defense Welfare Division. Infusion of new blood appears to be necessary to activate the now virtually lifeless civil defense Welfare Division. Such a move would require almost no increase in county expenditures, and, with leadership, employees of the Department of Public Aid, supplemented by the Red Cross, Salvation Army, and, possibly, School District employees, could provide the city and the county a more effective Welfare Division.

The School District

School District 186 includes all of Springfield and certain areas adjacent to the city. It is an independent unit governed by a seven member board elected by the voters to three-year, overlapping terms. Its chief administrative officer is a superintendent of schools appointed by the board.

The District has offered a civil defense course entitled, "Education for Survival," through its Adult Education Program. Offered on two occasions, this course has only been completed by 32 people. The obvious lack of interest on the part of the public is attributed by school officials to the fact that all those people interested in civil defense have already taken the civil defense agency's course in home protection. Of the District's 1,350 employees, only the two instructors teaching the "Education for Survival" course are known to have had any civil defense training.

The School District has no civil defense plan, and it is anticipated that all schools, even those designated as shelters, will be dismissed unless otherwise instructed by the civil defense director. The superintendent of schools attributes the District's inaction to the conviction on the part of the school board that federal civil defense plans are continually in a state of flux, and, consequently, it is useless to develop a plan which, when completed, will be obsolete.

The School District constitutes an untapped community resource. It is imperative that the School board be convinced of the need for civil defense planning and, in cooperation with the civil defense director, a plan be developed applicable to both disaster and nuclear attack situations. The plan should assign duties and posts to designated district personnel and such persons should be trained to carry out their assignments. Also, it would seem desirable to incorporate unassigned school personnel into a reorganized civil defense Welfare Division and to designate schools as registration points for use during a shelter emergence period. Because it has independent legal status, this latter recommendation should be formalized by a mutual aid agreement between the District and the city. Authorization to make such mutual aid agreements between "... political subdivision, municipal corporations or bodies politic..." is provided in the Illinois Civil Defense Act of 1951, as amended.

Special Districts

Springfield Airport Authority

The Springfield Airport Authority owns and operates Capital Airport located two miles north of Springfield. Created in 1945, the Authority is governed by a five member board of commissioners serving five-year, overlapping terms. Three of the commissioners are appointed by the mayor of Springfield and two are appointed by the county judge. Within its jurisdiction, which includes Capital Township and the urban areas of the townships just north and south of Springfield, the Authority has power to tax and issue general obligation bonds. The state legislature also has granted it powers to regulate land use and air space in the area of its facilities.

Airport operations are the responsibility of an airport manager appointed by the Board. He is assisted by two clerical, seven janitorial, one carpenter, and six maintenance employees. The Authority has some vehicular equipment, including one station wagon, three pickup trucks, four tractors, and two 1 1/2 ton dump trucks. It also has two emergency generators, one of 50 KW capacity and one of 37 KW capacity. Shelter space has been licensed and marked in one of the terminal buildings and one airport employee has received shelter management training. However, the airport has no civil defense plan and there is no liaison between the city or county civil defense agencies and the Airport Authority.

Even though the employees and equipment of the Airport Authority would not significantly contribute to the development of an effective civil defense organization in Springfield, it would be desirable if, in conjunction with the city civil defense director, the Authority developed a civil defense plan and formalized a mutual aid agreement with the city.

Pleasure Driveway and Park District of Springfield

The Pleasure Driveway and Park District of Springfield is responsible for planning, building, and maintaining pleasure driveways, recreational centers, and park facilities in Capital Township and the townships just north and just south of Springfield. It is governed by a seven member board of trustees elected to overlapping four-year terms. The District has the power to levy a property tax and, by referendum borrow and issue bonds. It also has police powers within its parks and driveways. The District has 24 full-time employees, including 4 patrolmen and owns 27 pieces of vehicular equipment, including 5 automobiles, 5 pickup trucks, 1 jeep, 5 dump trucks, 10 tractors, and 1 tractor carrier. The two automobiles used by the park police are equipped with radios operating on the city police frequency.

The District has no civil defense plans and no liaison has been established between the District and the city's civil defense agency. A civil defense plan for the District should be prepared in cooperation with the city civil defense director and a mutual aid agreement between the District and the city should be signed. Such an agreement should provide that the District maintenance employees and vehicular equipment would

become a part of a reorganized Public Works Division and the District's patrolmen and radio equipped vehicles would become a part of the civil defense Police Division.

Springfield Sanitary District

The Springfield Sanitary District is responsible for the collection and treatment of sewage in Springfield and its environs. The District is governed by the three member board of trustees appointed by the county judge to three-year overlapping terms. The District employs a total of 21 persons who are responsible for operation of the treatment plant and maintenance and repair of the sewer system. The Bureau of Sewers in the Department of Streets and Public Improvements is responsible for installation and maintenance of branch, lateral, and trunk sewers within the city. Major construction, expansion, and repair of sewerage systems is done by contract. Four or five local contractors have the men and equipment necessary to make repairs to the system and sewer pipe is manufactured in Springfield.

Although there are pumping stations throughout the district, major facilities including an administration building, shops, garage, and treatment plant, are concentrated just north of the city. Its vehicular equipment, located at these major facilities, includes one automobile, one utility truck, one 2 1/2 ton dump truck, and one tractor.

The District has not developed a civil defense plan nor has it established liaison with the city civil defense agency. Because continued operation, or rapid restoration of the sewerage system, is essential for the preservation of health, the Sanitary District should develop a civil defense plan in cooperation with the Springfield civil defense director and should, by mutual aid agreement, place its equipment and manpower at the disposal of the city. This manpower and equipment should become a part of the Public Utilities Section of the proposed Public Works Division.

Mutual Aid Agreements

There are, in addition to these overlapping districts, a number of other special purpose districts in Sangamon County, including 24 fire protection districts. The city's Fire Bureau provides fire protection to nine such districts in neighboring municipalities and communities by contractual agreement and it has mutual aid agreements with the 15 volunteer fire departments serving the other districts. Communications among these 15 volunteer departments, the city fire forces, the civil defense agency, and the county sheriff is by the County Fire and Disaster Net.

State Civil Defense Programs and Guidance

The Illinois Civil Defense Agency had a staff of 29 in fiscal 1962-63, including the director, 8 professional and technical employees, and 20 clerical employees. This full-time staff is supplemented by approximately eight persons receiving vocational training as a part of a state program of rehabilitation for the mentally disturbed. The

Agency has had no regular field personnel except for the part-time mutual aid coordinators who have been assigned the task of providing assistance and guidance to local civil defense directors and officials. In the 1963 legislative session, funds were provided for the employment of nine field representatives and nine secretaries who would be assigned the task of assisting local civil defense directors on a full-time basis replacing the mutual aid coordinators.

The Agency distributes substantial guidance material to city and county directors and to mutual aid coordinators, primarily in the form of information memorandums and administrative letters. These communications deal with state and federal civil defense policies and procedures and are based upon civil defense material distributed by federal agencies, state attorney general's opinions, as well as material prepared by the state Agency. In addition, the Agency provides local civil defense agencies with an auxiliary police training manual prepared by a committee of police officials. It reproduces and distributes copies of federal civil defense training course guides to such agencies. Two items prepared by the state Agency of particular interest are the model City Civil Defense Plan and the model County Civil Defense Plan. The model plans are well considered and are of assistance to local civil defense directors who may have neither the experience nor knowledge necessary to carry-out such a task. However, if adopted in toto, which appears to be the general practice, little consideration may be given to local needs or capabilities. This occurs even in Springfield which has a competent civil defense director. The new field representative could help local civil defense agencies tailor the model plans to fit local circumstances, thus eliminating this rather serious drawback.

The state Agency has an accreditation program for local civil defense agencies. Each city and county, to have an officially recognized civil defense agency, must file with the state Agency (1) a copy of the official appointment of the civil defense director, (2) an oath of office signed by the civil defense director, (3) a civil defense plan, (4) program papers and quarterly reports, and (5) each year, either the director or the assistant director must attend a two day accreditation seminar at state civil defense headquarters. Without accreditation, local civil defense agencies are not eligible for state workmen's compensation, surplus property, and personnel and administration and hardware matching funds. Initial accreditation and reaccreditation requirements, although not excessive, deter some municipalities and counties from establishing a civil defense agency, but these requirements appear to result in higher standards, on the average, for those local governments that do establish an accredited agency.

The state Department of Public Instruction, through local school districts, offers an adult education course entitled "Education for Survival"; and the state Department of Health supervises the Medical Self-Help Program by qualifying, through county health departments, medical self-help instructors. In addition, contracts are being prepared for the state university extension service to teach radiological monitor instructors and shelter manager instructors and to hold conferences for state, county, and municipal officials who have or will have civil defense duties.

The Civil Defense Agency is in the process of establishing an emergency operations center on the campus of the University of Illinois at Urbana. This center will have a Protection Factor of 100. The facility occupied by the agency for normal operations is the state's alternate emergency operations center. It has a Protection Factor in excess of 1,000 however, it is located in Chicago, which might well be a target in the event of a major attack on the United States.

The Illinois "Operational Survival Plan," completed and put into effect in 1958, has not been revised in keeping with the National Fallout Shelter Program although the state Agency has fully adopted this Program. The state Plan establishes policies, procedures, and lines of authority; delineates horizontal and vertical relationships between local, state, and federal agencies; and prescribes the state civil defense organizational structure. Modifications to the Plan incorporating the provisions of the National Fallout Shelter Program, completion of the emergency operations center in Urbana, and the now available field assistance to local civil defense directors, should enable the state to develop and carry on an effective civil defense program at the local level.

Federal Agencies in the Springfield Area

Two federal agencies in the Springfield area have shown a particular interest in civil defense. The United States Weather Bureau Station, located at Capital Airport, works closely with the city's civil defense agency in natural disaster situations as indicated previously. The Bureau has monitoring communication equipment, including a transmitter on the civil defense Liaison Radio Net, and the seven persons assigned to the station are trained in the use of the equipment. Fallout shelters located at the airport will protect station personnel, however, no equipment is located in the shelter and Bureau operations will have to be suspended during a shelter stay period. The Bureau indicated that it would assist the civil defense director by reporting radiological readings and plotting radiological findings if requested and if possible without endangering its personnel.

The civil defense operational plan of the Springfield Post Office provides that employees at the main Post Office, and the parcel post substation, are to secure accountable paper and mail and to move to assigned shelter spaces within the main Post Office building. Of the approximately 500 persons employed by the Post Office, 27 received radiological monitoring training in 1956 and refresher training in 1960. The Post Office has five pieces of monitoring equipment, but has no plans for the use of the equipment or for reporting findings to the civil defense agency. Formal liaison has not been established with the civil defense agency, but the Post Office indicated that it will cooperate in any way possible with the civil defense agency. It is prepared to carry out the registration of displaced persons as circumstances permit. An alternate location for the Springfield Post Office has been selected if operations in the city must be suspended. It would be desirable if Post Office employees could be assigned officially to such civil defense divisions as Police, Shelter Management, and Radiological Defense.

PART V
CASE STUDY
HARTFORD, CONNECTICUT

Hartford

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HARTFORD, CONNECTICUT

Community Profile

Hartford is a compact city with a population of 162,000 persons and an area of about 19 square miles. Essentially rectangular in shape, it has boundaries of approximately four miles in width on the north and south, and five miles in length on the east and west. It is located on the west bank of the Connecticut River, just northwest of the geographic center of the state and midway between New York and Boston. The Standard Metropolitan Statistical Area, formed by Hartford and the 21 surrounding urbanized towns, is part of the continuous urban development which extends along the eastern seaboard from Boston to Washington.

As the state's capital and largest city, Hartford is politically pre-eminent within Connecticut. In it are located the headquarters of the various state agencies, and, in addition, district and field offices of approximately 25 federal agencies including the Treasury Department's Internal Revenue Service and Narcotics Bureau, Veterans Administration, Department of Agriculture, Department of Commerce, United States Army Corps of Engineers, and Social Security Administration. Its social and economic influence, except for the insurance industry, is limited to its metropolitan area.

Its Economy

Hartford is nationally known as an insurance center. A total of 36 companies, with assets exceeding \$15 billion and employing approximately 26,000 persons locally, have home offices or American headquarters in the city. However, the city has a very substantial industrial and commercial economy. There are over 400 manufacturing plants within the city, 21 employing more than 250 persons. There are another 24 plants each employing in excess of 250 persons in the surrounding towns. Major types of industrial production in Hartford include aircraft parts, chemicals and paints, electrical and mechanical machinery, fabricated metals, firearms, food processing and bottling, furniture, primary metals, rubber products, scientific instruments, and textiles and wearing apparel.

Hartford is served by one railroad which provides direct passenger and freight service to New York and, by way of, Springfield, Massachusetts, to Boston and the middle west. The railroad also provides freight service between Hartford and a number of surrounding smaller cities. A total of 11 major state and federal highways and expressways converging on, or passing through the city, provide five interstate and eight intrastate bus companies with access to the city. Approximately 200 common carrier trucks are domiciled in the city by 15 trucking firms having terminal or headquarters facilities in the city and another 1,500 trucks regularly serve the area although

they are not quartered in Hartford. Bradley Field, a state-owned airport 14 miles north of Hartford, provides eight passenger and freight airlines with access to the city. In addition, Brainard Field, within the city limits and also state-owned, has facilities for private and chartered planes and fixed-base operations. Water transportation is available to the city on the Connecticut River which is maintained by the United States Army Corps of Engineers at a minimum channel depth of 15 feet. Waterborne commerce on the river totals approximately three million tons annually, mostly in bulk products such as coal and fuel oil.

Its Government

County government in Connecticut was finally abolished in 1960, and the town is now, as it has always been, the basic local governmental unit in the state. Hartford, a consolidated city and town, has a council-manager form of government provided by legislative charter. The significant elected officials include nine councilmen, the city treasurer, and nine members of the Board of Education. Of minor importance are two registrars of voters, five selectmen, and seven constables.

The nine councilmen and the treasurer are elected to two-year terms at the biennial, non-partisan municipal election held in even numbered years. The candidate for the common council receiving the largest number of votes serves as mayor for his term of office. The mayor is recognized as the head of the city government for ceremonial purposes; he presides at council meetings and has the right to speak and vote on all issues before the council, but he has no veto power. The council designates one of its members as deputy mayor to serve as mayor in the absence or disability of the mayor.

The town and city clerk, the corporation council, and the city manager are appointed by the common council. The heads of all other city departments are appointed by and responsible to the city manager, including the assessor, chief inspector of licenses, city engineer, fire chief, police chief, traffic engineer, and the directors of civil defense, finance, health, housing, parks and recreation, personnel, public works, and welfare. All except the assessor and personnel director, who are in the city merit system, may be removed by the city manager for cause.

In addition to these administrative officials, there are 16 independent, or semi-independent, administrative, advisory, appeal, and examining boards and commissions within the city government. Of these, six, including the Personnel Board, are appointed by the common council; seven, including the City Planning Commission, Hartford Housing Authority, and Redevelopment Agency, are appointed by the city manager; and three, the Board of Education, the Board of Selectmen, and the Registrars of Voters, are independently elected.

The nine members of the Board of Education, elected to staggered six-year terms of office at the biennial municipal election, are responsible for the control and

management of the city's school system, except that they must submit the school budget to the city manager and the common council for review and approval, and they must operate the system within the total amount appropriated by the council.

The other two elected bodies, the Board of Selectmen and the Registrars of Voters, have no municipal duties other than the certification and preparation of the lists of eligible voters, in conjunction with the town clerk. The five members of the Board of Selectmen and the two Registrars of Voters are elected to two-year terms coincidentally with the odd year state election.

The remaining elected officials, the seven constables, serve for four years and act only as process servers for the courts and have no municipal functions.

A simplified table of organization for the government of Hartford is presented on the following page. The table illustrates several interesting features of Hartford municipal government. The Hartford school district is financially an integral part of the city government. This relationship, the rule rather than the exception in Connecticut, is common only in New England. Communities in which the school system is financially integrated into the city government are better able to plan their fiscal affairs effectively than are communities in which these two local agencies are independent of each other and both empowered to tax, borrow, and plan their facilities requirements and building programs without common direction or coordination.

The heads of 14 agencies, which vary in size from two employees in the Department of Housing to 468 in the Police Department, report directly to the city manager. This exceptionally large span of control, combined with the manager's small administrative staff of one executive secretary and one secretary, places a heavy burden upon the manager and makes effective administration of city affairs more difficult than it would be if departments were consolidated or the manager's staff larger. It would be more practical to increase the manager's staff since state legislative action to amend the charter is necessary to reduce the number of departments.

The traffic engineer and his assistants are assigned to the office of city manager by the city charter, which designates the manager as "traffic authority of the city." Traffic Engineering is the only agency officially designated as a staff agency. The Civil Defense Organization, which should act in a staff capacity, is treated, and serves, as an operating agency.

Welfare services in Hartford are a municipal function. This governmental activity, generally assigned to counties, always has been a municipal function in Connecticut because its county governments did little more than operate the courts and penal system. By virtue of its responsibility for welfare services and its fiscal control over the school district, the city has direct administrative responsibility for all local government functions except the courts of original jurisdiction. There is no real municipal court in Hartford because the minor court system in Connecticut is an

integral part of the state judicial system. The four judges of Hartford's City and Police Court are nominated by the governor and appointed by the General Assembly.

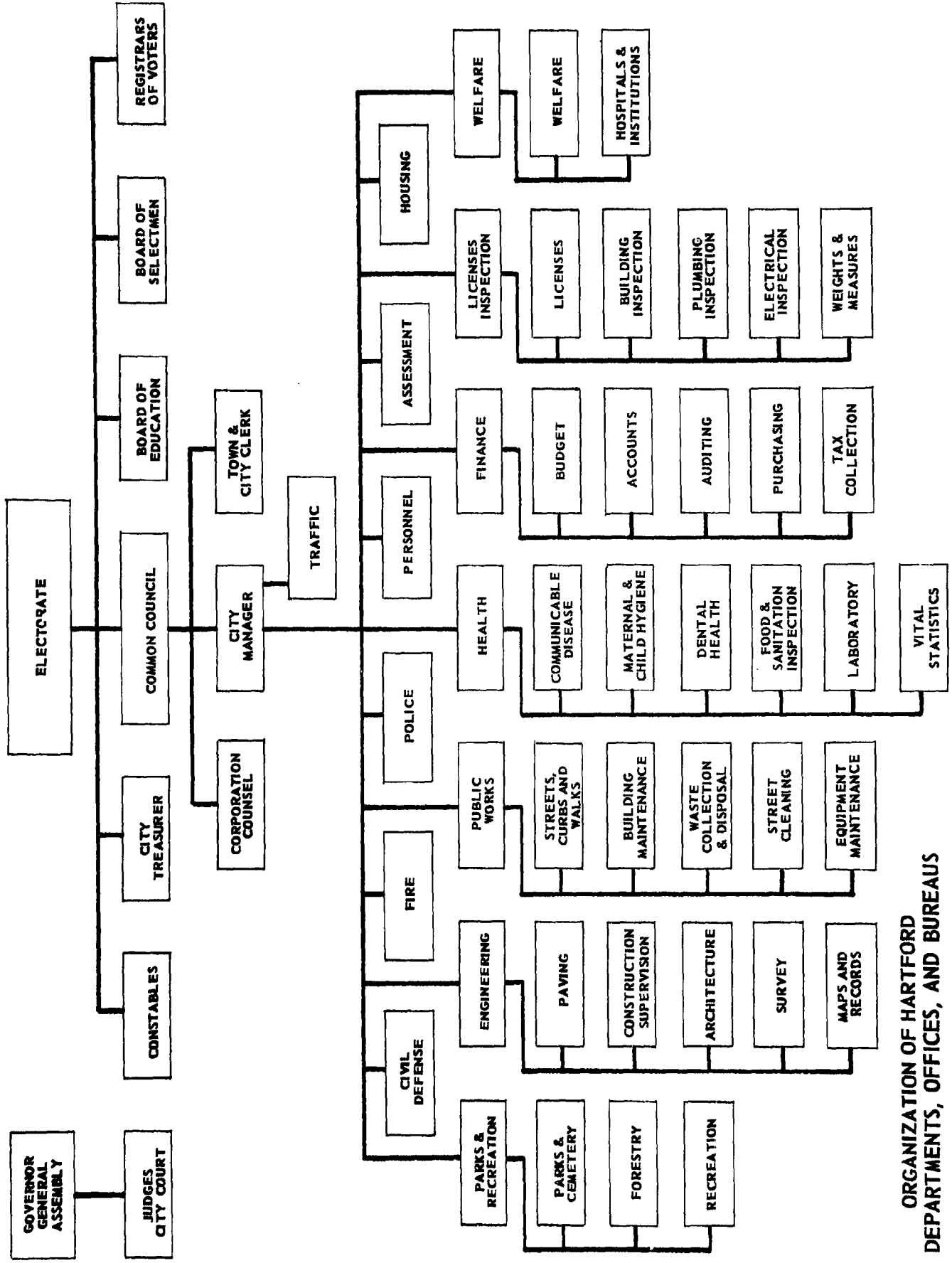
It should be noted that Hartford has an effective merit system administered by a director of personnel appointed by the city manager. The Department of Personnel is responsible for recruitment, examination, classification, and pay plan administration. Review and appeals from decisions made by the director are heard by the Personnel Board appointed by the common council. All municipal employees are under the merit system except those in the unclassified service which is comprised of elected officials, members of boards and commissions, officials appointed by the common council, heads of departments appointed by the city manager (except the city assessor and the director of personnel) and one confidential secretary in each such department, employees of the Board of Education, executive secretary to the city manager, assistant corporation councils, assistant city treasurer, doctors and dentists in city hospitals and institutions and in the Department of Health, patient or inmate help in city institutions, and persons employed for temporary or special purposes. All other city employees are in the classified or merit system and are appointed and promoted on the basis of merit and fitness. Persons in the merit system cannot be suspended for more than 30 days, reduced in pay, or removed except upon written notice and review, if requested, by the Personnel Board.

Its Fallout Shelters

It is unlikely that any city in the United States is better endowed with fallout shelters than Hartford, both in terms of the number of spaces available to the peak population of the city, and the proximity of the buildings in which the space is located to the places of employment or residence of the people. As early as January, 1963, the Hartford civil defense agency had obtained licenses from building owners for 499,667 spaces in 196 buildings. None of these spaces were below a Category 4 (PF 100) and no effort to license Category 2 & 3 shelter space was contemplated. There are, altogether, over a million shelter spaces in Hartford that could be licensed and stocked, but it is the intention of the city to be selective and use only those spaces with high protection factors that are favorably located with respect to the distribution of the people.

Hartford has this wealth of shelter space because it is both the capital of the state and the center of the Nation's insurance industry. These activities require large amounts of office space and their buildings are high-rise, of heavy stone or brick construction. Dwelling units also offer fallout protection because 96 per cent of the 57,653 units have basements, and apartment houses are the rule rather than the exception -- over 40,000 housing units are in structures of three or more units and 13,600 are in structures of 10 or more units.

The peak work-day population is about 215,000 and is concentrated in the downtown district where the bulk of the shelter spaces are clustered. At night, the population falls to 162,000, located largely outside the central business district. This poses less



ORGANIZATION OF HARTFORD
DEPARTMENTS, OFFICES, AND BUREAUS

a shelter planning problem in Hartford than in many other cities because the business district is in the middle of a very compact city with reasonably regular boundaries. The main street arteries converge on the business district and only the residents of the outermost corners of the city are more than 30 minutes walking time from the perimeter of the central business district. No section of the city is isolated by wide rivers or other natural barriers to movement.

There are eight towns with a combined population of slightly over 200,000 lying in a ring around, and adjacent to, the city of Hartford. Only one fallout shelter in one town had been licensed. All of these people could be sheltered by Hartford's surplus shelter space and, properly planned, their movement from the bedroom communities to the city should be accomplished in one hour. The Hartford civil defense director has a positive and well-conceived opinion that it would not make sense for Hartford to plan for the utilization of its shelters without taking these people into consideration. He was of the further opinion that the civil defense program should be on a regional basis and the costs shared by the city of Hartford and the towns whose people would use this shelter. Any planning done by the city to shelter only its own people would be set to naught by the unplanned influx of these suburbanites in the event of an actual attack warning.

Hartford marked its own shelters, rather than wait for the work to be done by the Bureau of Yards and Docks, in order to expedite the completion of this phase of the program. The work was done by the assistant civil defense director in consultation with the architect engineering firm who had made the Hartford shelter survey for the Navy's Bureau of Yards and Docks. Difficulty had been encountered early in the marking program with signs that would not remain affixed to the face of buildings. A decision was made to mount the exterior shelter signs on posts out on the curb line where they were both more visible to the public and more securely fixed. In January, 1963, none of the shelters had been stocked with federal supplies and the civil defense director had not determined how this task would be accomplished. By September, over 200,000 spaces had been stocked by the building owners and the state buildings were in the process of being stocked.

Its Special Resources

Hartford has very few special resources with which it could sustain itself if cut off from its regular sources of supply. The civil defense director reported that an inventory was made of Hartford's food supplies and it was calculated that there was enough food in the city to last for three days at the normal rate of consumption. Although the completeness or accuracy of this inventory may be challenged, it is, at least, indicative of the extent to which the city constantly is dependent upon outside sources of supply.

The Hartford Gas Company depends on two supply-line companies for the gas required to support Hartford during the winter months. The company can manufacture

enough gas for summer use only and has very little capability for sustained generation of even this amount. There is no fallout protection at its installations, no significant reserve supplies of gas, and only limited reserves of fuel with which to generate gas.

Water is supplied to the city by the Metropolitan District of Hartford from reservoirs located as much as 50 miles from the city and holding reserves of 48 billion gallons. Two of these reservoirs have water intakes capable of drawing water from different depths. By varying the depth of the water intake, it would be possible to find levels where there was pure water not contaminated by radioactive fallout. The upland location of these reservoirs makes it possible to distribute water by a gravity flow system. There are four trained radiological monitors at the water treatment plant with monitoring equipment and protection from fallout.

The Hartford Electric Light Company operates two generating plants using coal, oil, or gas for fuel. There is about a seven-month coal supply on hand and both plants offer the workers protection from fallout. The company has interconnected lines with other electric utilities throughout New England and power can be shifted from one area to another.

The major insurance companies that make their home in Hartford constitute, perhaps, its most valuable resource for civil defense purposes. These companies are extremely conscious of their responsibilities to their own employees and to the community. They have, in many cases, moved ahead of the municipal civil defense program in developing their own disaster plans, preserving their own vital records, training their employees in emergency duties, and developing and stocking their shelter facilities. The Travelers Insurance Company radio station (WTIC) serves the area as the CONELRAD station and has a transmitter located outside of Hartford with fallout shelter facilities and an emergency diesel generator. An announcer and an engineer are available there 24 hours a day to render this emergency service to the community as reliable as possible.

Its Problems

Hartford considers itself a likely target in the event of an attack upon the United States because it is the central city for the major population concentration in Connecticut and the capital of the state. Hartford and 12 satellite towns around it have a combined population of over 400,000. The "Civil Defense Operational Survival Plan for the City of Hartford" cites Pratt and Whitney Aircraft, located just across the Connecticut River from the city, as a major target. It is unlikely that this facility would be considered of priority importance by the enemy compared to the retaliatory potential of the United States Submarine Base at Groton, about 45 miles southeast of Hartford, which serves as the home port for the Atlantic Submarine Force, including the nuclear-powered Polaris Missile Submarines.

Hartford must expect heavy concentrations of fallout contamination even if it is spared the direct effects of a nuclear detonation. It lies in the path of the prevailing winds and accompanying fallout from the major metropolitan concentrations in New York, New Jersey, Pennsylvania and the more distant in origin, but still dangerous, fallout from the midwestern cities concentrated around the Great Lakes. Any conceivable pattern of nuclear attack on the United States is likely to result in the need for an extended shelter-stay period in Hartford.

The "State of Connecticut Operational Survival Plan for Wartime Emergencies" was completed in May of 1958 and is already obsolete. This Plan, which is supposed to govern all of the local plans in the state, is based upon the evacuation of the metropolitan target areas to designated reception areas. Although Hartford went ahead and developed an evacuation plan under the direction of its traffic engineer as evacuation officer, it never accepted the evacuation concept. The lack of confidence in evacuation was a direct result of the city's knowledge that the reception areas lacked both the organization and facilities for taking care of evacuees. The annual report of the Hartford Civil Defense Organization of April, 1959 commented as follows:

Our primary concern in the past has been the question of evacuation. The State Survival Plan, ... has the evacuation policy in it, under certain situations. ... We do not intend to call a tactical evacuation, till such time as the towns in the reception area are able to give our evacuees proper shelter and protection.

The National Fallout Shelter Program, then, found a very receptive city in Hartford. The conflict between the State Survival Plan and the National Fallout Shelter Plan has created a planning impasse for Hartford that only modification of the State Plan can correct. In April of 1962 the director of the Hartford civil defense organization reported to the city manager as follows:

We do believe that at our local level, on an operational basis, that our planning has been progressive and as sound as can be expected, what with the unsettled and sometimes mystifying approach to the various problems that confront us by higher echelons in civil defense as state and federal authorities.

CIVIL DEFENSE PREPARATIONS

Building the System

Continuity of Government

Hartford has not adopted a continuity of government ordinance, and therefore, vacancies in all elected and appointed posts occurring during an emergency period must be filled in the normal manner provided by the city charter or state statute. The city manager indicated that the council would have to present a charter amendment, for passage by the state legislature, giving the city this authority because the state had not enacted any general enabling statute for the continuity of local government. According to the corporation council, it was too late in the current session of the General Assembly to amend the charter as needed. Although it was not possible to obtain specific reasons from city officials, it was conceded that this problem had become politically sensitive and there had not been a meeting of minds among the members of council, the corporation council, and the city manager about the provisions that should be made for emergency succession.

The city charter provides that the corporation council is to act as city manager in the absence or disability of the manager or if the office becomes vacant for any reason. He serves until the city manager returns to duty or a successor is appointed by council and qualified. Vacancies in the city council and all elective city offices are to be filled by majority vote of the council for the unexpired portion of the term. The charter is not specific about the number of councilmen required to be present to make appointments to fill their own vacancies and, conceivably, one survivor could start a chain of appointments to reconstitute the body. A vacancy in the town and city clerks office is to be filled by the deputy clerk and assistant clerks according to state statute.

The emergency succession to the offices of heads of city departments and bureaus is provided only by the normal chain of command, and to key positions in the civil defense organization by the chains of command established in the several annexes to the city's Survival Plan. There is a need for more precise formulation of the order of succession to these posts because it was evident that many key people did not understand their relative position in this order.

No arrangements can be made by the city for the continuity of the judicial function. All of the courts in Connecticut are directly responsible to state authority and the judges are appointed by the governor.

The only persons who report to the city's emergency operations center in a disaster or attack situation are those responsible for the direction or furnishing of operating services. The members of city council are to take shelter like any other citizen. The

manager felt that their presence at the emergency operations center was unnecessary, and, because they would be too apt to interfere with the conduct of emergency operations, not desirable. The civil defense director indicated that they would be split in three different shelters, the mayor and two councilmen in one shelter, three councilmen in another shelter and three councilmen in a third shelter. The shelters selected would be as widely separated as possible, one from the other, to increase the likelihood that at least one of the councilmanic groups would survive an attack. The corporation council believed that at least a majority of council should be at the emergency operations center to exercise emergency legislative power. He recognized, however, that the city administration wanted to spread them among three shelters.

The town and city clerk was made chairman of a records preservation committee in 1951, at the time of the Korean Conflict. All of the vital records maintained by the clerk have been microfilmed up to 1962, but the city has fallen five years behind in the microfilming of records in the custody of other offices. Microfilmed records are stored at a location on the outer edge of the target area and are not available at the emergency operations center. Engineering detail diagrams of utilities and facilities are to be brought to the emergency operations center at the time of a warning. The corporation counsel has not reviewed the adequacy of the microfilming program to determine whether or not all of the essential records are being microfilmed and whether records being microfilmed are indeed essential. Any microfilming program on a selected basis should be given this review. The drawings and records needed for post-attack recovery operations should also be duplicated and stored at the emergency operations center because the transfer of these documents from their normal working locations is too unreliable at the time of an emergency.

Emergency Powers

The city manager has such comprehensive control of the entire city administration that there is no need to give him additional emergency authority for the management of the civil defense operating forces or city departments. The city charter gives him the power, whenever the interests of the city require, to assign any employee of one department to the temporary performance of similar duties in another department. Although he may not remove one of his appointees except upon written notice and an opportunity to be heard, he may suspend such an appointee from duty for not more than 30 days. This provision serves to give him ample authority to make personnel changes in key positions on instant notice to meet special emergency requirements.

The absence of any authority giving the city special and additional extraordinary powers at the time of an emergency is very critical in the light of Hartford's present intention to disperse the city councilmen and not bring them together as a body at the emergency operations center during an attack or post-attack period. There is little likelihood that they could act effectively and in a legal manner even if they were brought together, because the charter provisions for emergency adoption of an ordinance are extremely inadequate. The charter requires seven affirmative votes

out of 9 for the adoption of an emergency ordinance and also requires that the ordinance be published. The corporation counsel recognized that a special emergency procedure should be provided by an amendment to the charter to simplify and streamline the manner in which measures designed to cope with the unanticipated problems caused by an attack might be adopted. No draft of such an amendment ever had been considered or initiated. When these kinds of problems were posed to members of the administration, they expressed the feeling that provisions for judicial and legislative continuity, and extra emergency legislative procedures or powers, were refinements the city could do without. The exigencies of the situation, they held, would permit the city to take whatever action was appropriate and people would not insist on niceties of procedure or raise legalisms at such a time.

Municipal Civil Defense Agency

The director of the Hartford civil defense organization is an assistant fire chief. He carries out his duties as civil defense director in addition to his regular duties in the Fire Department. His civil defense assignment is considered a part-time collateral duty and he renders it without additional pay. He has two full-time civil defense staff members to assist him, an assistant director and a secretary.

The civil defense director is the only person on the staff to have received civil defense training. He has taken the civil defense management and radiological monitor instructor courses. As a member of the fire department, he has had the fire service training course offered by the Connecticut Department of Education, and he has taken a special course in public relations at the University of Hartford. The director did not see any value in his assistant director taking any civil defense training courses. The assistant director evidently was not going to be given any operational responsibilities during an emergency and his activity was to be limited to carrying out routine assignments and marking the shelter spaces.

The civil defense organization's offices are located in the main downtown fire station but the organization is not considered part of the Fire Department. It is a separate office directly responsible to the city manager. The city manager conceives of civil defense as a continuation of city government under emergency condition, and he conceives of the role of the civil defense organization as primarily a planning and coordinating agency to facilitate the full mobilization of all the city's resources. He has sought to avoid making major commitments of funds for either the civil defense staff or special emergency equipment. Although the demands of the shelter program alone will extend beyond the capability of the staff, they, as yet, have not been given needed augmentation from the operating departments of city government.

This limited civil defense organization is responsible, according to its director, for developing and maintaining the public warning systems, establishing the standard operating procedures for the local civil defense forces, complying with federal and state policies on civil defense, developing the fallout shelter plan, training and

instructing the public on civil defense plans, maintaining and inspecting the civil defense property in the control of the city, and strengthening the paid city forces with volunteers. To carry out these peace time activities, the organization is very dependent upon volunteer assistance and the participation of the regular city forces. Hartford must have a full-time professional civil defense director and a more adequate civil defense staff if these responsibilities are to be effectively discharged. In view of the level of support given the agency by the city, the progress it has made in developing a program is remarkable. The director has called attention to the program's deficiencies and the city's lack of preparedness each year in his annual report to the manager.

Financing Civil Defense

Hartford derives 80 per cent of its government revenues from the property tax. The city council has been engaged in a determined drive to cut expenditures and reduce the property tax rate. The rate for the fiscal year 1962-63 had fallen to 42.9 mills from the 1961-62 fiscal year rate of 49 mills. City council and the manager were engaged in a heated controversy concerning the budget and tax rate for 1963-64 at the time this survey was conducted.

City allocations for civil defense have trended sharply downward since a high of \$100,000 was appropriated in 1951-52. The peak expenditures for civil defense occurred in 1952-53 when the city spent \$77,000 of its own and an additional \$9,000 it received from matching funds. In 1961-62, the city spent only \$10,600 of its own, about 6.5 cents per capita, and \$7,200 in matching funds. In the face of the economy drive by city council, it is unlikely that there will be any increase of the appropriation for civil defense or sufficient money available in the budgets of the operating agencies to absorb the greatly expanded program required for shelter stocking, continuing maintenance and periodic inspection of these supplies, and developing appropriate shelter utilization plans. One possible alternative to total city financing should be explored. The city might be able to enter into agreements with the suburban towns whereby the towns would assume a proportionate share of the cost of the shelter program in return for the use of the Hartford shelter system by their citizens.

Program Activity

Training and Public Information

There are too few employees on the staff of Hartford's civil defense organization to permit the agency to administer or conduct a civil defense training program or public information program of wide coverage with its own staff. The civil defense director promotes, encourages, and stimulates the city departments and volunteer civil defense units to conduct appropriate training programs. It is claimed that courses in radiological monitoring, medical self-help, first aid, rescue, and mass

feeding continually are being carried on. It was not possible to evaluate this training, either qualitatively or quantitatively, because records showing the number of people trained and the number of courses conducted are not readily available. A compilation of the civil defense training claimed by the active city forces discloses that their preparations for emergency duty have made very little progress in terms of formal civil defense oriented courses of instruction.

Civil Defense-Related
Training Claimed By Active
City Forces

<u>Course</u>	<u>Trained</u>	<u>Course</u>	<u>Trained</u>
Basic Civil Defense	2	First Aid	42
Shelter Design Analysis	3	Arson and Bombing	7
Radiological Monitoring	28	Fire Auxiliary	30
Rescue	26	Police Auxiliary	37

All police recruits receive four hours of civil defense training and instruction in first aid, and the Police Department intends to "start soon" on a basic, 68 hour civil defense course to be required of all auxiliary policemen and police recruits which will cover first aid, civil defense riot control, self defense, arrest, search and seizure, note taking, government, traffic, and police communications. The civil defense director intends to initiate a shelter manager course and begin the Adult Education Program for Civil Defense sponsored by the Connecticut State Board of Education. A great many volunteer civil defense personnel undoubtedly have received training which is not reflected in the figures that appear here. For example, the utility companies alone claim to have 88 employees trained in radiological monitoring. Unfortunately, the lack of records maintained by the city, the high turnover of volunteers, and the hopeless obsolescence of the civil defense personnel rosters make it impossible to determine how many of these people have been trained and how many still would be available to the community in the event of an emergency.

The civil defense agency staff is assisted in its public information program by one of the announcers from a local radio station who serves as public information officer. It also supplies speakers to women's organizations, social clubs, and PTA groups through the Women's Division of its Warden Service. Wallet-size cards explaining the warning signals were distributed by the Boy Scouts to the citizens of Hartford. A newsletter to the citizens was distributed at one time but this has been discontinued. A supply of current federal civil defense brochures is kept at the civil defense organization's office and these are distributed to people in the community when requested.

Tests and Exercises

The Hartford "Bell and Light" warning system is tested each month and communications drills are held once a month also. The city's civil defense organization has participated in the "Operation Alert" exercises each year but it was not until the exercise held in 1961 that the Hartford civil defense director was able to report a satisfactory exercise. Previous to this OPAL exercise, Hartford always had been a target city and was "eliminated" in the early stages of the problem. Some heads of city agencies assigned to the operations center had fallen into the practice of sending representatives in their place.

Shelter Program

The civil defense director was hopeful that the building owners and managers would assume the burdens of providing trained shelter managers and the support services to shelter management, stocking the shelters, and providing their own security for the stocked supplies. The federal warehouse is within 25 miles of the city, and so, provision had to be made to pick up the supplies at the warehouse and move them into the shelters. This task was so overwhelming that it appeared unlikely that either the civil defense budget, or personnel and equipment borrowed from other city departments, would be adequate to do the job without a major volunteer effort. The willingness to accept civil defense leadership and the community spirit of Hartford businesses and industries was again demonstrated. The civil defense director reported in September, 1963, that survival supplies for over 200,000 spaces had been stocked. The city used its own resources to stock its own buildings and the others were stocked by the building owners. The State of Connecticut still is stocking its buildings, so the total number of stocked spaces is likely to be in excess of 250,000 in a short time.

The city has not developed a shelter utilization plan, as yet, but it has been selected by Region 1 staff for development of a prototype plan.

School Fingerprinting Plan

Hartford has a continuing program to fingerprint all school children so that their identification may be established reliably following a disaster, and families may be re-united. As many as 5,000 children are fingerprinted every year under this program. One set of fingerprints is kept by the Police Department and a second set is stored by the state civil defense authorities.

Facilities for Emergency Operations

Attack Warning System

Hartford is blanketed by a network of 60 attack warning sirens located on public buildings, for the most part. The city has recently completed the remounting of these

sirens on metal supports, rather than the former wood supports, to reduce maintenance costs. There are 31 two H.P. sirens, 27 five H.P., and one 10 H.P. siren. A three H.P. siren is connected to the system but is owned by an industrial establishment. Although most of these sirens are of low horse power, their wide dispersion throughout the city permits the warning to be audible to all of the people.

There is concern about public confusion in understanding the warning signals and taking the action called for by the signals. This concern is well founded because the city's survival plan provides different warning procedures and different combinations of siren sounds, "Bell and Light" signals, and CONELRAD instructions for six different attack warning situations based on the time an attack may be received. The city tested a voice warning system it hoped would help solve this problem in January, 1962, but the system did not meet expectations. The 1962 annual report of the Hartford Civil Defense Organization commented as follows:

The local Civil Defense control center will use the amplifier system of the Connecticut Bank and Trust Company atop 750 Main Street to give emergency voice commands. The amplifier system, used for the bank's chimes, is hooked up to a remote control unit in Civil Defense Headquarters. Director Shortell stated that voice commands are the ideal warning method. People sometimes become confused about signals, no matter how much publicity is given to them. If a voice can tell the people to "take cover" or "go home", there is much less confusion. There are "bugs" in the system, but when they are worked out there will be another test.

The attack warning sirens are controlled from the Hartford Fire Department headquarters and the emergency operations center. The fire dispatchers serve as the Warning Division and the dispatch center serves as the State Warning Point for the Hartford metropolitan target area and the Hartford Warning Point. The "Bell and Light" alarm system, owned and maintained by the Bell Telephone Company, is also triggered from the Hartford Warning Point by the fire dispatchers. Thirty establishments in the Hartford area have these devices installed. They are located in major office buildings and industrial plants or in police and fire headquarters in the surrounding suburban towns, for the most part.

The dispatchers at the Warning Point also initiate the telephone fan-out procedure which is an important part of the Hartford plan to alert civil defense forces in all pre-attack warning situations. The fan-out is designed so the dispatchers may call and inform the head of each civil defense service, or one of two designated alternates if the first call cannot be completed, of the nature of the warning. The person who receives the call is in return responsible for calling the individuals or heads of sub-units under his direction. The telephone company has provided a system of line load control whereby non-priority subscribers may be dropped from service as telephone

circuits reach peak capacity during an emergency period. Those persons who are to be called in the fan-out have been assigned priorities so their calls will reach them and they may then call their staff members. The telephone fan-out has added importance for Hartford because so many of its key civil defense people, both volunteers and city employees, live outside the city. There are 678 city employees living out in the towns according to the city's personnel records.

Emergency Operations Center

The Hartford emergency operations center is located in a fire station in the northwest corner of the city. The working and living spaces assigned to the civil defense forces are in the upper floors of this three-story, stone and brick building. The building offers no appreciable protection from fallout, but there is a basement with some usable space which could be improved to a PF of at least 100 by placing sand bags against the doors and windows and filling the window wells with earth. There is a small supply of food in the station used by the regular firemen and about 300 gallons of water in the boiler and pumper housed. The building will be stocked with federal survival supplies if a PF of 100 can be achieved. The 15 bunks used by the firemen are available to the civil defense staff during an emergency.

The police, fire, health, welfare, public works, and radiological defense services have desk type booths with landline telephones. There is a command table for the manager, civil defense director, and corporation council. The chief of the radiological defense service will be at the center, but his plotting and analysis team will be at the new Hartford High School which has a shelter with a PF of 1,000. Communications between the school and the center is now limited to telephone landline.

No space is provided for the city council or any judicial officer. No vital records are pre-positioned and engineering diagrams deemed necessary are to be brought to the center by the personnel from the services that would require them.

The center has radio receivers and remote transmitters for all the radio frequencies now available. A 60 H.P. generator is located in the basement to provide standby power for the electronic communications equipment and the attack warning sirens. A 275-gallon tank holds enough fuel to operate the engine to the generator for about one week. The Hartford emergency operations center has so little potential for development that there seems to be no point in continuing to use it. The basement of City Hall offers a much better location for the center. Because the city is so compact, little advantage is now derived from locating the center on the periphery. It might just as well be located in the main government offices in the downtown section as far as its ability to survive a nuclear detonation over Hartford is concerned. The City Hall location would at least offer fallout protection, more adequate working space, and access to most of the records that might be helpful in the conduct of recovery operations. It is also much closer to the regular working locations of most of the key civil defense officials. The only satisfactory facility, of course, would be an emergency

operations center with blast protection. If the city is ever able to develop a truly area-wide civil defense program, this center should be constructed at the outer limits of the metropolitan target area.

Communications

Hartford depends very heavily upon landline telephone for its emergency communications. It has only three city radio systems in use at the present time -- the police, fire, and public works frequencies. The Police Department has a primary dispatching frequency and a reporting frequency used in duplex. A point to point frequency for communications with the mutual aid police departments in the Hartford area has been authorized but it has not been installed. The Fire Department has one frequency for dispatching and reporting. A state fire net has been authorized but this has not been installed either. The Department of Public Works has one frequency for dispatching and reporting.

Both the emergency operations center and the Warning Point at Fire Department headquarters have remote CONELRAD transmitters and the operations center has remote transmitters for the police dispatching, fire and public works frequencies.

Communications with the metropolitan target area headquarters, the towns in the Hartford sector, and amateur mobile units are maintained from the center by three RACES frequencies in the ten, six, and two meter bands.

Fixed Radiological Monitoring Posts

Fixed radiological monitoring posts have been designated and monitoring equipment pre-positioned at 30 locations in the city. The Fire Department mans and furnishes 16 of these locations, the Police Department, Health Department, and the Metropolitan District Water Facilities buildings each have three, and five locations are at five of the city's hospitals and manned by their radiologists and technicians. The buildings selected are the places where the members of the monitoring teams are employed and have a PF of at least 100. Arrangements for radio communications to the posts and the school shelter where the reports will be analysed and the operations center have not been completed, as yet.

UTILIZATION OF MUNICIPAL FORCES AND COMMUNITY ORGANIZATIONS

Operating the System

Civil Defense Survival Plan

The "Civil Defense Operational Survival Plan for the City of Hartford" now in effect was completed in February, 1959. The annexes to the plan were not all completed and up to date. The civil defense director had asked all civil defense services to study and suggest revisions to their annexes in the light of their fallout shelter program. The Hartford Plan recognizes that the city and all Connecticut will receive heavy fallout in the event of a nuclear attack on the United States. It avoids committing the city to evacuation if warning of an attack is received, but it reserves this course of action as an alternative if intelligence reports indicate that evacuation would offer its people their best chance for survival.

The people of the city are to "go home" and await further instructions if the warning information indicates that there is one hour or more, with reference to New York, before enemy forces or weapons will arrive. If the warning time is less than one hour, the "take cover" signal is to be sounded and all people are to seek the best shelter available at once.

All city civil defense forces, however, are to mobilize by reporting to their several designated assembly areas and duty stations if time is such that 30 minutes or more remain before the expected arrival of enemy attack. The assembly areas where they will be mustered are, for the most part, in open areas such as city parks, cemeteries, and building yards. Secondary assembly areas outside the city will be designated if an evacuation is ordered. Once mobilized, forces are to take cover near their assembly points. If less than 30 minutes remain before the expected arrival of an attack, the forces are to take cover wherever they are located at the time they receive the fan-out message.

The Hartford mobilization procedure requires that the civil defense forces run a terrible risk of being caught in the open at the time the city receives an attack. Note that the take cover signal is to be sounded if there is less than one hour before an expected attack. The forces are to mobilize at the assembly areas if there is more than 30 minutes before the expected arrival of the attack. This difference of 30 minutes could very well mean the difference between survival or destruction of most of the city's civil defense forces. The Hartford mobilization procedure should be amended to complement the city's shelter program by having the city's civil defense forces report to designated shelters where they would have a better chance to survive and could also serve in support of shelter management.

The Hartford Survival Plan and its annexes give almost no indication of what the civil defense forces are to do during the post-attack or shelter emergence period. The civil defense director said that the Hartford Civil Defense Organization, the Office of Emergency Planning, the Office of Civil Defense and the state must all devote more effort to this phase. Much more guidance than it has received is desired from the federal level by the city.

Civil Defense Organization

The Hartford civil defense organization is composed of a combination of most of the city agencies, individual city employees assigned to specific civil defense units, community organizations, and volunteers assigned to specific units. Although the survival plan states that all governmental agencies and all municipal personnel have been incorporated into the civil defense plan, and the entire civil defense plan is based on existing agencies and organizations, the organization in being does not entirely conform to this ideal. The city manager is made the head of the Civil Defense Organization, but all units are to report to the civil defense director who is, in turn, under the direction of the manager. This is provided for in both the organization chart and the procedures prescribed in the Survival Plan and its annexes. No attempt has been made to establish the civil defense director's role as that of chief of staff to the manager, but rather, he is placed solidly in the chain of command. The Plan states, for example:

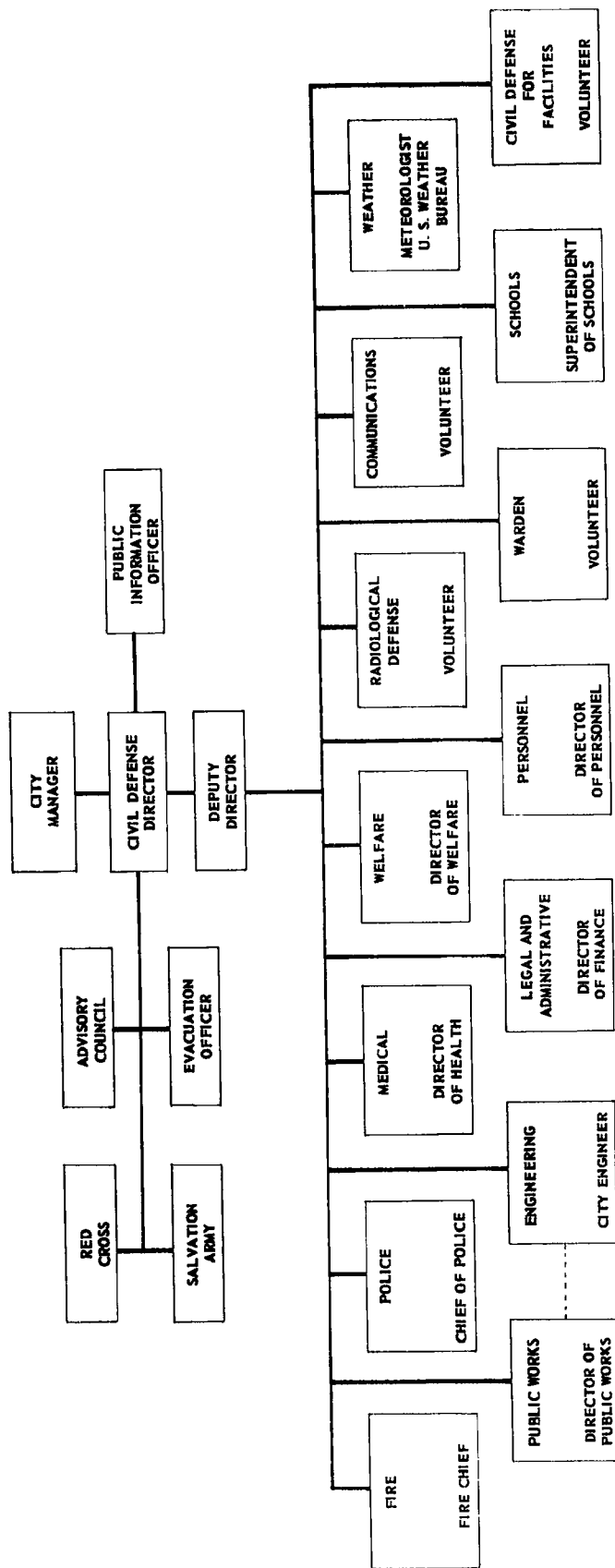
The Hartford civil defense director will assume command of all operations covered by this plan when the state declares an emergency exists.

All forces of Hartford's civil defense will be under direct control of Hartford's CD director and shall remain under this control until such time as directed differently or relieved.

It is the responsibility of each service director to carry out the pre-designated assignments, directives, and all commands that come from the city's director of civil defense.

The Office of Civil Defense in Hartford, same as any other municipal department, works under and is responsible to the city manager who is the administrative executive. The director of civil defense for the city of Hartford is appointed by the city manager, serves under his command and reports to the city manager.

It is evident that the conduct of emergency operations in Hartford will be directed by an assistant fire chief who will have command over not only his own peace time superior, the fire chief, but also the other heads of city departments who heretofore outranked him. It is, of course, unfair to judge the effectiveness of an organization



CITY OF HARTFORD
CIVIL DEFENSE ORGANIZATION

without taking the true capabilities of the personnel into account. However, any civil defense plan should provide an organization that will be of maximum effectiveness no matter when an emergency occurs or who the individuals are who have been assigned to positions of responsibility. For this reason, direct command of the city's civil defense forces should be retained by the city manager and the Hartford Survival Plan amended to accomplish this.

There is an advisory council which assists the civil defense director in the development of the civil defense program but it has no operational responsibility during an emergency. This council, the Hartford Civil Defense Organization Advisory Council, has 16 members, including the city manager, civil defense director, head of the Women's Division of the Warden Service, the deputy director of civil defense Health Services, a member of city council, and representatives of the Salvation Army, American Red Cross, the Chamber of Commerce, the Manufacturers' Association, the Hartford Gas Company, radio station WTIC, The Boy Scouts, one of the city's hospitals, and three clergymen, representing the city's three major faiths.

Four staff aides report directly to the civil defense director. The greater Hartford chapter of the American Red Cross and the Salvation Army each have designated a staff representative to coordinate their disaster activities with the Hartford civil defense organization. The city traffic engineer serves as a staff aide and reports to the director also. An evacuation plan has been developed and, in the event of an attack warning, the traffic engineer reports to the emergency operations center to assist the civil defense services solve their transportation problems and establish post-attack travel routes through the city in cooperation with area and state civil defense authorities. The public information officer also is placed in a staff relationship to the director and is to coordinate the dissemination of information and emergency instructions to the public by broadcast radio and the other news media.

There are 14 operating civil defense services that are to report directly to the civil defense director. The organization chart indicates that they report through the deputy director, but this is not the case according to both practice and the Survival Plan. This wide span of control is comparable in scope to the span of control of the city manager for the peace time administration of the city's affairs. Several of these divisions could be combined to reduce this span of control, and possible consolidations will be suggested in the description of the composition and missions of the divisions which follow.

Special Technical Services

The Hartford Survival Plan assigns to the civil defense director the responsibility for the Intelligence Service. The director is to collect, coordinate and disseminate accurate and complete information concerning the situation to all civil defense echelons, which can be utilized or upon which decisions can be based. It is suggested that the present RADEF, Weather, and Communications Divisions be combined with the Public

Information Service to constitute a Division of Intelligence Services. This would not only reduce four divisions to one, but also, bring together into one division these related technical specialists serving all civil defense forces.

RADEF Division

This service is responsible for detection, measurement, and evaluation of fallout data and its dissemination to civil defense forces, government agencies, and the public; removal of radiation hazards and establishment of perimeters around hazardous areas; advising the civil defense director regarding the best procedure to reduce radiological exposure to a minimum for civil defense forces and the public; and determination of contamination levels of water and foods.

The Hartford radiological defense forces are in the process of being reorganized. The service had been staffed as a volunteer group of ten men with technical backgrounds and headed by the superintendent of the research engineering department of a major insurance company. They were instructed and equipped to serve as mobile monitors at their homes or places of work in the past, but now they are to constitute the plotting and analysis team at the new Hartford High School and report to their chief, who will be at the emergency operations center.

The monitoring teams at the 30 monitoring stations, which have already been described, are to report their readings to the RADEF group at the high school. These monitoring teams are made up of radiologists at five hospitals in the city and members of the Fire, Police and Health departments and Metropolitan District (water). The stations are not manned every working shift and depend upon the members of the monitoring team to report at the time of an emergency warning.

Weather Division

The Hartford organization for civil defense includes a separate weather service provided by the United States Weather Bureau unit located at Bradley Field, a state-operated airport. The unit's primary orientation and experience has been in connection with natural disasters such as hurricanes, floods, and tornadoes. However, radiological monitoring equipment is located at the station and all employees are trained to operate as a fixed monitoring team and prepare fallout charts.

The Bureau is to provide weather forecast information to State Civil Defense Headquarters and State Police Headquarters. The primary means of communication to these two points, and to the city's Department of Public Works, is by teletype. The Bureau also has a standby radio for transmission on the State Police Network and an emergency generator to provide power for the transmitter and its other equipment. The city has named a liaison officer who is a retired general, former Hartford fire commissioner, and former Metropolitan Target Area civil defense director, to go to the Weather Bureau and keep the city informed of weather conditions during a disaster period by telephone.

The Bureau has no protection from fallout in its normal working spaces and, in the event of a tactical warning, instruments would be given a final reading, and winds, radiological readings, and the latest weather information would be disseminated. The employees would then go to the basement area to take cover until it was safe to return to their assigned tasks. An emergency operations center is under consideration but it has not been developed.

Communications Division

The Communications Division is responsible for manning and operating the message center at the emergency operations center and for the maintenance and operation of telephones, the CONELRAD monitor, and RACES equipment to the Metropolitan Target Area Headquarters, the towns in the Hartford sector, and mobile units. The Division is made up entirely of volunteer radio amateurs and the size of its membership fluctuates widely from year to year. No accurate count of its strength could be determined. It was evident that the morale of the organization was difficult to maintain in the face of inactivity, poor facilities at the emergency operations center, and, during one period, lack of leadership. The 1962 report of the Division's new director indicated that progress had been made but called attention to the problems as follows:

During the year we experienced difficulty in maintaining a good active crew. Some of our better men were recruited to colleges and the military service. . . . We believe when new headquarters are available . . . the acquisition of new members will be much easier.

It appears that this vital service is much too dependent upon an unreliable base of volunteer support. The city's uniformed services should provide the leadership and personnel for this Division. The city forces could be augmented with reliable volunteer participants — not teenagers.

Administrative Services

The Legal and Administration Division and the Personnel Division could be combined to constitute a single division organized into sections to carry out their related emergency functions.

Legal and Administration Division

The city's director of finance heads this civil defense service which is responsible for providing the administrative and clerical staff for the emergency operations center; for drafting legal forms, executive orders, emergency legal actions; for giving legal advice to the civil defense director; for establishing and maintaining fiscal records and procedures; and for coordinating fiscal operations with other agencies of civil

defense so as to provide for their financial requirements in time of an emergency. The Division is also given responsibility for the continuity of government and the preservation of vital records. A Supply and Economic Requirements Section is also included within this Division. The purchasing agent is director of this service and is responsible for procurement and for storing and issuing equipment, medical supplies, food, clothing, fuel, and all materials necessary for operation of the civil defense services. He is also responsible for providing plans and methods to insure proper distribution of essential supplies, conservation of resources, and control of prices and rationing until federal and state programs are put into effect.

The Department of Finance has 75 full-time employees and only nine of these work under the purchasing agent. The remainder serve the Department's divisions of Budget and Research, Accounts, Auditing, Insurance, Tax Collection, and Central Duplicating. The following table summarizes the staff positions assigned to this Department.

Staff
Department of Finance

Director of Finance	1	Administrative Analysts	4
Deputy Director	1	Accountants	6
Auditor	1	Buyers	3
Purchasing Agent	1	Tax Collection Aides	3
Tax Collector	1	Cashiers	3
Supervisors	5	Machine Operators	20
Insurance Assistant	1	Clerks	25

This Division has made no progress on its assigned missions. More information about the purchasing and requisitioning needs of civil defense, about shelter utilization plans, and about the activities of other civil defense agencies is required.

Personnel Division

The Personnel Division is under the direction of the city's director of personnel. This unit is charged with the direction of manpower service and is responsible for recruiting and supplying personnel to fulfill the labor requirements of the civil defense organization. It is also responsible for all records and data pertaining to personnel in the Hartford civil defense organization.

The director of personnel has a staff of eight consisting of an assistant director, three personnel technicians, and four clerks. The Division has been unable to keep even the civil defense roster up to date. The director of personnel reported to the civil defense divisions by letter in November, 1962, that:

As I mentioned at the meeting held at Fire Headquarters on October 24th, because of the old practice of recruiting on a very general basis, the Personnel Department has approximately 40,000 applications in its files, most of which are over ten years old.

It is impossible for us to cull these files of inactive people without your help. We are asking each of you to submit to the Personnel Department, within the next month and sooner if possible, a list of all the people whom you consider to be the key people in your area of civil defense activity.

Public Works Engineering

Hartford has both a Department of Public Works and a Department of Engineering in its regular city government. They are retained as separate divisions in the civil defense organization but the Survival Plan provides for close liaison between them and they share a common annex in the Plan. It is recommended that this consolidation be completed and one Division of Public Works Engineering be created.

Public Works Division

The Public Works Division is organized into nine specialized sections as follows: Public Utilities, Rubble Clearance and Road Repair, Transportation, Rescue, Equipment Maintenance, Procurement of Personnel and Supplies, Public Buildings, Flood Control, and Communications. The Division is under the command of the director of public works and manpower and equipment of both the Public Works and Parks departments is pooled to carry out its civil defense missions. There are 166 employees from Parks and 411 from Public Works as follows:

Staff

Departments of Public Works and Parks and Recreation

Administrative	15	Mechanics	19
Foremen	57	Machine Shop Mechanics	6
Equipment Operators	100	Auto Servicemen	9
Laborers	215	Painters	13
Custodians	51	Sign Painters	5
Recreation Leaders	22	Welders	2
Switchboard Operators	3	Carpenters	7
Dispatcher	1	Mason	1
Tree Trimmers	9	Electrician	1
Gardeners	9	Plumbers	5
Clerks	26	Blacksmith	1

The equipment itemized below is that which has been listed as available for civil defense use by the director of public works and the director of parks. Radio communication is available between 29 mobile units and three Public Works base stations.

Equipment
Available for Civil Defense
From Public Works and Parks

Autos	10	Heavy Power Shovel	1
Trucks	29	Motor Crane and Backhoe	1
Tractors	17	Rollers (8-10 ton)	3
Snow Plows	65	Vibrating Roller	1
Snow Loaders	8	Distributors (600 Gal.)	2
Snow Blowers	4	Welder Truck	1
Leaf Blowers	4	Generator Trucks	2
Spreaders	22	Dumpsters	4
Stone Spreader	1	Sweepers	8

The Public Utilities Section is to be manned by representatives of the four utilities serving the city -- telephone, water, gas, and electric. The Section's primary function is to operate and maintain the respective utilities and to request specialized additional help in emergencies as needed. Conversely, they will, where possible, make their surplus equipment available for other assignments. Little operations detail is provided in either the Survival Plan or the utilities' individual plans.

The Rescue Service is under the direction of the superintendent of the city incinerator. A volunteer organization, it reported in November of 1962, that five men were trained in rescue operations and each would be the nucleus of a rescue crew. The rescue chief has contacted the Union Hall and has been notified that the unions will supply all the men available to them for rescue duty at the time they are requested.

The Transportation Service was organized under an advisory group of citizens from the city and several towns to constitute a committee with special knowledge of the various types of mobile equipment. This Service is to mobilize all such equipment needed by the civil defense organization in an emergency. The director of public works informed the civil defense director in a November, 1962, memorandum that:

This division has at present no personnel assigned to the Transportation Section as our previous people have left the area or moved out of jurisdiction. We therefore need advice from your office in filling this as far as leadership by a division head and deputy.

All Public Works Division municipal personnel and equipment are to assemble at 12 assembly points in the event of an attack on the city and these forces constitute the elements of the remaining six sections. The director of public works in his memorandum to the civil defense director raised the following question:

We are awaiting instructions from your office concerning the dispersal of equipment and men to the various rescue areas in the city as per our previous plan but seriously question whether this is now part of the civil defense plan as these dispersal areas contain no protection for the employees from fallout radiation.

Engineering Division

The director of the Engineering Division is the city engineer. The close relationship of the Engineering Division to Public Works is demonstrated by the fact that the city engineer is made second in command and in the line of succession to the director of public works by the Survival Plan. The Engineering Division is responsible for building and bridge inspection, and all maps, blueprints, and related material are to be prepared under the supervision of the city engineer. Liaison with the Public Works Division is to be maintained for the use of heavy equipment and personnel, clearance of debris from vital transportation facilities, use of rescue facilities, and mass burial operations.

The Engineering Division is organized in two sections. The Engineering Section is manned by the staff of the city engineer and its Building Section is manned by the professional staff of the Department of Licenses and Inspections. Only the top administrators of the Department of Engineering and the Department of Licenses and Inspections have civil defense assignments in the event of an attack warning. The other personnel would be mobilized after an attack or upon emergence from shelter. Other than three engineers, who have been to the federally sponsored school in shelter design analysis, none of the employees listed below have had any special civil defense training.

Staff Departments of Engineering and Licenses and Inspection

Administrative	2	Building Inspectors	5
Engineers	13	Electrical Inspectors	4
Engineering Technicians	14	Plumbing Inspectors	3
Architects	4	Heating Inspectors	3
Structural Engineer	1	Clerks	9

There are 21 automobiles and four survey trucks available to the personnel of these two city departments. None of these vehicles are radio equipped.

It was pointed out by the Department of Licenses and Inspection that state legislation was needed to authorize issuance of building permits for single-purpose fallout shelters that do not meet normal habitability standards but do meet the federal fallout shelter requirement. It was further believed that all shelters could be thrown out if this Department was asked by an attorney to issue a certificate of occupancy. The Department feels that blanket permissive legislation is needed to exempt these spaces from building regulations.

Police Division

The Hartford Survival Plan makes the Police Department responsible for the direction and control of traffic; enforcement of all laws, rules, and regulations; crowd control (to eliminate panic); plant protection against sabotage and looting; prevention of subversive activities; and bomb reconnaissance. The Department also is to assist the RADEF Division in radiological monitoring and the Communications Division in communications. The Department has 387 commissioned police officers, and 84 civilian employees. In addition to these regular forces listed below, 37 auxiliary policemen, 170 retired members of the police force, and 25 fully uniformed members of the Pinkerton Detective Agency are to be teamed with regular officers during an attack emergency. Hartford has one commissioned police officer for every 415 residents of the city.

Police Department Personnel

Commissioned

Chief	1	Patrolmen	276
Assistant Chief	1	Detective Sergeants	2
Captains	10	Detective	45
Lieutenants	16	Policewomen	4
Sergeants	32		

Civilian

Crossing Guards	48	Police Matrons	4
Dog Wardens	2	Radio Technicians	4
Lab Technician	1	Telephone Operators	5
Meter Service	2	Clerks	18

The Police Department has 44 patrol cars, 3 wagons, 12 motorcycles, and one service truck for the traffic lights. These vehicles are radio equipped on the Police dispatching and reporting frequencies. A gas-operated generator at Police Headquarters supplies emergency power for the transmitter and all police communications.

The Hartford Survival Plan provides that in the event of an attack warning all off-duty police officers will report to one of three assembly areas. Police cruisers on-duty will report to Headquarters, the control center, and the three assembly areas. All traffic control points will be activated. No police have been given specific assignment to shelters and it is the intention of the chief of police that officers working foot beats will cover the shelters on their beats.

Upon emergence from shelter, the police force will help with radiological monitoring, maintain traffic control, assist in damage assessment, and clear areas where unexploded ordnance is discovered. Plain-clothes officers will report to their division commander and be assigned to hospitals and temporary morgues. Policewomen will be assigned to care for lost and abandoned children.

The Police Department has made no provision for records preservation, and civil defense training has not been stressed in the past. The Department does plan to initiate a basic civil defense course of 68 hours that would cover essential emergency duties for auxiliary policemen and new recruits.

Fire Division

A Hartford Fire Department is responsible for the Attack Warning Division, the direction and coordination of fire fighting and fire prevention, minimizing fire damage resulting from or incidental to an enemy attack, and providing support to other services in rescue, radiological monitoring, and decontamination actions. The Department's 388 uniformed firemen are assigned to 15 companies located at 13 fire stations. This force may be augmented in an emergency by 30 auxiliary firemen.

Fire Department Personnel

Chief	1	Lieutenants	45
Assistant Chief	1	Firemen	226
Deputy Chief	6	Drivers	88
Captains	21	Clerks	3

The Department operates a fire training school and new recruits are given three weeks of training, six days a week. Auxiliary firemen receive training similar to that given the regular forces. A continuous in service training program is conducted at the several fire stations for two hours each day for the day and evening shifts.

There were eight fire stations that had a Protection Factor of 100 or better. Spaces in the other five stations were being improved so that radiological monitor teams could be located at them. The equipment listed on the following page is distributed among the 13 fire stations. These vehicles are radio equipped on the Fire Department dispatching and reporting frequency.

Major Fire Department Equipment

Pumpers (active)	6	Aerial Ladders (active)	6
Pumpers (reserve)	7	Aerial Ladders (reserve)	2
Hose Wagons	15	Rescue Truck	1

The Fire Department intends to have all firemen report to the eight fire stations with a Protection Factor of 100 in the event of an attack on the United States. It has been the Department's intention to keep the Fire Department together as a force in being during a shelter stay period. It even was felt by the civil defense director that the situation might demand that these forces be used to extinguish fires during a shelter stay period. The fire chief did not concur.

Hartford participates in a mutual aid fire program with the other towns in the Hartford area. According to this program, the Hartford Department would send men and equipment to mutual aid towns to the best of their ability, but Hartford would come first.

The Fire Department has a building inspection program carried out by fire company personnel in their assigned areas. Special hazards are noted and follow-up inspections are made by the Fire Prevention Bureau. This program could readily adapt itself to inspection of stocked shelter supplies as part of normal operating routine.

Medical Division

The Medical Division is organized under the leadership of the city's health director and will utilize personnel of the Health Department in conjunction with all of the physicians, nurses, dentists, pharmacists, related professional personnel, and volunteer litter bearers. The Medical Division is responsible for all emergency care and treatment of casualties; emergency health services; preventive and remedial measures against physical, biological, chemical, and radiological hazards; and burial of the dead. All matters of sanitation are to be under the supervision of this Division.

The Hartford Health Department staff of 69 full-time and 33 part-time employees is organized into ten Bureaus responsible for administration, vital statistics, tuberculosis control, communicable and venereal diseases, medical and nursing services, health education, food and sanitation, laboratories, maternal and child hygiene, and dental health.

Staff Health Department

Physicians	4	Nurses	7
Physicians (part-time)	24	Sanitarians	18
Dentists	1	X-ray Technicians	2
Dentists (part-time)	9	Lab Technicians	3
Dental Hygienist	1	Child Welfare Worker	1
Veterinarian	1	Physiotherapist	1
Clerks 30			

Two administrators in the Department have had formal training in civil defense operations. The deputy director of health conducts radiological monitoring courses. Six employees of the Health Department have received such training, and all sanitarians and teams from five of the city's hospitals are being trained. The Red Cross instructors are being trained by the Department to teach the Medical Self-Help Course.

The Health Department has 16 passenger vehicles assigned to it, only one of which is radio equipped on the Fire Department's dispatching and reporting frequency. The Department is located in a two-story brick structure which does not have a Protection Factor of 100. Plans are being made to bring the Department's micro-filmed records up to date from 1953. Originals of all vital statistics are located in the vault of the Bureau of Vital Statistics in the municipal building.

The city operates a general hospital for the care of welfare patients, primarily, under the nominal supervision of the Department of Welfare. There are 144 beds in the general hospital, a 63 bed convalescent and nursing hospital, and an out-patient department. There are four resident doctors and eight interns, 56 full-time nurses, 54 practical nurses, and 39 private duty nurses available. This hospital's disaster plan has no civil defense provisions or assignments other than those relating to the sheltering of the patients and staff.

The three other major hospitals in the city have about 2,000 beds, 98 resident physicians, 29 interns, 513 full-time nurses, 620 student nurses, and 120 practical nurses. These hospitals have disaster plans and they have all been provided with emergency wells and generators to maintain power to the pumps and their emergency equipment.

The Civil Defense Medical Services of Hartford in cooperation with the State Office of Civil Defense prepared a "Medical Services Plan for the Hartford Critical Target Area." The Plan provides for post-attack mobilization of all medical resources in the area. There are 455 physicians, surgeons, specialists and 190 dentists with offices in Hartford. No personnel are given specific assignments but locations for supply and assignment depots, casualty clearing stations, and emergency hospitals are identified. Of these, 21 casualty clearing stations are to be located in Hartford. Another 37 clearing stations, all nine supply and assignment depots and 16 emergency hospitals are to be located outside the city.

The Medical Service Plan provides much more operational detail than do the annexes to the Hartford Survival Plan developed by most of the civil defense services. The Medical Service Division should be able to proceed in the future with a plan to distribute the available medical personnel among the fallout shelters in the event of an attack warning. Most of the physicians and dentists are located in the downtown area, and this is also where most of the Hartford shelters are located.

Welfare Division

The Welfare Division is to be responsible for providing the necessities of life to the homeless and others who are in need as a result of enemy attack. These necessities consist of lodging, food, clothing, information concerning relatives, financial aid, guidance and counsel. The Welfare Division is also to provide feeding and rest facilities for civil defense workers where needed, and assist the Medical Division by providing for the feeding of patients and personnel in medical institutions in which the Medical Division is not equipped to carry out feeding operations.

The disaster chairman for the Hartford Red Cross Chapter coordinates welfare activity for civil defense in the city. The Hartford Department of Welfare has not been active in civil defense planning or programs. Welfare Department personnel would be utilized in a post-attack situation, but no specific assignments have been made. The following personnel of the Department of Welfare are now virtually unutilized in the civil defense program.

Staff Department of Welfare

Administration	4	Interviewer	1
Case Supervisors	5	Director of Day Care	1
Welfare Workers	24	Nursery Teachers	4
Child Welfare Workers	3	Cook	1
Clerks	27	Building Attendant	1

Red Cross

The offices of the Greater Hartford Area Red Cross Chapter are located in the city. The Chapter serves the city and 24 towns in the area and serves as the blood center for all of Connecticut. The Chapter's four station wagons are radio equipped and the transmitter is located in the Red Cross Building. They also have one portable base radio station and two walkie-talkie sets.

The Red Cross, and Hartford civil defense welfare services, depends on about 1,000 volunteer workers. These include nurse's aides, clerical workers, people trained in first aid, and others useful in welfare operations. Apparently these lists of volunteers are maintained by the city's personnel director. These lists are badly out of date and many of the people are no longer in the Hartford area.

The Red Cross welfare service, like the Medical Division, is organized entirely for post-attack activity. No attempt has been made to distribute welfare personnel to the Hartford fallout shelters. Welfare centers have been designated, in schools for the most part, and these are to be manned after an attack or disaster. A prototype

organization called "School as Disaster Shelter" was developed in cooperation with the Hartford Public Schools. The school shelter plans include the names of the shelter managers and assistants. Although designed to meet natural disaster needs, these plans are compatible with post-attack needs after emergence from fallout shelter.

Schools Division

The Schools Division is under the direction of the assistant superintendent of schools and is responsible for organizing and training school department personnel to register and keep records of all people reporting to them in their school district; training all school children to understand the various warnings and what to do; and utilizing, in cooperation with the Welfare Division, school buildings as shelters and public registration and feeding points.

The school system operates 23 elementary schools, two junior high schools, three high schools, and three administration buildings. The schools have been designated either as casualty clearing stations for the Medical Division or as disaster shelters in the Red Cross plan of organization for welfare. Only seven schools have cafeterias and are suitable for mass feeding stations. Each school has a disaster committee composed of approximately ten individuals, headed by the principal, who have been assigned specific tasks in case it is necessary to open the schools as refugee centers. The superintendent of schools has indicated that the present plans will be revised to make them more compatible with Hartford's fallout shelter program when this program has been developed. According to the present plan, the schools will be used as shelters only in the event that there is less than half an hour before an attack is expected or CONELRAD instructions indicate that the children should take shelter in the schools. The casualty clearing stations and welfare disaster shelters would be opened and manned only in the post-attack period.

The Hartford school system employs 63 administrative and supervisory personnel, 1,105 teachers, 59 cafeteria workers, 101 clerks, and a custodial and maintenance staff of 211. None of these employees have been given any civil defense training and no inventory has been made to determine those who have had training in first aid or other civil defense related skills.

Facilities Civil Defense Division

The volunteer director of the Facilities Civil Defense Division is to establish liaison with plants, industries, insurance companies, banks, and coordinate their civil defense plans with those of the city. After an attack, these establishments are to assess and report their damages and expedite the conversion and rehabilitation of vital industries for the continuance of essential production. The staff of this Division consists of one representative from each of the major business, industrial, or community groups. Each facility is to designate a plant coordinator to formulate

an operational plan for that facility, which is to provide for the necessary organization, training, evacuation or shelter procedure, plant security, fire protection, medical care, feeding, and such other measures as may be applicable to the situation.

The Facilities Division has been very successful in enlisting the cooperation of Hartford's businesses and community institutions. Many had developed detailed shelter plans, provided for the management of the shelters, and made rosters for the staffing of the shelter service forces. The Division would serve as an excellent base upon which to build a more comprehensive Fallout Shelter Facilities Division.

Warden Division

The Warden Division is a holdover from the time when attack by conventional weapons was still the basis for civil defense planning and operations. The Division has fallen into disrepair, both because of the obsolescence of its missions and lack of interest from the volunteers who constituted its organization. Its Women's Activities Section is still pursuing its home preparedness programs with women's organizations; but the block wardens who were to be responsible for establishing self protection groups and training individuals within their respective blocks to combat and control small fires, conduct rescue work, and provide first aid, appear to have evaporated.

The Warden Division should be abolished and the energy once devoted to this service redirected to work in conjunction with the Facilities Civil Defense Division in the proposed Shelter Facilities Division.

City Agencies Not Being Utilized

The Housing Authority for the city of Hartford provides low and moderate income public housing to 3,633 families. There are an average of 4 1/2 people in each housing unit. The Authority has a staff of 130 employees, including 94 maintenance personnel. The Authority administrators did not know what fallout shelter space was available in their several projects, nor had any thought been given to the development of shelter management capabilities, but they were going to see that the fallout shelters, if any, were well stocked and that all tenants were aware of the shelters available to them. The maintenance personnel of the Authority could be assigned to the Public Works Division together with their 24 light trucks. Employees such as the tenant relations adviser, the interviewer, and the project managers, could be assigned to strengthen the Welfare Division.

The Hartford Planning staff of six planners and two draftsmen, together with the ten planning and supervisory personnel from the Hartford Redevelopment Agency provide the city with an available pool of talent which could be used to develop a shelter utilization plan. Community profiles for each section of the city are available as a result of a community renewal project, and the Planning Agency has developed

full sets of land use maps, population density maps, and economic base studies. The planning director indicated, however, that he would require additional staff if he were to undertake the task of developing the civil defense shelter utilization plan.

The 14 clerical employees in the Office of the Town and City Clerk, the 19 in the assessor's office, and the five employees in the city treasurer's office could be assigned to strengthen the Legal and Administrative Division, particularly the Procurement and Supply Section.

INTERGOVERNMENTAL ASPECTS OF CIVIL DEFENSE

Coterminous and Overlapping Jurisdictions

Absence of county government in Connecticut and the inclusion of the school system within municipal government eliminate the impediments to the development of civil defense frequently caused by these overlapping jurisdictions. The one existing governmental entity that does include Hartford and nine surrounding towns within its sphere of activity is the Metropolitan District. This is a multi-purpose special district with broad powers to tax and levy service charges, borrow money, sue and be sued, and enact ordinances necessary to carry out its functions. It exercises three functions — the storage and distribution of water, the collection and disposal of sewage, and very limited regional planning. It has not elected to exercise any of the other powers given to it in its 1929 charter by the Connecticut General Assembly.

The Metropolitan District is governed by a board of 22 commissioners composed of 15 at-large commissioners and one commissioner from each of the seven full-member towns. Two towns served by the district have a purely contractual relationship to the District and do not participate in its government. The appointment of commissioners is made biennially by the governor of the state — seven town representatives for two year terms and five at-large members for six year terms. The commissioners select the manager of the District.

The Metropolitan District is treated as a public utility in the Hartford civil defense organization along with the telephone, gas, and electric companies. It has assumed greater responsibility to the city for radiological monitoring than the other utilities and will man three fixed monitoring stations which, unlike the other utility teams, will report to the Hartford civil defense RADEF group. Also, District engineers are to report to the Metropolitan Target Area and city emergency operations centers in the event of an attack warning to coordinate restoration of water supply facilities with the civil defense operations.

The District's main office building in Hartford has been marked as a public fallout shelter, and its treatment plant and reservoir have fallout protection and could continue operations during a shelter stay period. Of 152 pieces of vehicular and earth-moving equipment, 68 are radio equipped and the District's five base stations have emergency sources of power. All work crews have had first aid training. The District's resources in men and equipment are to be used first for post-attack restoration of water service, and then made available for other assignments as they are needed by the civil defense forces.

Relations with Neighboring Towns

The State Survival Plan divides Connecticut into five Metropolitan Target Areas. Hartford is the critical target city in its Area which includes 43 towns and cities and extends through the middle of the state from Massachusetts on the north to Long Island Sound on the south. The Hartford Metropolitan Target Area is subdivided into six Sectors. The Hartford emergency operations center and civil defense organization serves as Sector headquarters and staff for the seven cities and towns in the Hartford Sector. The Metropolitan Target Area headquarters is located in one of the towns in the Hartford Sector, about ten miles south of the city, and Hartford serves as alternate Metropolitan Target Area headquarters. In the event of an attack, communications are to channel from each municipality to its Sector, from Sector to Metropolitan Target Area, and from Target Area to the state operations center. The Hartford Metropolitan Target Area headquarters is the only one of the five in the state that has a Protection Factor of 100, but its operational capability has not been developed and Hartford is placing little reliance on this echelon of command for support.

This "division of the ground" was established by state civil defense authority to implement an evacuation operation and has little applicability to the requirements of shelter utilization planning or shelter oriented operations. The municipal units in the Hartford Sector lie to the south and southeast of the city and only two towns are actually contiguous to its borders. Only one other town in the Sector is a feasible participant in an area-wide shelter program, should one be developed. If Hartford is successful in developing a joint shelter utilization system with its surrounding towns, the Hartford civil defense organization should be assigned the responsibility for both Sector headquarters and Metropolitan Target Area headquarters. Its emergency operations center should then be relocated in a shelter with blast protection in one of the towns on the periphery of its shelter drainage area. The Sector should be reorganized to include all the units that participate in the joint shelter system in cooperation with the city.

The Connecticut Civil Defense Law provides ample authority to organize a joint shelter system. Complete provisions for mutual aid are included in this law. Hartford has already entered into mutual aid agreements for fire protection with its neighboring towns. Mutual aid for police protection also is being developed and a new police radio frequency for mutual aid is going to be installed. The State Survival Plan also establishes a chain of command for mutual aid from Sector to Metropolitan Target Area to the state civil defense director. Each echelon is supposed to supply the requirements ordered by the next higher echelon for post-attack recovery operations according to its ability.

State Civil Defense Programs and Guidance

The Connecticut State Office of Civil Defense is part of the state Military Department. The state civil defense director is appointed by and directly responsible to the

governor. There are 16 professional and 12 clerical employees on the staff. The professional staff includes five deputy civil defense directors who are assigned to the five Metropolitan Target Areas to provide field assistance and guidance to the local governments' civil defense organizations and serve as metropolitan target area commanders in attack or disaster situations.

The state civil defense agency has offices in the State National Guard Armory in Hartford, but its emergency operations center, or control center, is to be located at the State University at Storrs, which lies outside critical target areas. Neither the state control center nor any of the Metropolitan Target Area operations centers have been developed and adequate fallout shelter protection is lacking at all but the Hartford Metropolitan Target Area center. Lack of state action in providing proper facilities at these key installations has tended to discourage the cities from developing their own emergency operations centers.

The metropolitan target area commanders have been to shelter manager instructor school but only one course had been planned in one Area by January of 1963. The University of Connecticut has contracted with the Department of Defense and the State to teach the shelter course in the University extension program but, as of October, 1963, no courses had been conducted. The State Department of Education also has contracted with the United States Office of Education to conduct the civil defense adult education program.

The state civil defense agency developed a uniform program paper which it distributed to all local units. The cities had only to check-off the tasks they would undertake and indicate a target date for their completion. Cities receiving a federal reimbursement for personnel and administration expenses were required to file quarterly progress reports based on their program papers to keep their eligibility for these funds certified by the state agency. Advisory bulletins were issued regularly by the state office to all of the local civil defense directors and local chief executives. These bulletins, for the most part, relayed essential information from federal levels and procedural instructions for programs such as shelter stocking and requisitioning.

Connecticut has an unusually well staffed civil defense agency considering both the size of the state and its relative strength compared to that of other states. In spite of this, both the city manager and the city civil defense director felt that Hartford was getting inadequate support from the state. It was their opinion that leadership for coordination between the suburbs and the city should come from the state civil defense agency. The city manager felt that no clear lines of demarcation for their respective functions and responsibilities had been established among the city, Sector, Metropolitan Target Area, and state levels of command. The manager further felt that state leadership was lacking and this was partly responsible for apathy and inaction at the city level.

It is imperative that the State Survival Plan be rewritten to implement the shelter concept rather than the obsolete evacuation concept. Clear distinctions between state and local functions are needed. The state has not made a start on this revision.

Federal Agencies in Hartford

The participation of the United States Weather Bureau in the Hartford Civil Defense Organization has already been described in the section "Utilization of Municipal Forces and Community Organizations." The only other federal agency contributing directly to the city's defense capability is the United States Post Office in Hartford.

The main Post Office building has a rated shelter capacity of 3,150 spaces and a detailed organization for management of the shelter has been prepared as part of the Office's "Civil Defense Emergency Operations Plans." Other aspects of these plans are devoted to security provisions regarding mail, government funds and accountable paper, and the disposition of supplies of forms to be used in the post-attack period for emergency changes of address, safety notification, and emergency registration. The plan also provides that the Post Office shelter may be selected as a monitoring and reporting station in the community-wide radiological system in accordance with the local RADEF Plan. The city has not done this as yet, and the radiological monitoring team trained at the main Post Office building has been reduced to a single member by the transfer of the other members to branch offices.

The Hartford Post Office employs about 1,500 in the Hartford area, and of these, about 500 are letter carriers. The Hartford civil defense director considered using the letter carriers to help fill the gap created by the deterioration of his Warden Service. He believes that the carriers are in an excellent position to give information to the public on where they may reach shelter, to help direct traffic, and to serve as auxiliary police in an emergency. No training has been given to the postmen at this time but information circulars were distributed to them advising them of their role in guiding the public. The civil defense coordinator for the Post Office felt that they could serve as auxiliary police to route people and traffic but they would expect to be paid for the time they devoted to their training. The federal budget would have to allow for the cost. The consensus also appeared to be that the men would look out for their families first, except if a "duck and cover" warning was sounded when they were on their routes.

The Post Office has 92 vehicles of all types in the Hartford area and these are to be available for civil defense use. Six trucks are earmarked for use as ambulances and special stretchers have been designed to convert them to this use.

It should be stressed, in conclusion, that both the Hartford city manager and civil defense director were in agreement that much more specific guidance should be provided by the federal government. The manager felt that there was not enough representation of local government at the federal civil defense level, and that liaison between the federal government and the urban centers was too remote — there should be a much closer direct working relationship. The civil defense director felt that if better liaison and communications were established between the city and the federal government, the city would get clearer directions and duplication among the federal, federal region, and state civil defense offices, now being experienced, would be eliminated.

PART VI

CASE STUDY

PORTLAND, OREGON

Portland

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PORTLAND, OREGON

Community Profile

Portland, a city of 375,000 population located in the northwestern part of Oregon, is about 65 miles east of the Pacific Coast and one mile south of the Columbia River which forms the boundary between Oregon and Washington. It is situated on both sides of the Willamette River, five miles upstream from the confluence of the Columbia and Willamette rivers. Approximately one-third of the city's 72 square mile area, including the downtown section, lies west of the Willamette, and the remainder lies east of the river. It serves as the social, cultural, economic, and transport center of a region stretching from the southern part of Washington to northern California and extending inland from the coast to western Wyoming.

Its Economy

Portland is a major maritime port connected to the Pacific Ocean by a 110 mile, deep-draft channel. It is the leading import-export, dry cargo port on the Pacific and is served by 54 steamship lines and 17 tug and barge lines connecting the city with river ports 200 miles to the east on the Columbia River and with those to the south on the Willamette. Petroleum products, chemicals, cement, iron and steel products, coffee, burlap, and foreign autos are its major imports. Grain, lumber, scrap metal, and agricultural products, constitute the bulk of the city's exports.

Portland is served by five major railroads, 33 truck lines, and nine airlines connecting the city with major cities in the United States, Canada, Mexico, Europe, and the Orient.

The city and the area surrounding it is a diversified manufacturing complex. The 1958 census of manufacturers listed 1,738 separate manufacturing establishments. The 1960 United States census lists 68,562 persons employed in manufacturing in the standard metropolitan statistical area which includes Multnomah, Clackamas and Washington counties in Oregon, and Clark County in the state of Washington. The major industries in this area include primary metal reduction, metal fabrication, electronics, chemicals, drugs, insecticides, paints, petroleum products, textiles and wearing apparel, wood processing, pulp and paper products, and food processing.

Its Government

Portland, under its constitutional right to have a home rule charter, has had a commission form of government since it was adopted by the voters in 1913. The only elected officials are a mayor, four commissioners, and a city auditor. Each of these officials is elected to a four year term of office at elections held every two

years. The mayor and two commissioners are selected at one election and the auditors and two commissioners are selected at the next election two years hence. This procedure prevents a complete change in elective officials in any one year except under extraordinary circumstances such as the death, resignation, or removal of such officials. A successor is selected to serve the unexpired term should one of these circumstances occur.

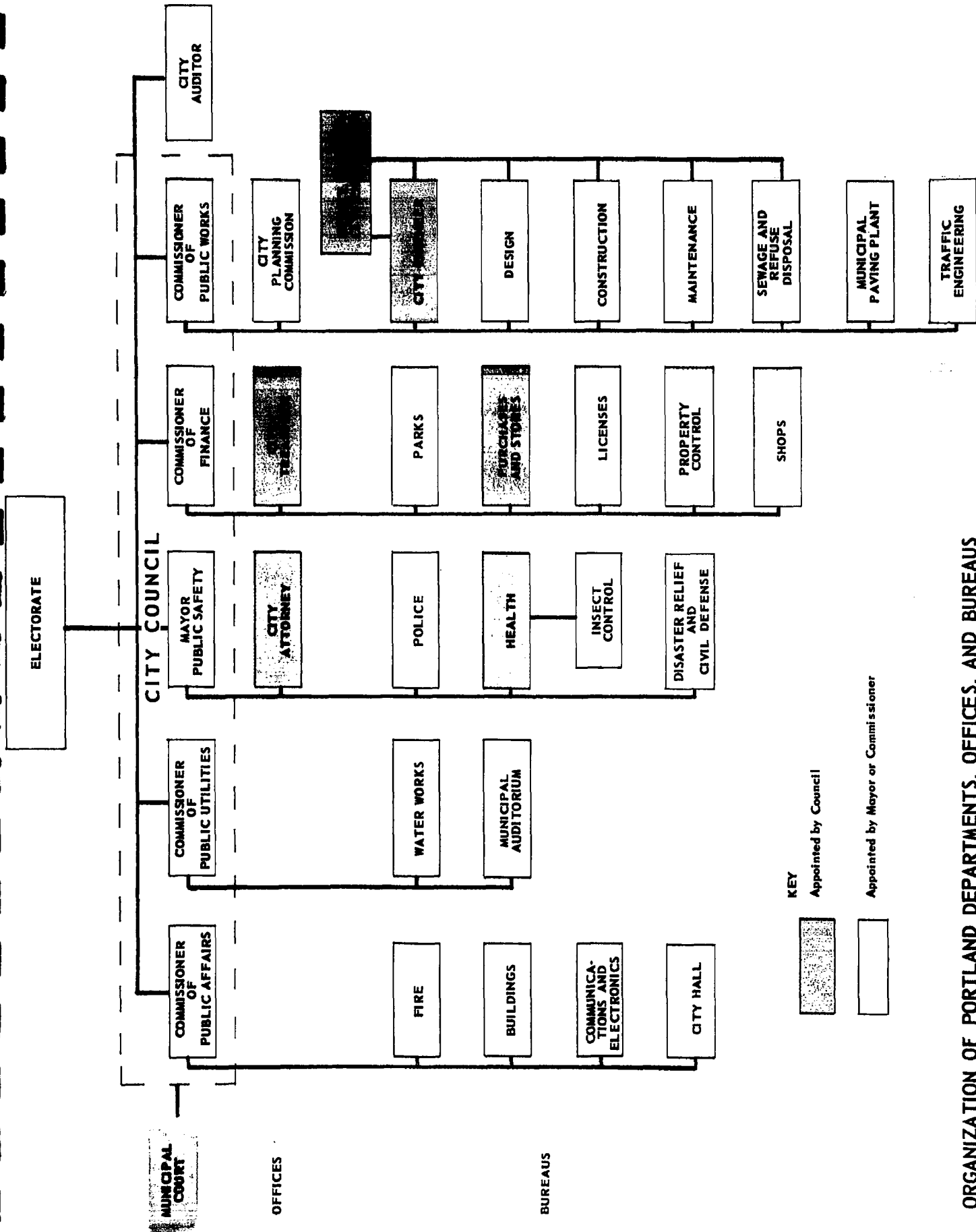
The city council consists of the mayor and the four commissioners and exercises the legislative power in governing the city. The council may enact ordinances, adopt resolutions, levy taxes, and adopt a budget by majority vote. The mayor presides over council meetings and votes on all matters but does not have the power to veto a measure passed by council.

The mayor and commissioners each head one of the five city departments. The mayor traditionally takes the administration of the Department of Public Safety as his post, and, by provision of the city charter, he assigns each of the four commissioners to administer one of the other departments — Public Affairs, Public Utilities, Finance, and Public Works. In addition to assigning these four departments among the commissioners, the mayor, again by authority of the charter, assigns the various operating bureaus, offices, and functions among the five departments. He may also reassign them when he deems such redistribution necessary.

The present assignment of the major bureaus among the departments is shown on the organization chart of city government. Note that the names of the departments are not entirely descriptive of the functions they perform and they contain many bureaus with unrelated functions or functions not usually associated with the department's name. The Bureau of Fire is in the Department of Public Affairs rather than Public Safety, and the Bureau of Shops is in the Department of Finance rather than Public Works. These are only two examples among many of bureaus that appear to be "misplaced". This grouping of unrelated functions within one department generates one of commission governments most serious problems in building and operating an effective civil defense system. Units that should be combined or coordinated for civil defense purposes follow separate lines of command, each to a separate commissioner, and no official can direct them to work together if one commissioner wishes to go his own way and not cooperate.

The causes of the apparently irrational assignment of bureaus in commission governments are usually political, historical, or related to patronage considerations. However, the rigid requirement that there be five departments, no more, no less, forces some functions to be placed where they are alien to the main purposes of the department simply for lack of any other place to put them.

The city auditor is the chief accountant and clerical officer for the city. The major functions of the Office of City Auditor include: preparing financial reports,



ORGANIZATION OF PORTLAND DEPARTMENTS, OFFICES, AND BUREAUS

issuing warrants, preparation of the council calendar and serving as clerk of council, apportioning special assessments, maintaining records of real property ownership, conducting city elections, and operating the centralized microfilming program.

Portland has 24 independent or semi-independent boards and commissions. The Civil Service Board, City Planning Commission, Commission of Public Docks, Portland Development Commission, and the Housing Authority of the City of Portland are the more important ones. Members of boards and commissions are appointed by the mayor with councilmanic confirmation and may be removed only for cause.

The organizational relationships of the departments and bureaus are made more complicated by charter requirements that the heads of certain offices and bureaus be appointed by council rather than by the head of the department in which they are located. The city treasurer, attorney, engineer, purchasing agent, and health officer are appointed by council. The three city judges, nominally in the Department of Public Safety under the mayor, are also required to be appointed by council. The independent boards and commissions appoint their own staffs. All other employees, including heads of bureaus and offices, are appointed by the commissioner of the department to which the agency is assigned.

A city merit system which requires that employees shall be appointed and promoted according to fitness as ascertained by open competitive examination, merit, and fidelity in service is established by charter. All city officials and employees are in the merit system except the following: All officials chosen by popular election or appointed by the council, members of all boards and commissions, judges and clerks of elections, deputies of the city attorney, chief deputy to the city treasurer, city engineer, superintendent and chief engineer of the Bureau of Water Works, the secretary to the Civil Service Board, the mayor's secretary, employees of the Bureau of Health, the librarian, and the chief of police.

Its Fallout Shelters

Portland has 366,572 shelter spaces in Categories 4-8 (PF 100 or better); almost enough to shelter its entire resident population. In addition, there are 195,822 shelter spaces in Categories 2-3 (PF 40-99). Of these 562,454 shelter spaces, buildings containing 331,715 spaces had been marked with shelter signs by the middle of March, 1963. By the end of April, 1963, licenses had been obtained from building owners by the Portland Bureau of Disaster Relief and Civil Defense for the use of 311,755 spaces; 223,993 spaces in Categories 4-8 and 87,762 spaces in Categories 2-3.

The United States Army Corps of Engineers marked the shelters and the Portland civil defense agency obtained the licenses by a mail solicitation. A program of personal contact to secure the remaining licenses was about to be instituted. Only 2,765 shelter spaces had been stocked by the end of April, and except for one apartment

building and several schools, the stocked spaces were located in 17 fire stations designated as fixed radiological monitoring posts. This limited stocking was done entirely by the staff of the municipal civil defense agency.

Portland's impressive shelter capacity is poorly located with respect to the night distribution of the population. About 75 per cent of the spaces are concentrated west of the Willamette River in the downtown business district. Only 17.3 per cent of the city's people reside west of the Willamette; however, it is estimated that 250,000 people, or 67 per cent of the city's total population, may be located there during the working day. Access to the business district from the east side of the river is made across six bridges which lie in close proximity to this area of shelter concentration.

Expedient shelter is available in residential sections of the city to compensate, in part, for their lack of marked shelters. About 85 per cent of the housing units have basements and home owners could construct effective home fallout shelters at a modest cost. There would be a grave danger from fire, however, because dwelling units are old, 72 per cent were constructed prior to 1939, and most are of frame construction.

Its Special Resources

Portland is fortunate to have very flexible and reliable access to electric power, natural gas, water, and food supplies. While parts of any of these resources are vulnerable to attack, it is unlikely that an entire system could be degraded to the extent that its service or use by the city would be eliminated.

Electric power is supplied to the area by the Portland General Electric Company and the Pacific Power and Electric Company. Portland General Electric is a generation and distribution utility which operates in Oregon. Pacific Power and Light is a multipurpose utility with operations in Oregon, Washington, Montana, California, Idaho, and Wyoming. In 1962, these two companies sold 3.4 billion kilowatt hours to customers in the city of Portland. While both of these utilities have substantial hydroelectric facilities of their own, as well as auxiliary steam plants in Portland, they receive power from the Bonneville Power Administration and the other 13 members of the northwest power pool to which they belong. In addition, Pacific Power and Light, because of its extensive operations, has direct interconnected lines with four other electric utilities.

Natural gas is supplied to the Portland metropolitan area by the Northwest Natural Gas Company which serves twelve counties in northwest Oregon and one in southern Washington. The natural gas distributed by the company is obtained from the El Paso Natural Gas Transmission Company through a continuous pipe line which receives natural gas from Canadian fields in British Columbia and Alberta at the northern end

and from fields in Colorado, Wyoming, and Utah as well as the San Juan basin in New Mexico at the southern end. In an emergency, gas from the West Coast Transmission Company and the Pacific Gas Transmission Company could be introduced into the El Paso Transmission Company lines supplying the Northwest Natural Gas Company.

The Portland Bureau of Water Works, a municipally owned and operated utility, provides water to Portland and to 56 other city and private water companies in the metropolitan area. The source of supply is the Bull Run River, which rises in the mountains 50 miles east of Portland. Water supply storage at the source totals 21.4 billion gallons, and because it is located directly east of the city and the prevailing winds are from the southwest the water supply should receive little fallout contamination. There are reservoirs, standpipes, and tanks with a storage capacity of approximately 210.5 million gallons located within the city.

The Commission of Public Docks, a semi-autonomous agency of the city government, owns over 11,000,000 bushels of grain storage space, the largest tidewater grain elevators west of the Mississippi River; 1,386,129 square feet of covered storage space in 19 warehouses and storage tanks for 51,500 barrels of vegetable oil, some of which are leased and used for petroleum products storage. In addition, there are many privately owned and operated commodity docks for handling specialized cargos such as lumber, cement, petroleum, and scrap metal.

Portland's most significant natural advantage is its geographic location. There are no military or population targets in its vicinity and none at all to the west of the city. Consequently, Portland will not receive heavy accumulations of fallout that midwestern and eastern cities will experience in the event of an all-out nuclear attack upon the United States.

Its Problems

Portland is a possible target in the event of an attack upon population centers because it is the 32nd largest city in the United States and the regional center for a diversified manufacturing, commercial, and transport economy. The dams and hydroelectric facilities on the Columbia River might also be targets. While an attack on these facilities normally would not cause a fallout problem to Portland, destruction of the dams would cause substantial flooding in the city.

The Portland City Council decided to abolish the Bureau of Disaster Relief and Civil Defense on May 21, 1963. The four commissioners stood solidly against the mayor in reaching the four to one vote in spite of the fact that Portland had developed an outstanding civil defense program. This program had been built to disperse the city's operating forces around Portland and evacuate the population. Although there

was substantial dissatisfaction with the current program emphasis upon the National Fallout Shelter Program by the federal government, this dissatisfaction did not control the decision to abolish the agency. Unquestionably a number of factors affected the councilmanic decision, including:

1. Criticism leveled at civil defense in Oregon for not providing a warning of the hurricane on October 12, 1962.

A low pressure area caused by the aftermath of typhoon "Frieda" created unusual weather conditions. A cold air mass from the Gulf of Alaska met moist warm air from the south and generated a violent storm which struck northern California at noon. By 2:00 P.M. the storm hit southwest Oregon and communications began to fail. At 4:00 P.M. the storm hit Eugene; at 5:00 P.M. communications were out in Salem. Between 5:30 and 7:00 P.M. the storm centered in the Portland area. Approximately 50 persons lost their lives in this storm but none of them were in Portland. Property damage estimates ranged from \$50 million to \$200 million. Although the United States Weather Bureau Station at Portland reportedly issued warnings of winds up to 69 miles an hour by late afternoon, little notice was apparently taken of the announcement. The fact that the Oregon State civil defense agency did not warn the public of the intensity and violence of the storm caused the agency to be severely criticized by the state legislature and the press and was characterized as "an illustration of the unsatisfactory nature of the organization."

2. Defeat at the polls of a special levy to finance civil defense operations in Portland on November 6, 1962.

Three tax propositions were on the ballot at this election. One proposition would have authorized bonds for the construction of a convention hall in conjunction with the Memorial Coliseum. The second proposition would have permitted the city to increase the tax levy by more than the existing six per cent limitation. The third proposition provided for a special civil defense tax which would yield \$75,000 annually (about 1/10 of a mill) for a five year period. The convention hall bond proposition was supported by business and civic interests and the press; 43 per cent of the voters favored it. The tax levy increase was supported by civic interests and the press; 38 per cent of the voters favored it. The special civil defense tax received little organized support; 47 per cent of the voters favored this proposition. On the basis of this election, three city commissioners expressed the view that it was the mandate of the voters to abolish the Portland civil defense agency.

3. Anticipated passage of an emasculated civil defense appropriation bill by the Oregon legislature.

On March 25, a subcommittee of the Joint Ways and Means Committee voted to

reduce the Governor's civil defense budget recommendation for the 1963-65 biennium from \$195,000 to \$50,000. This reduction would reduce the state civil defense staff from twenty, recommended by the Governor, to three. On March 30, the full Joint Ways and Means Committee, following the recommendation of its sub-committee voted for the \$50,000 appropriation. On April 16, the Oregon house passed by a vote of 32-27 the budget recommended by the Joint Ways and Means Committee providing a state civil defense staff of three — a director, a radio engineer, and a secretary. The vote generally followed party lines; only two Democrats, both from Portland, opposed the reduction of the civil defense agency's staff. All but four Republicans voted against reduction. Portland officials expressed the feeling that there was little cause for the city to continue its participation if the state thought so little of the program.

4. Long-standing and vocal opposition to civil defense by one of the city's commissioners.

One Portland commissioner had vigorously and publicly opposed civil defense for the past five years. This commissioner stated that Portland had, in his opinion, the best civil defense director, the best civil defense plans, the best emergency operations center, but, that in the event of a nuclear war, everyone would be killed.

5. Unwillingness of the state civil defense director to permit federal region civil defense staff to communicate openly and directly with Portland municipal officials.

The former Oregon state civil defense director refused to permit Region 8 civil defense staff personnel to communicate or to deal directly with local civil defense directors. Since the retirement of this official, early in 1963, better state-region relations had developed, and region personnel had begun to meet with and assist local directors. Apparently this occurred too late to affect the course of events already in motion.

Two points stressed by three of the Portland Commissioners were that:

1. Federal policy towards civil defense had fluctuated too frequently in the past — both in regard to the type of program recommended and in regard to the urgency that the program should be implemented.
2. The citizens of Portland do not feel that there is an urgent need for civil defense. This feeling was demonstrated at the special election on November 6, 1962, which defeated the special levy for civil defense purposes.

The mayor, who stood alone against the four commissioners, recognized civil

defense as an integral part of the nation's defense posture. In his opinion, a country with an effective civil defense program is less subject to nuclear blackmail and in this sense civil defense can make a major contribution to peace. He held that civil defense is a necessary governmental function, the responsibility of federal, state, and municipal units; however, it is not an operational agency but a planning and coordinating agency. He felt that lack of strong federal and state leadership had hindered the development of local civil defense programs. While federal leadership had improved since the transfer of the Office of Civil Defense to the Department of Defense, there was still an urgent need for the federal government to provide more energetic leadership.

The municipal civil defense director believed that the problems encountered in establishing a municipal civil defense capability result from the following:

1. Absence of continuous and forceful leadership from the President, Congress, military leaders, and state and local officials.
2. Exaggerated statements by "self-appointed experts" speaking outside the area of their competence.
3. Failure of the federal government to explain adequately to the public why the national civil defense plan has changed from evacuation to shelter. Without such explanation, public confidence in the local civil defense plans and staff was seriously impaired.
4. Lack of understanding by the average citizen of the need for civil defense and, consequently, a lack of acceptance (not apathy) on the part of private citizens, and state, county, and local officials. Such lack of acceptance resulted in inadequate financial support necessary to effectively carry out civil defense programs.
5. Excessive federal controls over the civil defense programs. Local governments are not permitted to develop plans tailored to their needs. The emphasis by the federal government of the National Fallout Shelter Program forced local civil defense agencies to curtail long established and necessary plans and programs.
6. Civil defense planning and organization should be on an area or regional basis, not on an individual municipal basis.

Portland, it is assumed, is a city that should plan a civil defense program to meet post-attack conditions that include damage to the city as well as the threat of fallout radiation. Given the serious nature of this threat to the city and the excellent progress made in civil defense in past years the decision to abolish the civil defense agency should be reconsidered at the earliest opportunity. Direct relations between the city and the federal regional office should be established in the absence of leadership from the state.

CIVIL DEFENSE PREPARATIONS

Building the System

Continuity of Government

The continuity of Portland's municipal government has been fully provided for by necessary amendments to its charter and enactment of specific ordinances. The city charter provides that council elect a president by majority vote. In the absence or disability of the mayor, the president shall preside over its meetings and perform the duties of mayor. Should both the mayor and president be absent or disabled, the other members of council are to select one of their number to perform the duties of president and mayor. If a vacancy occurs in the office of mayor, commissioner or auditor, the council is to appoint an eligible person to fill the vacancy until a successor is elected at a regular election and qualified.

When three or more members of city council are prevented from performing their duties by death or a crippling disability caused by a natural disaster, calamity, accident or enemy attack, the following city officials succeed to the vacancies: city attorney, city engineer, city treasurer, health officer, chief of the bureau of police, chief of the bureau of fire, presiding municipal judge, and the other permanently appointed municipal judges in the order of their seniority. This becomes an interim city council to transact necessary city business and to select, as soon as possible, from among the citizens of Portland, persons to serve as members of council until the next regular election. If the regularly elected mayor is not a member of this citizen council, they select one of their own number to be mayor. The mayor will then assign the other members to head the remaining departments.

No formal arrangements have been adopted relative to judicial continuity. The charter provides that the three judges of the municipal court, the only city judicial body and court of record, are appointed by the city council. It is evident that in an emergency, council would appoint to fill vacancies once it had reconstituted itself under the procedures described above.

Succession to all key government and civil defense posts is provided by the city's civil defense plan. With only two minor exceptions, interviews with heads of bureaus, offices, divisions and civil defense units disclosed that the lines of succession were clearly understood and followed the normal operating chain of command to the extent possible.

All the elected city officials, the director of disaster relief and civil defense, the city attorney, presiding municipal judge, city treasurer, city engineer, chief of police, fire chief, city health officer, and the superintendent of parks and designated

assistants report to the emergency operations center in the event of an attack warning. Other government and emergency service personnel with operating assignments report to five dispersal areas around the city of Portland on the order to undertake either a staged or immediate evacuation of the city.

Portland has made provision for not only the continuity of its government offices but also its operational continuity by preserving its vital records. In 1955, the city council by ordinance authorized the city auditor to microfilm copies of city records for safe keeping. Under the program established by the auditor, all city records have been microfilmed except confidential police records. Two copies are made of each document microfilmed. One copy, the negative, is stored at the emergency operations center; the other, the positive, is stored in the basement of city hall, or, in some cases, in the office of city attorney or in the office of city engineer. Two microfilm readers are located in the auditor's office, one is located in the office of city engineer, and one is located at the emergency operations center.

Emergency Powers

The powers given to the mayor by the city charter are very atypical of commission government forms. First, the mayor is elected by the people, and not selected by the council as may sometimes be the case. Second, the mayor designates the department each commissioner is to head. This is most unusual because in almost all commission cities these assignments are made by the mayor and commissioners acting in concert as city council. Third, the allocation of bureaus and offices to each department is determined by the mayor. It is evident that the mayor of Portland is potentially a much stronger executive than is customarily found in commission government cities. With these powers, the mayor could, conceivably, place all the municipal agencies in the department he heads, creating a unified structure in place of the sometimes referred to "five headed monster" of commission administration.

The mayor would not aggrandize his own control in this fashion for normal city operations because the commissioners could retaliate when they considered the budget, and of course, seek political redress at the polls. In an emergency, however, he would be free to take command, at least as far as the charter is concerned, and assumption of complete operational control of city government would then be acceptable to the commissioners. This acceptance is evinced by the city's civil defense plan. It provides that the mayor be in complete charge of operations under a special unified organizational structure. He may, if he chooses, assign commissioners to supervise specific services under his direction. The plan also provides that the commissioners be at the emergency operations center to advise and assist him.

The city charter also permits the council to pass an ordinance on the day of its introduction, providing there are at least four councilmen present and that the ordinance contains the statement that an emergency exists, specifies the nature of the emergency, and receives the unanimous vote of all members present.

The Portland city council has passed five ordinances regulating conduct in civil defense tests or emergencies and granting special emergency authority to city and civil defense personnel. These ordinances are designed primarily to implement Portland's evacuation plans and they provide that:

1. It is unlawful to disobey any order relating to the control of traffic given by a regular, auxiliary, or reserve police officer of any level of government or of civil defense personnel participating or assisting in a civil defense test or emergency involving the city.
2. It is unlawful to park, or to allow to remain parked, vehicles in areas designated as areas of evacuation by the Bureau of Traffic Engineering during a civil defense test or emergency.
3. The park superintendent or other park employee, has authority to order persons from park grounds and buildings in case of an emergency or in cases where life and property are in danger.
4. The director of disaster relief and civil defense of the city has authority to designate any area over which the city may exercise police jurisdiction an emergency area and fix the duration of time it shall remain such.
5. The Bureau of Police has the authority to regulate, or prohibit egress, ingress, or movement within any area designated as an emergency area; and to evacuate any persons from emergency areas whenever human life or property are in danger.

Although it is difficult to anticipate the requirements that a major disaster or an attack might make on the city for special additional emergency powers, there is no apparent lack of emergency authority given to Portland's city government.

Municipal Civil Defense Agency

The Bureau of Disaster Relief and Civil Defense is responsible for organizing, developing, and coordinating civil defense plans and activities and training programs in the city of Portland. The civil defense director is appointed by, and responsible to, the mayor. The bureau is appropriately located in the organizational structure in the Department of Public Safety assigned to the mayor, but the staff character of its function should be emphasized by changing its title from 'Bureau' to 'Office' of Disaster Relief and Civil Defense. This change of title alone would help place the agency at a staff rather than an operating level and facilitate its function of coordinating the civil defense activities of all of the other operating bureaus.

The official line of authority for civil defense operations in the state of Oregon is from state to county to city. For example, all requests for financial assistance

by cities and towns must be approved by the county director before submission to the state agency. However, for civil defense purposes, Portland is considered a county and, consequently, deals directly with the state agency rather than with the civil defense director of Multnomah County. The bureau serves only the city of Portland and no area-wide civil defense agency has been officially established, but an informal association of Portland target area civil defense directors has been established. This organization is called The Target Area Coordinating Council (TACC) and is composed of the directors of the city of Portland, and the directors of the Oregon counties of Multnomah, Hood River, Clackamas, and Washington, and the Washington county of Clark.

The Bureau of Disaster Relief and Civil Defense is staffed by 13 full-time employees assigned to the agency from various operating bureaus. The table indicates the bureau personnel by title, and, for professional staff, the previous municipal employment by bureau and position title. Only one full-time employee is not in the personnel and administration matching fund program. That employee is the health coordinator who, because he is in the Bureau of Health, is not in the city merit system. In addition to the full-time employees listed in the table, a battalion chief in the Bureau of Fire serves as fire coordinator from time to time as required, and a senior engineer from the Bureau of the City Engineer serves, on the same basis, as the engineering coordinator.

Portland
Bureau of Disaster Relief and Civil Defense

<u>Title</u>	<u>Bureau</u>	<u>Title</u>
Director	Fire	Captain
Ass't. Dir. Administration	Fire	Lieutenant
Ass't. Dir. Plans & Training	Fire	Fire Fighter
Shelter Coordinator	City Engineer	Draftsman
Police Coordinator	Police	Lieutenant
Health Coordinator	Health	Sanitarian
Communications Officer	Comm. & Electricity	Radio Technician
Rescue Instructor	City Engineer	Engineer Aide
Clerical (5)		

The Bureau's staff is thoroughly professional and, except clerical workers, highly trained either in civil defense or in their technical specialties. The director has been concerned with civil defense as a member of the armed forces and as a civilian for more than twenty years. He served as United States Army Liaison Officer to the British Civil Defense organization and was attached to the staff of the British Civil Defense Staff College; participated in two nuclear tests in Nevada and observed the first H-Bomb detonation at Bikini Atoll. The two assistant directors have been in civil defense work for approximately twelve years and have attended appropriate federal civil defense courses. All professional staff members, except the communications officer, have attended one or more civil defense courses.

Financing Civil Defense

The primary source of municipal revenue in Portland is the property tax which provides approximately 55 per cent of the total receipts of the city's general fund. Current operations of all city agencies are financed from the general fund, except that the operations of the city's Bureau of Water Works, Bureau of Municipal Paving Plants, Department of Exposition and Recreation, and Department of Public Docks, are financed almost exclusively from their own receipts. Consequently, state imposed restrictions on the property tax levy impose very real limits on municipal activity. The Oregon constitution provides that the maximum tax levy which can be imposed in a given year by a taxing authority cannot be more than six per cent greater than the largest levy imposed in any one of the three immediately preceding years without the approval of the voters. The maximum possible levy computed in this manner is called the property tax base. With voter approval, the tax base may be increased for one year by a specific number of dollars rather than held to the six per cent limitation. This new amount may become the new tax base for future years, again subject to the six per cent limitation. In addition, special levys which are not part of the tax base, and are not subject to the six per cent limitation, may also be authorized for from one to ten years by the voters.

The Portland city council has annually increased the tax levy by the full six per cent amount in recent years. However, during the 1930's and early 1940's the council did not impose the maximum allowable annual increment and, as a result, the city's tax base is now approximately half as large as it would have been had the six per cent increase been imposed regularly.

In 1952, the voters of Portland approved a special tax levy to raise \$600,000 to be spent over a two-to-four year period for civil defense supplies, equipment, and facilities. The rate necessary to raise this amount was approximately one mill. The funds, actually used over an eight-year period, were used in conjunction with available federal and state funds for the construction of an emergency operations center, procurement of base stations and mobile radio equipment, establishment of a microfilming program, construction of a civil defense training center, installation of the "Green Light" traffic

control system, and installation of the public attack warning system. Current operations, including salaries and wages, operation and maintenance, and equipment, have been financed from general fund revenues and from federal contributions. Information provided by the Office of the Mayor indicates that Portland spent \$358,858 for civil defense for the 1959-60 through 1962-63 fiscal years. During that four-year period, the city will have received state contributions of \$9,800 and federal contributions of \$130,000. In short, an average of about 14.6 cents per capita per year of city money was actually expended for civil defense during the four years. No expenditures are anticipated in the 1963-64 fiscal year because of the decision to eliminate civil defense as a separate operation.

A proposition authorizing the city to levy a special tax which would produce \$75,000 annually for five years to finance an expanded civil defense program was submitted to the voters of Portland on November 5, 1962. The tax rate necessary to produce this amount, on the basis of the city's 1962 assessed valuation of \$866,541,585, would have been slightly less than 1/10 of a mill. This proposition was defeated by the voters as was a proposition to increase the tax base by more than the allowable six per cent.

The civil defense director estimates that to provide city residents with other than the present "token" civil defense program, annual expenditures should total \$250,000, half of which would be derived from city revenues and the remainder from state and federal contributions. These funds would be used for salaries; maintenance; supplies; equipment; and facilities, including expansion of the public attack warning system, expansion of the CONELRAD broadcasting system, extension of the "Green Light" evacuation control system to include signals at all intersections within the city limits, additional stockpiling of food and medical supplies, acquisition of specially outfitted rescue vehicles, and continuation of the city records preservation program.

Program Activity

Training and Public Information

The Portland Bureau of Disaster Relief and Civil Defense has conducted extensive training programs since it was established in 1950. A rescue training school, including a classroom building, a fire training building, and a "bombed out" building, has been located near the emergency operations center to serve an extensive rescue training program. Emphasis has also been placed on training auxiliary police and the radio-logical defense monitors. Many citizens have taken courses in medical self-help, home protection, and adult education in civil defense. Sophomore dental and dental hygienist students at the University of Oregon and student nurses at three Portland nursing schools are required to take a civil defense course arranged by the civil defense coordinator from the Bureau of Health. The variety of courses and the number of trainees completing them is indicated by the table on the following page:

Civil Defense Training in Portland

<u>Course</u>	<u>Trainees</u>	<u>Course</u>	<u>Trainees</u>
Adult Education	1300	Medical Self-Help	723
Adult Education Instructor	52	Ordnance Reconnaissance	75
Auxiliary Fire	350	Plant Protection Management	75
Auxiliary Police (Basic)	1500	Radiological Monitoring	624
Auxiliary Police (Advanced)	750	Rescue - Basic	1156
Civil Defense Orientation	800	Light Duty	365
Emergency Mass Feeding	570	Heavy Duty	152
Engineer Stockpiled Equipment	95	Instructor	62
Home Protection Workshop	1650	Hospital Personnel	59

The Bureau of Disaster Relief and Civil Defense has published and distributed brochures, including a 24-page Sunday supplement prepared in cooperation with the Portland newspapers, to keep the people of Portland informed about civil defense matters. Information bulletins to city officials, prominent and interested citizens, and the news media are prepared and distributed periodically by the Bureau. Since 1950, 97 such bulletins discussing aspects of civil defense and natural disaster problems have been prepared.

Tests and Exercises

Portland has participated in all the national OPAL exercises, NAWAS warning tests, and conducts a CONELRAD exercise every six weeks consisting of 30 minutes of live broadcasts over the Portland CONELRAD station. Attack warning sirens are sounded once every month, and each siren is given an on-site mechanical test twice a month. Emergency generators and the fire alarm system at the emergency operations center are tested weekly. Fire personnel from Portland, the state fire marshal's office, and municipal and volunteer departments around Portland have conducted fire mobilization exercises on two occasions.

The Bureau of Disaster Relief and Civil Defense, in cooperation with the Bureau of Traffic Engineering, has prepared and implemented a plan to evacuate the city's downtown population in the event of a nuclear attack upon the United States. The plan, designated as the "Green Light Plan," permits the switching of all electric traffic signals so they remain a steady green or red and, by following the green traffic lights, vehicles emerge from the controlled area at the proper points to evacuate the city. Switching of the electric traffic signals in the controlled area is done from two locations — the Police Radio Dispatch Center at the police headquarters and from the East Side Precinct Station. Bureau of Police personnel at those places are responsible for activating the plan upon authorization from the mayor, the Bureau of Disaster Relief and

Civil Defense, the chief of police, or, under certain designated situations, the attack warning point (Police Radio Dispatch Center). On Tuesday, September 27, 1955, at 3:10 P.M. "Operation Green Light" was conducted to test this plan. In 49 minutes, 29,423 vehicles and 101,074 persons evacuated the downtown and lower east side area, approximately four square miles containing about 1,000 city blocks. About six months was spent planning the test, and it was well publicized by all communications media that the tests would occur on one of three days. Although the exact date and time were not announced, some commercial and industrial firms in the test area reportedly excused their employees early on the 27th or gave them the day off. While the population count made during the test indicated approximately 100,000 persons evacuated the test area, the normal population of the area during the working day is estimated to be over 200,000 persons. However, the Bureau of Disaster Relief and Civil Defense believes that with a minimum but continuous education program the downtown area could be completely evacuated in one hour in an emergency situation.

Shelter Program

Portland has made progress in its shelter program, however, it appears that the Bureau of Disaster Relief and Civil Defense has not pursued this program with the same energy it has undertaken its other civil defense tasks. Shelter marking was done entirely by the Corps of Engineers (331,715 spaces out of 562,454 potential spaces); licenses were obtained by the Bureau from building owners by mail (311,755 spaces); and personal contact for the remainder was planned but deferred until the shelter coordinator had completed shelter management instructor training; stocking was done by the limited Bureau personnel (2,750 spaces out of 311,755 licensed); no shelter manager instructors had been trained. The city is within 25 miles of a federal warehouse and, consequently, must go there and get its own shelter supplies. No effective means had been decided upon for moving these supplies in the quantities necessary from the warehouse to the licensed shelters.

The lack of emphasis imparted to the shelter program stems from a number of causes -- including the belief that the fallout shelter program, while necessary, is only a stop-gap program of limited value and that eventually a blast shelter program must be undertaken; the belief that other civil defense programs considered necessary for Portland will be jeopardized or lost if more energy is devoted to the shelter program; and the belief that the city does not have the financial resources to move supplies from the warehouse to shelter facilities -- but basic to the Bureau's attitude toward the fallout shelter program are the assumptions that in an attack situation, evacuation of the city is more likely than a movement to shelter, and that even if it were necessary to take shelter, the shelter stay period would be of very short duration.

Facilities for Emergency Operations

Attack Warning System

Attack warning is provided by seven Chrysler Air Raid Sirens located on dominant terrain on publicly owned property, wherever possible. These sirens are completely self-contained units, each having its own individual power plant, gasoline operated, and can be activated manually or by remote control. About 98 per cent of the territory of the city lies within an area in which the sound output of the sirens is 80 decibels or more; the siren sound output for the remainder of the city does not fall below 70 decibels.

Portland serves as one of the six District Warning Points in Oregon and as such receives warning over the National Warning System (NAWAS). This District Warning Point is located in the radio room of the Portland Bureau of Police and is manned on a 24-hour basis by communication division personnel of the Bureau. Reliable and flexible procedures have been prescribed in the Portland operations plan for getting the warning from the District Warning Point to the Fire Alarm Telegraph Office or the emergency operations center which both serve as attack warning control points and are able to sound the attack warning sirens.

Emergency Operations Center

Portland completed the Nation's first underground municipal civil defense operations center in 1957. Designed to be the emergency seat of government and nerve center for directing rehabilitation and restoration activities in the event of a nuclear attack on the city, the two story underground structure provides a protection factor of 10,000 and can withstand air pressure of at least 30 pounds per square inch. It is located 5 1/2 miles from City Hall and 3/4 of a mile east of the eastern city limit line. In addition to the control center proper, there is an entrance structure that houses the fan room, personnel decontamination facilities, and entrance security devices. Entrance security is provided by an electric eye, closed circuit television, an intercommunications system, and an electrically controlled air lock operated from two inside stations.

The emergency operations center is equipped with two 100 kw diesel powered generators, either one of which is capable of supplying all of the electric power needed to operate the center and its communication systems for a period of 60 days. All city records have been microfilmed, and the negative and a reader are stored at the center. In addition to an operations room, the center has a dormitory with 100 bunks, a dining area, kitchen, telephone message center, radio transmitter room, radio shop, broadcasting studio, press room, radio dispatching areas, store room, boiler room, and office space for the mayor, commissioners, civil defense personnel, police, fire and medical personnel. The kitchen contains food and water for 300 people for ten days. Attempts to drill a well to provide the center with an unlimited water supply have proved unsuccessful.

Communications

Portland is licensed to operate on 21 radio frequencies: 14 frequencies in the Public Safety Radio Service Band, one in the Operational Fixed Radio Service Band, two in the Aviation Radio Service, and four in the Maritime Mobile Radio Service. These frequencies are assigned to the municipal services as follows:

1. The Bureau of Police has five frequencies in the Public Safety Radio Service Band used for primary dispatching and reporting, detective, traffic control (mobile radar units), intercity, and one frequency classified "confidential". The four frequencies in the Maritime Mobile Service are used by the Bureau of Police to provide the Bureau's police boats with communications to the United States Coast Guard and other vessels on the Willamette and Columbia rivers.
2. The Bureau of Fire has four frequencies in the Public Safety Radio Service Band for primary dispatching and reporting, command, administrative, and State Fire Net.
3. The Bureau of Water Works has three frequencies in the Public Safety Radio Service Band, two for primary dispatching and reporting, and one used between base, mobile units, and pack sets during the forest fire season. The frequency in the Operational Fixed Radio Service Band is used by the Bureau of Water Works to provide communication between City Hall, the reservoir at Bull Run Dam, and Dodge Park Reservoir in the city.
4. The Bureau of Insect Control uses the two frequencies in the Aviation Radio Service for communications between the Bureau's two spray planes and ground control.
5. The Bureaus of Disaster Relief and Civil Defense, Health, Insect Control, Parks, and Traffic share one frequency in the Public Safety Radio Service Band for dispatching and reporting.
6. The Department of Public Works, Bureaus of City Engineer, Design, Construction, Maintenance, Sewage Disposal, and the Municipal Paving Plant, share one frequency in the Public Safety Radio Service Band for dispatching and reporting.

Located in the emergency operations center are radio transmitters operating on the Bureau of Police primary dispatching and reporting frequency; the Bureau of Fire primary dispatching and reporting, command, administrative, and State Fire Net frequencies; the Bureau of Water Works dispatching and relay frequency; the

Public Works primary dispatching and reporting frequency; and the primary dispatching and reporting frequency used by the Bureaus of Disaster Relief and Civil Defense, Health, Insect Control, Parks, and Traffic Engineering. In addition, transmitters operating on the Civil Air Patrol frequency and three RACES frequencies are located in the center. The latter provide the center with radio communications with state civil defense headquarters at Salem or the alternate center at Corvallis, state civil defense mobile units, three neighboring county civil defense agencies, and mobile units in automobiles of amateur radio operators assigned to dispersal areas. Also located in the center is a radio teletype trans-receiver.

A fully equipped CONELRAD broadcasting studio connected by land-line to the key CONELRAD station in the Portland area (KEX) is also located in the center. Broadcasts can be made directly from the studio, or rebroadcasts can be made of any messages received on the center's trans-receivers. Two tape recorders located in the studio permit recording and replaying messages or playing and recording simultaneously.

The center has its own internal telephone communications system. Land-line communications at the center include: four trunk circuits, trunk hunting type, with seven stations; 20 direct Portland exchange telephone circuits and 20 operating positions in the telephone message center, five of which are in operation and the remainder to be put in service by the telephone company as required; two leased lines, primarily underground, which go through the Portland Central Telephone Office but do not go through the central office switching equipment; one direct telephone circuit to Salem, Oregon Toll Board; one direct telephone to Eugene, Oregon Toll Board; and one direct telephone circuit to the KEX broadcasting station transmitter for intercom use (in addition to the line for broadcasting purposes); and one direct line on the NAWAS circuit. In addition, arrangements have been made with the telephone company for augmentation of the land-line facilities at the center in accordance with pre-arranged plans in the event of an emergency.

Fixed Radiological Monitoring Posts

Fixed radiological monitoring posts have been established in 17 fire stations providing a protection factor of 100 or better. These 17 stations have been stocked with federal supplies. To man the monitoring posts, three qualified instructors in the Bureau of Fire gave radiological monitoring instruction to 269 fire fighters, of whom 195 were qualified. From these 195 qualified firemen, 102 were assigned to 51 two-man teams, 17 teams on duty each shift. The remaining 93 qualified monitors serve as substitutes. The 17 monitoring stations have telephones and, by means of fire vehicles located at the stations, radio communications with the emergency operations center.

Dispersal Area Facilities

Facilities in school buildings have been located at each of the five dispersal areas capable of housing dispersal area personnel. A program to secure written agreement for the use of these designated facilities in the dispersal areas was only recently undertaken. Only one such agreement, between the city of Portland and a school district, has been signed. However, the county civil defense directors of the counties in which these facilities are located have agreed orally that they would be available for use by Portland as dispersal area headquarters.

UTILIZATION OF MUNICIPAL FORCES AND COMMUNITY ORGANIZATIONS

Operating the System

Portland Civil Defense Survival Plan

The Portland "Operations Plan" now in effect was completed in 1962. This plan sets forth the civil defense mission, assumptions, policy, and organization. It assigns specific duties, responsibilities, and posts to city officials, employees and key staff members of participating utilities and community organizations. The "Operations Plan" has been widely publicized and distributed among city officials and administrative employees who, consequently, know their assigned posts, duties, and responsibilities.

Four basic assumptions have determined the plan for evacuation and civil defense operations in Portland:

1. Enemy action would be directed against civilian population centers in the event of war. Attack could come without warning or with warning of as much as several days.
2. In the event of an attack on the United States with less than one hour of warning, it is probable that attack on Portland would be delayed for an indeterminate period while higher priority targets were attacked.
3. Because there are no military or civilian targets west of the city, it is possible to disperse the city's population without the necessity of providing fallout shelters in the evacuation areas.
4. Fallout shelters in the city provide protection from radioactive fallout primarily; only secondarily do they provide very limited protection from the immediate effects of nuclear weapons — blast and heat.

It is therefore, the policy of the city to undertake evacuation, except, an attempt will be made to shelter the population if intelligence indicates clearly that there is less than one hour before the city will undergo an attack. In an evacuation, municipal employees and others with civil defense duties would report to their assigned posts; all others would move to designated evacuation areas in the surrounding support counties. In the event of a strategic warning of one or more days, the city would begin a staged evacuation of non-essential employees and equipment, women and children, and nonessential civilian workers.

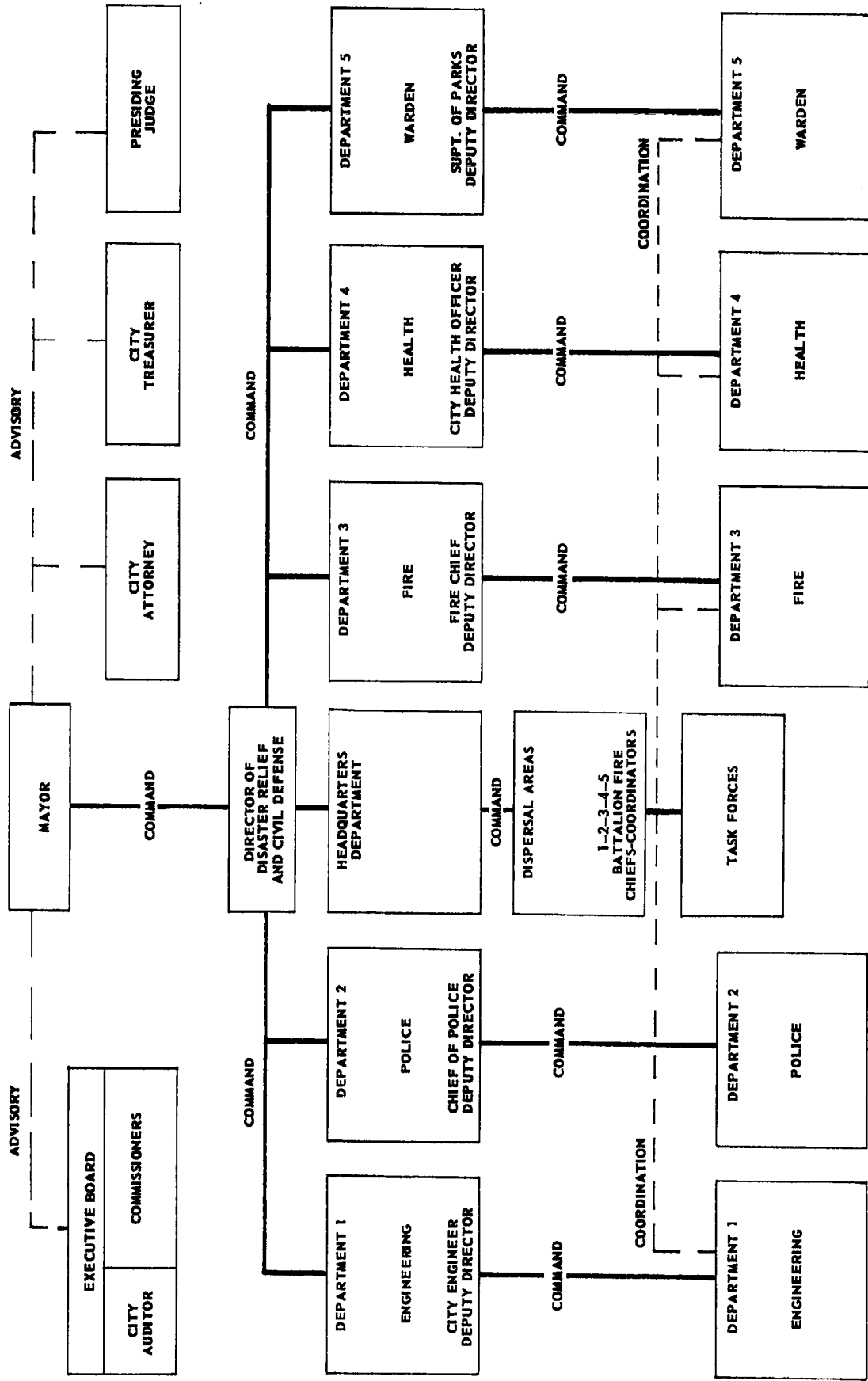
Civil Defense Organization

Staffing and implementation of the Portland civil defense "Operations Plan" is based almost exclusively upon the utilization of municipal personnel. One or more persons from 30 city bureaus and offices, including all the major ones, have civil defense assignments. However, the organizational structure established by the Plan deviates radically from the normal day-to-day municipal structure. The new structure is designed for a single purpose -- to meet emergency disaster needs. It therefore appears specialized, simplified, and more rational than the structure for normal peace time activities. Nonessential services are eliminated and political considerations are not a significant influence on the system.

The reorganized municipal government for emergency operations is composed of a Headquarters Department under the immediate supervision of the director of the Bureau of Disaster Relief and Civil Defense, and five operating departments under the supervision of five deputy directors. Department 1, Engineering, is under the city engineer; Department 2, Police, under the chief of police; Department 3, Fire, under the fire chief; Department 4, Medical, under the city health officer; and Department 5, Warden, under the superintendent of parks. Several of these departments are divided into various divisions and sections to carry out their assigned duties and responsibilities. All six departments are headquartered at the emergency operations center. Actual field operations are conducted by municipal personnel and volunteers assigned to five dispersal area headquarters located in a ring lying approximately 15 miles from downtown Portland. A civil defense organization composed of the same six departments found at the operations center is to be established at each of these five dispersal areas.

The on-duty battalion chiefs of the five Bureau of Fire districts serve as dispersal area coordinators and are in charge of the dispersal areas and dispersal area headquarters. They are responsible to the director of disaster relief and civil defense and exercise power in the name of the director, except that they only coordinate the activities of the five operating departments in their areas. Commanding officers of each of the five operating departments at the dispersal areas report and are responsible to the deputy directors of their respective counterpart departments at the emergency operations center. Although the dispersal area coordinator does not have direct command over personnel assigned to the operating departments at the dispersal areas, he does have one or more task forces under his direction composed of personnel from engineering, police, fire, medical, and communications. The missions of the task forces are to provide preliminary post-attack reconnaissance, damage analysis, radiological readings, initial debris clearance, rescue, and medical assistance to the injured prior to the movement of the operating department forces into damaged areas.

The civil defense organization and chain of command is as follows: departmental service commanders at the dispersal areas report to their counterpart deputy director at the emergency operations center; the dispersal area coordinators report and are



PORTLAND CIVIL DEFENSE ORGANIZATION

responsible to the civil defense director, act for the civil defense director at the dispersal areas, and coordinate the activities of the five operating departments in the field. At the emergency operations center, the civil defense director reports and is responsible to the mayor. Deputy directors in charge of the five operating departments report to and advise the mayor and the civil defense director in the areas of their specialization, either directly, or indirectly through their respective elected commissioner, as the mayor may designate.

An Executive Board consisting of the elected city auditor and commissioners, and the city attorney, city treasurer, and presiding judge of the municipal court report to the emergency operations center to advise the mayor on the conduct of emergency operations. A schematic representation of the civil defense organizational structure and chain of command just described is shown on the accompanying chart.

Headquarters Department

The Headquarters Department provides staff assistance to the director of disaster relief and civil defense and support services to the five emergency operating departments. The assistant director for administration of the civil defense agency manages the agency staff performing clerical services and maintaining the emergency operations center. A public affairs staff under the assistant director for plans and training is responsible for training, education, emergency information, and the attack and all clear warning systems. Support services are provided through four main divisions:

Repair and Maintenance Division

This Division provides emergency services required to keep equipment and vehicles in good working condition. The superintendent of the Bureau of Municipal Shops in the Department of Finance serves as chief of this Division at the operations center. In addition, three mechanic foremen and the office manager of the main shop installation report to the center to serve as assistant division chiefs. Ten other Bureau personnel are assigned to the dispersal areas.

There are 90 persons employed in the Bureau of Municipal Shops as follows:

Superintendent of Shops	1	Painter	1
Mechanic Foremen	3	Carpenter	1
Garage Foremen	4	Repairmen	2
Machinists	8	Compressor Maintenance	1
Mechanics	36	Equipment Operator	1
Blacksmiths	3	Utility Men	26

Clerical 3

The Repair and Maintenance Division is supposed to inform and train shop personnel for their assignments during emergency operations and recruit and train volunteer personnel, if required. Although Bureau personnel appear to know their assigned emergency posts and their assigned duties, no employees are known to have had civil defense training and no volunteers have been recruited or plans and procedures developed for providing emergency services.

The Bureau has repair and maintenance facilities at five different locations in the city. None of these facilities provide employees with fallout protection. Six automobiles, 11 pickup trucks, one panel truck, and one tow truck are operated by the Bureau. In addition, the Bureau operates the three tow trucks assigned to the Bureau of Police. Only tow trucks are equipped with two-way radio and the dispatching is done by the police radio operators.

Fiscal and Supply Division

This Division is assigned the task of providing fiscal, supply, property control, and resources management systems required to carry out all activities of the city during an emergency period, including the development of detailed plans and procedures for the establishment of fiscal policies and general public economic controls. It includes a Procurement Section, responsible for locating, developing, and providing supplies and equipment necessary for emergency operations, and a Property Control Division, responsible for maintaining records relative to the assignment, location, availability, and use of municipal and privately owned equipment prior to and during emergency operations.

The director of the Bureau of the Budget in the Department of Finance has been designated chief of this Division. The city auditor and the city treasurer have been named to assist him in carrying out this assignment. More than token assistance is necessary, however, because the director of the Bureau of the Budget has a staff of two, an assistant director and a clerk. The city treasurer's staff is almost as limited, consisting of two deputies and four clerks. Only the city auditor with 65 employees has the manpower with potential for executing emergency functions of the magnitude called for. These 65 employees include 17 accountants, 29 clerks, and 15 tabulating equipment specialists.

It would appear that the city auditor would be a more satisfactory choice as chief of the Division if such an assignment could be worked out in the face of his status as an elected official and his independence of the mayor for normal city operations. Although the budget director is aware of his assignments and duties, he has been able to do little to implement these provisions of the plan. Lists of supplies and vendors have not been prepared, procedures for rationing or distribution of food and clothing have not been determined, and plans have not been developed for establishing general economic controls or fiscal policy.

The Procurement Section of the Fiscal and Supply Division is under the supervision of the city purchasing agent. The Bureau of Purchases and Stores in the Department of Finance, the bureau which is under the direction of the city purchasing agent, also has an extremely limited staff. An assistant purchasing agent, two buyers, a clerical force of five, and three storekeepers constitute the complete work force for normal operations. The purchasing agent knows his assigned post and has participated in civil defense exercises. However, none of the assignments given him have been carried out to date. For example, no procedures have been established with representatives of Portland industries and firms dealing with such vital commodities as food, clothing, petroleum products, and medical supplies. Vendors are known to the purchasing agent but no list has been prepared and kept current at the emergency operations center.

The Property Control Division of the Fiscal and Supply Division is under the direction of the head of the Bureau of Property Control, also in the city's Department of Finance. This unit is responsible for taking charge of shelter stocking, signing the papers, taking ownership of the city, and knowing the location and quantities of supplies in each shelter. Its staff is limited to an assistant director, five clerks, and three storekeepers. Given a full shelter stocking program, it is apparent that this agency would be extended to the limit of its capability in discharging this responsibility alone. Its responsibility for maintaining records relative to the assignment, location, availability, and use of municipal and privately owned equipment prior to and during emergency operations was not being discharged even prior to the imposition of the additional responsibility for shelter stocking control. Inventories of supplies that would be in demand in the event of a nuclear attack had not been prepared.

Communications and Warning Division

The Bureau of Communications and Electronics in the Department of Public Affairs provides the leadership and staff for this Division. It is responsible for planning, installing, repairing, and maintaining communication equipment for emergency operations; supervising installation and maintenance of attack warning systems; maintaining stockpile inventories of equipment and spare parts; organizing, training, and maintaining liaison with amateur radio organizations and coordinating and directing RACES operations.

The personnel of the Bureau of Communications and Electronics consists of the director, an assistant director, lead man, six radio technicians, a storekeeper, and a chief clerk. This specialized staff is responsible for preparing specifications, reviewing bids, and making recommendations relative to all electronic communication equipment to be purchased or leased by the city, except the fire alarm telegraph system. No equipment can be purchased or leased without the approval of the director. The Bureau also is responsible for engineering, installation, repair, and maintenance of all municipally owned communication equipment except the fire alarm telegraph system. This centralized authority in communications has resulted in standardization of radio

equipment for all city agencies. Complete interchangeability of parts has been achieved and the stocking of spare parts has been simplified. The civil defense responsibility of the Bureau is a direct extension of its normal operations. In the event of a nuclear attack, the director, assistant director, and lead man are to report to the emergency operations center where they act as chief of communications and warning division, senior assistant division chief, and assistant division chief. The communications officer assigned to the Bureau of Disaster Relief and Civil Defense from the Bureau of Communications and Electronics becomes the division coordinator and RACES radio officer.

The six radio technicians employed in the Bureau are assigned to the five dispersal areas. They are in charge of repair and maintenance of radio equipment in those five areas. Greater depth than this thin staffing would permit is provided by the assignment of volunteer licensed amateur radio operators to the emergency operations center and dispersal areas.

Bureau personnel are familiar with their assigned posts and duties and, to a very great extent, the duties and assignments either have been carried out, as evidenced by the extensive municipal communication system available for civil defense and disaster purposes, or they are being carried out by normal Bureau operations. The weakest part of the communications program is organizing and maintaining liaison with amateur radio personnel, who are very dedicated but independent and difficult to control.

Aircraft Division

The director of emergency services of the Oregon Wing of the Civil Air Patrol reports to the Portland emergency operations center in the event of a nuclear attack. He serves as chief of the Aircraft Division of the Portland civil defense Headquarters Department and as director of emergency services, Oregon Wing Headquarters. Three other Wing Headquarters personnel also report to the emergency operations center to serve as mission coordinators for the Oregon Wing. All other Wing personnel have been assigned to operations bases and alternate bases. Squadrons of the Oregon Wing in the Portland area have the following duties and assignments: (1) traffic control reconnaissance, (2) damage assessment reconnaissance, (3) aerial radiological monitoring, and (4) transportation of key personnel and critical medical supply items.

The Wing has 61 light aircraft, 15 radio equipped ground rescue vehicles, and a communications truck. There are 135 pilots and 419 senior members available to man this equipment. Not all aircraft have radios, but a number of mobile transmitters are available that can be installed on short notice. Oregon Wing personnel are familiar with their assignments and have conducted annual civil defense training missions in cooperation with the city's civil defense personnel. Four Wing members have received training as radiological monitoring instructors but no courses for other Wing personnel have been planned as yet and no monitoring equipment has been obtained.

Department 1 -- Engineering

The civil defense department of engineering is a combination of two entire city departments, the Department of Public Works and the Department of Public Utilities, and one Bureau from the Department of Public Affairs, the Bureau of Buildings. Its emergency responsibilities are critical, extremely demanding, and cover a wide range of operations. To meet these complex operations, it is organized into six divisions under the general command of the city engineer. Three divisions, Public Works, Demolition, and Rescue, are made up of men and equipment from the Bureaus of City Engineer, Design, Construction, and Maintenance in the office of city engineer, and the Bureau of Sewage and Refuse Disposal also under the city engineer for normal operations but not in his office. The Transportation Division is drawn from the Bureau of Traffic Engineering in the Department of Public Works. The Utilities Division is composed of the Department of Public Utilities and augmented by liaison personnel from the utility companies serving the city. The Shelter Division is staffed by the Bureau of Buildings in the Department of Public Affairs.

The bureaus under the city engineer do not lend themselves to an assignment scheme of a civil defense division for each bureau because of their varying size and balance of employee skills. They have, then, for civil defense operations, been assigned among the three divisions according to need and to achieve a maximum utilization of each persons ability to render emergency service. These three divisions, each with a senior engineer as chief, have the following missions:

Public Works Division -- interpretation and plotting of all intelligence, radiological, damage assessment, and population injury data; clearing debris, restoration of streets, railways, docks, bridges, air fields, sewage system, public buildings, and other vital installations; provide emergency cemeteries and assist in burial of the dead.

Demolition Division -- shoring and demolition of unsafe buildings and structures, creation of fire breaks, and clearing debris.

Rescue Division -- planning, training, and directing emergency rescue operations and assisting in tasks that will contribute to the earliest possible restoration of essential community functions.

There are 537 engineers, craftsmen, equipment operators, public works foremen, laborers, and a wide choice of other special skills available to perform these functions. The city's "Operations Plan" enumerates only 28 positions at the emergency operations center to be filled by personnel from the bureaus responsible to the city engineer, but according to Engineering Department plans, 47 people would report to the center. All of the remainder are to report to one of the five dispersal area headquarters.

Staff
Office of City Engineer
and Bureau of Sewage and
Refuse Disposal

Supervisors	14	Concrete Finishers	11
Engineers	31	Electricians	6
Engineer Aides	11	Carpenters	11
Surveyors	12	Painters	9
Surveyor Aides	20	Utility Workers	11
Draftsmen	21	Laborers	178
Inspectors	22	Gardeners	2
Public Works Foremen	21	Chemists	2
Sewer Leadmen	8	Photographer	1
Sewage Operators	31	Radio Dispatcher	1
Equipment Operators		Storekeepers	7
(Automotive)	73	Clerical	13
(Construction)	21		

The Rescue Division alone has undertaken an extensive training program. Basic rescue training has been given to 39 staff members, light rescue to 30, and heavy rescue to 20. Other civil defense training includes Radiological Defense Monitoring-two, Explosive Ordinance Reconnaissance-three, and one each have taken Decontamination Instructors Course for Fire Safety given by the Atomic Energy Commission, Emergency Patient Evacuation and Fire Control by the Veterans Administration, and Shelter Design Analysis. In addition, a number of people living in Portland have received rescue training.

Over 300 pieces of motorized equipment are operated by the bureaus under the city engineer. Of these, 93 are radio equipped for the Public Works frequency. The major types and number of vehicles are indicated on the following page and the number having radio communications is shown in parentheses.

Vehicular Equipment — Office of City Engineer

Automobiles	82 (48)	Flushers	19 (4)
Pickup Trucks	32 (9)	Sweepers	16 (1)
Metros	7 (5)	Oilers	2
Panel Trucks	4 (3)	Rollers	3
Dump Trucks	86 (15)	Planerheater	1
Flatbed Trucks	12 (3)	Concrete Mixer	1
Compressor Trucks	4 (1)	Tower Trucks	3
Travelalls	7 (2)	Truck & Hydrocrane	2 (1)
Scoopmobiles	12	Power Shovels	7
Bulldozers	7	Tractors	5
Graders	3	Loaders	1
Fork Lift	1	Rescue Truck	1
Miscellaneous Trucks	9 (1)		

Care has been spent preparing detailed organization charts for the Department of Engineering. These charts show all positions at the emergency operations center and all major positions at the dispersal areas, and list the personnel assigned to the positions by name. Tables listing vehicular equipment to be dispatched to the five dispersal areas for use by each of their six operating divisions have also been prepared. However, no separate and detailed operations annex has been prepared by the Department. Only a few meetings have been held among the city engineer, the civil defense engineering coordinator, and the designated Engineering Department division chiefs. However, copies of the engineering section of the city's Plan and the Alert and Call Plan of the Department have been distributed to key personnel employed by both the city and the utility companies.

The local garbage drivers union has been contacted and has agreed to provide manpower for the operation of equipment during an emergency and the local association of contractors has indicated a willingness to provide equipment and some manpower. Listings of privately owned equipment which would be of use in emergency situations have been compiled, as has a list of active wells in the city, but both lists are now out of date. Microfilm negatives of all engineering records, including maps, plats, plans of municipal buildings and structures, and locations of underground water, sewer, and utility facilities are stored at the emergency operations center.

No plans and procedures have been developed for the disposal of contaminated material and rubble in landfills but it has been considered. Two areas, including the city operated dump, have been found where debris can be disposed. The refuse disposal supervisor and sewage disposal supervisor are assigned to dispersal areas but they are apparently unaware of their assignments and the units have not participated in civil defense exercises in recent years. Employees under their supervision and employees of the Bureau of the Municipal Paving Plant are unassigned and out of touch with civil defense activities.

Transportation Division

This Division, with leadership and staffing provided by the Bureau of Traffic Engineering, is responsible for developing, installing, testing, and maintaining city "Green Light" traffic control equipment; developing plans for maximum emergency utilization and preservation of existing transportation facilities; and providing emergency transportation for supplies, equipment, and personnel for civil defense operations.

The Bureau has a staff of 58 employees, none of whom are known to have received any civil defense training.

Traffic Engineers	5	Investigators	2
Engineering Aides	7	Meter Repairmen	7
Draftsmen	2	Meter Maids	17
Electricians	8	Clerical	8
Traffic Safety Specialists	2		

The Bureau operates 14 automobiles, four panel trucks, and one safety training vehicle. All but two automobiles and the training vehicle are equipped with radios operating on the local government service frequency assigned to the city.

The traffic engineer, the assistant traffic engineer, and the two assistant engineers are to report to the emergency operations center. All other Bureau employees, except clerks, meter maids, and traffic safety personnel, report to the several dispersal areas where they are responsible for carrying out Transportation Division assignments. Bureau personnel are aware of their assigned posts and responsibilities and substantial effort has been expended developing the "Green Light" traffic control system that has been installed in the central city area on both sides of the Willamette River. Lists were prepared of transit and transport companies and their available equipment and agreements have been made with some of these companies to supply drivers, but these lists are now out of date.

Shelter Division

This Division is composed of the Bureau of Buildings in the Department of Public Affairs. The Bureau is responsible for enforcing the city's building and housing codes, issuing permits, and making building inspections. Its civil defense assignment fits very well with its normal peace time work. The Shelter Division is responsible for the following activities: survey and record the available public shelters for emergency use; provide the marking for public shelter; coordinate distribution and maintenance of supplies in each public shelter; assist other civil defense services find shelter at dispersal areas; disseminate information about fallout shelter requirements; and advise industry, institutions, and individuals on proper methods of shelter construction.

The Bureau has 72 employees and four of them received training in shelter construction and analysis so that they could carry out that portion of their civil defense assignment.

Director	1	Plumbing Inspectors	10
Chief, Building Division	1	Heating Inspectors	4
Chief, Electrical Division	1	Sign Inspector	1
Chief, Plumbing Division	1	Structural Engineers	2
Building Plan Supervisor	1	Plan Examiners	6
Building Inspectors	12	Clerical	16
Electrical Inspectors	16		

All Bureau of Buildings employees, including clerical, have civil defense assignments at either the emergency operations center or the dispersal areas. Although substantial planning has been done in assigning Bureau employees to specific duties and specific posts, little has been done to carry out assigned missions other than to disseminate information about fallout shelter requirements and proper methods of shelter construction. These functions have been carried out when requests for information are received and when building plans are reviewed and checked to insure that proposed shelter conforms to the Blast and Fallout Shelter Code.

Utilities Division

The Utilities Division of the civil defense Engineering Department provides for emergency water supply and restoration of the water system, electric power, natural gas supply, and telephone service. The chief engineer of the Bureau of Water Works is assigned the post of chief of the utilities division.

The Bureau of Water Works is in the Department of Public Utilities, and, during normal operations, is responsible for engineering, construction, maintenance, repair, and operation of the city's water supply, storage, transmission, and distribution systems; and for billing and collecting water service charges. The Bureau is organized into engineering, water supply, water operations, and meter shops sections supervised by the chief engineer; and a revenue division under a superintendent. There are 415 full-time employees in the sections under the chief engineer, and 81 full-time employees in the Revenue Division, as follows:

Water Superintendent

Supervisory	3	Accountants	4
Water Service Inspectors	24	Clerical	50

Chief Engineer

Engineers	6	Mechanic Foremen	3
Engineer Aides	5	Mechanics	7
Surveying Aides	3	Water Service Mechanics	53
Draftsmen	8	Equipment Operators	30
Operating Engineers	19	Electricians	3
Public Work Inspectors	3	Carpenters	5
Headworks Operators	6	Welders	5
Pipeline Maintenance	27	Concrete Finisher	1
Water Operations Supervisors	2	Brickmason	1
Water Operations Foremen	18	Radio Dispatcher	1
Laborers	195	Storekeepers	7

Clerical 7

Four years ago, nine Bureau employees received radiological defense monitor training, sixteen have received rescue training, and three have been trained in fallout shelter design and analysis. One staff member attended a national resources conference sponsored by the Industrial College of the Armed Forces.

The Bureau of Water Works operates 168 vehicles and pieces of motorized equipment. Equipment is subject to reliable remote control over the four radio frequencies assigned to the Bureau of Water Works.

Automobiles	47	Flatbed Trucks	2
Service Buses	27	Welders and Compressors	4
Pickup Trucks	25	Stake Trucks	3
Panel Trucks	2	Tank Truck	1
Metros	4	Tractors	4
Travelall	1	Cement Mixer	1
Meter Trucks	4	Bulldozer	1
Dump Trucks	17	Graders	2
Utility Trucks	5	Trenchers	3
Emergency Truck	1	Loaders	4
Pipe Truck & Crane	2	Forklift	1
Hydraulic Cranes	3	Crawler Shovel	1
Hoist Trucks	2	Drag Shovel	1

The Bureau operates sixteen pumping stations, six open reservoirs, and has six closed stand pipes, one open stand pipe, and thirty water tanks in addition to the main dam, reservoir, and headworks facility. Storage capacity for the six open reservoirs is 190,500,000 gallons; for stand pipes, 2,827,000 gallons; and for tanks, 18,152,000 gallons. These facilities offer the city over 20,000,000 gallons of water protected from fallout contamination, exclusive of the water in the distribution lines — about 53 gallons of water per capita.

Five key Bureau employees, the principle engineer, supervising engineer, head-works engineer, the superintendent of construction and maintenance, and a foreman, report to the emergency operations center in addition to the chief engineer. Representatives of the four private utility companies serving Portland are designated to report to the emergency operations center where they serve as assistant division chiefs and section chiefs of their respective private utilities sections. The Pacific Power and Light section will send five representatives; Portland General Electric Company, three; Northwest Natural Gas Company, four; and Pacific Northwest Bell will send four representatives.

The five dispersal area headquarters are to be manned by 26 Bureau of Water Works employees and 20 employees from the private utility companies, five from each company. All other Bureau of Water Works personnel, except those in the revenue division which has no civil defense assignment, and equipment are to report to the dispersal areas where they serve as the field crews.

Only a limited amount of planning has been done, although Bureau personnel appear to know their assigned posts and duties. Plans of the various Bureau installations, and plans, maps, and plats showing the location and depth of the Bureau's underground facilities have been microfilmed. An inventory has been made of wells in Portland, but the water from these sources is not considered sufficient in quantity or readily accessible for distribution through the city's water system. An inventory of auxiliary power for water bureau pumps has been made and a determination has been made as to the number of men and vehicular equipment to be assigned to each of the five dispersal areas. Little has been done to plan and coordinate the activities of the Bureau of Water personnel and the personnel of the private utility companies. The private utility companies have developed extensive plans for the use of their personnel and equipment for the restoration of the services they provide the city. It is probable that only limited coordination can be achieved in this area, because the utility companies are concerned almost exclusively with restoration of their own operations. The organization and staffing now established will provide, at least, liaison between the city and utility companies.

Pacific Northwest Bell Telephone Company

The Company's emergency operations plan provides that in the event of a strategic warning, its Oregon Area Emergency Committee would meet and consider several courses of action, including limited dispersal of men and equipment. In the event of a tactical warning, the Company emergency operations center in Eugene, Oregon, would be activated and men and equipment would be dispersed to strategic locations outside the Portland metropolitan area. Except for the designated liaison personnel, dispersed employees report to telephone company facilities rather than the city dispersal areas. During a shelter stay period, employees would carry out whatever telephone service maintenance could be provided with safety at either the

shelter areas or dispersal areas. General restoration of telephone service would begin as soon as radiation levels dropped low enough to permit activity.

Administrative offices in seven buildings, six of which are in the downtown area; thirteen district garage and office buildings; and eight equipment and supply storage buildings are in Portland, the Company's regional headquarters. The Western Electric Company has an office and supply building in Portland also. Of these, four office buildings, seven equipment and supply storage buildings, and the Western Electric Building have shelters providing a protection factor of 100 or more. Outside Portland city limits, but in close proximity, the Company has six district garage and office buildings and four equipment and supply storage buildings. Three of the storage buildings have shelters providing a protection factor of 100 or more. Company buildings have diesel powered generators capable of providing electricity to maintain telephone service for extended periods. Serious consideration is now being given to establishing a shelter manager training course for Company employees but, because of the sensitive nature and emergency features of the telephone industry, buildings will not be made available to shelter the general public.

The Company has 76 radio equipped pieces of mobile equipment in the metropolitan Portland area. The Company has polled its employees to obtain information on special training or skills which might be of value in the event of a disaster and about 1,150 persons have had first aid training, and 31 are ham radio operators. A records preservation program assures that either originals or microfilmed copies of all vital records are stored at the Company emergency operations center in Eugene. The Company has radiological monitoring equipment in its main administrative office, and a training program for Company personnel in Company shelter buildings is planned. One employee has received radiological monitoring instructor training. Following an attack upon the Portland metropolitan area, the company anticipates relying upon the civil defense agency for the radiological readings necessary to determine whether it is safe to re-enter the city for the purpose of restoring services.

Portland General Electric Company

An emergency and civil defense disaster plan was prepared in 1960 providing that, in the event of a strategic warning, Company personnel would be alerted and apprised of the situation. The disaster plan would be reviewed and updated where necessary at this time. Upon receiving a tactical warning, the plan provides that the Company's mobile equipment would be dispersed to operating divisions at Salem, Oregon, and five other small cities. When the civil defense dispersal areas have been firmly established and provision made for accommodating the personnel assigned to the dispersal areas, the Company will send mobile equipment to them. The Company personnel assigned to the emergency operations center will direct Company activities and attempt to maintain service from the center during the shelter stay and the shelter emergence periods. All other Company employees are to follow the directions of the civil defense director

in regards to evacuating or seeking shelter. During a shelter stay period, Company employees have no assignment other than to provide for their families. Upon shelter emergence, employees are to report to the nearest division office and begin a program of service restoration starting from the outside and working in toward the center of the damaged or contaminated area. Restoration of electrical service is viewed as the Company's primary responsibility but they will work in close cooperation with city civil defense personnel.

Company facilities include an administrative offices and load dispatching center building; an equipment, material storage, and service center; a storage and repair shops building; a garage; two steam generating plants and substations. In addition to these Portland facilities, the Company has four hydro-electric generating plants, a fifth one is under construction, and district offices and service centers throughout its area of operations. The two Portland plants use natural gas as fuel, but in an emergency they can operate on oil. The Portland plants can operate approximately 200 hours at maximum capacity on stored fuel. Unfortunately, the office and load center building is the only building occupied by the Company with marked shelter space.

Approximately 265 radio equipped pieces of mobile equipment are located in the metropolitan Portland area. Copies of all Company maps and plans have been deposited at the emergency operations center to facilitate rapid restoration of service. Current records at the Company offices are bound and are to be brought to the emergency operations center by the personnel assigned to it. A microfilming program is under way and copies of all records are being located in Salem.

A few Company employees have had civil defense training; four have had a general civil defense course and four have had radiological monitor instructors training. A Company sponsored course in radiological monitoring is being contemplated for company employees. A questionnaire has been sent to all personnel to determine special skills and qualifications which might be of use in the event of a civil defense emergency.

Pacific Power and Light Company

The disaster operations plan of the Pacific Power and Light Company does not now contain any written provisions relative to civil defense emergencies. However, in the event of a strategic warning, Company equipment would be dispersed during the night and Company officials and operating supervisors would review disaster plans for their applicability to the emergency. In the event of a tactical warning, service trucks would proceed to civil defense dispersal areas and the personnel assigned to the emergency operations center and dispersal areas would report to their duty stations. The Company has a major switching station at Troutdale, one of the city dispersal areas, and this point would be used as a staging area for Company vehicles moving back into the city to restore service.

The Company has an administrative office building; an operating headquarters with equipment, material storage, and garage facilities; two steam generating plants; and substations in Portland. The two Portland plants use natural gas, oil, or coal as fuel. One of the plants could operate at full capacity for seventeen days, and the other for thirty-three days on stored fuel. About 95 per cent of the Company vehicles are radio dispatched and plans have been made to extend their control to the emergency operations center by the installation of a Company transmitter at the time a strategic warning is received. No Company employees are known to have had any civil defense training.

The Company has made substantial preparation for possible civil defense emergencies in the areas of record preservation, assignment of personnel to the city's emergency operations center, and in communications. There is, however, a substantial deficiency in civil defense planning and civil defense training of Company employees.

Northwest Natural Gas Company

The Company's natural disaster emergency operations plan has no provisions relative to a civil defense attack situation. In the event of a strategic warning, however, it is the intention of the Company to encourage employees to remove their families from the metropolitan area and to review the disaster plan in the light of the situation. In the event of a tactical warning, the personnel assigned to the emergency operations center and the dispersal areas would report to their duty stations. The remainder of the Company employees are to follow the directions of the civil defense director. It is planned that Company employees will report to the various dispersal areas after they have made their families safe in the several evacuation areas.

The Company has an administrative office building; a service office; a material, supplies, and equipment storage facilities building; and an artificial gas plant no longer in operation and now used for the storage of natural gas. The administrative office building has public shelter facilities which are being stocked with federal supplies. In addition, the Company has field headquarters throughout its area of operation and further decentralization of field headquarters is now being planned for reasons of efficiency rather than improved disaster capability. The Company operates 151 radio equipped vehicles and it is anticipated that a transmitter will be located at the emergency operations center in the near future. However, until that time, a radio equipped vehicle will be driven to the center by the employees assigned to service there to provide communication with the personnel at the various dispersal areas.

Microfilm copies of all Company plans and records are located at Salem and it is anticipated that duplicate microfilm copies will be made and placed at the emergency operations center.

Company personnel assigned to the emergency operations center appear to know their assigned posts and duties. They have participated in civil defense drills and have done preliminary planning on civil defense organization and operations. There is a need for greater formalization of civil defense plans and a need for providing employees with civil defense training. No Company employees are known to have had any civil defense training, but an inventory of personnel with first aid training has been made.

Department 2 — Police

The Bureau of Police is in the city's Department of Public Safety and headed by the chief of police, appointed by the mayor and directly responsible to him. The Bureau's civil defense assignment is, in large part, an extension of its normal peace time functions and includes protection of life and property, maintenance of law and order, enforcement of laws and civil defense regulations, traffic control, and the prevention of sabotage, espionage, and subversive activities in cooperation with the Federal Bureau of Investigation. It conducts reconnaissance for unexploded ordnance and downed aircraft, performs radiological monitoring and other defense measures required to carry out its assignments, activates the "Green Light" plan, and coordinates its activities with state and county police authorities.

The chief of police, three deputy chiefs of police, two captains, three lieutenants, including the civil defense coordinator, and the civilian commander and assistant commander of the auxiliary police unit are to report to the emergency operations center in the event of the threat of a nuclear attack upon the Portland area. There are three police precincts and the personnel from each one report to a different dispersal area. Traffic Division personnel are assigned to their own dispersal area, and the remaining area is assigned to the Investigative Division, Identification Division, and jail personnel and prisoners. Police patrol boats are to move to predesignated locations away from the city. Auxiliary police are not assigned to any specific dispersal area but are to report to the nearest area at the time a warning is received.

Portland has about one commissioned police officer for every 600 people in the city exclusive of the harbor pilots and female personnel in the Women's Protective Division. Commissioned Bureau personnel total 661, as follows:

Chief	1	Identification Supervisor	1
Deputy Chiefs	4	Identification Officers	10
Captains	9	Captain, WPD	1
Lieutenants	25	Sergeants, WPD	3
Sergeants	58	Policewomen, WPD	10
Patrolmen	454	Matrons, WPD	7
Inspector	1	Pilots, (Harbor)	8
Detectives	69		

In addition, 112 civilian personnel are employed in the Bureau as follows:

Clerks	65	Carpenter	1
Telephone Operators	10	Painter	1
Building Engineers	8	Printer	1
Custodians	23	Cooks	3

There are 600 active, trained auxiliary police officers working with the Portland Bureau of Police. These auxiliaries receive 18 hours of basic training in such subjects as law, evidence, police procedures, police regulations, auxiliary police rules, and traffic control. Special classes in firearms, civil defense rescue, and first aid are available after the completion of basic training. Auxiliary police officers meet two hours a month and have a minimum of four hours of field training a month. For day-to-day operations, auxiliary police officers are used for traffic direction, crowd control, and patrol at special school events, parades, and at churches. Police auxiliaries will be integrated into the Bureau of Police in a disaster situation.

The Bureau operates its own police academy and regular recruits receive 320 hours of instruction and training in such subjects as local government, law, human relations, patrol functions, detective functions, staff services, administration, physical fitness, traffic functions, firearms, and personnel policies. The Bureau has in-service training programs and advanced training in physical fitness and range firing. Four officers have attended the Federal Bureau of Investigation National Academy, forty-three officers have been to arson and bombing schools, six officers to fingerprinting schools, one officer to photography school, two officers to polygraph school, fifty-one officers to the Northwestern University Traffic Institute, and forty-two have been to Fort Lewis for riot control training.

The Bureau has three major buildings including the headquarters building and two precinct stations. The administrative offices, special squads, communications, records, storage garage, city jail, municipal courts, and the central precinct station are located in the headquarters building. This is the only Bureau facility marked as a fallout shelter. The police boathouse is located on the river front and garage and service facilities, operated by the Bureau of Shops for the Bureau of Police, are located at one precinct station and a special police shops and garage facility. The Bureau has 132 patrol cars, two wagons, 28 motorcycles, 16 three-wheel cycles, and three police boats.

Substantial effort has been expended to develop a comprehensive police annex conforming to the city's operations plan. The annex sets forth in detail the duties assigned to the Bureau in a civil defense emergency and assigns Bureau personnel to posts by position rather than by name. The annex, like the city's plan, is based upon evacuation and devotes little consideration to shelter, which is considered only an immediate, and

temporary action. No assignments have been given for a shelter stay period or for specific activity during a strategic warning, tactical warning, or post attack period. Little civil defense training as such has been received by Bureau personnel although they are aware of their assigned posts and duties as prescribed in the plan and annex.

Department 3 — Fire

The Portland Bureau of Fire is responsible for testing warning sirens and activating them under certain emergency situations, manning fixed radiological monitoring posts, and, when the conditions permit, conducting operations to contain, suppress, and ultimately extinguish fires in order to reduce loss of life and property. The fire chief and 13 other key Bureau personnel are to report to the emergency operations center in the event of a nuclear attack. The coordination of all city forces at the five dispersal areas has been given to the five on-duty battalion chiefs who become dispersal area coordinators and report directly to the civil defense director.

There are 701 uniformed personnel and 24 civilians assigned to the Bureau. A tabulation of Bureau personnel by rank and division is shown below:

Uniformed

<u>Fire Fighting and Administration</u>		<u>Fire Alarm Telegraph</u>	
Chief	1	Chief Operator	1
Deputy Chief	1	Fire Alarm Operators	9
Assistant Chiefs	3		
Battalion Chiefs	15	<u>Training</u>	
Captains	32	Battalion Chief	1
Lieutenants	106	Captain	1
Fire Fighters	485	Inspector	1
Fireboat Pilots	9		
Fireboat Engineers	9	<u>Mechanical</u>	
		Fire Master Mechanic	1
<u>Fire Prevention</u>		Mechanics	5
Fire Marshal	1		
Battalion Chief	1		
Captain	1		
Fire Inspectors	18		

Civilian

<u>Fire Alarm Telegraph</u>		<u>Building Maintenance</u>	
Superintendent	1	Superintendent	1
Fire Alarm Engineer	1	Plumbers	2
Line Foreman	1	Carpenters	2
Linemen	5	Painters	2
Electrician	1	Custodial Worker	1

Clerks 7

The Bureau of Fire operates its own training school and drill tower. A continuous in-service training program is conducted by the drill staff and company officers. During the last five years, Portland firemen received 283,280 man hours of instruction. Of this total, 37,000 man hours were in first aid; 15,165 man hours were in gasoline and oil fire fighting; and 11,005 man hours were in civil defense, including 4,482 man hours in radiological monitoring. In addition to training given by Bureau personnel 25 men have been sent to special arson investigation schools, three men have received training and have been licensed by the Atomic Energy Commission to handle radioactive material, and approximately 100 men have received aircraft fire fighting training from the Air National Guard unit stationed at Portland International Airport.

Portland at one time had an active auxiliary fire service and approximately 350 trained auxiliary firemen. However, lack of interest by Bureau officials and failure to maintain auxiliary interest by providing active assignments resulted in the disbandment of the organization. The civil defense fire plan, adopted in October of 1962, provides for an auxiliary fire service. Plans and training schedules have been prepared for re-establishing an active fire auxiliary.

The Bureau has 29 fire stations, a fire alarm telegraph office, and a training center adjacent to one of the stations. The 17 fixed radiological monitoring stations maintained by the Bureau of Fire are located in 17 stations with a protection factor of 100 or greater. A detailed compilation of the radio equipped and fire fighting vehicles operated by this Bureau is given below:

Fire Fighting Equipment (Front Line)

<u>Pumpers</u>		<u>Aerial Trucks</u>	
500 GPM	1	65'	1
750 GPM	4	75'	1
1000 GPM	6	85'	4
1250 GPM	10	100'	4
1500 GPM	9	Total	10
Total	30		

Manifold Trucks	4	Foam Truck	1
Hose Trucks	4	Tanker	1
Compressor Trucks	2	City Service	1
Fireboats (12, 500 GPM)	3	Boat Tender	1

Fire Fighting Equipment (Reserve)

Pumpers, 1000 GPM	7	City Service	2
Aerial Trucks 100'	1		

Disaster, Communication, and Staff Vehicles

Disaster - Rescue Truck	1	First Aid Cars	2
Squad Truck	1	Station Wagons	9
Communication Vans	5	Automobiles	21
Jeeps	2		

Service Vehicles

Truck, 1 1/2 Ton	1	Panel Truck	2
Truck, 1 Ton	2	Dump Truck 8 cu.yds.	1
Truck, 3/4 Ton	1	Ladder Truck	1
Pickup 1/2 Ton	3	Gas Truck	1

It is evident that present plans to disperse the fire defense equipment and personnel in the event of tactical or strategic warning of an attack preclude use of these resources in providing fire defense during a shelter stay period. No attempt has been made, either, to assign fire fighters for emergency police duty during the phases when their primary duties are not required.

Department 4 — Medical

The Medical Department is responsible for planning, organizing, mobilizing, supervising, and directing medical operations and public health facilities necessary to care for the emergency sick and injured and safeguard city residents from biological, chemical, and radiological hazards resulting from natural or war caused emergency situations and providing for the expeditious care of the dead. The Department is headed by the city health officer, who is appointed by city council to administer the Bureau of Health in the Department of Public Safety under the mayor.

The Bureau of Health enforces all city ordinances and regulations in the field of public health and sanitation. Its activities include maintenance of vital statistics; inspection of restaurants, markets, dairies, food processing plants, bottling plants, institutional kitchens, public swimming pools, water supply, air pollution and industrial hygiene, and nursing homes; conducting home nursing care and school health programs; operation of mental health clinics, venereal disease clinics, and tuberculosis outpatient and diagnostic clinics; and the operation of an emergency hospital located at police headquarters. To carry out these activities, the Bureau is organized into 13 divisions employing 125 full-time persons and 11 part-time as follows:

Health Officer	1	Nurses	52
Physicians	2	Sanitarians	25
Physicians (part-time)	11	Chemical Engineer	1
Veterinarians	3	Health Educators	2
Laboratory Technicians	6	Photo Fluorographers	5
Social Worker	1	Clerks	24
Audiometrist	1	Custodial Workers	2

The civil defense coordinator, assigned full-time to the civil defense agency, has completed the radiological defense officer course and the radiological monitoring instructors course; 16 Bureau personnel have received radiological monitoring training.

The Bureau's offices are located at City Hall and in a building diagonally southeast of City Hall. The tuberculosis out-patient clinic is in the University State Tuberculosis Hospital, and a tuberculosis diagnostic clinic is maintained at a separate location. The emergency hospital is located at police headquarters. Of these locations, only City Hall, police headquarters, and the State Hospital have fallout shelter facilities. There are 47 cars, one ambulance, and one polio truck assigned to the Bureau. The polio truck is equipped with an iron lung and an emergency portable generator. Only 9 of the 47 cars are equipped with radios and two civil defense mobile radios are assigned to the Bureau for stand-by service.

The civil defense Medical Department staff is organized into four divisions as follows: A Headquarters Section, headed by the health officer; Public Health Division, headed by the chief of the Division of Tuberculosis Control; Emergency Medical Division and Radiological Division, both headed by volunteers. The duties and assignments of these four divisions are:

Headquarters Section — supervise, coordinate, and recruit staff for the divisions within the department; act as liaison with other civil defense departments, Multnomah County Medical Society, Portland Council of Hospitals, and local associations of related medical personnel; coordinate the movement of medical personnel, supplies, equipment, and patients; and maintain vital records and statistics.

Public Health Division — control communicable diseases through immunization, rodent and insect control, supervision of food, water, and sanitary facilities; provide for maternal and child welfare; and provide for biological and chemical warfare defense.

Medical Division — provide emergency medical care to the city's population in time of war-caused disasters; provide for stockpiling of medical equipment and supplies; assist local hospitals, nursing homes, and medical supply and equipment firms develop disaster plans and procedures; provide emergency medical care training; and inform doctors and related medical personnel of locations of first aid stations and emergency aid, evacuation, and dispersal areas.

Radiological Defense — provide information to civil defense emergency services on radiological conditions; furnish technical advice on allowable

radiation exposure limits and decontamination procedures; advise the public on action to take to minimize exposure and effects of radiation; and train radiological defense monitors.

The city's operations plan provides that the health officer and seven of his staff in the Bureau of Health shall report to the operations center. Seven other Bureau of Health personnel are assigned duties at the dispersal areas. In spite of this light utilization of Bureau of Health personnel, the staff of the Medical Department has not yet been completely filled. A new annex for the Medical Department is to be prepared and, presumably, it will provide for more extensive use of city personnel. But, because of the necessarily limited city medical staff, by far the greatest number of medical personnel must come from outside city employment. The Medical Department has apparently been unable to attract many such people. The Multnomah County Medical Society has not, it would appear, taken an active part in civil defense planning, although it has worked out special emergency medical care plans and procedures with the Police and Fire Bureaus and is in the process of working out emergency plans and procedures with the Portland International Airport. Several years ago the Bureau of Disaster Relief and Civil Defense, in cooperation with Portland hospitals, established a plan for doctors to report to the nearest hospital or clinic, or to the nearest dispersal area. These plans have not been reviewed or publicized in recent years and it is considered doubtful whether medical personnel would remember to carry out these assignments in the event of an attack.

The duties and responsibilities assigned to the Medical Department have been carried out to only a limited extent. Some stocking of medical supplies has been accomplished. Dressings, litters, cots, emergency operating lamps, gasoline lanterns, and splints have been prepositioned at three dispersed locations. Some consideration and planning has been given to where first aid stations should be located, but there is no indication that any of the other duties and responsibilities assigned to the Medical Department have been provided for or carried out. No arrangements or agreements have been made with wholesale and retail drug and medical supply firms relative to the controlled distribution or evacuation of their critical supplies. No inventories have been compiled of medical and related personnel whose services would be required in the event of a nuclear attack. The Multnomah County Medical Society has compiled such a list of doctors which it uses in the event of natural disaster, and hospitals have compiled lists of nurses, pharmacists, and technicians who are to be called in the event of a natural disaster. Liaison between the Multnomah County Medical Society and the professional societies of the allied medical groups appears to be ineffective. Liaison with the Portland Council of Hospitals appears to be somewhat more effective and hospitals have been provided assistance in the preparation of their disaster plans, but this assistance has been given by the Bureau of Disaster Relief and Civil Defense personnel rather than by personnel assigned to the Medical Department.

Hospitals

Portland has 13 major hospitals with approximately 4,000 beds and 5,650 full-time employees (or full-time equivalents for part-time employees), excluding interns, residents, and students. All these hospitals have disaster plans covering both local disasters and mass disasters resulting primarily from enemy action or anticipated action. These plans provide that upon receiving notification of an anticipated mass disaster from the civil defense agency the hospital will either evacuate or shelter its staff and patients depending upon the instructions received from the civil defense director. The plans assign personnel specific posts and duties, provide instruction as to the action to be taken in the event of either evacuation or sheltering, indicate the order, manner, and disposition of patients and personnel for either type of action, and designate the hospital relocation sites and alternate relocation sites. Key hospital personnel have received training in setting up the 200 bed emergency hospitals provided by the federal government and stored at relocation sites.

The Portland Council of Hospitals has a disaster committee that is responsible for establishing liaison with the civil defense agency and coordinating the activities of the hospitals and the agency. Hospitals have actively cooperated with the civil defense agency and participated in civil defense and disaster drills. This cooperation has been informal, although hospital administrative personnel indicate that they will follow the direction and guidance of the civil defense director in the event of a nuclear attack or the threat of such attack. On the basis of their emergency plans and stored equipment and supplies, Portland hospitals are in a good position to continue to provide medical care if they are not destroyed by enemy action.

Department 5 — Warden

The Warden Department is a catch-all organization without any meaningful attack or post-attack operating functions. It is designed to provide survival planning and home preparedness information and instruction to individuals, families, churches, schools, industries, commercial establishments, and other institutions and governmental agencies; coordinate civil defense activities of churches, schools, industries, commercial establishments, and other institutions, except medical facilities and utility companies who will coordinate their activities through the Medical Department and Engineering Department respectively; provide for religious affairs services and establish liaison with church groups; recruit and assign unallocated skilled and unskilled manpower and establish priorities for post-attack recovery operations; and conduct training courses.

The superintendent of parks and recreation, the head of the Bureau of Parks in the Department of Finance, is designated to command this civil defense department. The Bureau of Parks maintains and operates the city's parks and recreational facilities

and conducts the various city recreational programs. It employs 436 persons on a full-time basis and 308 persons on a temporary or part-time basis. Only the full-time positions are indicated in the table below because of the limited seasonal nature of most of the part-time employment.

Administrative	9	Parks Project Engineer	1
Recreation Leaders	57	Landscape Architect	1
Park Attendants and Guards	14	Draftsmen	3
Zoo Keepers	19	Carpenters	7
Park and Greenhouse Foremen	42	Electricians	3
Laborers and Utility Workers	202	Painters	4
Equipment Operators	10	Plumbers	2
Park Foresters	6	Mechanics	10
Gardeners	14	Clerical	28
High Climbers	4		

The Bureau offices are located in the City Hall Annex; and shops, warehouses, storage facilities, a greenhouse, two museums, a zoo, and about 20 community centers, field houses, and shelters, are maintained by the Bureau of Parks. The Bureau operates 124 motor vehicles of which 14 are equipped with radios operating on the Local Government Service Frequency.

Autos	15	Boom Trucks	2
Trucksters	12	Spray Truck	1
Panel Trucks	3	Loaders	3
Pickup Trucks	24	Backholler	1
Dump Trucks	18	Grader	1
Carryalls	2	Sweeper	1
Motorcycles	7	Roller	1
Scooters	3	Puncher	1
Bus	1	Forklift	1
Tractors	26		

These resources of both personnel and equipment are not being utilized in the civil defense plan. Only the superintendent of parks and recreation, an administrative assistant, a clerk, and the warden coordinator are designated to report to the emergency operations center. The post of warden coordinator is now vacant because the Bureau employee who had this assignment was dissatisfied and asked to be relieved of his civil defense duties. Bureau personnel have not been assigned to dispersal areas nor have civilian volunteers or additional Bureau personnel been assigned to staff the emergency operations center. It is evident that the program of this civil defense department is moribund. Industrial firms and commercial organizations are no longer being provided assistance in the development of their survival plans. Training programs have continued only under the direction of the assistant director for plans and training of

the Bureau of Disaster Relief and Civil Defense and contact with women's groups is maintained by the Mayor's Committee for Women's Activity in Civil Defense.

There is some hope that if this Department was given an entirely new and meaningful assignment, more activity could be generated. In the absence of any city welfare resources, this Department should be reconstituted to provide at least the rudiments of a civil defense welfare program.

Unassigned Resources and Services

Welfare

The Portland civil defense organization and operations plan makes no provision for emergency welfare services. Welfare is a state-county function in Oregon and administered locally in Portland by the Multnomah County Public Welfare Commission composed of the three county commissioners and four lay citizens appointed by the commissioners. The commission's staff headed by an administrator appointed by the commission, consists of 191 persons, none of whom are known to have had any civil defense training, as follows:

Administrator	1	Supervisors	5
Assistant Administrator	1	Case Work Supervisors	24
Personnel Director	1	Case Workers	55
Resources Director	1	Accountants	15
Medical Service Director	1	Clerks	82
Program Supervisors	2	Telephone Operators	3

The Multnomah County Welfare Commission and its staff have no plans to be put into effect in the event of a nuclear attack upon the Portland area. Personnel have no assigned posts or duties, nor have they been assigned to shelters. In the event of such a disaster situation, the administrator expects to report to and take orders from the Multnomah County civil defense director and no attempt would be made to provide welfare services through, or in cooperation with, the Portland Bureau of Disaster Relief and Civil Defense. The Multnomah County Civil Defense Agency is non-existent, for all practical purposes.

The Welfare Commission prepared and adopted an emergency welfare services annex to both the county and city operations plans in 1956. This annex is obsolete and is no longer considered to be in effect by the welfare staff, although it has not been superseded by a revised plan. The collapse of civil defense activity is attributed to three factors by the welfare administrator:

1. Reduction of the welfare staff by 1/3 by the commission.
2. Lack of interest on the part of county officials in civil defense.

3. Obsolescence of the county civil defense plan based upon evacuation.

The Oregon Trail Chapter of the American Red Cross has established a disaster committee following American National Red Cross guidance. The chairman is responsible for organizing, directing, and carrying out disaster operations. The 27 full-time professional employees and 29 part-time employees of the Chapter have had the Red Cross standard first aid course or better. One staff member has attended General Staff College Command School and taken the nuclear weapons course; one has had the Red Cross mass care training course; and seven have had a family survival course entitled "Case Work for Disaster".

The Chapter has a 1955 civil defense plan and a 1961 agreement with the city of Portland which establishes their relationship and their responsibilities. In the event of a strategic warning, Chapter staff would be alerted and establish liaison with civil defense, and continue to carry out their normal duties. In the event of a tactical warning, the disaster committee would man first aid stations. Welfare and mass care service centers would be established in cooperation with civil defense agencies in the evacuation areas, and Red Cross personnel would assist in the registration of displaced persons in such areas, under the direction of state and county welfare and unemployment offices. If warning time permits, the Chapter office would be evacuated and relocated at another site. During the shelter stay and the shelter emergence periods the Red Cross personnel and volunteers would work with civil defense agencies to provide mass care, feeding, shelter, medical services, and population relocation.

The Oregon Trail Chapter of the American Red Cross, with headquarters in Portland, has had substantial experience in natural disasters, the most recent being the October 12 hurricane. With experienced personnel and a tested organization, the Chapter should be in a position to provide substantial welfare assistance to civil defense agencies in the Portland metropolitan area. Unfortunately, Chapter personnel have received little civil defense training, no one has had training in radiological monitoring, rescue, or shelter management, and their existing civil defense plan is obsolete. An additional problem, from the point of view of Portland civil defense, is the fact that the Chapter is a county and district headquarters with responsibilities to all 35 counties in its district. As a result, even though it has an agreement with the city of Portland, the Chapter feels its responsibility is to county residents and to the county civil defense agency which, as has been indicated, is virtually inoperative.

The headquarters for the Oregon and Southern Idaho Division of the Salvation Army is located in Portland. This Division, consisting of ten Army ministers, six volunteer and paid clerical employees, and volunteers, has a disaster committee advisory board and disaster unit. However, only limited planning has been done relative to civil defense. Three Army ministers have been designated to go to the city's emergency operations center in the event of a nuclear attack, but no over-all army civil defense disaster plan has been prepared by the disaster committee.

Both the Red Cross and the Salvation Army would put their manpower and facilities at the disposal of the county welfare director in the event of a civil defense emergency. As a result, even though agreements with the city of Portland exist between these two organizations, the Portland civil defense agency has no effective welfare staff or program at the present time.

Commission of Public Docks

This Commission is a semi-autonomous agency of city government created by charter to provide and maintain public marine terminals and promote and develop traffic through the port. The Commission is composed of five members, appointed by the mayor for five-year staggered terms, who appoint a general manager to head its staff of 138 employees. The staff includes administrative personnel, engineers, and skilled mechanics and members of the several trades to operate its facilities for the movement, loading, and unloading of cargo. The main equipment includes 15 cargo lifts from 5,000 to 8,000 pound capacity, 11 cranes from three ton to 100 ton capacity, four diesel locomotives, a Dravo straight line unloader, and a number of horizontal conveyors, other materiel loaders, and related equipment.

The "Port of Portland Emergency Operations Plan" establishes an emergency planning committee made up of executives of the major companies using the port, industry associations, professional associations, and unions. The Port of Portland planning committee is responsible for developing and maintaining a plan for the continuity of port operations during emergency periods. Such plans shall provide for port security, dispersal of personnel and equipment, maintenance support operations, reconstruction, restoration, and improvisation, material inventory and control, communications, and transportation. This committee becomes an advisory group to the director of emergency port operations when the plan is put into effect.

The general manager, a member of the civilian reserve, becomes the director of emergency port operations and reports to and takes orders from the Maritime Commission Pacific Coast Coordinator in the event of an attack upon the United States. Emergency operating headquarters will be established at the Commission of Public Docks offices or, if dispersal action is necessary, at alternate headquarters to be established at the city's emergency operations center. Employees of the port are to report to dispersal areas or take shelter until such time as they can report to the dispersal areas. Radio communications between the city's emergency operations center and the dispersal areas will enable the director of emergency port operations to control the activities of port personnel. While the port will follow the direction of the city's civil defense director relative to procedures to be followed during strategic warning, tactical warning and shelter stay periods, the primary responsibility upon shelter emergence is for restoration and operation of the port and it is not anticipated that the personnel will be available for any other assignments.

The general manager and commission advisory and supervisory personnel have participated in civil defense exercises and they are aware of their civil defense assignments and duties, however, except for the preparation of the emergency operations plan, little civil defense planning has been accomplished and little has been done to implement the plan itself.

Unassigned City Agencies

Portland has done an extremely creditable job in assigning its resources of personnel and equipment to civil defense tasks. There are, however, a number of agencies which are unassigned. The 25 employees of the Bureau of Licenses in the Department of Finance could be used to strengthen the presently undermanned Fiscal and Supply Division of the civil defense Headquarters Department. There are 19 planners in the Office of the City Planning Commission who could be utilized in the Shelter Division of the Department of Engineering, particularly in developing Portland's shelter utilization system. The Civil Service Board, with six professional employees, and the Employee Relations Office, with one professional employee, are too small to be assigned unit civil defense tasks.

The Housing Authority of the City of Portland and the Department of Development and Civic Promotion, the agency responsible for Urban Renewal and Industrial Development, have staffs of 26 and 17 persons respectively and some of their personnel could be integrated into existing civil defense departments but there is little potential for unit assignments. The Housing Authority has 1,026 housing units in operation, including a 13 story, 150 unit apartment building for the elderly. Only the 13 story apartment building will provide protection from fallout, and shelter space in this building will be limited because of its slab construction. The Housing Authority has not undertaken preparation of any plans for either the evacuation or sheltering of its own staff or tenants. The executive director has not received, or is not aware of receiving, any guidance or leadership from the Public Housing Administration, the state, or the local Bureau of Disaster Relief and Civil Defense regarding such plans.

INTERGOVERNMENTAL ASPECTS OF CIVIL DEFENSE

The School District

The Multnomah County School District No. 1 includes all of Portland and certain limited areas adjacent to the city. It is an independent unit and its governing body is a board of directors elected to four-year terms of office. Its chief administrative officer is the superintendent of schools appointed by the board.

The Bureau of Disaster Relief and Civil Defense prepared a master civil defense plan for the District in 1955. Each school prepared its own plan to meet its particular needs using the master plan as a model. Outline drawings of the areas within each school that would afford the greatest amount of shelter as determined by an engineering study made in 1955 were included in the plans. Although, like all Portland plans, the school plans are based upon evacuation, more attention is devoted to sheltering the school population because the schools have greater responsibility for the safety of the children during a shelter period than in an evacuation.

The plans are obsolete now and somewhat absurd in the light of weapons system developments since 1955. Upon receiving information that an attack will occur in only 20 or more minutes, the schools plan to evacuate. Elementary school children are to walk to their homes; high school students can walk home if they can make it in 20 minutes, otherwise they ride out of the city in student or teachers cars on predetermined evacuation routes. If the warning time is less than 20 minutes, all students move to predetermined shelter areas in the schools.

The school district has provided a course in individual and family survival in its adult education program which has been completed by over 1,000 persons. In addition, the district offers two courses which contribute to the city's civil defense capability; a one year course in practical nursing and a nursing aide course. Other than the employees who teach the course in individual and family survival, no school district employees are known to have had any civil defense training. This pool of over 3,000 school teachers and 222 administrative and supervisory employees could be used to support the core of a civil defense welfare program, the lack of which represents the most serious deficiency in Portland civil defense. At the very least, the schools should implement their shelter plans by stocking programs and training shelter managers, both of which have been seriously neglected.

Relations With Other Governments in Portland Area

The state Operations Plan makes no provision for the establishment of area-wide civil defense coordinating agencies, although the state Civil Defense Act grants to local civil defense agencies the power to develop and execute mutual aid and assistance programs. Because of the need to coordinate evacuation movement plans and plans for

receiving evacuees and dispersed civil defense personnel and equipment, the civil defense directors of Portland and the five counties in the Portland target area established an informal association called the Target Area Coordinating Council (TACC). Through the efforts of the Council, compatible evacuation routes and traffic control procedures have been established, shelter and evacuation policies have been coordinated, and plans for mutual aid and emergency services have been developed. While the Council has apparently operated harmoniously and a number of potential problems have been solved, it is reported that the Council was established against the expressed wishes of the state civil defense director because of his desire to have all local civil defense activity and planning channeled through his office and under his immediate control.

The failure of the civil defense program in Multnomah County has already been cited. Apparently the programs of the other counties also require stronger support if they are ever going to effectively serve their own residents, let alone be of any possible assistance to Portland.

State Civil Defense Programs and Guidance

The Oregon civil defense agency staff consisted of 18 persons in fiscal 1962-63 including the director, nine professional and technical employees, and eight clerical employees. The agency has no regular field personnel but, upon request, it does send representatives from its staff to advise local civil defense directors on particular areas. It also will send teams to political sub-divisions to provide each new local civil defense director, legislator, and executive with information and guidance relative to civil defense programs, policies, and procedures. Such instruction is tailored to the particular needs of the requesting community, insofar as possible. The agency distributes substantial guidance material to local civil defense directors, primarily in the form of memorandums. Information for these memorandums is obtained, almost exclusively, from civil defense material distributed by federal agencies. In addition, the agency occasionally has prepared manuals dealing with specific civil defense problems.

The state civil defense agency conducts no regular training programs for either civil defense personnel or the general public. However, the state Department of Education, through local school districts, offers adult education courses on individual and family survival; and the state Health Department supervises the Medical Self-Help Program. Actual instruction for the latter program is carried out by county health department personnel, agricultural extension workers, and other instructors qualified by county health departments. A contract with the federal government has been prepared to have the State University, through its extension school, train shelter managers and radiological monitors. The training of "end products" rather than instructors was desired by the state because it was felt that only such a program would provide operating personnel since there is no way to guarantee that instructors will train the needed personnel in local training programs.

The facilities occupied by the Oregon state civil defense agency would provide them no fallout protection, however, work was underway to establish an emergency operations center in the basement of the capitol building. Communication equipment in use by the agency includes transmitters on the State Police, Forestry, and Highway Department frequencies; State Board of Aeronautics frequency; and four RACES frequencies. The latter provide communications with Portland and the three county civil defense agencies in the state that have obtained transmitters thus far. In addition, the agency has telephone and radio teletype communications.

The Oregon state civil defense Operations Plan, completed and put into effect in 1958, has not as yet been revised in keeping with the National Fallout Shelter Program, reduced warning time resulting from advancements in weapon delivery systems, and increased weapon yields. However, the state agency has prepared a draft of a new "Planning Basis and Shelter Policy" which, when published, will provide a basis for revising state and local operations plans. The state Plan, still in effect, prescribes state and local civil defense organizational structure; establishes policies, procedures, and lines of authority; delineates horizontal and vertical relationships between the various local, state, federal, and public and semi-public agencies and organizations; and assigns missions and responsibilities to state and local civil defense agencies.

The decision of the state legislature to reduce the civil defense agency at the state level to a staff of three will unquestionably destroy whatever program the state had developed. In the past, local civil defense agencies were prevented from dealing directly with Region 8 federal personnel. Now that the state agency has been cut to 1/6 of its former size, it is imperative that guidance be given Oregon counties and municipalities by the federal Region 8 Offices. There is no other effective way the Oregon counties and cities may be helped and kept abreast of civil defense developments.

Federal Agencies in Portland

A United States Weather Bureau Station is located at the state operated International Airport. The Weather Bureau Emergency Plan provides that in the event of a strategic warning, the Bureau would alert its personnel but continue normal operations. Upon receipt of a tactical warning or information that the federal government was in Defense Condition I, staff personnel would take shelter or go home to their families. At present, personnel are reported not to have assigned posts or assigned duties and plans to relocate the Weather Bureau have been canceled. Also, the principal assistant meteorologist was at one time to report to the city's emergency operations center, where according to the city's Operation Plan he would serve as the chief of the meteorological section in the Medical Department's Radiological Division, but this is not now contemplated by the Weather Bureau. Federal direction to its Portland Weather Bureau to place its critical resources in personnel and equipment at the disposal of the local civil defense agency should be given.

The Portland Post Office has prepared a civil defense operational plan based upon

evacuation ("in case of atomic attack, survival means evacuation.") Upon receiving a strategic warning, employees are to be alerted and supervisory and administrative personnel would review civil defense plans. Postal employees in the various stations and sub-stations are to secure money and stock and evacuate to established evacuation areas where they would assist in registering displaced persons. Carriers on their routes are to store undelivered mail in storage boxes and evacuate. Parcel Post, mounted carriers, and special delivery messengers are to stop at any station on their evacuation route and assist in the evacuation of Postal employees; they are also to pick up pedestrians walking along the evacuation route and they are to put their vehicles at the disposal of the civil defense authorities for as long as they are required. As soon as possible, all employees are to report to the emergency relocation site designated.

On receiving a tactical warning, employees would evacuate if best intelligence indicated that the attack would not be made on Portland for one hour. If the best intelligence indicated that the attack would hit Portland in one hour or less, employees would take shelter. Postal employees have been designated as radiological monitors, wardens, first aid crews, and fire brigades at the main Post Office and at stations where there are shelter facilities. The city's civil defense agency gave radiological monitor training to 48 Post Office employees two years ago. These monitors received a refresher training course during the past year. The Department has 15 monitoring sets in the Portland area; 12 of these sets are still located in the main Post Office and only three have been placed in other postal stations. It is anticipated that these instruments and trained personnel would be used to determine whether it is safe to deliver mail after shelter emergence; a much too limited utilization. No firm agreement has been made with the city's civil defense agency for reporting fallout conditions determined by Post Office monitors.

The civil defense plans and resources of both the Post Office and the Weather Bureau should be coordinated with the city civil defense effort to a greater extent than is now the case. The uniformed Postal employees could be especially valuable as auxiliary police to assist direct evacuation, or as shelter security leaders if that alternative to evacuation is ever required.

PART VII

CASE STUDY
CLEVELAND, OHIO

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CLEVELAND, OHIO

Community Profile

Cleveland has a population of 876,050 according to the 1960 census, and an area of approximately 76 square miles. It is located in northeastern Ohio, on the southern shore of Lake Erie which forms the state's northern boundary. Divided by the Cuyahoga River which flows into the lake, Cleveland has 14 miles of lake front interrupted by one small municipality. A sprawling city, with a boundary convoluted by the 19 immediately adjacent municipalities which surround it, Cleveland is approximately 20 miles long and the city penetrates nine miles inland at its widest point.

The largest city in the state, and eighth largest in the United States, Cleveland is the core city of a two-county metropolitan area containing a total of 75 cities, towns, and villages. It is the dominant social, cultural, and economic center in northeastern Ohio.

Its Economy

Cleveland has a highly developed and extremely diversified industrial and commercial economy. Cleveland area firms produce 309 products of the 450 enumerated by the United States Census of Manufacturers in its standard industrial classification. Industrial activity is greatest in transportation equipment, primary metals, non-electrical machinery and fabricated metal products, although Cleveland also is a major producer of electrical machinery, chemicals and paints, printing, food and dairy products, textiles and wearing apparel, pulp and paper products, furniture, clay and glass products, petroleum and coal products, scientific instruments, rubber products, and lumber and wood products.

Cleveland's industrial development results in large part from its geographical location which provides it with an unlimited supply of water and which has enabled it to become a major transport crossroads served by land, sea, and air carriers. On the Great Lakes-St. Lawrence trade route, Cleveland is the main general cargo port for the state of Ohio. The port, served by 37 steamship lines, handles approximately 15 million tons of cargo each year. While the greatest tonnage is in bulk commodities, such as iron ore, limestone, sand, gravel, coal and coke, and petroleum products, there has been a constantly increasing movement of general cargo through the port since the opening of the St. Lawrence Seaway, including automobiles, glass products, liquors and wines, processed food products, finished steel products, and industrial chemicals. Five major railroad lines and three industrial railroads serve the city. Air freight and passenger service between Cleveland and all major cities in the United States, Canada, and Mexico is provided by 11 scheduled airlines operating out of the city-owned and operated airport. In addition, the city's Lake Front Airport provides private and executive aircraft with

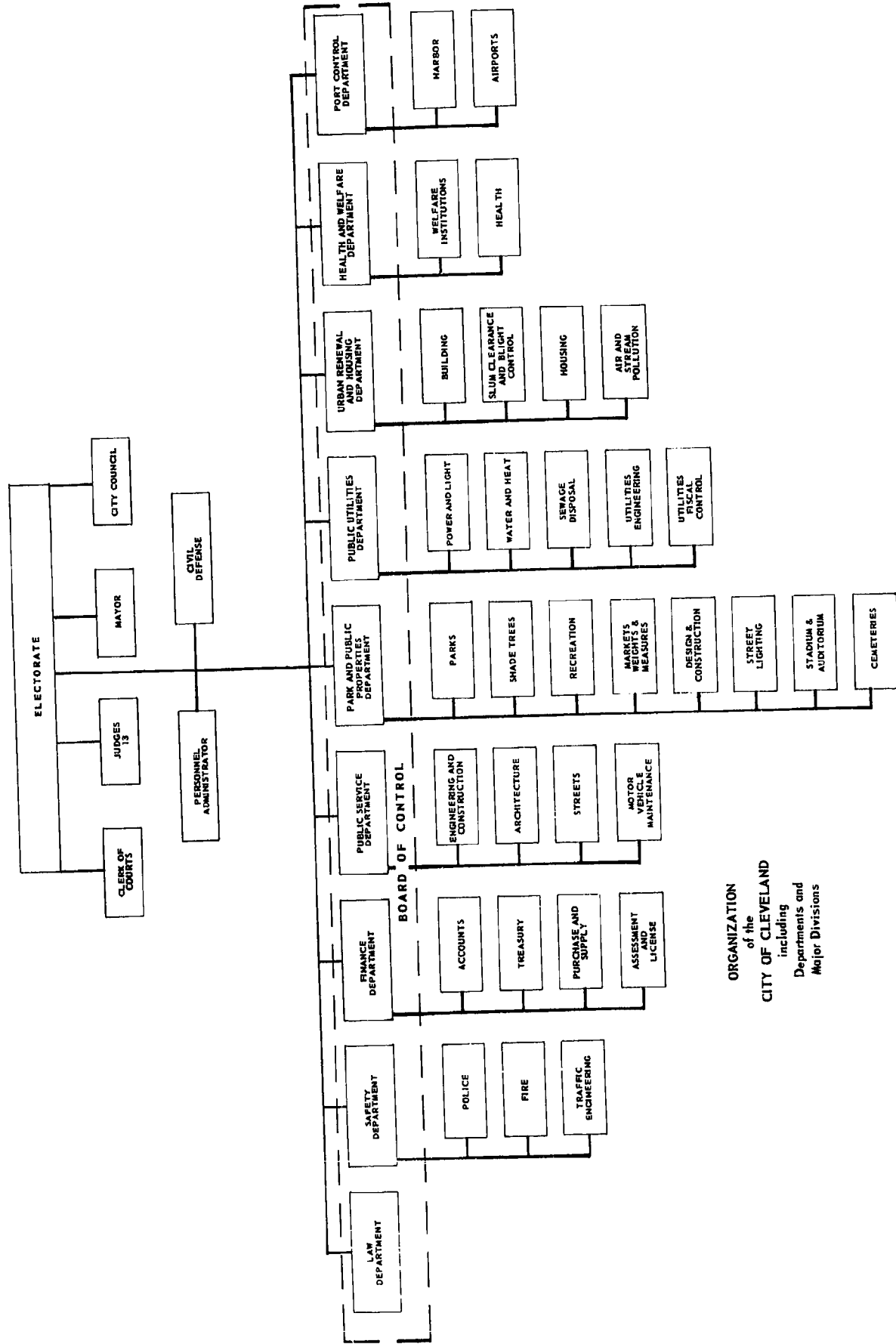
ready access to the downtown area. Approximately 18 major state and federal highways, in addition to close proximity to the Ohio Turnpike and the new north-south thruways, provide five intercity bus lines and approximately 150 common carrier trucking firms with ready access to the city.

Its Government

Cleveland has a 'strong' mayor-council government established by a home rule charter adopted in 1913. The only elected officials are the mayor, 33 councilmen, 13 judges of the municipal court, and the clerk of the municipal court. The mayor is elected on a partisan ballot to a two-year term at the biennial municipal election. Councilmen are elected on a non-partisan ballot, by wards, to two-year terms at the same election. Judges and the clerk of the municipal court are elected on a non-partisan ballot to six-year terms of office.

The mayor has the charter-conferred right to sit in council meetings, introduce ordinances, and participate in discussions of all matters before council; but he does not have a vote. He does have power to veto in whole, or in part, any ordinance or resolution adopted by council and a two-thirds vote of all council members is necessary to override any such veto. The mayor, as chief executive and administrative officer of the city, has the power to appoint and remove directors of all municipal departments and officers and members of commissions not within such departments, except that the city clerk is appointed by the council.

With certain exceptions discussed below, all municipal operating and staff agencies are assigned to nine charter or ordinance established departments. Each department is headed by a director appointed by and responsible to the mayor. Divisions are headed by commissioners or chiefs appointed by and responsible to the directors, except that, while the chief of police reports to the director of public safety, he is appointed, and may be removed, by the mayor. The nine directors together constitute the Board of Control, or, as it is more commonly called, the mayor's cabinet. The mayor acts as ex-officio president of this body. The cabinet provides the mayor with administrative and advisory assistance in managing municipal affairs. Its existence permits him to operate with a relatively small staff of only five full-time and two part-time assistants and clerical employees. In addition, Cleveland mayors have in recent years relied heavily upon the heads of certain staff agencies, particularly the office of personnel administration which has been attached to the office of the mayor by ordinance. The commissioner of traffic and engineering, while under the director of public safety, also apparently acts in an advisory capacity to the mayor and to the cabinet. The division of civil defense is also attached to the office of the mayor as a staff agency by ordinance. The civil defense director advises the mayor on civil defense matters when requested.



ORGANIZATION
of the
CITY OF CLEVELAND
including
Departments and
Major Divisions

For the last 20 years mayors of Cleveland have been independent Democrats. The present success of Cleveland's "cabinet" is due in large part to the fact that during this period departmental directors have remained in office from one administration to the next and a "career tradition" has been established. Thus top administrative positions are filled by experienced officials who have developed a high degree of professional competence rather than by political appointees having possibly only limited knowledge and understanding of administrative problems. Continuation of the "tradition," and the particular administrative effectiveness of the cabinet system, is dependent upon mayoralty victories by independent Democrats. There very likely would be a complete turnover of directors should the regular Democrats, who control city council and are constantly at odds with the independent Democratic mayors, regain control of City Hall. If a Republican were elected mayor, a similar turnover would result, but such an occurrence is highly improbable because Cleveland is essentially a one-party city. At present, the mayor is unopposed for re-election and only five of the 33-man council are considered to be Republicans, and then only nominally.

Defeat at the polls of the independent Democratic faction would not affect municipal employees below the cabinet level. Cleveland has a merit system administered by a three member Civil Service Commission and a chief examiner who serves as secretary to the Commission. The Commission members serve staggered six-year terms. They are appointed, and may be removed for cause by the mayor. The chief examiner is appointed by the commission. All city employees are in the merit or classified service except: elected officials, directors of departments, the clerk of council, the chief of police, members of boards and commissions, the secretary (administrative assistant) and executive assistants to the mayor, the secretary (administrative assistant) to each director, and college or university students employed as student aides for training purposes. All other persons employed by the city are in the classified service and are appointed and promoted on the basis of fitness and merit.

In addition to the Civil Service Commission, the mayor appoints the members of nine other boards and commissions, including the Cleveland Transit Board and the City Planning Commission. The city council appoints the members of the police and firemen's relief and pension fund commissions. The members of three minor boards and commissions are prescribed by state law.

A simplified table of the governmental organization for Cleveland is presented on the preceding page. Some city agencies have been omitted for the sake of clarity because they were of very minor importance both in terms of size of staff and function performed.

Its Fallout Shelters

The shelter survey identified 1,355 buildings with 1,475,000 shelter spaces of Categories 2 to 8 in Cuyahoga County. Of these, 616,000 spaces in 651 buildings have been licensed and marked. No stocking has been done by the civil defense agency, as yet.

The County needs just over one million more licensed spaces to shelter its resident population; all but about 172,000 spaces of this deficit could be supplied if every available space in the County was licensed. This does not appear to be the best solution, however, because 1,322,000 spaces are in Cleveland, and about two-thirds of these are concentrated in the downtown district. It would be impossible for large numbers of people to move quickly into the business district from the outer areas of the city and the county. Further, Cleveland constitutes such a major population concentration that movement toward the core of the city must be regarded as contrary to almost everyone's normal instinct for survival. Therefore, Cleveland and Cuyahoga County should place emphasis on a shelter incentive program designed to increase the spaces available in the outer reaches of the city and in the county.

The County has about 519,000 housing units and 472,000 of these have basements, most of which could be used for expedient shelter. Until shelter facilities are available outside the city, a shelter utilization plan anticipating post-attack movement of those in basement shelters to the more highly protected spaces in the center of the city should be developed and carried out in the event the city is not hit directly but receives heavy fallout.

Its Special Resources

It is not possible to single out any special resources in Cleveland that would be of value in the event of a nuclear attack other than Lake Erie's abundant water supply. Cleveland has all the resources and services one would expect to find in a major city. These resources and services have no special characteristics which would be likely to reduce their vulnerability.

Its Problems

The Cleveland civil defense program has suffered from public apathy, vocal opposition from important political and community leaders, and neglect by the city administration. The present mayor characterized civil defense as a "step-child" of the past and the attitude of the public as "apathetic." He felt that both President Eisenhower and President Kennedy failed to dramatize the alternatives available to the people; consequently they are neither worried nor concerned. Ohio's two United States Senators are from Cleveland. One of the Senators has a consistent record in opposition to civil defense appropriations and the other has not only opposed the appropriations but has taken a public position in opposition to the civil defense program. The effects of this political leadership on the

community have been reinforced by the pronouncements of a nationally respected doctor associated with the leading university in the city .

The Cleveland-Cuyahoga County Office of Civil Defense has given only qualified acceptance to the shelter concept. The probability that Cleveland would be attacked is considered so great that the agency believes evacuation should be attempted, if there is any appreciable advanced warning, because analysis indicates that a sheltered population in the downtown area would suffer approximately the same number of casualties as would an unsheltered population. The view was expressed that a successful evacuation may be defined as one that saves one more life than would have been saved had the evacuation not been attempted.

The creation of the joint city-council civil defense agency appears to have had some unfortunate results. For one, it has made it possible for municipal and county officials to feel that they are doing their part by civil defense when they make their annual contributions to the agency. For another, it has so divided the responsibility for supervising the agency that its director and staff are forced to feel their way toward a civil defense program without being able to rely upon decisive and politically responsible leadership. Finally, the county and municipal operating departments have not been required to accept a share of the burden in carrying out civil defense programs and activities. The total resources of county and municipal government barely have been tapped for civil defense missions and assignments.

CIVIL DEFENSE PREPARATIONS

Building the System

Continuity of Government

Cleveland has made no special or extraordinary provisions for continuity of its city government during and after a natural disaster or nuclear attack on the city. Succession to office depends entirely upon the provisions of the city charter and the chains of command established for the peace-time administration of city affairs.

The city charter provides that a vacancy in the office of mayor, occurring more than one year before the next regular municipal election, is to be filled by a special primary election held on the first Tuesday after 60 days from the day on which the vacancy first occurs; and a final special municipal election on the fifth Tuesday following the primary. If the vacancy occurs less than one year before the next regular municipal election, the office is filled at the regular election. In either event, pending the election of a successor, the director of law, director of finance, or director of public utilities serves as acting mayor in that order. If the mayor, or the person performing the duties of mayor under the title of acting mayor, is temporarily absent from the city, or temporarily disabled for any cause, his duties are performed during his absence or disability by one of the acting directors in the order named.

The mayor is aware that he is to report to the emergency operations center in the event of an attack warning, but he feels that this could be misunderstood by the people and he does not intend to leave the city to go to the center if the decision is made to take shelter rather than evacuate the city.

City council is empowered to fill vacancies in its membership. However, a majority of council - seventeen councilmen, not a majority of a quorum, must concur in the filling of a vacancy and the individual selected must be a registered voter from the ward in which the vacancy exists. No plans have been made to bring the council together as a body during a natural disaster or a nuclear attack period. Special meetings of council may be called by the mayor, the president of council, or any five members of council; but written notice, served personally or left at the usual place of residence, must be provided each member of council at least 12 hours preceding the time of such special meeting. It is virtually impossible that such a requirement could be met under disaster conditions.

Vacancies in the judicial offices are filled by appointment of the governor. The city has no plan for the continuity of the judicial function in the event of a disaster or nuclear attack. The mayor and city council have no judicial powers.

Each department of city government has a director, and usually an executive secretary, who may in practice be acting director of the department in the absence of the director. Each division in the department is headed by a commissioner and the commissioners have deputy commissioners and other supervisory staff members under them. Succession to the directorship of a department usually is according to the seniority of the several commissioners in the department. It was evident, however, that the commissioners had a very uncertain understanding of the order in which they would succeed to the direction of their departments.

There is an obvious need for a succession to office ordinance for the city of Cleveland and an administrative directive setting forth clear and formal lines of succession to the top administrative posts. The city charter also should be amended to provide a special disaster procedure for calling an emergency meeting of council, to provide for a smaller quorum to conduct business, and to authorize the filling of vacancies by a majority of this reduced quorum.

The city has no systematic records preservation program. Almost all city records are kept in steel file cabinets, and some important documents are stored in fire-proof safes in the offices. The city clerk has microfilmed copies of the proceedings of council, all official city documents, deeds, contracts, the city charter, and ordinances. These are stored in a fire-proof safe in his office in City Hall. Essential working records, diagrams, engineering details, and schematics have not been located at the emergency operations center or other emergency locations.

Emergency Powers

No special emergency powers have been given to the city administration or to city council. Council frequently enacts ordinances under a section of the city charter which provides for their adoption as emergency measures. A two-thirds vote of the members elected to council is necessary to pass an emergency measure under this procedure. The only distinction between an emergency measure and a non-emergency measure is that the emergency measure may go into effect at the time indicated in the ordinance rather than after 40 days from its date of passage. The courts have upheld the right of council to determine for itself what qualifies as an emergency measure. The procedure would not be useful in a nuclear emergency because it would still be necessary for the measure to be read on three separate days unless this requirement was dispensed with by a two-thirds vote of all the members of council, and every ordinance or resolution must be published at least once in the city record within ten days after its final passage.

An amendment to the city charter is vitally needed to permit council to enact emergency ordinances and pass emergency resolutions without the delay of three separate readings and publication in the city record. This need is made more critical because of the absence of standing emergency ordinances at the present time.

Municipal Civil Defense Agency

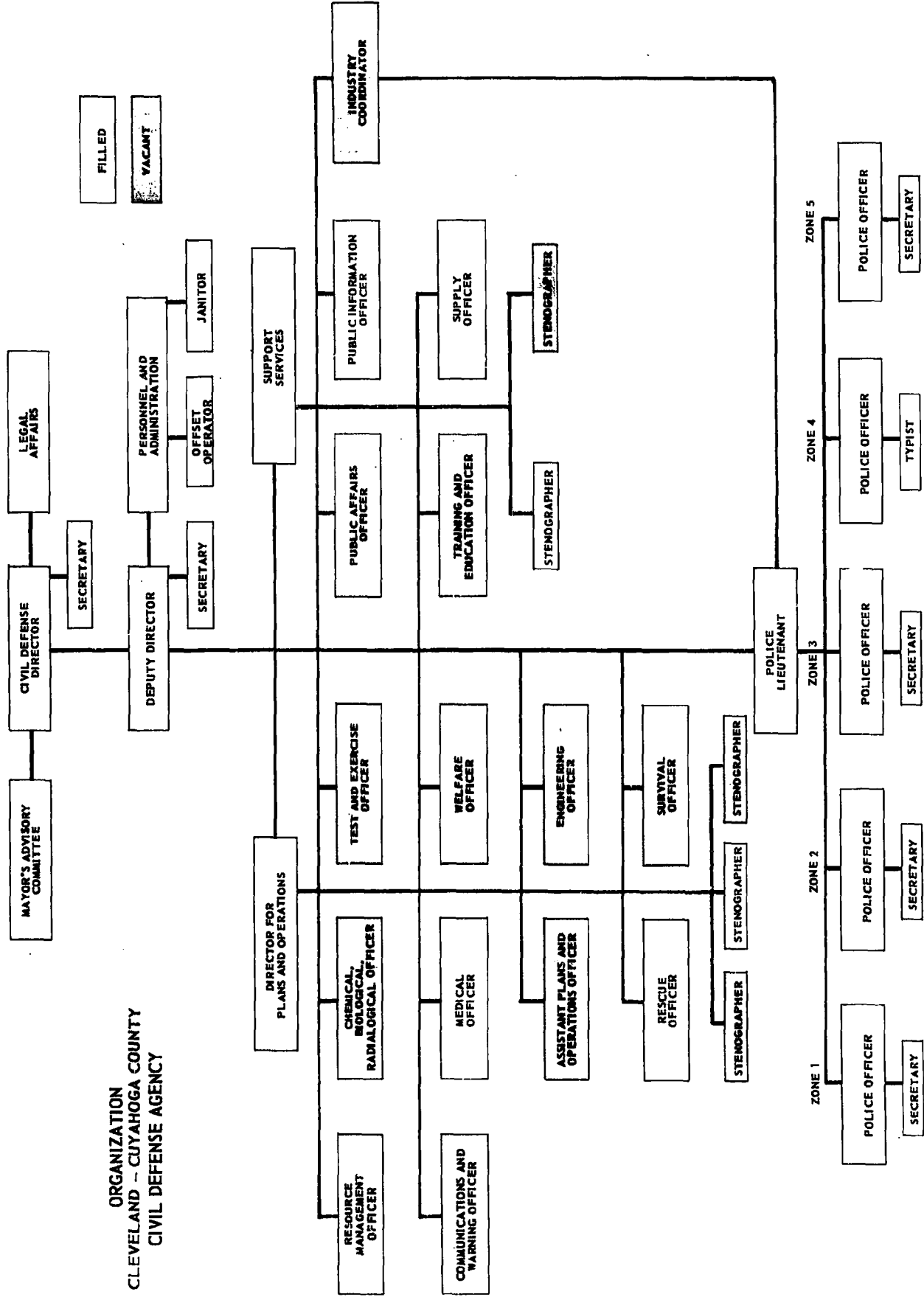
The Cleveland-Cuyahoga County Office of Civil Defense is a composite of three different levels of civil defense authority. It is the Cleveland civil defense agency, the Cuyahoga County civil defense agency, and it is the civil defense coordinating agency for the municipalities in the county. The civil defense director draws his authority from all three levels and may use any one of three titles, depending upon his role from time to time. He is the Cleveland civil defense director, the Cuyahoga County civil defense director, and the county civil defense coordinator. These three roles become so intertwined in practice that it is seldom clear, or very important, which title the director is acting under as he and the agency carry out various aspects of the total program.

The Cleveland civil defense agency serves in a staff relationship to the mayor and its director is appointed by and responsible to the mayor. The county is required by Ohio law to provide a civil defense program for its unincorporated areas. There are only four townships with a combined population of about 7,500 in Cuyahoga County. When the county coordinating agency was formed by an intergovernmental agreement, it was stipulated in the agreement that the county civil defense director would become the county coordinator. The Board of County Commissioners then appointed the Cleveland director to the post of county director, making him, ex-officio, the county coordinator.

The coordinating agency was created in 1952 under a statute of the Ohio Code which permits municipalities to contract for certain services if the municipalities pay for them. By agreement among the municipalities, bilateral contracts were concluded between the Board of County Commissioners and each subscribing municipality. The coordinating agency assists and advises the municipalities and correlates their civil defense plans. The agreement permits each community to retain its own civil defense autonomy and identity, and all that immediately is required of them is that they each organize a civil defense program which conforms to the recommended county plan. The agreement does state, however, that in a national emergency the county coordinator becomes the head of all civil defense operations in the county and it obligates each member to render mutual aid to the civil defense director of the county and to the other participating units.

The agreement established a County Council of Civil Defense composed of the Board of County Commissioners and the mayor or chief executive officer of each municipality

ORGANIZATION
CLEVELAND - CUYAHOGA COUNTY
CIVIL DEFENSE AGENCY



party to a contract with the Board of Commissioners. By 1958, the Council had a membership representing 56 of the 58 municipal units in the county. A Civil Defense Advisory Committee also was established to prepare the budget for the civil defense coordinating agency and to advise and assist the county coordinator. The Committee is composed of the mayor of Cleveland as chairman, the president of the Board of County Commissioners as vice chairman, and seven additional members selected by the Council. The selection of these seven Committee members is the only function given the Council by the agreement.

The Cleveland-Cuyahoga County civil defense agency has a staff of 23, organized as indicated in the chart on the preceding page. Note that there are 14 vacancies. These gaps are filled, in part, by doubling-up on assignments. The rescue officer is also serving as engineering officer, for example.

The functions of the police personnel in the civil defense organization deserve comment. A police lieutenant and five patrolmen from the Division of Police are assigned to the agency on a full-time basis. They are located in offices in the city's five civil defense zones. The lieutenant acts as director of a zone as well as providing supervision over all five zones and the industrial coordinator, who is the fifth police patrolman. Specifically, the lieutenant is responsible to the chief of the Cleveland Division of Police, and in coordination with all other law enforcement agencies in the target areas, for civil defense law enforcement functions and traffic regulation. He also is responsible for plans and emergency programs for police operations and the development of auxiliary police training and plant security measures. The zone officers are each responsible for the recruitment, training, and assignment and supervision of volunteers for auxiliary police, warden, and other civil defense functions within their zones. They are to promote public education in survival measures through various organizations and groups in their areas. The police officer assigned to be the industrial coordinator is responsible for the encouragement of plant security measures and gives assistance to industry in the development of civil defense plans and mutual aid programs, and provides them with information on the civil defense services available to them.

Five professional employees and two clerks are county employees and paid out of contract funds from the participating municipalities. The other staff members are city employees. The agency does not participate in the personnel and administration expenses matching fund program. Refusal to participate may be attributed to two reasons. One reason advanced was that both the state and the city rejected the program as a matter of principle against federal aid for what should be primarily a state and local responsibility. The other reason was related to the civil service requirements that must be met to establish eligibility for the grant. Some employees are serving within the city civil service system on acting appointments. The examinations for permanent appointments have not been held or scheduled. Apparently they have not been held because of the possibility that incumbents would be unable to qualify or obtain high scores to hold their positions in open competitive examinations.

Members of the professional staff have taken a number of civil defense training courses. The director, who was a professional welfare administrator prior to his civil defense assignment, has been to the OCDM Staff College at Olney and taken courses in civil defense administration, operations, and participated in Operational Sentinel. He also attended a decision-making course at Alameda, took the Atomic Energy Commission radiological defense course, and was an observer for two test nuclear detonations at Camp Mercury, Nevada. Staff members have attended at least 21 course in the areas of their assigned responsibility. Of these 21 courses, the plans and operations officer has eight to his credit and the medical officer has seven. The medical officer regularly attends the American Medical Association disaster medical care conferences.

The civil defense agency has a number of pieces of equipment assigned to it, but most of it is county-owned and its use is county wide. It is equipped with radios on the Cleveland police dispatching and reporting frequencies, however.

Autos	3	Rescue Trailer	1
Half Ton Truck	1	Communications Buses	2
Rescue Trucks	3	Amphibious Vehicles	8

Financing Civil Defense

The Cleveland-Cuyahoga County Office of Civil Defense has an annual budget of about \$150,000, including both the city appropriation and the county coordinating contract payments.

The contract costs paid by the participating municipalities are determined under the agreement by a formula whereby 50 per cent of the budget adopted by the Advisory Committee is assessed according to relative taxable valuation and 50 per cent according to the relative population of the participants. In 1961, a total of \$77,400 was assessed. Cleveland's share of this was \$40,764 but \$21,055 came back into the Cleveland treasury as a payment for rent and services provided by the city. The assessments, other than Cleveland's, ranged from \$14.08 to \$3,434 and most of them were under \$1,000. The county paid only \$258.25 on behalf of its four townships.

Cleveland budgeted an appropriation of \$112,500 for civil defense in 1963. If the cost of the police officers is conservatively estimated at \$50,000, a per capita expenditure of about 18 1/2 cents is indicated. The mayor feels that increased expenditures for civil defense should not be requested until the city has granted a salary increase to city employees. It has been four years since employees have had an increase and the mayor believes that the government of the entire city will suffer if this situation is not corrected. He also recognizes that there is a growing, but still minority, sentiment on city council against continuing the civil defense program. An attempt to increase the budget for this purpose might create increased opposition to the program and result in its abolishment.

Given this need for general salary increases and uncertain support for civil defense in the city council, it is imperative that the city reconsider its position and participate in the personnel and administration matching funds program. If the entire agency staff could be placed under this program it should be possible to fill the staff vacancies to meet the increased demands of the fallout shelter program and develop up to date plans and annexes oriented toward shelter operations and providing for the use of city agencies more fully than has been the practice in the past.

Program Activity

The programs of the Cleveland-Cuyahoga County Civil Defense Agency are county-wide in scope and no breakdowns showing the portion of the activity in Cleveland are available. Many programs are carried out by organizations such as the Red Cross or Academy of Medicine Disaster Committee and these will be covered in the sections devoted to these organizations and their operations. This section will be restricted to the programs of the civil defense staff, although they may exercise some supervision over and participate in the other programs.

Training and Public Information

A civil defense rescue school was erected in 1955 on a site adjacent to one of the city's sewage disposal plants. Matching funds were obtained from the federal office of civil defense to construct buildings that simulate bombed-out or damaged structures which would be found after an attack or natural disaster, such as a tornado. About 980 persons have been given basic and light rescue training since the school was started. Many of these students were from nearby counties as well as Cuyahoga County. The school has been inactive in recent months because of the lack of interest among volunteers in this aspect of civil defense training.

The plans and operations officer has conducted courses in emergency operations which 24 persons attended, radiological officer training in which 17 were qualified, and radiological monitoring in which 597 persons have been qualified. When those in training complete their courses, a total of 745 monitors in Cuyahoga and two neighboring counties will have been trained.

The zone officers reported that about 1,500 area wardens have been trained in addition to almost 2,000 auxiliary police. About 650 auxiliary firemen have been trained for duty outside the city and 50 radio amateurs have taken a communications course. The civil defense agency hopes to begin a shelter manager course in the near future.

Pamphlets and booklets have been distributed to the general public to acquaint them with survival methods and speakers provided for group meetings. A complete library of civil defense films for public showings is maintained. News stories are furnished to newspapers and trade papers in the area to promote the civil defense program.

Although there is little difficulty getting space in the public press, editorial comment has frequently been unsympathetic to the program. The papers are especially critical of the national civil defense policies and activities. Radio and television programs have been prepared and produced for local stations to use in acquainting the public with civil defense programs.

The Cleveland police officers assigned to the five zone offices reported conducting 180 public meetings attended by 2,500 persons, in 1962. They have registered a total of almost 20,000 volunteers for all civil defense services to date.

Tests and Exercises

The county attack warning sirens are tested every nine weeks and the "Bell and Light" system once each week. No general civil defense drills or tests have been conducted since the last "Operation Alert." Civil defense staff members, city personnel, and volunteers have participated in these OPAL exercises in the past. City administrators, however, frequently felt that their personal participation at what one called "paper" drills was not needed, and sent representatives in their places. An emergency mass feeding exercise was held in 1955 and a total of 17 exercises have been held for selected medical groups on the 200 bed emergency hospital. "Operation Know-How" will be described in the section devoted to the activities of the Disaster and Relief Committee of the Academy of Medicine.

Shelter Program

The staff of the civil defense agency, the zone police officers in particular, contacted building owners to obtain their licenses to use their buildings as public fallout shelters. An attempt was made to mark the buildings with the civil defense staff and volunteer help, but in order to meet a reasonable deadline for completing the work, the Corps of Engineers assigned a crew from the Buffalo District to assist. The county now has 651 licensed buildings with 616,000 shelter spaces. No stocking has been attempted by the civil defense agency, as yet. The Red Cross did stock 462 spaces in its office building with federal supplies on its own initiative. The civil defense agency has reached an agreement this fall with local truckers to move shelter supplies on a voluntary basis. The present goal of this new program is to have 250,000 spaces stocked by the end of March, 1963. The lack of support from city agencies in carrying out both the marking and the stocking program is illustrative of the lack of involvement of the city administration and line departments in civil defense programs and problems.

The development of a shelter utilization plan for the city and the county will be complex, and professional planning skills should be utilized. Jurisdictions are so numerous and interrelated geographically that a county-wide plan is essential. The concentration of spaces in downtown Cleveland are difficult to reach from some sections of the city because of distance and the natural barrier to movement posed by the Cuyahoga River and its industrial and port complex. It appears that a two-stage movement to shelter

should be anticipated, and because the city constitutes such a major population and industrial concentration, it is also reasonable for the initial movement of people to be away from the center of the city and toward shelter on the periphery of the target area, even if of lower grade. Procedures and methods for developing these plans have not been formulated by the civil defense agency.

Facilities for Emergency Operations

Attack Warning System

Cuyahoga County has been blanketed by 133 attack warning sirens of both 10 and 7.5 horse power. Both telephone land-lines and electrical current are utilized for triggering and supplying power to the sirens. Tests of the system have demonstrated that all people in the county who are out of doors can be warned of an impending attack. The local civil defense agency has reported that the Federal Office of Civil Defense concurs that the system is adequate for the 468 square miles in the county. Sirens are located on both public and privately owned buildings and are controlled from the Cleveland police radio room which serves as the District Warning Point. The order to sound the sirens is to be given by civil defense authority if the police radio room can reach one of the three designated and ranking members of the staff. The alert may be sounded by the police communications unit, but only the civil defense director, deputy director, or director of operations and planning are authorized to issue a decision for evacuation or "take cover".

The "Bell and Light" system is controlled from the police radio room and is installed in about 150 businesses and institutions in the county. All municipalities which are subscribers to the County Coordinating Fund Agreement are provided with this system and the cost is paid out of the contract funds. The installations are in the police or fire departments of these communities.

Emergency Operations Center

Cleveland attempted to develop a flexible and reliable emergency operations center capability by redundancy and dispersion of facilities when their survival planning was designed to meet the threat of kiloton yield weapons delivered by manned bombers. Two alternate emergency operations centers were designated, and five zone headquarters inside the city and five support zone headquarters out in the county were established. The main operations center was on the edge of the city and the alternate was in the civil defense headquarters near the center of the city. The support zone headquarters were equipped modestly to serve as control centers and, in most cases, were located in the city halls or police stations of the various municipalities.

The ICBM and the megaton yield weapon made it necessary to modify this plan. The alternate control center was changed to a city 30 miles from Cleveland and outside of

Cuyahoga County. The former support zone headquarters were changed to evacuation sector control headquarters in five cities in neighboring counties.

Now the emergency operations center situation is again in a state of flux. None of these facilities had adequate fallout shelter protection or communications. The two communications busses were supposed to move to the main and alternate centers to give them adequate communications, but the busses are even more vulnerable to fallout than the centers. The former main control center now is used only for training exercises. The main emergency operations center is now considered to be at Oberlin, Ohio, and the alternate center at Hiram. A number of zone headquarters are still in existence but they are not operational. The centers at Oberlin and Hiram have shelter areas but their Protection Factors are both less than 100. They also have only two, six, and ten meter band RACES for radio communications. The six meter band has not been satisfactory in performance. The main control center has only two telephones, but cables are installed for 20. The buildings have not been stocked with operating or survival supplies.

The civil defense agency is seeking an emergency operations center that offers blast protection. Two proposals for new emergency operations centers are being considered and waiting for a decision by the mayor. An abandoned Nike missile site in Independence has been made available for development as an operations center that would have blast protection. The basement of City Hall in Cleveland is also being considered for development as an alternate in the event there was not time to move to Independence. The City Hall basement would offer good fallout protection and some slight blast protection.

Cleveland and Cuyahoga County are without an operable emergency operations center at this time. Department directors and commissioners of divisions in city government have been shifted about so frequently in their assignments to emergency operations centers and zone headquarters that they are uncertain of just what is expected of them at the present time. County officials are equally uninformed of their reporting assignments, which apparently have not been changed from the old center now used for training exercises.

Communications

Cleveland's communications capability cannot be evaluated in the context of the present emergency operations centers. Cleveland has extensive radio communications in its city government, utility companies, and community agencies. These systems will be described in the sections devoted to the services operating them. When a viable emergency center has been provided and equipment installed to utilize these frequencies, together with the available RACES equipment and amateur radio volunteers, Cleveland will have excellent facilities for radio control of its emergency forces.

Fixed Radiological Monitoring Posts

The fixed radiological monitoring network is in the process of being organized. Monitoring station assignments have been made for 108 stations already, 46 of which are in Cleveland and the remainder in the county. The civil defense agency has an ultimate goal of between 200 and 300 stations in the county. The stations are located, for the most part, in police and fire stations, but other city installations and hospitals also have been designated. Land-line telephone or the Public Safety radio frequencies, if available, would be used by the stations to report their readings to the radiological defense team at the operations center. The civil defense agency is attempting to develop six meter FM RACES frequencies for the monitors to use for reporting. Only two stations have been established on this system but others are expected to follow as more amateurs become available and voluntarily convert their equipment to the assigned frequencies.

UTILIZATION OF COMMUNITY RESOURCES AND COMMUNITY AGENCIES

Operating the System

Civil Defense Survival Plan

Cleveland's Operations Plan is found in the two volumes of the "Ohio Survival Plan" of May 15, 1958, devoted to the Lake Erie Civil Defense Authority. This Plan is based upon evacuation and was issued by the Ohio Civil Defense Corps. The Lake Erie Civil Defense Authority includes Cleveland's Cuyahoga County, one county on the west and two counties on the east. No formal agreements have been effected among these counties and, in fact, even Cuyahoga County has done little more for civil defense than contribute financially to the joint city-county civil defense agency and accept the Cleveland civil defense director as the county coordinator. Although the document is an excellent model of an area-wide civil defense plan, replete with detailed annexes and appendices for every possible civil defense service, it has not been made operational by the commitment of the participating units to its provisions or the assignment of their governmental agencies to the services called for by the Plan.

The departments in Cleveland's municipal government are not familiar with this Plan and, for the most part, they have not been given any civil defense assignments or missions. A draft of an executive order assigning civil defense functions and responsibility to city departments was prepared during the administration of the previous mayor, but it was never issued or approved. Civil defense in Cleveland's municipal government has been the responsibility of the civil defense agency almost exclusively, and the agency has developed whatever civil defense capabilities the city has, using only the forces it could enlist from the community and selected personnel and limited assistance from the police and fire forces.

The civil defense participation of Cleveland's governmental agencies in a shelter program, an evacuation, or in post-attack recovery operations, would have to be improvised. There are no operational plans that could be used and the city's administrators and employees have little understanding of what might be expected of them. Cleveland should proceed to develop its own survival plan based upon the shelter concept. The city's departments and divisions should be used as the basis upon which the several civil defense services may be built. It is very desirable that Cuyahoga County, its municipalities, and neighboring counties join with Cleveland and develop coordinated shelter utilization systems and mutual aid plans for joint recovery operations. There must be a workable survival plan and an organized commitment of Cleveland's city forces for such a coordinated effort to attract them, however.

Civil Defense Organization

The only general civil defense organization discernable is the one shown previously for Cleveland's civil defense agency. Individual services, such as the Emergency Medical Service, may have their own internal organization, but the relationship of the various services to one another and to the regularly constituted civil authorities such as the mayor, heads of departments, and commissioners of divisions, is not clearly defined. For this reason, the city's governmental resources of men and equipment which could be utilized for civil defense purposes will be summarized by department. The civil defense activities, assignments, and plans, if any, of the Department and its divisions will be described. The activity of volunteers and community agencies will be indicated after the discussion of the related city department.

Department of Public Safety

The director of Public Safety administers and supervises the work of the Divisions of Police, Fire, Traffic Engineering, and Dog Pound. The chiefs of fire, police, and the traffic engineer are to report to the emergency operations center in the event of an attack warning. The three employees in the director's office, the seven dog wardens, the 120 employees in the Division of Traffic Engineering have no civil defense assignments or duties. The Police and Fire Divisions have such critical civil defense roles and ready-made civil defense capabilities that they will each be discussed separately.

Division of Police

The Division of Police has a staff of 1,901 commissioned police officers and 718 civilian personnel. These positions are categorized below. The number of women officers is indicated in parenthesis after the total number of both male and female officers in each category.

Commissioned Personnel

Chief	1	Lieutenants	68 (1)
Inspectors	4	Sergeants	130 (3)
Deputy Inspectors	12	Detectives	254
Captains	24 (1)	Patrolmen	1408 (25)

Civilian Personnel

School Crossing Guards	410	Superintendent of Communications	1
Ambulance Drivers	16	Dispatchers	31
Ambulance Men	19	Radio Repairmen	10
Institutional Guards	7	Telephone Operators	16
Police Surgeon	1	Maintenance Workers	146
Nurse	1	Clerks	60

The "1961 Annual Report of the Police Department" indicated that there were 678 fully equipped and 1,283 partially equipped auxiliary police available for service. These reserves are used for crowd control, church traffic details, and guards at charity drive collection points. They are uniformed in green to distinguish them from the regulars, who wear blue.

Cleveland has a police academy and recruits are supposed to receive 564 hours of initial training. It was necessary to hold a special two-week course in 1959 to complete the training of 92 cadet patrolmen because the 1958 class had to be assigned to duty before their training was complete. A full course was given to 75 recruits in that year and no classes were held in 1960. The hours devoted to subjects with civil defense application in the full course are as follows:

Civil Defense	4 Hours	Radio Procedure	4 Hours
First Aid	39 Hours	Subversive Organization	4 Hours
Psychiatry	12 Hours	Fire Arms	48 Hours

In-service training programs are conducted by the Academy and 30 officers have received 12 weeks of training in fingerprinting and 16 officers have received a like amount of instruction in photography. Special training has been given 9 officers by the FBI National Academy, 12 by the United States Army Arson and Bombing School, 34 by the North western Traffic Institute, and 20 by the Western Reserve Police Command School. Radiological monitoring training has been given to 30 officers, but the Police Division has not organized monitoring teams and its only two sets of monitoring equipment are carried in the crime investigation laboratory truck.

Auxiliary police are given 22 hours of instruction, 10 of which are in first aid. The remaining 12 hours are divided among traffic control, crowd control, and police procedures.

The Division of Police operates 6 district stations, one of which also serves as police headquarters. In addition to the vehicles listed below, the Division has 48 horses used for mounted patrols.

Patrol Cars	232	Crime Lab. Van	1
Motor Cycles	63	Communications Van	1
Patrol Vans	19	Trucks	52
Tow Trucks	12	Patrol Boat (28 foot)	1

The Division of Police has a flexible and wide choice of communications, but the personnel operating the systems are extremely vulnerable to fallout radiation. The radio room at Police Headquarters is on the top floor of the building and the facilities at the emergency operations center and other dispersed locations are not protected.

The police have five voice radio systems in daily use. They are: (1) Police Primary and Dispatching and Reporting - two frequencies in mobile relay - one for dispatching and one for reporting; (2) Traffic Bureau Primary Dispatching and Reporting - one frequency in simplex is used; (3) Detective Dispatching and Reporting - two frequencies in mobile relay - one for dispatching and one for reporting; (4) Sheriff's Net - one point-to-point frequency covering northeastern Ohio; and, (5) County Net - selective point-to-point to individual police departments in the county.

The police radio room has transmitters for 8 RACES frequencies, and 11 hand sets and 5 portable trans-receivers are available for emergency use in the field. A "Disaster Network" has been created under the control of the police whereby all radio and television stations, the Weather Bureau, Red Cross, Police, Fire, and civil defense forces can be tied into and transmit over police radio. CONELRAD broadcasts may originate in the police radio room by remote transmitters to the CONELRAD stations. Finally, although not a voice system, there is a Continuous Wave (C.W.) transmitter in the radio room for long distance communications which may be operated on seven frequencies.

The NAWAS District Warning Point is the police radio room and all attack warning sirens in the county may be activated from this location. The radio room dispatchers also activate the "Bell and Light" system to all municipal police departments and hospitals in the county, the City Hall switchboard, the civil defense agency's office, and about 250 private firms and subscribers in the Cleveland area. Direct-line telephone is available to the State Warning Point, City Hall, the homes of the civil defense director, assistant director, and plans and operations officer, each district police station, the control towers at the two airports, the Ohio Bell Telephone Company, and a telephone exchange outside the Cleveland target area. There is a public address system to each district station and a special hospital disaster alert system to the major hospitals which is activated from the radio room.

The police headquarters building may use either the municipal Division of Light and Power or the Cleveland Electric Illuminating Company as a source of main power. In the event both these sources should fail, an emergency generator is available capable of supplying power for the radios, lights, and one elevator. A 50 KW and a 10 KW portable generator are on hand to be moved to the districts as they are needed.

The police command communications van is equipped with an emergency 2.5 KW generator and is able to convert 12 volt battery power to 110 volt power. Its radio equipment includes the Dispatching and Reporting frequencies for the Police Primary, Police Detective, Division of Light and Power, Cleveland Transit System, Division of Water and Heat, and Fire Division systems. and the Sheriff's point-to-point net. The van also has four telephone "jacks" and a public address system.

The Division of Police has no civil defense plan. An evacuation plan was prepared, but it was never adopted by the Department. This plan called for the evacuation of most of the police force to six assigned locations in the county immediately upon receipt of an attack warning. Designated police officers were to remain in the city to direct evacuation traffic. The plan was never adopted because it was unworkable without the cooperation of the outlying municipal governments. The Division of Police is in the process of preparing a natural disaster plan.

Division of Fire

The Cleveland fire force consists of 1,314 uniformed and 59 civilian employees organized into 38 engine companies, 18 hook and ladder companies, 3 hose companies, 3 rescue squads, 2 fire boat details, and the Fire Alarm signal system maintenance crew. Fire companies conduct fire prevention inspections in homes and less hazardous business locations in their areas. A special fire protection squad of 45 men is used to inspect more hazardous risks in business and industrial locations. Cleveland has no auxiliary fire force or volunteer firemen.

<u>Uniformed</u>		<u>Civilian</u>	
Chief	1	Medical Officer	1
Assistant Chiefs	4	Nurse	1
Battalion Chiefs	31	Fire Alarm Maintenance Men	24
Captains	79	Building Maintenance Men	31
Lieutenants	173	Clerks	2
Firemen	1,026		

The Division of Fire conducts a training academy and recruits receive 120 hours of initial instruction. Emphasis is placed on general orientation in fire department rules and regulations and fire fighting techniques. Ten hours of instruction are devoted to the American Red Cross Standard First Aid Program but no special civil defense training is included. In-service training is conducted on-station in such subjects as radiation hazards and radiological monitoring, fog and foam methods, chlorine and liquid petroleum emergencies, use of gas mask and rescue breathing apparatus, airplane rescue, and first aid. Special training courses have been taken outside the Division's own training program. Radiological monitoring has been given to 132 firemen, arson and bombing to 5, aircraft fire fighting to 75, use of gas masks to 20, and 30 men have been trained in advanced medical aid. This latter course consists of 52 hours of lectures and 64 hours of practical work in hospitals.

There are 37 fire stations, one of which serves as fire headquarters, and a fire alarm and radio building, a high pressure station, shops, and a facility at the Cleveland Hopkins Airport. The fire stations were not surveyed as fallout

shelters because they are not to be used by the public. All stations are of brick and masonry construction with basements and would provide fallout protection. The Division operates 33 automobiles and 111 pieces of major fire fighting, rescue and service equipment as follows:

Pumper, 1,500 GPM	1	Gasoline Trucks	2
Pumpers, 1,250 GPM	17	Communication Truck	1
Pumpers, 1,000 GPM	19	Generator-Light Truck	1
Pumpers, 750 GPM	19	Carbon Dioxide Trailer	1
Pumper-Ladders, 1,250 GPM	2	Fire Alarm Repair Trucks	9
Aerial Ladders	22	Building Maintenance Trucks	6
Hose Wagons	2	Supply Trucks	1
Rescue Trucks	4	Hydrant Service Truck	1
CD Emergency Rescue Truck	1	Fire Boats, 6,000 GPM	2

There are two mobile relay radio communications systems for these vehicles. The fire fighting pieces and engine houses are on the Primary Dispatching and Reporting frequencies and the service vehicles and shops are on a Service Dispatching and Reporting frequencies. The city uses the Gamewell alarm system and the fire alarm office and radio room has direct trunk telephones to all station houses, the City Hall and Police switchboards, the control towers at the two airports, and three suburban fire departments.

The Fire Division's communications van is not as fully equipped as the one operated by the Police Division. This van has the Primary and Service Fire frequencies and a walkie-talkie frequency for the two hand sets carried in the assistant chiefs' cars for use at fires. It has a receiver on the Police Primary Dispatching frequency, a public address system, two telephone "jacks", six-sound-powered telephones, and a five KW generator.

The Division of Fire reported that in the event of a tactical warning, all men would be recalled to their regular duty stations by telephone and radio. If time did not permit, they would report to the nearest station. The Division's forces are to conduct regular operations until their RADEF teams or other authority report that radiological levels are too high to continue operations. During a shelter stay, the Divisions' RADEF teams would keep a check on radiation levels and the forces would be ordered back to fire-fighting operations as soon as radiation levels permitted. This decision would be up to the fire chief. During the post-attack period and after shelter emergence, the Fire Division would conduct normal fire fighting operations and rescue duty.

The Division has 97 radiological monitoring teams with five men on each team. Although only 132 men received training in radiological monitoring under civil defense auspices, enough men have been trained in the "on-station" training program to enable about 32 teams to be on duty at all times. There are 37 radiological monitoring kits in the Division and they are carried on the fire trucks to

be used during fire fighting operations. No plans have been implemented to report the radiological readings to civil defense authority or the emergency operations center. The civil defense director clearly expects that the fire stations will be integral parts of the radiological monitoring and reporting net, however.

Department of Health and Welfare

All personnel in the Department of Health and Welfare except the acting director, a case worker, and a clerk are assigned to the Division of Health or the Division of Welfare Institutions. The commissioner of Welfare Institutions is acting director of the Department of Health and Welfare. Although both the health and welfare functions are critical to a civil defense program, neither of these divisions has any civil defense assignment.

Division of Welfare Institutions

The only welfare institution operated by the city of Cleveland is its House of Correction. All other welfare institutions have been transferred to the Cuyahoga County Welfare Department. The House of Correction has about 500 male and 30 female inmates serving sentences for misdemeanors which average about 40 days. Work, educational, recreational, and rehabilitation programs are provided. A staff of 136 employees are required for this program.

Superintendent	1	Maintenance Men	3
Assistant superintendents	2	Farm Supervisors	3
Guards	69	Steam Firemen	6
Matrons	16	Cooks	6
Nurses	5	Telephone Operators	3
Case Workers	10	Clerks	12

A number of vehicles are located on the grounds of the House of Correction, including an ambulance, fire truck, bus, six tractors, seven trucks, seven automobiles, two plows, and a jeep. The main building is marked as a shelter but the two dormitories, the dining hall, and the recreation hall do not offer any appreciable fallout protection. The House of Correction has no assignment for civil defense other than to retain custody of the inmates. In the event of an attack warning the superintendent plans to move the prisoners to the main building and shelter them there.

The civil defense director intends to call upon the county for welfare services if they are required in a post-attack recovery period. There are no formal or official plans, agreements, or assignments, and the employment of the county's welfare resources depends entirely upon "an understanding" with the county welfare director.

American Red Cross

The greater Cleveland Chapter of the American Red Cross has been given primary responsibility for civil defense welfare services under an agreement executed in 1951, which has never been amended. The chairman and the secretary of the Chapter's Committee on Disaster Preparedness and Relief are to serve, respectively, as deputy welfare director of civil defense and executive secretary of welfare services of civil defense, Cuyahoga County. In spite of the titles used, it is apparent that the deputy welfare director of civil defense heads the welfare program in a disaster and he should be called, more correctly, the deputy civil defense director for welfare.

The Chapter's staff of about 180 full-time employees includes 10 professional Red Cross executives and directors of services, 20 social case workers, a doctor, 31 nurses, 12 blood technicians, and ten bloodmobile drivers. There are about 3,000 Red Cross volunteers trained in civil defense disaster operations.

The Chapter normally has 24 vehicles in the county including 2 one-ton panel trucks, 4 two-ton mobile blood units, and 18 station wagons which convert for use as ambulances. The 462 shelter spaces in the Chapter's downtown office building were the only spaces in the city that had been stocked with the federal survival supplies. Radiological monitoring equipment was in the shelter but no one had been instructed in its use. The Chapter office building has radio communications on the Civil Defense Net and 141 volunteer operators have sets in their cars or homes on an amateur radio net. The Chapter believes that it could set up for emergency operations in its basement shelter by moving its radio equipment to that location.

The Chapter reports to the civil defense director for only civil defense or attack emergencies. In the event of natural disasters, it reports directly to the mayor. The welfare assignments given to the Chapter are directed to evacuation activity and post-attack welfare services. The Chapter felt that any in-shelter welfare services were the responsibility of the County Welfare Department or shelter management. The Chapter was prepared to teach shelter managers and one of the staff executives had been given instructor training. It was hoped that the first class would be held during the summer months.

Salvation Army

There are 51 Salvation Army officers with status as professional welfare workers on full-time duty in Cleveland, and at least 50 employees and 50 lay members could be called upon for emergency service. The Army operates 30 two-ton trucks for collecting clothing and furniture, 16 station wagons, and a small canteen truck. Its several facilities include four kitchens that could be used for mass feeding stations.

The Army's civil defense plan is now being revamped. Its old mission was to assist with feeding at the evacuation reception centers.

Division of Health

The Division of Health administers the sanitary code of the city and the state laws affecting public health. Its basic activities include medical service, public health nursing, laboratories, vital statistics, and food and sanitary inspection. The Division has an authorized complement of 418 employees, but only 345 of these positions are filled. The doctors and dentists on the staff serve part-time and average about 20 hours of work a week.

Division of Health

Doctors	38	Sanitary Police	4
Dentists	26	Sanitarians	62
Nurses	67	V.D. Investigators	2
Dental Assistants	16	Photostat Operator	1
Oculist	1	Blueprint Operator	1
Nutritionist	1	Offset Operator	1
Bacteriologists	8	Building Engineman	1
Chemists	2	Telephone Operators	2
Laboratory Assistants	4	Custodians	11
Health Educators	6	Laborers	3
Veterinary Inspectors	3	Clerks	85

In addition to its offices and laboratory at City Hall, the Division operates seven health centers. X-ray equipment is located at the health centers and City Hall. The Division did not know whether the health centers offered any fallout protection. The sanitary inspectors operate 15 automobiles and the sanitary police use 3 police cars equipped with police radios.

The Health Department has no civil defense assignment and none of its personnel have participated in civil defense drills. No records preservation program has been installed but vital statistics are recorded in the city, the state capital, and in Washington, D.C. The only provisions that have been made for succession of command within the Division are by "verbal understanding."

Responsibility for civil defense or natural disaster health services are, as in the case of welfare services, assigned to a non-governmental agency, the Disaster and Relief Committee of the Academy of Medicine of Cleveland.

Disaster and Relief Committee, Academy of Medicine

The Disaster and Relief Committee of the Academy of Medicine is composed of 57 physicians; 34 representatives from the American Red Cross; 12 related professional organizations; and a number of lay people representing the Advanced Medical Aid Corps, Ohio Bell Telephone Company, the 256th General Hospital, United States Army Reserve, as well as a public relations and a supply consultant. Civil defense funds are used to finance the office force necessary to maintain this organization and carry on its projects. The objectives of the Committee are:

1. To plan for community-wide disaster relief for either natural or enemy caused disaster.
2. To provide training to physicians and to the ancillary professions in disaster medical care.
3. To provide professional personnel with disaster medical assignments.
4. To coordinate community-wide disaster medical planning with other relief agencies in the county, including the American Red Cross, the Office of Civil Defense, and the six county health commissioners.
5. To promote the development and completion of disaster plans in the 42 existing hospitals, clinics and sanitariums in Cuyahoga County.

The rosters kept by the Committee's executive secretary, who is the Civil Defense Agency's medical officer, indicate that almost 16,000 trained and experienced volunteers are registered and assigned posts for natural disasters or a civil defense emergency. They include:

Physicians	2,010	Lab Technicians	138
Osteopaths	73	X-Ray Technicians	139
Dentists	938	Supply Consultants	4
Registered Nurses	3,979	Dietitians	249
Practical Nurses	894	Dietary Volunteers	675
Home Nurses	1,570	Essential Hospital Personnel	4,165
Pharmacists	166	Custodians	423
Funeral Directors	19	Miscellaneous	225
Advanced Medical Air Corps	310		

Medical Service volunteers are issued wallet identification cards in the form of a booklet which indicate both a primary and a secondary disaster assignment. If it is impossible to reach either location, the volunteer is to report to the most readily reached medical location listed on the inside pages of the card. First aid teams have been assigned to 96 reporting centers and auxiliary hospital teams to

32 reporting locations designated as auxiliary hospitals. Emergency surgical supplies have been located in the buildings where they will be used. The stockpile of disaster medical supplies, purchased on matching funds, is valued at approximately a half million dollars.

These supplies were to be checked during the summer of 1963 to ascertain their condition. A sub-committee inventoried the amount and type of first aid equipment controlled by the Fire and Police Departments in each one of the 58 communities in Cuyahoga County. The inventories of antibiotics over normal inventory levels in the 21 greater Cleveland hospitals are rotated and original stocks are replaced with new products as changes occur in this field.

The present plans of the Medical Service call for zone medical and health teams to report to the designated zone centers in the event of a strategic warning. If the people are ordered to take shelter, professional medical personnel would take shelter in the hospitals. If a tactical warning was sounded, personnel would take the nearest available shelter. It is felt that the first responsibility of medical personnel is to preserve their own lives to aid in recovery operations. They would, of course, take care of hospital patients or take charge of health services in the public shelters if they were unable to reach hospital shelter. Upon shelter emergence, they would report to their assigned emergency stations.

The Disaster and Relief Committee administers an extensive training program. Lectures on disaster nursing care for registered nurses and licensed practical nurses, which emphasize the regrading of nurses to assume medical responsibilities in time of total disaster, have been held. 1,235 professional nurses and 75 practical nurses have enrolled in these classes since 1960. The Cleveland Dental Society has enrolled 114 dentists in its proposed course to train dentists to act as assistants to physicians in time of total disaster. These plans include two exercises on the 200 bed civil defense emergency hospital as well as a lecture program. The Cleveland Academy of Pharmacy sponsored lectures on disaster medical care for 74 pharmacists at the various hospitals. A 29 week advanced medical aid course is given to lay people who have certificates in advanced first aid or as first aid instructors. The 310 graduates of this program have donated almost 31,000 hours to the emergency rooms of Cleveland hospitals. Eleven hospitals have sent teams to be trained in the operation of the civil defense emergency hospital and five communications exercises have been conducted to demonstrate to physicians and hospital administrators the importance of communications in a disaster. These drills have been held in cooperation with the Radio Amateur Civil Defense Emergency Services. The Disaster Relief Committee provides guidance in presenting the medical education for national defense program at the Western Reserve University Medical and Dental Schools, the Ohio College of Chiropractic, and lectures in disaster nursing at the 11 schools of nursing in the greater Cleveland area.

The Disaster Relief Committee planned a disaster drill, "Operation Know How," sponsored by the Cleveland Hospital Council, Red Cross, Civil Defense Agency, Medical Education for National Defense Program of Western Reserve University, and the Academy of Medicine. Approximately 500 simulated casualties were transported to nine hospitals as well as an improvised civil defense emergency hospital. The Committee estimates that 18,000 people were involved in the drill including those at the hospitals, those conducting the drill, and those acting as casualties.

Two pilot classes in the Medical Self-Help program have been held and 68 people were enrolled. The 1962-1963 annual report of the Disaster and Relief Committee recommends that the Medical Self-Help program be encouraged. The report also recommends that an adequate communications system be organized among the hospitals for disaster purposes and a community emergency health services plan be written as an annex to a basic civil defense plan.

It is apparent that the Disaster and Relief Committee is making an outstanding contribution to Cleveland's civil defense preparedness. The organization already established could be adapted to provide in-shelter medical services. Rather than limiting the assignments to post-attack operations, shelter assignments could be added to distribute the members of the medical professions among the sheltered population.

Department of Port Control

The Department of Port Control supervises and controls the activities of the Division of Airports and the Division of Harbor.

Division of Airports

The Division of Airports operates the Cleveland-Hopkins and Burke Lakefront airports by providing maintenance service for the structures, supervising landings and take-offs and safety devices, collecting landing fees and charges for hangar space, negotiating concession agreements, promoting the services incidental to the operation of the airports, and publicizing the airport facilities. Although the 1963 city budget indicated that 120 positions were filled in 1962, the Division reported only 88 on its staff.

Commissioner	1	Building Maintenance men	15
Deputy Commissioners	2	Mechanics	3
Airport Managers	2	Laborers	28
Operations Agents	16	Accountants	9
Flight Information	9	Clerks	3

There is a United States Air Force Reserve Recovery Unit located at the Cleveland-Hopkins Airport and the Division has the following equipment assigned to it which could be used to conduct its own recovery operations. Those vehicles marked with an asterisk

are equipped with radios operating on both the tower and the city airport frequencies.

Autos	7*	Sander and Plow	1
Aircraft Fire Truck	1*	Grader	1
Foam Truck	1*	Stake Truck	1
Rescue Truck	1*	Dump Trucks	3
Tank Truck (3,000 gal.)	1*	Trencher	1
Pickup Truck	3*	Front End Loaders	3
Snow Blowers	2	Bulldozer	1

The Division has developed a civil defense plan and organization following the Federal Aviation Agency's "Airport Disaster Control Guide." The airport managers serve as disaster control officers and two employees have been trained as radio-logical monitors. The plan provides that personnel are to take shelter in the 575 spaces in the airport's underground tunnels and basements until it is safe to emerge and restore the airport to operation. The shelter areas have no means of communication but the monitors will report their readings to the civil defense director if communications can be established.

Division of Harbor

The Division of Harbor is responsible for contracting for the design, construction, and leasing of all city-owned waterfront property. The harbor master is charged with the operation of all movable bridges and the policing of the harbor. He cooperates with the United States Army Corps of Engineers and the Coast Guard in maintenance of the channel and harbor safety. The Division's staff is composed of the commissioner, harbor master, 2 port coordinators, 2 civil engineers, a four-man surveying team, and 30 bridge attendants.

The Division of Harbor has very little equipment of its own because most of the port facilities are not operated by the city. It does have four autos, a harbor master's boat equipped with marine radio, and a 150-ton dock-side crane.

"An Emergency Plan for the Port of Cleveland," which is consistent with the requirements of the United States Maritime Commission, has been developed with the assistance of the civil defense plans and operations officer. The Plan designates the director of the Department of Port Control as the director of emergency port operations. A Port Emergency Planning Committee has been created consisting of executives representing major port users, the Division of Harbor, and representatives of the Civil Defense Agency. Task groups have been designated for planning, maintenance of port operations, legal aspects, transportation, communications, port security, inventory and control, port evaluation, emergency training, reconstruction, and dispersal of personnel and equipment. Task groups are composed of appropriate personnel from Cleveland city government, communications companies, the Coast Guard, and companies and organizations using the port. The annexes to the Plan for these functions are not

available, as yet. The Plan provides for the dispersal of personnel, equipment, and records if there is sufficient warning. Personnel are to take shelter and report to designated reporting centers to organize for restoration of port facilities and recovery operations after emergence from shelter. The commissioner of harbor indicated that all bridges would remain lowered during an attack warning situation to permit the movement of vehicles and people across the bridges and into the center of the city where most of the shelter facilities are located.

Department of Public Service

Cleveland's Department of Public Service performs the city's public works functions. The director of the Department has cognizance over the activities of its four divisions: Streets, Engineering and Construction, Architecture, and Motor Vehicle Maintenance. Although the Department and its divisions have no civil defense or disaster plans, have conducted no civil defense training, and have no emergency assignments, its personnel and equipment constitute a logical and valuable resource for post-attack damage assessment, rubble clearing, demolition, and reconstruction activity. About 3,000 persons are employed in the four divisions on a full-time or part-time basis depending on the season of the year. These include over 100 engineers, architects, and draftsmen; 60 equipment operators; 250 truck drivers; 1,200 laborers; and over 200 skilled workers in the several building and construction trades.

The Division of Motor Vehicle Maintenance is responsible for the procurement, assignment, maintenance, repair, and control of all motor vehicles and motorized equipment of all city departments. The only systematic inventory of this equipment is maintained by the Division and its "1962 Annual Report" summarized the inventory which it valued at over eleven million dollars as follows:

Standard Passenger Cars	422	Heavy Trucks	445
Compact Passenger Cars	242	Motorcycles	60
Light Trucks	388	Fire Equipment	95
Medium Trucks	240	Special & Construction Equipment	1,067

The Division of Streets operates the incinerator and city dump and is responsible for rubbish collection and street cleaning, maintenance, and paving. In the event of snow emergencies, the Division has a plan whereby the city forces are augmented by private contractors. It is believed that this plan could be applied in civil defense emergencies and the city's equipment increased by about 25 per cent.

The city does not have a sanitary land fill operation and the disposal of large amounts of radioactive material by this method could not be accomplished readily at its dump sites.

Department of Public Properties

The Department of Public Properties has seven divisions. One of the divisions, the Division of Parks, is responsible for the supervision of three housekeeping bureaus in addition to its main responsibility, the maintenance and operation of parks, gardens, and parkways. These bureaus are City Hall Building, City Hall Telephone Exchange, and Harvard Shops.

The Bureau of City Hall Building has full-time service, cleaning, and maintenance crews under the direct supervision of the building custodian who also is assigned as the civil defense warden of the building. The Bureau of Harvard Shops cares for the grounds at the main city shops complex where the Division of Motor Vehicle Maintenance is headquartered. Its full-time crew is limited to a park foreman and a truck driver. Part-time maintenance workers are used as they are needed.

The Bureau of City Hall Telephone Exchange, with a chief telephone operator and 13 operators, is the central clearing point for telephone calls to and from City Hall. It also is a "Bell and Light" station and a teletype "drop" for dispatches from the Weather Bureau at the airport. The chief operator, during the day, and two night men, during non-working hours, are to call the mayor, civil defense director, and the building custodian if a "Bell and Light" warning is received. The civil defense director, assistant director, and plans and operation officer may be reached at their homes automatically by call switch. In the event of a teletype tornado warning, the civil defense director's office is alerted first and then the Police, Fire, Light and Power, and Water and Heat divisions are called.

The Division of Shade Trees is responsible for the planning and management of shade trees on the city streets. The Division plants new trees, removes undesirable and dead trees, and maintains the trees by trimming, spraying, fertilizing, cutting roots, and clearing debris from those damaged by storms. Trees and shrubs are grown at the city nursery for use on streets and other public properties.

The Division of Design and Construction is responsible for designing and preparing drawings, plans and estimates for the site, land planning, and landscape architectural development and improvement of parks, recreation play areas, cemeteries, off-street parking developments, freeway site improvements, and other properties of the city. It carries out some of the physical work with its own crews and equipment, but most of the projects are carried out by contractors.

The Division of Recreation provides public recreation facilities and programs for all age groups and maintains the park facilities used for recreation programs. It operates 11 recreation centers, three "out-posts" connected with housing developments or churches, and five boys' towns. Only one recreation center affords fall-out protection. Most of the Division's employees are seasonal and the Department's

table of employees at the end of this section will list only those employees of the recreation program who work full-time or for more than six months of the year.

The Division of Markets, Weights and Measures maintains and operates the municipal markets and refrigeration plant. It tests and seals all types of weighing and measuring instruments used commercially. Concessions in the markets are leased and commodities are not stored at these locations in large quantities. The two city markets have no fallout protection.

The Division of Auditorium and Stadium operates the civic auditorium and the Municipal Stadium. The Division will have a major responsibility in the shelter program because its present exhibition hall and public hall have a combined capacity of 16,000 spaces. The proposed new exhibition hall will add an additional 13,000 spaces, and, as yet, the Division has trained no shelter managers for these facilities.

The Division of Cemeteries operates 11 burial grounds, a mausoleum, and a crematory. Because of the presence of this Division within the Department of Public Properties, and the extensive land managed by the Department in the park system, it appears that its personnel and construction and earth moving equipment could be used to provide civil defense mortuary services.

The staff normally available to the Department of Public Properties is summarized below:

Administration and Supervision	45	
Clerks	45	
Operations	746	
Parks	224	
Recreation	270	
Shade Trees	96	
Design and Construction	49	
Markets, Weights and Measures	25	
Auditorium and Stadium	32	
Cemeteries	50	
Maintenance		131
Parks	31	
Recreation	83	
Auditorium and Stadium	17	
Total		967

The inventory kept by the Division of Motor Vehicle Maintenance indicated that the Department of Public Properties was assigned 31 automobiles, 77 light trucks, 59 medium trucks, and 6 heavy trucks. In addition to these basic vehicles, a number of special pieces of equipment are regularly available to the Department. Other equipment is available through the Division of Motor Vehicle Maintenance as it is needed.

Tractors	8	Compressors	3
Tree Movers	2	Generators	2
Winches	3	Shovel Cranes	2
Brush Chippers	7	Bulldozers	3
Stump Chippers	5	Backholers	2
Sprayers	5	Grave Diggers	3

Department of Public Utilities

The Department of Public Utilities manages and supervises the three divisions operating the non-tax supported public utilities furnished by the city. These include the Division of Water and Heat, Division of Sewage Disposal, and the Division of Light and Power. Billing and collection, and engineering services for these divisions are centralized in a Fiscal Control unit and an Engineering unit, each under the direction of a commissioner.

The Division of Water and Heat operates and manages all water system facilities owned by the city. Water is furnished to all of Cleveland and to almost all residents of Cuyahoga County. Just over 116 billion gallons of water was pumped to consumers in 1962. Steam for heating purposes, a by-product of one of its pumping stations, is supplied to customers located in the vicinity of the station. The following installations are the major components of the Cleveland Water System:

4	Lake Intakes
5	Major Pumping Stations
7	Secondary Pumping Stations
13	Booster Pumping Stations
4	Rapid Sand Filtration Plants
9	Large Distribution Reservoirs
11	Elevated Water Towers and Tanks
3,654	Miles of Water Mains

Three of the filtration plants provide the operators protection from fallout and the Division intends to have its plants continue operation during attack and shelter periods. Of the five major pumping stations, two are dependent upon electric power entirely, two use electric or steam generated power, and one is dependent entirely upon steam. It is estimated that a three-month supply of coal is on hand at all times for the generation of power. The normal daily capacity of the water system is as follows:

Tunnels	615 million gallons
Filtration Plants	515 million gallons
Raw Water Pumps	832 million gallons
Filtered Water	900 million gallons
Pumps, Major Stations	720 million gallons
Pumps, Secondary Stations	132 million gallons
Reservoirs, (Raw)	80 million gallons
Reservoirs and Tanks, (Filtered)	293 million gallons

Water is taken from Lake Erie through three cribs, located three, thirty, and forty feet below water level. In addition, a fourth crib is on the lake surface capable of bringing water in at 12 feet below the water surface and 20 feet above the lake bottom. These various intake levels would permit the selective introduction of water into the Cleveland system to avoid levels where radioactive fallout concentrations were located.

The Division operates a number of vehicles which could be used for recovery operations. Of these, 93 passenger cars and repair trucks are equipped with radios on the Division of Water and Heat dispatching and reporting frequencies.

Passenger Cars	29	Chlorinating Trucks	1
Meter Repair Trucks	45	Gasoline Trucks	2
Pipe Repair Trucks	37	Mobile Cranes	2
Dump Trucks	19	Miscellaneous Trucks	7
3/4 Ton Pickup Trucks	10	Back Hoes and Bulldozers	7

The Division of Sewage Disposal treats and disposes of sanitary sewage and is responsible for the maintenance of the sewage collection system. It operates three modern sewage treatment plants and 13 pumping stations. The three sewage treatment plants treat an average of 213 million gallons a day. Two of the treatment plants provide shelter protection for the workers, but the Division anticipates that the plants could operate to only a very limited extent during a shelter stay period. Although the Division has no specific civil defense plans, it anticipates keeping the sewers open and running and restoring services as quickly as possible upon emergence from shelter. Treatment plants would be shut down or operations curtailed if the men were needed for more essential tasks, such as the restoration of water supplies. If the treatment plants became overloaded or were not operational, sewage would automatically bypass them and empty into Lake Erie. Engineering Services are performed by the Division of Engineering and Construction in the Department of Public Service and the actual construction of new sewage lines is done by contract. For this reason the Division of Sewage Disposal has little heavy equipment assigned to it. It has a bulldozer, two back hoes, two tractors, two civil defense pumpers, and 13 assorted trucks.

The Division of Light and Power manages all plants owned and operated by the city for the purpose of generating and distributing electric current for the use of the city.

It also supplies some private consumers and business establishments with electrical power. The Division maintains and services over 24,000 street lights for which it furnishes the electric current. It operates two generating stations with a capacity of 137,500 kilowatts. Electric power is steam-generated and the supply of coal on hand is enough to operate the plant for 30 days. The company has no interconnected lines with other companies, but, its transmission system feeders are mostly underground.

About 60 per cent of the Division's 35 automobiles and 151 service trucks are equipped with radios on the Division's own primary reporting and dispatching radio frequencies. Although the transmitter has an emergency generator, the Division estimated that its fuel tank had enough gasoline for only about three hours of operation.

Staff
Department of Public Utilities

Administration and Supervision		6
Clerks		153
Directions Office	2	
Fiscal Control	131	
Engineering	6	
Water and Heat	2	
Sewage Disposal	9	
Light and Power	3	
Operations		1569
Fiscal Control	80	
Engineering	60	
Water and Heat	765	
Sewage Disposal	192	
Light and Power	472	
Maintenance		143
Sewage Disposal	143	
Total		1871

Cleveland Transit System

The Cleveland Transit System is managed by a semi-independent board of five members appointed by the mayor to five year overlapping terms. The general manager, appointed by the Board, is to report to the emergency operations center in an attack warning situation, but there are no plans or assignments beyond this, as yet. The manager indicated that there had been no direction from the city civil defense authorities to develop such plans.

The Transit System operates a fleet of about 1,000 busses with an average capacity of 50 passengers and a rapid transit system with 88 electric cars. It would be possible to carry up to 125 passengers in each car. In practice, 70 of these cars are married in tandem. The System has 18 service vehicles with radios on its own dispatching and reporting frequencies. The service building, where the radio transmitter is located, and the Cleveland Transit System Building, where the administrative offices are located, have been marked as public fallout shelters. There is no provision for emergency power for the radio transmitter or the rapid transit system.

Cleveland Electric Illuminating Company

This privately owned and operated utility generates, transmits, and distributes electric energy to consumers in Cleveland and five counties in the Cleveland area. It also generates and distributes steam for heating in downtown Cleveland. The Company has an operations plan to be put into effect in the event of a nuclear attack. Liaison representatives are to report to the state and city civil defense operations centers and each Cleveland-Cuyahoga County civil defense zone headquarters. The general offices, four electric generating plants, two steam heating plants, and 38 of 134 sub-stations offer fallout protection and have been stocked with food supplies. Employees on duty in the field are to take shelter in these locations and assist those regularly working there to maintain service as long as possible. Upon shelter emergence, employees are to assemble at normal reporting points or decentralized locations depending upon conditions. They then will be deployed to decontaminate company facilities and restore service.

The Company reports that about 2,800 workers are trained in first aid, 1,000 in fire fighting, 30 in civil defense rescue, and 40 are "ham" radio operators. Three employees are qualified radiological monitoring instructors and there are plans to establish a company-wide radiological monitor training program. The program anticipates training 40 to 50 instructors who would, in turn, train others on the job at all company locations. Monitoring teams are to be located at the generating plants and five transmission sub-stations and serve as fixed monitoring stations in the civil defense radiological monitoring network.

The Company has its own dispatching and reporting radio system to its four generating plants, two heating plants, five transmission sub-stations, and 370 of its repair and maintenance vehicles. There are four base transmitters, three of which are located outside the city. These transmitters have emergency generators with enough gasoline or propane to operate from 24 hours to several days.

Cleveland Electric Illuminating is a member of two electric utility mutual assistance organizations, one in Ohio covering eight companies, and the other, a national group

covering 75 companies. It also has interconnected lines with both the Ohio Power Company and the Ohio Edison Company. Its own generating plants use oil for ignition and coal for continuous operations. There are sufficient coal reserves to operate for 90 days under normal conditions and, it is estimated, enough for over one year under shelter conditions or most austere rationing.

Ohio Bell Telephone Company

The Telephone Company emergency operations plan for nuclear attack provides that company equipment is to be dispersed if warning time permits. Employees have been assigned to shelters in company facilities and the work areas that are required to be manned all have Protection Factors of 100 or better. Reassembly upon shelter emergence has been planned and the Company would then proceed to restore service in damaged areas and, as soon as possible, assist local government.

A Telephone Company liaison representative is to report to the civil defense emergency operations center and another representative serves as the communications officer at the center. Each of the Company's 32 operating and switching equipment offices has fallout protection and radiological monitoring equipment. These stations are to report their radiological readings to the civil defense radiological defense unit at the emergency operations center, according to a company spokesman.

The Company has its own shelter manager course and reported that 800 employees already had been given this training. The Office of Civil Defense shelter manager instructor course has been taken by 12 employees. In addition, about 9,000 employees are trained in first aid, 100 are "ham" radio operators, but only 20 were reported as having been trained in radiological defense.

Over 300 Company vehicles are radio dispatched and base transmitters are located at the main offices and five dispersed locations. Emergency power is provided for the transmitter, lighting system, and telephone operations by diesel generator. Enough fuel is available for at least 14 days of operation.

East Ohio Gas Company

The East Ohio Gas Company has a plan for natural disasters and this would have to be adapted to serve in the event of a nuclear attack. The chief distribution engineer and the operating engineer had civil defense assignments in the past, but it is doubtful that these assignments would be continued in the future because of the city's inactivity in civil defense. No inventory has been made of employees with special civil defense skills.

Four radio transmitters are located in the main offices and the three shops for dispatching 107 company vehicles. An emergency generator powered by natural gas is available to operate the main base transmitter.

The Company is supplied with natural gas from three pipe lines and 135 billion cubic feet of natural gas is stored in three storage pools. The Company is party to a regional cooperative agreement with approximately 37 companies in the Mid-Continental Gas Utility Mutual Aid Group. This agreement covers gas emergencies only.

Department of Finance

The Department of Finance administers the financial affairs of the city, including the preparation of the budget, maintenance and supervision of all accounts, custody and disbursement of city funds, collection of licenses fees, control of expenditures, and centralized purchasing. It performs these functions through its four divisions: Accounts, Assessments and Licenses, Treasury, and Purchases and Supplies. The Department has no civil defense assignments and, apparently, there is little awareness of what missions might be assigned to them in an emergency. Commissioners of divisions have reported in the past to the emergency operations center or one of the alternate centers for civil defense exercises. Because they had no functions to perform there, they were falling into the practice of sending representatives in their place.

The mayor's executive order assigning civil defense responsibilities to the city departments appropriately would have assigned the Department of Finance emergency responsibility for post-attack rationing, price control, and emergency procurement. The Department's staff, which makes extensive use of bookkeeping machines and other labor-saving office equipment, is as follows:

Director of Finance	1	Store Keeper	1
Commissioners of Divisions	4	Accountants	6
Deputy Commissioners	3	Bookkeeper Machine Operators	12
Budget Analyst	1	Office Machine Operators	7
Payroll Supervisor	1	Cashiers	12
Licenses Investigators	4	Parking Meter Collectors	4
Buyers	5	Watchmen	3
Clerks	38		

Department offices are in City Hall and the Division of Purchases and Supplies operates a warehouse. There are between \$ 150,000 and \$ 200,000 worth of drugs and blankets stored in the warehouse.

The Civil Defense unit, anticipated in the mayor's executive order, if it is created, should include a personnel or "manpower" section. This section could be organized

by the staff of both the Civil Service Commission and the Office of Personnel Administration. Both of these agencies have extremely small complements for a city the size of Cleveland. The Civil Service Commission has only a secretary, who serves as chief examiner, and three examiners and nine clerks. The Office of Personnel Administration has a personnel administrator, an assistant, a nurse, a sick leave investigator, and two clerks. It probably would be necessary to augment their staffs with clerical and administrative personnel from other agencies to carry on a post-attack manpower allocation program.

Department of Urban Renewal

The Department of Urban Renewal administers the four divisions concerned with the use of land standards for construction and occupancy of buildings, and the control of air pollution. The city planning work for the Department, and particularly its Division of Slum Clearance, which is the city's Urban Renewal Agency, is done by the staff of the City Planning Commission whose program and work has been coordinated with that of the Department. The Division of Slum Clearance, is responsible for the prevention and removal of urban blight and it manages all city property within urban renewal areas by collecting rents, effecting the relocation of occupants, demolishing structures, and clearing and redeveloping the land. The Division of Housing enforces the provisions of the housing ordinance and inspects residential properties to determine that they are used and maintained in a safe, sanitary, and fit condition for human habitation. The Division of Buildings enforces the building and zoning requirements as they relate to commercial and industrial properties. The Division of Air Pollution Control enforces the ordinances and regulations relating to air pollution arising from all sources other than single and two-family homes.

The staffs of these four divisions and the city planning specialists could be used to develop or supplement several civil defense services. The city planning staff could be called upon to develop shelter utilization plans, the building and housing inspectors for post-attack damage assessment, the air pollution inspectors and chemists for radiological monitoring and plotting, and the urban renewal coordinators for welfare activity in housing and family relocation. The following personnel are employed in the Department and its Divisions:

Director	1	Building Plan Examiners	6
Commissioners	4	Building Inspectors	20
Planners	17	Electrical Inspectors	11
Civil Engineers	3	Plumbing Inspectors	13
Engineering Aides	3	Refrigeration Inspectors	3
Draftsmen	10	Elevator Inspectors	11
Urban Renewal Coordinators	27	Heating Inspectors	8
Field Representatives	18	Housing Inspectors	49
Air Pollution Bureau Chiefs	4	Photostat Operator	1
Air Pollution Chemists	6	Accountants	3
Air Pollution Inspectors	10	Office Machine Operators	17
Industrial Hygienist	1	Clerks	65
Maintenance Workers	7		

Only the divisions of Building and Air Pollution Control have engaged in any civil defense activity. The Division of Building assisted in the location of the civil defense shelter signs and worked in cooperation with the architect and engineering firms making the shelter survey in Cleveland. This Division also issues building permits for the construction of home fallout shelters. The building code was amended in 1961 by a rule of the Board of Building Standards and Building Appeals to provide for the application of federal fallout shelter standards. A three dollar fee is charged for a permit and only five have ever been issued.

The Division of Air Pollution Control serves as a reporting point in the National Air Sampling Network and the Radiological Air Sampling Network. The offices and laboratories of the Division are located in the sewerage treatment plant and this building has been marked as a fallout shelter. One of its laboratory men has been trained to make radiological readings and from time to time he teaches the radiological defense course in the city's civil defense training program. No plans have been formulated to use the personnel or facilities of the Air Pollution Control Unit for a fixed radiological monitoring point or for radiological plotting in the event of a civil defense emergency.

Department of Law

The Department of Law acts as the city's legal advisor, attorney and counsel. It represents the city in all legal action to which the city is a party and prepares ordinances and resolutions as well as contracts, agreements, leases, deeds, proclamations, and charter amendments. Its staff consists of 44 attorneys and 15 clerical personnel.

The director of law is acting mayor in the absence of the mayor. Three acting directors of law are designated to succeed the law director but they do not succeed to the office of mayor should a vacancy occur while acting as law director. The director indicated that he would follow the orders of the civil defense director although he has not been assigned to the emergency operations center and intends to report to the basement of City Hall in the event of an attack warning. His office has no civil defense assignment other than to draft all necessary ordinances and contracts between the city, county, state, and federal governments should it be requested by proper authority.

INTERGOVERNMENTAL ASPECTS OF CIVIL DEFENSE

The Cleveland-Cuyahoga County civil defense program and civil defense Agency were designed to coordinate the civil defense efforts of Cleveland, the county, and all fifty-eight municipal units in the county. The city-county program is well conceived in theory, but it has not been developed in practice. The result, it appears, has been the abdication of county and municipal effort to the civil defense agency. The county has lagged behind the city, even though the city has fallen far short of desirable goals. Suburban participation also has been very limited and virtually nonexistent in several instances. Cleveland has the resources in personnel, equipment, and shelter space at the present time for an outstanding civil defense program based upon the fallout shelter concept. Conditions exist in the Cleveland situation, however, which could have a combined impact leading to a decision to abandon civil defense similar to the one recently made in Portland. For example: (1) important community leaders are openly opposed to the civil defense program; (2) some members of council are reluctant to spend limited city funds for the program; (3) there is strong attachment to the earlier evacuation concept as opposed to fallout shelter; (4) the county and the surrounding communities have made little progress in their civil defense programs; and (5) the state has aimed its civil defense effort to a minimum program.

Cleveland School District

Cleveland has an independent school district governed by a board consisting of seven members elected to four-year overlapping terms. The board appoints the superintendent of schools, a treasurer, and a business manager. There are 146,000 pupils in the public school system, which employs about 7,500 teachers, education administrators, and support personnel. Of these, about 5,000 are trained and experienced teachers or education administrators.

Cleveland has a neighborhood school system and, consequently, there are many schools and very few school buses. The 12 buses owned by the system are used only to carry handicapped and retarded children to their special schools. There are 12 senior high schools, 19 junior high schools, 123 elementary schools, and six special schools. A school FM radio station broadcasts special educational programs to all schools and there is a tie-in with the police station which could be used in an emergency for one-way communication.

The Cleveland school district has made very little progress in developing disaster plans for the schools. Although some have been designated as fallout shelter areas, the school administration intends to make them available only for the day-time student and staff population, and they do not intend that they be opened and managed for the use of the general public. In the event a "take cover" warning is sounded, the students are to take the best available shelter in the schools. Students are to be sent home if there is enough warning time.

The "Education for Survival" course was offered in the adult education program. About 180 teachers have been certified to instruct this course. The public response has been so poor that only 207 adults have taken and completed the few classes that have been held.

The superintendent of schools feels that much more guidance from civil defense authority is needed and civil defense policies require clarification before the district can proceed to develop the plans that are needed.

State Civil Defense Programs and Guidance

The Ohio Civil Defense Act of 1949, as amended, created the state Civil Defense Corps within the Adjutant General's Department and designates the adjutant general as ex officio state civil defense director. He is appointed by, and directly responsible to, the governor. The Corps had a full-time staff of ten persons in fiscal year 1962-63, including the ex officio director, deputy director, four professional employees, a technical staff member assigned to the Corps on a full-time basis by the Ohio Bell Telephone Company, and three clerical employees. The Corps has one part-time staff member serving as director of women's activities. Two other positions, one professional and one clerical, were authorized but not filled. None of the personnel on the staff of the state Civil Defense Corps are in the personnel and administration matching fund program.

The state legislature, in 1961, reduced appropriations for civil defense which necessitated a reduction in the authorized civil defense staff from 26 positions to the present 11, excluding the adjutant general serving as ex officio civil defense director.

The governor, by executive order, assigned civil defense duties to the various state departments and agencies to implement the state civil defense plan. Five state agencies have given civil defense planning assignments to employees on their staffs. The Highway Department has 11 such employees, the Health Department three, the Public Utilities Department one, the Personnel Department two, and the Welfare Department has one. All of these agency civil defense planners are in the personnel and administration matching fund program. In addition, the Health Department has three employees and the Welfare Department has one employee working on civil defense assignments on a part-time basis. The Ohio Civil Defense Corps, because of its limited manpower, is unable to coordinate and supervise the civil defense plans and activities of these five state agencies.

The Corps distributes guidance material to city and county directors, primarily in the form of information memorandums. These memorandums deal with state and federal civil defense policies, procedures, and programs and are based upon civil defense material distributed by federal agencies, as well as material prepared by the state agency. The Corps formerly published a newsletter for civil defense personnel, and it has, on occasion published manuals for use by civil defense personnel and educational material

for the general public. The most extensive program undertaken by the state was the preparation of the state-wide operational survival plan through the Survival Project Program Reports prepared in cooperation with the federal government. This project involved the preparation of operational survival plans for each of the nine target cities in the state, as well as the State Survival Plan and a state-wide Resources Manual. These plans were all based upon the evacuation concept and have not been revised to conform to the national fallout shelter program. The plans contemplated the creation of civil defense authorities which would be responsible for civil defense activities in two or more counties. Only one of the nine authorities proposed has ever been created. The other eight of these reports never have been implemented.

The state Civil Defense Corps does not carry on any training programs. However, the state Department of Education trains and certifies instructors to teach an adult education course in civil defense; the state Department of Health administers, through county health departments, the medical self-help training program; the Agricultural Extension Service conducts a rural civil defense training program; and the state Highway Department conducts a radiological monitoring training program for its own employees. The Highway Department, in the past, provided monitoring training to local civil defense officials, but, because of a reduction in appropriations, the department is limiting this program to its own employees at the present time. In addition, contracts are now being negotiated for the state university extension service to teach radiological monitor instructors and shelter manager instructors and to hold conferences for county and municipal officials who have, or will have, civil defense duties.

The state civil defense plans established five Civil Defense Areas. These areas were staffed by two to three state employees who were responsible for coordinating and guiding civil defense activities within the area. The area offices served in the chain of command between municipalities and counties and the state. The state also had established six mobile support groups composed of service teams, including engineering, rescue, fire, auxiliary police, welfare, and health. These support groups were staffed by volunteer civil defense personnel, but equipment and supplies were provided by the state. The reduction in the civil defense appropriation in 1961 required the deactivation of the mobile support groups and the elimination of the Civil Defense Area personnel.

The state civil defense agency has established an emergency operations center in the National Guard Building in Westerville, Ohio, which is approximately 12 miles north of the capital. The center has a Protection Factor of 100 or better, and communication capability, including radio communication with the district offices of the State Highway Patrol, Highway Department, and Department of Natural Resources and Civil Air Patrol Headquarters; direct land-line communications with Region 2, the governor, and district offices of Highway Patrol, Highway Department, and Department of Natural Resources; and direct dial teletype to each of the nine target cities in the state. Flexible communication systems are available at the center and communications between

cities, counties, and the state operations center have been provided through the seven geographically distributed district offices of the Department of Natural Resources. The center also serves as the alternate district warning point of the NAWAS system.

State facilities for emergency operation appear to be adequate, although the emergency operations center is only 12 miles from Columbus, which has been designated as a city which should prepare plans for "damaged and radioactive-damaged conditions" in the event of a major nuclear attack upon the United States by the "Federal Guidance for State and Local Civil Defense, Planning Alternatives."

Federal Agencies in Cleveland

Cleveland Post Office

The United State Post Office in Cleveland has a civil defense plan, which like other post office plans, provides for the security of government property and the post office facilities. Written attack emergency instructions have been given to drivers to secure their mail and then put themselves and their vehicles at the disposal of the city civil defense director. After securing mail, drivers are to assist in transporting people out of the attack area if an evacuation is ordered. It is anticipated that post office trucks would be used as ambulances in the civil defense medical service after an attack.

The Cleveland Post Office and its many sub-stations employs about 7,500 persons. Of these, about 1,200 are drivers, vehicle operators, or special delivery personnel. The drivers operate 50 mailsters, 172 one-half to one ton trucks, 58 two ton or two and a half ton trucks, five trailers, and three tractors. As yet, no definite plans have been made with the civil defense agency to utilize these trucks and drivers.

Weather Bureau

The United States Weather Bureau Station, located at Cleveland Hopkins Airport, cooperates with the city civil defense agency, when requested. The station has no emergency operations center at the airport and personnel have no assigned posts in the event of a nuclear attack. Personnel will follow whatever direction is provided by the local civil defense agency. The station has extensive communication capability, including the city Disaster Net; Public Service Teletype Net, which has drops at City Hall telephone switchboard and civil defense headquarters; FM Weather Radio to Akron, Ohio; direct emergency land-line to civil defense headquarters; and teletype communications with the Weather Bureau Regional Office. Federal Aviation Agency long-line communications and commercial teletype are located at the airport. Emergency radio communication is provided the Weather Bureau during periods of severe weather forecasts by licensed amateur radio operators in the Cleveland area. In the event of such a forecast, one such amateur has been designated to report to the Weather Bureau Station. The Weather Bureau has two radiological monitoring sets and 12 of the personnel assigned to the station have been trained in the use of this equipment. If communications are available, radiological readings will be reported to the civil defense headquarters.

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