Final Report *July 1966*

CIVIL DEFENSE COMMUNICATIONS REQUIREMENTS AT THE LOCAL, STATE, AND REGIONAL LEVELS

Prepared for:

OFFICE OF CIVIL DEFENSE
DEPARTMENT OF THE ARMY — OSA
UNDER
WORK UNIT 2211C

CONTRACT OCD-PS-64-201

STANFORD RESEARCH INSTITUTE
MENLO PARK, CALIFORNIA

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SUMMARY

Communications is a key element in civil defense efforts to mobilize and integrate the diverse human and material resources of the community, state, and nation in response to the threat of nuclear attack. Civil defense decision-making at all levels of government is influenced by the quality, quantity, and timeliness of the information that communications systems convey.

Fundamental to an understanding of communications needs of government for undertaking civil defense activities is an analysis of the organizational structure and functions of those entities having civil defense responsibilities. Since a clear definition of civil defense operations and organization is still lacking in many areas, generalized structures and procedures have had to be created out of research judgment to supplement stated policies and procedures.

The study emphasizes the analysis of information and the derivation of circuit requirements for local, state, and regional civil defense operations during a nuclear emergency. Information flows between federal agencies and departments and within state agencies that are not assigned civil defense emergency roles are excluded.

The study approach is based on a narrative scenario of a generalized nuclear emergency situation and the actions undertaken by the various functional groups (fire protection, health, law and order, shelter management, etc.) in reacting to the demands of the emergency. The information flows required between various functional groups and levels of government are abstracted from the scenario and classified by means of a number of descriptors (urgency, frequency, volume of messages). Thus the need for, and nature of, communication links is ascertained.

From this analysis, requirements for communication links are translated into circuit requirements; these can serve as a basis for the engineering design of communications systems and the selection of equipment. A companion SRI report, "Communications Equipments and Systems To Support Intrastate Civil Defense Operations--Circa 1960," by Cone, Baer, and Shapiro treats these engineering issues.

The most significant conclusion of this study is that a detailed statement of communication requirements in support of civil defense cannot precede a clear-cut description of the organization itself. Further, the procedures and policies that govern an organization also govern the nature and volume of information flows supporting it.

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1 INTRODUCTION

Background

Communications is a key element in civil defense efforts to mobilize and integrate the diverse human and material resources of the community, state, and nation in response to the threat of nuclear attack. Civil defense decision-making at all levels of government is influenced by the quality, quantity, and timeliness of the information that communications systems convey. An understanding of the communications needs of government for the undertaking of civil defense activities requires analysis of the organizational structure and functions of the entities having civil defense responsibilities. The information flows necessary to carry out these activities within the organizational framework so determined provide the basis for estimating communications system requirements.

Recognizing the importance of communications in unifying the varied elements of a civil defense program, the Office of Civil Defense (OCD) asked Stanford Research Institute to study the requirements for civil defense communications at the local, state, and regional levels.

Objective

The objective of this study is to analyze the information flows required in the conduct of local, state, and regional civil defense operations during a nuclear emergency, and to develop means of determining the communications links necessary to transmit this information.

Scope

The study emphasizes the analysis of information and the derivation of circuit requirements for local, state, and regional civil defense operations during a nuclear emergency. Information flows between federal agencies and departments and within state agencies not assigned civil defense emergency roles are excluded.

From the analysis, requirements for communications links are translated into circuit requirements; these can serve as a basis for the engineering design of communications systems and for the selection of equipment.

The dissemination of public warning and information messages is the subject of another area of civil defense research; its consideration in

this study therefore is limited to its interaction with civil defense command and control communications.

The study is in compliance with the following Scope of Work specified under OCD Task Order 2211C:

> "The contractor shall furnish the personnel and facilities required for conducting research and development studies initiated under prior OCD research contracts covering interim and long-range analytical programs in the field of communications for operating civil defense systems, determined for:
>
> 1. A range of time periods - preattack system evaluation and training exercise, transattack operations, and postattack control;
> 2. Each level of government - Federal, state, and local, and between them;
> 3. Each function and civil defense activity.
>
> The development of requirements will be in terms of modes (telephone, radio messages, record copy, etc.), message load, criticality, cost, timing, and such other factors as are determined to be important during the course of the study. This is the initiation of the SRI segment of a year-to-year study."

Method of Approach

For the purposes of this study, civil defense communications requirements are defined as those communications links necessary to transmit the information flows that support civil defense operations during an emergency.

The information flows of any organization must be based on a knowledge of the formal and informal structure of its resources (human and material) and the procedures that govern its activities. Investigation of published local, state, and regional operations plans, doctrine, and procedure as well as discussions with CD officials at various levels of government failed to disclose commonly agreed-on premises for civil defense operating policies.

In the absence of a standard set of operational concepts for CD organizations, the research team developed a generalized model of local, state, and regional CD operations. Such a model needed to be sufficiently broad to cover geographic variations of organization and resources.

In developing the model, the research team assumed complete plans and procedures, for effective planning and training can minimize the requirement for information transfer during the critical phases of an emergency. No attempt was made to prescribe a structure for the several levels of

organization; rather, the model depicts what appear to be the most important demands and appropriate responses to be anticipated during the emergency. The responses are collected into groups of related activities, labeled "functional areas." In turn, these areas are delegated to individuals designated as directors, a term that implies the senior responsible member of the CD organization or of a functional area thereof, and those persons who assist him as advisers, analysts, delegated decision-makers, and in other executive staff capacities.

A companion study, "Communications Equipment and Systems to Support Intrastate Civil Defense Operations--Circa 1970," also conducted by SRI, Contract OCD-PS-64-201, covers detailed equipment analysis for local, state, and regional civil defense communications needs. The two reports are intended to be complementary.

II CONCLUSIONS

The information flows for local, state, and regional level functional areas are detailed in narrative and tabular form in the report. These flows are grouped and simplified where redundancies occur. The result is a general picture of the total information flows supporting local, state, and regional CD organization. Chartered and quantified in general terms, these total flows are translated into communications requirements. Through parallel analysis, the individual community, state, state area, or region can determine its CD communications requirements.

Although the individual communications flows derived in the study do not lend themselves to general summarization, a number of conclusions emerge from the field research and from an overview of the study:

1. A detailed statement of communications requirements in support of civil defense cannot precede a clear-cut description of the organization itself.

   The "how" of A communicating with B in a communications requirements study first depends on identifying A and B and the nature of what they wish to communicate. Only then can the number and composition of circuits connecting them be analyzed. There are extensive gaps and ambiguities in the nation's organization for civil defense at all government levels. Before CD communications requirements acquire any real meaning in a detailed and reliable sense, additional work must be performed in the organizational sector.

2. The procedures and policies governing an organization also govern the nature and volume of information flows supporting it.

   Information follows channels determined by lines of responsibility within an organization, according to operating procedures designed to cope with specific anticipated demands. Comprehensive operating procedures, assimilated and practiced by the operating components of the CD organization before an emergency, allow the implementation of responses with a minimum of communication.

3. Communications facilities among all levels of CD authorities, as well as links between various-level CD authorities and authorities in other federal civilian agencies with whom coordination is required, have high priority in the general restoration process.

Communications between civil defense authorities are critical to the optimal allocation of available resources, and coordination of efforts within states and within the nation as a whole depends on restoration of adequate supporting communications facilities.

4. Internal communication control centers within Emergency Operating Centers (EOCs), administered by Communications Directors at state and regional levels, can improve the efficiency of transmittal of information to and from the EOC.

   Control centers can monitor incoming information and expedite its transmission to the appropriate point(s) within the EOC, as required by urgency or other criteria. They can also maximize the effectiveness of available external communications links by establishing and monitoring message priorities. Furthermore, by use of techniques such as time registry of internal and external information flows on transmittal and receipt, these centers can eliminate loss of messages and monitor the progress of priority information between intra-EOC action points, thus reducing the administrative workload of EOC decision-makers and their staffs.

The following conclusions pertain specifically to the local government level.

5. A communications system linking the community EOC with shelters is an essential element of any local CD program.

   Every functional area has a requirement for information transfer between the EOC and shelters during the in-shelter and brief emergence phases of a nuclear emergency. These links are vital to resource assessment and distribution, planning, and community cohesion throughout the shelter period. Their absence would greatly reduce the capability of individuals and the community as a whole to endure the crisis. All shelters should have telephones or radios.

6. Net control stations of the community's mobile radio nets should be located at the EOC.

   Net control facilities for each of the service nets (fire, police, public works) should be installed at the EOC. This allows functional area directors and their dispatchers to function from a common location.

7. Coded alarm systems may provide important means of directing field units.

Given preattack instruction as to their responsibilities in a nuclear emergency, field units may be mobilized and directed by coded alarm (e.g., siren, klaxon) when direct radio or telephone contact is difficult. In many cases, the initial alert of field organizations should precede alerting the general populace.

8. Where community fallout or blast shelters are used for protection against direct weapons effects, survivability requirements are imposed on the communications systems.

   Where fallout shelters are provided, and the local EOC is hardened, hardening or redundancy must be provided for links from the ECC to shelters and to external authorities beyond the anticipated blast area. Where blast protection is provided for the population of a community, the communications links used in local CD activities and to external authorities must be hardened to the same degree.

Quantitative summaries of circuit requirements are given in Summary Tables 1 through 4, built up from the detailed analysis of functions performed by each organization and level of government. These summary charts are reproduced here as representative of the quantitative conclusions generated in this study. In these tables SU and CU are abbreviations for single user and common user circuits, respectively. Single user refers to the reservation of circuits for a sole user as opposed to the sharing of facilities in the case of the common user.

Summary Table 1

CIVIL DEFENSE LOCAL LEVEL COMMUNICATIONS CIRCUIT REQUIREMENTS FOR DIFFERENT SIZE CITIES WITH FALLOUT SHELTERS*

EOC Communications Circuit to:	Number of Each Kind of Communications Circuit: Cities with 500,000 Population or Greater	Cities with 100,000-500,000 Population	Cities with 25,000-100,000 Population	Cities with less than 25,000 Population
State EOC (state area EOC)				
CU VOICE channels	4	2	1	1
CU TTY channels	2	1	1	1 (possibly)
Other communities				
CU VOICE channels	3	1	1	1
CU TTY channels	1	1	0 (probably)	0
Shelter Complex Headquarters (or shelters)				
CU VOICE channels	3	2	1†	1†
Emergency AM broadcast networks				
SU program channel	1	1	1 (serves both purposes)	1 (if broadcast station available)
CU administrative channel	1	1		
Local military units				
SU VOICE system	1‡	1‡	1‡	1‡
Local field organizations				
Police Fire Rescue Weapons Effects Medical Health Welfare Public works Utilities	Multichannel, SU voice radio systems with supporting SU voice wire systems in some cases.§		Single to multichannel SU voice radio systems, possibly supported by SU voice wire systems. Increasing incidence of facility sharing as size of community decreases.§	

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* Requirements for 500,000 population are diagrammed in Figure 1. See text for methods used to develop these scaling factors.

† Shelters will probably be used in these communities. This assumes the following rough ratios:

1. An average of 500 shelter spaces per shelter, with a range of 50-5,000.
2. Where Shelter Complex Headquarters exist: (a) there will be 10-15 shelters per SCH, with the smaller number in cities of smaller population, i.e., 100,000-500,000; (b) there will be 30-40 SCHs per EOC.

‡ Probably supplied by the military.

§ These field organizations can be expected to vary greatly in size, nature, and complexity, depending on their peacetime structures and the expected needs of the community. Their exact nature requires separate study.

Summary Table 2

CIVIL DEFENSE COMMUNICATIONS CIRCUIT REQUIREMENTS FOR VARIOUS SIZE STATES
(Number of Circuits)

State EOC to:	0-2 Million Population	2-5 Million Population	5-10 Million Population	Over 10 Million Population
Local EOCs (links per EOC)	1 CU voice 1 CU TTY 1 SU voice (optional)	2 CU voice 1 CU TTY 1 SU voice (optional)	2 CU voice* 1 CU TTY 1 SU voice (optional)	2 CU voice* 1 CU TTY 1 SU voice (optional)
OCD regional headquarters	1 CU voice 1 CU TTY 1 SU voice (optional)	2 CU voice 1 CU TTY 1 SU voice (optional)	2 CU voice 1 CU TTY 1 SU voice (optional)	3 CU voice 2 CU TTY 1 SU voice (optional)
Field offices of federal agencies (links per office)	1 CU voice	1 CU voice	1 CU voice	1 CU voice
State fire and rescue field organizations (links per fire origin or station)	1 SU voice	1 SU voice	1 SU voice	1 SU voice
State field engineering resources (links per resource point)	1 SU voice	1 SU voice	1 SU voice	1 SU voice
Bordering and nearby state EOCs (links per EOC)	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY
Utility repair and maintenance field units (links per unit)	1 SU voice	1 SU voice	1 SU voice	1 SU voice
State utility operating facilities (links per facility)	1 SU voice	1 SU voice	1 SU voice	1 SU voice
State military CD director (adjutant general of state)	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY
State medical field facilities (links per facility)	1 SU voice	1 SU voice	1 SU voice	1 SU voice
Non-CD military organizations (links per organization)	1 CU voice	1 CU voice	1 CU voice	1 CU voice

* More circuits will be required by cities over 500,000 population (see Reference 1).

Summary Table 2 (concluded)

State EOC to:	0-2 Million Population	2-5 Million Population	5-10 Million Population	Over 10 Million Population
Federal CD and military warning nets (links per net)	1 SU voice	1 SU voice	1 SU voice	1 SU voice
State public health field resources (links per resource point)	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY
Point of entry to AM emergency broadcast networks (for warning dissemination)	1 SU voice	1 SU voice	1 SU voice	1 SU voice
State and/or local radio stations	1 SU voice	1 SU voice	1 SU voice	1 SU voice
Selected industrial facilities (links per facility per user at EOC)	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY
State law enforcement field agencies (links per agency or station)	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY
State welfare field organizations (links per organization or station)	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY

Summary Table 3

CIVIL DEFENSE COMMUNICATIONS CIRCUIT REQUIREMENTS FOR VARIOUS SIZE STATE AREAS (Number of Circuits)

State Area EOC to:	0-2 Million Population	2-5 Million Population	5-10 Million Population	Over 10 Million Population
Local EOCs (links per EOC)	1 CU voice 1 CU TTY 1 SU voice (optional)	2 CU voice 1 CU TTY 1 SU voice (optional)	2 CU voice* 1 CU TTY 1 SU voice (optional)	2 CU voice* 1 CU TTY 1 SU voice (optional)
State EOCs (links per EOC)	1 CU voice 1 CU TTY 1 SU voice (optional)	2 CU voice 1 CU TTY 1 SU voice (optional)	2 CU voice 1 CU TTY 1 SU voice (optional)	3 CU voice 2 CU TTY 1 SU voice (optional)
Bordering state area EOCs (links per EOC)	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY
Field offices of federal agencies (links per user per agency)	1 CU voice (1 SU voice for U.S. Forest Service only)	1 CU voice	1 CU voice	1 CU voice
Point of entry to AM emergency broadcast networks	1 SU voice	1 SU voice	1 SU voice	1 SU voice
Selected industrial facilities (links per user per facility)	1 SU voice	1 SU voice	1 SU voice	1 SU voice
State law enforcement field agencies (links per agency)	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY
State fire and rescue field organizations (links per organization)	1 SU voice	1 SU voice	1 SU voice	1 SU voice
State public health resources and field organizations (links per organization)	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY
State medical field facilities (links per organization)	1 SU voice	1 SU voice	1 SU voice	1 SU voice

* More circuits will be required by cities over 500,000 population (see Reference 1).

Summary Table 3 (concluded)

State Area EOC to:	0-2 Million Population	2-5 Million Population	5-10 Million Population	Over 10 Million Population
State welfare field organizations (links per organization)	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY
State field engineering resources	1 SU voice	1 SU voice	1 SU voice	1 SU voice
State utilities repair and maintenance field units, where they exist in state area (links per field unit)	1 SU voice	1 SU voice	1 SU voice	1 SU voice

Summary Table 4

CIVIL DEFENSE COMMUNICATIONS CIRCUIT REQUIREMENTS FOR VARIOUS SIZE REGIONS (Number of Circuits)

Region EOC to:	0-10 Million Population	10-20 Million Population	20-30 Million Population	30-40 Million Population
National OCD headquarters	1 CU voice 1 CU TTY, data, or video	1 CU voice 1 CU TTY, data, or video	2 CU voice 2 CU TTY, data, or video	2 CU voice 2 CU TTY, data, or video
National OEP headquarters (including NREC)	1 CU voice 1 TTY or data	1 CU voice 1 TTY or data	1 CU voice 1 TTY or data	1 CU voice 1 TTY or data
State EOCs (links to each state with 2-5 million population)	1 CU voice 1 CU TTY 1 SU voice (optional)	2 CU voice 1 CU TTY or data 1 SU voice (optional)	2 CU voice 1 CU TTY or data 1 SU voice (optional)	3 CU voice* 2 CU TTY or data 1 SU voice (optional)
ZI Army headquarters (links to each headquarters within OCD region)	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY
Bordering region EOCs (links per EOC)	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY
NORAD (NAWAS)	1 SU voice	1 SU voice	1 SU voice	1 SU voice
Other military warning systems within region (links per system)	1 SU or CU voice or 1 SU or CU TTY or data	1 SU or CU voice or 1 SU or CU TTY or data	1 SU or CU voice or 1 SU or CU TTY or data	1 SU or CU voice or 1 SU or CU TTY or data

* Where regions of this size contain states of over 10 million population; in the case of smaller states within such regions, use figures for regions with 10-30 million population and 0-10 million population.

III ANALYTIC FRAMEWORK

General

Civil defense communications requirements for local, state, and regional levels of government were analyzed on the basis of abstracting the information flow aspects from a generalized scenario of civil defense operations. The nature of the responsibilities and actions of the various agencies of government in a civil defense emergency were established by reference to a diversified number of policy documents, private conversations with officials, and, necessarily, with a high degree of professional judgment. Where policy or procedure was spelled out officially, these were incorporated in the narrative description of operations. Appendix C contains selected references of this nature. Unfortunately, the state of the art in many areas has not been advanced to the point where the operational procedures can be defined in detail with confidence. Undoubtedly, the Five City study will be of immense benefit to the development of these operational procedures. In the interim, a large amount of generalization and judgment is required.

The general characteristics of civil defense response to nuclear attack were formulated for each given level of government. Related tasks or responsibilities were then grouped into "functional areas," which give the components of a generalized organization for which communications must be provided. The numerous responsibilities were based on an analysis of tasks that should be allowed for in responding to nuclear emergency. Lacking documented organization of many of these tasks, it was necessary that some structuring of responsibilities be provided to enable assessment of information flow requirements to serve the interrelationships between functional units. Different definitions and groupings of responsibilities may evolve as civil defense plans progress, and modifications to the flows derived in this report can be readily incorporated at such later times.

The actions performed by the several functional areas in fulfilling their respective responsibilities were chronicled as they might reasonably be expected to occur over time. To give structure to the analysis, "time phases" were defined as intervals of time separated by events significantly changing the environment in which civil defense actions are carried out. For example, buttoning up of shelters in a community marks a transition from an external environment in which movement of people and supplies is pre-eminent to an internal environment in which in-shelter habitation is the key characteristic. The time phases employed are based on research judgments that evolved from both a survey of previous civil defense work and the needs of this particular problem. The individual time phases used in each level of analysis are presented in detail in the sections relating to local, state, and regional organization, as are the appropriate functional areas.

The primary responsibilities within each functional area were abstracted for this report in outline form from detailed scenarios constructed for each level of government. The scenarios themselves were the primary method of analysis, bringing together in narrative form the clusters of responsibilities with an unfolding crisis environment. The quantity, nature, and urgency that characterized the need to communicate between each cluster of responsibilities (functional area) at each period of time (time phase) was ascertained from these scenarios.

In order to cite an example of the application of this narrative technique, the functional area of fire protection at the local level can be used. The responsibilities encompassing fire prevention and control can logically be grouped together and assigned to an organizational unit headed by an individual with responsibility for these tasks, who can be termed the Fire Director or any other identifying label. His responsibilities are listed on pages 31-32 and his resultant communications needs are charted in Table 5, p. 40.

Prior to civil defense emergency warning, the fire functional area would have requirements to plan for contingency operations, to train personnel in civil defense tasks, and to combat the normal fires occurring in the community. Once an emergency is imminent, a need arises to provide personnel and equipment for rescue operations, such as the moving of people unable to care for their own welfare (elderly, children, infirm), in addition to extinguishing any fires under way at the time of warning. This gives rise to a movement of the Fire Director to the local Emergency Operating Center where personal coordination with other directors in the EOC are facilitated, as shown in the first section of Table 5. The Fire Director accepts commands from the Civil Defense Director and gives information to both CD Director and Mayor (or other local political leader). Messages conveying information or coordinative directions are exchanged with other directors with varying degrees of urgency. Usually these messages are short and communicated in random fashion by personal contact. Commands are given to the local fire organization from the EOC with great urgency, frequently, via a radio or wire single user communications network. This network is required because of the nature of such a dispersed, emergency field organization as a local fire department. Individual pieces of equipment and rescue teams must be netted for control of operations.

Other message flows in this Take Shelter time phase, as well as other phases, are derived from the analysis of the tasks to be accomplished, their urgency, the interdependence of actions on communications, and the needs for dispersion, control, security, and other critical characteristics of the communications medium.

Estimated communications requirements in terms of numbers and kinds of circuits can be obtained, given a characterization of information flows in terms of the several descriptors which are defined in detail below. To proceed from the identification of a need to communicate in a given fashion between parties to the actual derivation of numbers of physical circuits between physical locations, it is necessary to assign quantitative weights to certain descriptors.

Chapters IV, V, and VI develop the information flows for local, state, and regional levels of government, respectively. In Chapter VII, quantitative weightings are estimated for circuit loadings (for light, medium, and heavy traffic, see Table 50, p. 138) for various sizes and levels of government. Application of these weights to the previously determined flows gives the quantitative circuit requirements for three sample cases of different sized political jurisdictions. Research estimates based on interpretation of the scenario portrayal of civil defense emergency were the source of these weightings. They should be subject to considerable debate and modification as research progresses in all areas of civil defense effort.

The information flows are developed for the local level of government (cities and counties) in Chapter IV, for the state level in Chapter V, and for the regional level in Chapter VI. Derivation of the estimated communications circuit requirements from these information flows is accomplished for all levels in Chapter VII.

A significant element of judgment has had to be applied throughout, as firm standards for many aspects of civil defense operations on which information needs depend are often lacking. This point must be emphasized in citing the approximate nature of the numbers derived in this report. The following efforts at structuring the problems of civil defense communications are based, as much as possible, on the limited amount of fact available.

The communications path descriptors that are applicable to the analysis of all three government levels are contained in the next section. Time phase and functional area definitions unique to each level are in the chapters dealing with the respective level of government.

Communications Path Descriptors

The communications path summary tables are divided into three major parts that describe: the users or entities between which information may be expected to flow, the information flows, and the communications medium.

A number of descriptors that characterize the key aspects of each information path were selected and applied to define the nature of the various paths and to facilitate the derivation of qualitative and quantitative communications circuit requirements.

For the purpose of this analysis, the following nine classes of descriptors were isolated as providing sufficient detail to permit a realistic derivation of the communications requirements of state and regional civil defense EOCs:

Kind of traffic
Direction of flow
Length of message
Form of message
Time urgency
Density of flow
Occurrence
Mode of transmission
Nature of circuit
Circuit use

Kind of Traffic

This classification can be broken down into four subdivisions as follows:

Command and control
Requests
Information
Coordination

Policy and guidance generally are associated rather closely with command and control. Coordination and planning also may be related to command and control, but to a lesser degree. Requests are unique in CD operations and are expected to constitute a substantial portion of CD traffic. Command and control is not intended to carry the strong connotation normally associated with military organizations; however, it should reflect recognized authority sufficient to cause a given task to be accomplished in the desired time frame. Coordination is considered to be two-way wherever it occurs. Information includes all traffic that describes the situation without implying the action to be taken.

Direction of Flow

Direction of communications flow is associated closely with kind of traffic. The following is a segment from the table showing the state CD

director's communications requirements; it describes the kinds of communications and the communications paths from the state CD director to two other entities. The direction of flow is indicated by arrows.

State CD Director

State area EOCs or local EOCs where state areas do not exist	C^2 ↓	↕ INFO
Regional civil defense headquarters	C^2 ↑	↑ INFO ↓ COORD

The arrows are not intended to show "higher" or "lower" organization levels, but rather to show the direction of flow of information, regardless of the relative level. An arrow pointing upward indicates a direction of flow from the correspondent to the function being discussed. In the above example, the arrow pointing downward beside the state area or local EOC relating to command and control traffic (C^2)indicates that the direction of flow is from the state CD director to the state area or local EOC. Information passes in both directions.

Length of Message

Considerable variability may be expected in the length of messages that are exchanged between functional area directors in the EOC and the various outside agencies, and other entities with whom they communicate. For example, the state public safety director may be expected to make extensive use of the well-known and widely used "Ten Code," which permits appreciable brevity in the conduct of normal operations--the majority of transmission exchanges can consist of 100 words or less. By contrast, certain messages, such as reports that contain considerable detail or that cover a large number of component elements, may be expected to extend to several pages and contain more than 500 words. These two extremes are categorized as "brief" and "long" messages, respectively. The intermediate category, "medium," describes messages of about 250 words (one page) in length.

Form of Message

Some messages, such as status reports, can be organized into more or less standard format form, whereas others are of unpredictable content. The categories "format" and "nonformat" were selected to differentiate between the forms, and to facilitate assessment of information flow paths that lend themselves to specific communications means, such as teletypewriter.

Time Urgency

The terms "emergency operational," "operational," and 'administrative" denote degrees of urgency. Emergency operational refers to traffic whose prompt transmission affects the life or death of a person, a group of persons, or the bulk of an entire community. If emergency operational traffic is not transmitted quickly, there is little reason for its ever being transmitted. Operational conveys less urgency; traffic in this category is relevant primarily to current operations where human and material resources are being employed in response to particular situations. Administrative traffic is envisioned as routine in nature and consequently amenable to reasonable deferment.

Density of Flow

Density of flow is characterized as "light," "medium," or "heavy." Light means that message originations are infrequent and that communications circuit use is relatively low. At the other extreme, heavy means that message originations are frequent or virtually continuous and that communications circuit use is relatively great. Medium refers to a midpoint between the two extremes. Exact descriptors, such as "Number of Messages per Unit of Time" for every community and situation are impossible unless a large number of different load classifications are established. For the purposes of this study, absolute precision is not necessary. However, to provide a general idea of the relative scale of facilities required for typical situations, four state (state area) and four regional size groupings were adopted for analysis; their communications requirements are described in Section V.

Occurrence

"Occurrence" refers to the relative frequency of information flow, and is categorized as follows:

Random
Periodic
Single
Bunched

Single and random are self-explanatory. Periodic refers to regular or cyclic and thus predictable occurrence. Bunched traffic describes occasions when the traffic flow diminishes for a period of time and then reappears for transmission in greater than average quantity. Bunched traffic can be expected during such critical periods as when the first alarm is sounded, or when mass fires or heavy fallout (and consequent high radiation counts) threaten numerous communities within the state or region. When such situations occur, traffic bunching may not be readily apparent owing to heavy density of flow and subsequent queuing.

Mode of Transmission

Mode of transmission is subdivided into:

Voice
Record
Coded
Data
Video

Voice is self-explanatory. Record transmission usually means teletypewriter and is shown as such in the tables. However, facsimile and similar modes of transmission are possibilities and may be used to replace teletypewriter transmission. Coded transmission describes direct current or voice frequency code alarms or messages such as various combinations of long and short pulses as in the International Telegraph (Morse) Code. Data transmission describes standard binary data coding systems used in computers. These transmissions are usually at voice frequency or higher and operate at high data rates. While these transmissions sometimes result in page print-outs from the terminal computers, this mode of transmission is not included in record transmissions described above. Video transmission probably would occur on closed circuit coaxial cable or microwave radio systems, usually in accordance with NTSC* standards, although slower transmission rates are entirely possible and may be more desirable in some cases.

Nature of Circuit

Nature of circuit is subdivided into personal contact, radio, and wire. Personal contact includes verbal or visual contact and the interchange of written notes or messages between persons in the same control center. While the majority of the radio links at state and regional levels usually employ simplex† mobile type communications, traffic requirements may dictate use of multichannel, microwave point-to-point systems, possibly including video channels. Record communications generally are transmitted over wire circuits.

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* National Television System Committee.

† Simplex communications relate to use of a single frequency by two or more communicating stations who take turns transmitting and listening. Use of this technique instead of full duplex transmission, where each station may receive and transmit simultaneously on two different frequencies, is necessitated by the paucity of frequencies allocated and available for this class of service.

Circuit Use

This descriptor is subdivided into two categories: common user and sole user. Common user facilities are those shared by more than one user and are characterized by a disparity between the number of subscribers and the number of communications paths or circuits available to accommodate the subscribers. Sole user circuits (sometimes called "dedicated circuits") are reserved for only one user.

In times of great urgency or heavy density of flow, sole user circuits may be justified, whereas when urgency or flow density is low, a common user circuit generally will be employed. Physical constraints, such as shared or separate operational locations may also influence the choice of circuit use.

Summary

Table 1 summarizes the communications path descriptors and indicates the abbreviations used in the functional area communications analysis and derivation tables.

Table 1

SUMMARY OF INFORMATION FLOW PATH DESCRIPTORS*

Descriptor	Subdivision	Abbreviation
Kind of traffic	Command and Control	C^2
	Requests	REQ
	Information	INFO
	Coordination	COORD
Direction of flow		↑↓↕
Length of message	Brief	BRF
	Medium	MED
	Long	LONG
Form of message	Format	F
	Nonformat	NF
Urgency of traffic	Emergency Operational	EO
	Operational	OP
	Administrative	AD
Density of flow	Light	LT
	Medium	MED
	Heavy	HVY
Occurrence	Random	RAND
	Periodic	PER
	Bunched	BU
	Single	SO
Mode of transmission	Voice	VOICE
	Record	TTY
	Coded or Data	DATA
	Video	VIDEO
Nature of circuit	Wire	W
	Radio	R
	Personal contact	PC
Circuit use	Common user	CU
	Sole user	SU

* The abbreviations given here are used in tables throughout this report.

IV LOCAL CIVIL DEFENSE INFORMATION FLOWS

Organization

Civil defense at the local level refers to a political subdivision of community or county scope. Central to the planning of local civil defense is the Community Shelter Program in which public fallout shelters are marked and stocked with federal support. In some areas and under some attack situations, blast shelters or evacuation may prove to be the preferred method of passive defense, but in general this report assumes community fallout shelters to be the primary form of protection. Differences in communications requirements for community blast shelter systems are explained further in Section VII.

It is assumed that the directors of the several local functional areas will be located in a central decision-making and information-processing facility. Such a center, termed an Emergency Operating Center (EOC), minimizes the mechanically transceived information flows required to carry out CD actions. A community with a large number of shelters is assumed to have Shelter Complex Headquarters (SCHs)--the intermediate CD command level.

The mayor, city manager, county manager, or other official serving as the head of the local political subdivision is assumed to retain his authority throughout the emergency period. The civil defense director, who presumably is most knowledgeable in the ways and concepts of civil defense, is responsible for coordinating the efforts of the various functional areas; and the mayor is then free for policy-level decision-making that will provide overall guidelines for the civil defense director's activities.

Eleven functional areas have been chosen for analysis on the local level. Many responsibilities, such as fire fighting, obviously fall within the jurisdiction of existing local service organizations; others, such as radiological monitoring and analysis, do not, and these responsibilities have been included either in the domains of directors whose other duties and resources seem most compatible, or in wholly new organizations which have no peacetime counterpart.

The functional areas used in the analysis of local communications requirements are:

Mayor, city manager, or county supervisor
Civil defense director
Police
Fire
Rescue
Weapons effects
Medical
Health
Welfare
Public works
Utilities

Time Phases

The general characteristics of a nuclear emergency as it would evolve on the local level were broken into six time phases coinciding with the environmental changes that influence CD actions and information flows. These time phases provide a level of detail appropriate for analyzing local actions.

Prewarning (PW): All time before receipt of first warning in the community of anticipated attack.

Take Shelter (TS): From receipt of first warning to "button up" of shelter.

In Shelter (IS): From "button up" of shelter to issuance of orders permitting brief emergence by selected individuals for specific important missions.

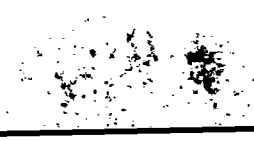
Brief Emergence (BE): From order permitting first brief emergence to issuance of orders allowing emergence of general populace.

General Emergence (GE): From order allowing emergence of general populace to point at which continued environmental threat is officially judged to be minimal.

Recovery (RCV): From official judgment of minimal environmental threat on; no official termination point.

General Outline of the Emergency Situation

As an initial step in analyzing information flows, a general identification was made of local attack conditions segmented by the above time phases and the civil defense responses to these conditions. The responsibilities of each functional area then were examined in detail to obtain



specific parameters such as urgency, mode of transmission, and number of circuits.

Prewarning

During peacetime, the local CD organization, in conjunction with state and national authorities, is concerned with preparing the community for the possible occurrence of nuclear attack as well as potential natural disasters. Preparatory activities include selection of shelter locations, and shelter marking and stocking; education of the general populace concerning the threat and personal protective measures; training of CD personnel in first aid, radiation monitoring, shelter management, etc.; and organizing peacetime community resources (manpower and material) to respond rapidly to CD emergency authority.

The communications used during this time phase are those normally employed in the peacetime operation of the community, except in the case of readiness exercises. However, emergency communications must be planned, purchased, and installed as part of the general community preparation. In the planning phase of local civil defense, the close relationship of organization to information flows should be noted, and plans, procedures, and training should be directed in part toward minimizing the dependence of the emergency organization on extensive information transfer. Many words and even whole messages can be deleted from operational information requirements by good planning and preattack training of personnel for the implementation of tasks within the plans.

If a period of rising political tension precedes the attack, CD preparations can be expected to increase. This may include the acceleration of readiness conditions for the CD organization and populace, accelerated stocking of shelters, exercise of CD equipment, and public information campaigns.

Although no exact assessment of the threat facing each community is possible in this time phase, some areas clearly will be targets or will be directly adjacent to military targets. For such communities, blast shelter systems or evacuation may be planned to supplement the Community Shelter Plan. Since the damage sustained by various communities will be far from uniform, negotiations for mutual aid agreements should be undertaken on the local level during the prewarning phase.

Take Shelter

The Take Shelter phase encompasses two major activities: (1) alerting the community CD organization and populace to the impending attack and (2) guiding people and supplementary resources to shelter.

Warning presumably will be received in the community from the National Warning Systems (NAWAS), but a post tended round the clock, such as the local police or fire dispatcher's station, should be used as an additional reception point for warning messages delivered from other sources. Once warning is received, communications should be available for the rapid dissemination of warning to the CD organization through a radio network such as that of the fire or police, or by telephone with line-load control possibly imposed for the use of CD personnel only. Sirens or radio broadcast then would be used to notify the public of danger and of the steps to be taken in obtaining protection.

The functional area directors and their staffs should occupy the EOC as quickly as possible, and operations for this and subsequent phases should be directed from this center.

Among the tasks to be carried out following warning are rescue operations, fire fighting, crowd control, traffic direction, movement of supplies, radiation monitoring, and medical assistance. The mobile radio sets available in the community will be heavily used during this phase, as will the telephone system.

In Shelter

During this phase, the primary concern will be to satisfy the basic needs of the populace (food, water, medical care, etc.) in the shelters while external habitation is hazardous. The CD staff in the EOC will obtain inventories of people and resources from individual shelters or Shelter Complex Headquarters and will exchange situation reports with state or state area officials. A communications system linking the shelters, Shelter Complex Headquarters, and local EOC is a critical need at this time.

Available resources and the shelter needs (lack of medical assistance, shortage of food, radiation leakage, etc.) that are revealed in the shelter inventories will be the basis for planning the missions to be accomplished during the subsequent Brief Emergence phase. Planning for measures to be implemented on General Emergence will also begin during this phase in conjunction with high-level officials of neighboring communities.

Brief Emergence

As the intensity of local radiation diminishes to relatively safe levels, selected individuals will be permitted to emerge from shelter

to perform specific short missions, such as the redistribution of medical personnel, food, and water among shelters, and reconnaissance for locating critically needed resources or for damage assessment. Mobile communications would be useful for such missions; however, reports via the shelter-EOC network could fulfill most, if not all, communications needs in this phase.

General Emergence

Once the external radiation environment is judged habitable for the general populace, plans should be implemented to feed and house the survivors, in nonshelter locations where possible. In heavily damaged communities, it may be necessary to use schools and other public buildings for such purposes until some rebuilding is possible. Once the decisions have been made defining regulation of the community on emergence--where people will go, how they will procure food and medical attention, etc.--the populace will be allowed to emerge from shelter and begin to restore the most immediate services of the community. The efforts of all functional areas will be heavy in this phase, requiring extensive communications. Damaged communications facilities will be among the resources to be restored first. Public information messages will be frequent. Communications traffic will be intense between cooperating communities and local, state area, state, and regional levels of government.

Recovery

Once the basics of community life have been restored and no further threats are apparent, longer range restoration efforts will be initiated. Local communications facilities should be restored in this phase, and restraints (line-load control) of the public telephone system gradually relaxed. Communications loads will be heavy but less urgent than in preceding phases.

Functional Area Responsibilities and Information Flows on the Local Level

Mayor* (Table 2)†

Responsibility	Time Phase
1. To establish a local CD emergency operations program, including local doctrine	PW

* Or city manager, county supervisor, etc.

† Tables detailing information flows and communications media for each functional area are grouped at the end of this section.

Mayor (continued)

Responsibility	Time Phase
and operating procedures, within the general framework of state and national civil defense doctrine and policy.	
2. To formulate policy decisions dealing with local administration of civil defense.	All
3. To coordinate with civic officials in nearby communities and with state officials in establishing policies regarding distribution of resources among political subdivisions.	All

Civil Defense Director (Table 3)

1. To plan overall CD preparations for the local political subdivision in cooperation with local political leaders; state and national CD agencies; and local service organizations, businesses, and volunteer groups.	PW
2. To direct local response of civil defense to emergency by overall coordination of activities of functional area directors and shelter managers.	All
3. To coordinate with CD directors of neighboring political subdivisions and with state and national agencies during the emergency period.	All
4. To advise mayor of operational status of CD measures and relevant policy questions as they arise.	All
5. To educate the population regarding CD plans and operations, particularly with respect to the individual's responsibilities in emergency.	All

Police Director (Table 4)

1. To train police forces (including auxiliary and reserve forces) in the use of radiological monitoring instruments and RADEF reporting procedures.	PW

Police Director (continued)

	Responsibility	Time Phase
2.	To prepare traffic control plans and secure necessary traffic control equipment (barriers, etc.) to assist the movement of persons to shelter.	PW
3.	To obtain authorization and keys to open shelters within the community.	PW
4.	To assist in the dissemination of initial warning immediately after receipt.	TS
5.	To implement the traffic control plan to direct persons to suitable shelter.	TS
6.	To maintain law and order in the community during movement to shelter and on emergence of the general populace.	TS, GE
7.	To assist shelter managers in the maintenance of law and order within shelters.	IS
8.	To assist in the in-shelter training of volunteers for such activities as light rescue, damage assessment, radiological monitoring, and first aid.	IS
9.	To carry out reconnaissance and emergency missions during brief emergence, as required.	BE
10.	To direct groups of volunteers in rescue, decontamination, and resource allocation missions, as required.	GE

Fire Director (Table 5)

1.	To plan for the protection of fire service equipment, dispersal of fire service personnel, and reduction of fire hazards during the emergency.	PW
2.	To train fire personnel in radiological monitoring techniques (RADEF).	PW

Fire Director (continued)

Responsibility	Time Phase
3. To extinguish or contain fires in the community.	PW, TS, BE, GE
4. To provide personnel and equipment, as required, for use in rescue operations.	TS, BE
5. To assess damage to the community and fire hazards resulting from such damage.	BE, GE
6. To coordinate mutual aid efforts with adjacent communities and state fire agencies.	TS, IS, BE

Rescue Director (Table 6)

1. To organize, train, and equip rescue personnel to accomplish light and heavy rescue missions.	PW
2. To execute rescue missions, as appropriate, coordinating when necessary with directors of other functional areas who normally control the personnel and material resources assigned to rescue missions.	TS, IS, BE

Weapons Effects Director (Table 7)

1. To collect, analyze, and interpret radiological and blast data related to the local environment.	All
2. To advise local CD director of blast and radiation conditions in the community and the region at large, with emphasis on conditions requiring key decisions such as general alert of the populace, button-up of shelters, and brief emergence exposure times.	All
3. To report local weapons effects conditions to weapons effects officials at state and regional levels.	TS, IS, BE

Weapons Effects Director (continued)

Responsibility	Time Phase
4. To train and organize radiological monitors and instructors recruited from the populace and from police, fire, and other services.	PW, IS
5. To provide planning and guidance to other functional area directors concerning possible weapons effects.	PW

Medical Director (Table 8)

1. To organize medical personnel, facilities, and supplies within the community for CD emergency operations.	PW
2. To provide shelters with medical personnel and supplies during CD emergency, and establish special hospital and clinic facilities following emergence.	TS, IS, GE
3. To cooperate with adjacent communities in mutual medical aid agreements.	GE
4. To advise higher medical officials of local conditions and request resupply of medicines, as required.	IS, GE
5. To educate populace on medical self-help related to radiation illness, and train medical volunteers in treatment of injuries and sicknesses related to CD emergency.	PW, IS, GE

Health Director (Table 9)

1. To periodically inspect shelters to ensure that food stocks, water, sanitation, and burial facilities are adequate for estimated health needs of shelterees.	PW
2. To plan for the coordinated use of existing health resources to effectively meet health needs in shelter and on emergence.	PW

Health Director (continued)

Responsibility	Time Phase
3. To disperse health resources and personnel to shelters during the emergency.	TS
4. To supervise sanitation and hygienic aspects of in-shelter habitation.	IS
5. To cooperate with public works personnel in the restoration of community sanitation and water services.	GE
6. To control conditions hazardous to general health, such as epidemics and radiation dangers, by means of inoculations, quarantine, and closing off of hazardous areas.	GE
7. To coordinate with health services of neighboring communities and the state to ensure optimum allocation of surviving health resources.	IS, GE
8. To inform the public of precautionary health measures to be taken in the emergence and recovery periods.	GE, RCV

Welfare Director (Table 10)

1. To procure and maintain stocks of food, water, bedding, and sanitation facilities within shelters before attack.	PW
2. To maintain information on inventories of welfare resources existing within the community (food storage warehouses, clothing outlets, etc.).	PW
3. To prepare vital statistics of community, including registration of shelters and relocation of family members.	IS, GE
4. To locate persons requiring food, housing, clothing, water, and relocation assistance.	IS, GE

Welfare Director (continued)

Responsibility	Time Phase
5. To distribute welfare resources among the populace after emergence.	GE
6. To coordinate with private welfare organizations (religious, Red Cross, etc.) and welfare officials of neighboring communities or counties to effect mutual assistance.	GE
7. To advise local CD director and higher level welfare officials of welfare conditions existing within the community.	PW, IS, GE

Public Works Director (Table 11)

1. To maintain inventories of personnel, facilities, and equipment in public and private hands for use in CD public works field operations.	PW
2. To allocate public works resources to field operations, such as demolition, debris clearance, construction, and heavy rescue.	TS, BE, GE
3. To inspect physical structures such as buildings, bridges, and roads for structural damage and, when necessary, directing the repair of these structures.	BE, GE
4. To coordinate with neighboring communities and state agencies in mutual aid efforts (clearing roads, opening railroad tracks, etc.).	GE
5. To construct expedient shelters, when warranted by shelter occupancy and conditions of attack.	TS

Utilities Director (Table 12)

1. To plan for utility operation or shutdown under CD emergency conditions.	PW

Utilities Director (continued)

	Responsibility	Time Phase
2.	To operate utilities, when possible, under emergency conditions.	TS, IS, BE, GE
3.	To restore services on priority basis to selected users during emergence.	BE, GE
4.	To provide inventories of personnel, equipment, and facilities for use in CD operations.	PW
5.	To coordinate restoration efforts with private utilities, state agencies, and adjacent communities.	GE

Table 2

MAYOR:
LOCAL LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: TS	Urgency: IS	Urgency: Z	Urgency: RCV	Density: TS	Density: IS	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
Within EOC	↓ [illegible] ↕ INFO	BRF	NF	ZD	AD	AD	AD	LT	LT	LT	LT	RAND PER	VOICE	PC-W	CU
CD Director	↕ INFO	BRF	F	BD	AD	BD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Police Director	↕ INFO	BRF	F	BD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Fire Director	↕ INFO	BRF	F	BD	AD	BD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Rescue Director	↕ INFO	BRF	F	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Weapons Effects Director	↕ INFO	BRF	F	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Medical Director	↕ INFO	BRF	F	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Health Director	↕ INFO	BRF	F	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Welfare Director	↕ INFO	BRF	F	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Public Works Director	↕ INFO	BRF	F	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Utilities Director	↕ INFO	BRF	F	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Shelter Complex Headquarters (or shelter)	↑ REQ ↕ INFO	BRF	NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND PER	VOICE	R-W	CU
Emergency broadcast networks	↓ INFO	MED-LONG	NF	BD	OP	AD	AD	MED	LT	MED	LT	RAND PER	VOICE	R-W	SU CU
Other communities	↕ REQ ↕ INFO ↕ COORD	BRF-MED	NF	OP	AD	OP	AD	[illegible]	LT	LT	LT	RAND	VOICE	R-W	CU
Local military units	↕ INFO ↕ COORD	BRF-MED	NF	AD	AD	AD	AD	LT	[illegible]	LT	LT	RAND	VOICE	R-W	CU
State EOC (state area EOC)															
Governor (state area CD Director)	↓ REQ ↕ INFO ↕ COORD	BRF-LONG	NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE-TTY	R-W	CU CU

Table 3

CIVIL DEFENSE DIRECTOR: LOCAL LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow			Message: Length	Message: Form	Urgency: TS	Urgency: IS	Urgency: E	Urgency: RCV	Density: TS	Density: IS	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
Within EOC																	
Mayor	↑ C^2	↕ INFO	↕ COORD	BRF		NF	OP	AD	AD	AD	MED	LT	LT	LT	RAND PER	VOICE	PC-W	CU
Police Director	↑ C^2	↑ INFO	↕ COORD	BRF	F	NF	RO	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Fire Director	↑ C^2	↑ INFO	↕ COORD	BRF	F	NF	RO	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Rescue Director	↑ C^2	↑ INFO	↕ COORD	BRF	F	NF	RO	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Weapons Effects Director	↑ C^2	↑ INFO	↕ COORD	BRF	F	NF	RO	OP	RO	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Medical Director	↑ C^2	↑ INFO	↕ COORD	BRF	F	NF	RO	OP	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Health Director	↑ C^2	↑ INFO	↕ COORD	BRF	F	NF	OP	OP	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Welfare Director	↑ C^2	↑ INFO	↕ COORD	BRF	F	NF	OP	OP	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Public Works Director	↑ C^2	↑ INFO	↕ COORD	BRF	F	NF	RO	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Utilities Director	↑ C^2	↑ INFO	↕ COORD	BRF	F	NF	RO	OP	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Shelter Complex Headquarters (or shelter)	↓ C^2	↕ INFO		BRF-LONG	F	NF	RO	OP	OP	AD	MED	MED	LT	LT	RAND PER	VOICE	R-W	CU
Emergency Broadcast networks	↓ C^2	↑ INFO	↕ COORD	BRF-LONG		NF	OP	OP	OP	AD	HVY	MED	LT	LT	RAND PER	VOICE	R-W	SU CU
Other communities	↕ REQ	↕ INFO	↕ COORD	BRF-MED		NF	AD	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	R-W	CU
Local military units	↓ REQ	↕ INFO	↕ COORD	BRF		NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	R-W	SU
State EOC (state area EOC) Civil Defense Director (state area CD Director)	↑ C^2 ↓ REQ	↕ INFO	↕ COORD	BRF	F	NF	AD	AD	OP	AD	LT	LT	LT	LT	RAND PER	VOICE	R-W	CU

Table 4

POLICE DIRECTOR:
LOCAL LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow			Message: Length	Message: Form		Urgency: TS	Urgency: IS	Urgency: E	Urgency: RCV	Density: TS	Density: IS	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
Within EOC																		
Mayor		↓ INFO		BRF	F		AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC-W	CU
CD Director	↑ C[2]	↓ INFO	↕ COORD	BRF	F	NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND PER	VOICE	PC	
Fire Director		↕ INFO	↕ COORD	BRF		NF	OP	AD	OP	AD	MED	LT	MED	LT	RAND	VOICE	PC	
Rescue Director		↕ INFO	↕ COORD	BRF		NF	MO	OP	MO	AD	MED	LT	MED	LT	RAND	VOICE	PC	
Weapons Effects Director		↕ INFO	↕ COORD	BRF		NF	OP	AD	OP	AD	LT	LT	MED	LT	RAND	VOICE	PC	
Medical Director		↕ INFO	↕ COORD	BRF		NF	AD	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Health Director		↕ INFO	↕ COORD	BRF		NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Welfare Director		↕ INFO	↕ COORD	BRF		NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Public Works Director		↕ INFO	↕ COORD	BRF		NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Utilities Director		↕ INFO	↕ COORD	BRF		NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Local police organization	↓ C[2]	↕ INFO		BRF-MED	F	NF	MO	OP	OP	AD	HVY	MED	HVY	MED	RAND PER	VOICE	R-W	SU
Shelter Complex Headquarters (or shelter)	↑ REQ	↕ INFO	↕ COORD	BRF		NF	MO	OP	OP	AD	LT	LT	LT	LT	RAND	VOICE	R-W	CU
Emergency broadcast networks	Traffic for broadcast to be cleared through CD director																	
Other communities	↕ REQ	↕ INFO	↕ COORD	BRF		NF	MO	OP	OP	AD	LT	LT	LT	LT	RAND	VOICE-TTY	R-W	CU CU
State EOC (state area EOC)																		
Public Safety Director		↕ INFO	↕ COORD	BRF		NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE-TTY	R-W	CU CU
Intelligence and statistical analysis		↓ INFO		MED	F		AD	AD	AD	AD	LT	LT	LT	LT	PER	VOICE-TTY DATA	R-W	CU CU

Table 5

FIRE DIRECTOR:
LOCAL LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow				Message: Length	Message: Form		Urgency: TS	Urgency: IS	Urgency: E	Urgency: RCV	Density: TS	Density: IS	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use	
Within EOC																				
Mayor			↕ INFO		BRF	F		AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC-W	CU	
CD Director	↕ C[c]		↕ INFO	↕ COORD	BRF	F	NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND PER	VOICE	PC		
Police Director			↕ INFO	↕ COORD	BRF		NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC		
Rescue Director			↕ INFO	↕ COORD	BRF		NF	EO	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC		
Weapons Effects Director			↕ INFO	↕ COORD	BRF		NF	EO	AD	EO	AD	LT	LT	LT	LT	RAND	VOICE	PC		
Medical Director			↕ INFO	↕ COORD	BRF		NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC		
Health Director			↕ INFO	↕ COORD	BRF		NF	AD	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC		
Welfare Director			↕ INFO	↕ COORD	BRF		NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC		
Public Works Director			↕ INFO	↕ COORD	BRF		NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC		
Utilities Director			↕ INFO	↕ COORD	BRF		NF	EO	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC		
Local fire organization	↕ C[p]		↕ INFO		BRF-MED	F	NF	EO	AD	EO	AD	HVY	MED	HVY	MED	RAND PER	VOICE	R-W	SU	
Shelter Complex Headquarters (or shelter)		↕ REQ	↕ INFO	↕ COORD	BRF-MED		NF	EO	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	R-W	CU	
Emergency broadcast networks	Traffic for broadcast to be cleared through CD director																			
Other communities		↕ REQ	↕ INFO	↕ COORD	BRF-MED		NF	EO	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	R-W	CU	
State EOC (state area EOC) Public Safety Director		↕ REQ	↕ INFO	↕ COORD	BRF		NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	R-W	CU	
Intelligence and statistical analysis			↕ INFO		MED	F		AD	AD	AD	AD	LT	LT	LT	LT	PER	VOICE-TTY DATA	R-W	CU	CU

Table 6

RESCUE DIRECTOR:
LOCAL LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow			Message: Length	Message: Form	Urgency: TS	Urgency: IS	Urgency: E	Urgency: RCV	Density: TS	Density: IS	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
Within EOC																	
Mayor		↓ INFO		BRF	F	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC-W	CU
CD Director	↑ C[1]	↓ INFO	↕ COORD	BRF	F NF	BO	AD	OP	AD	LT	LT	LT	LT	RAND PER	VOICE	PC	
Police Director		↕ INFO	↕ COORD	BRF	NF	BO	AD	OP	AD	MED	LT	MED	LT	RAND	VOICE	PC	
Fire Director		↕ INFO	↕ COORD	BRF	NF	BO	AD	OP	AD	MED	LT	MED	LT	RAND	VOICE	PC	
Weapons Effects Director		↕ INFO	↕ COORD	BRF	NF	BO	AD	OP	AD	MED	LT	MED	LT	RAND	VOICE	PC	
Medical Director		↕ INFO	↕ COORD	BRF	NF	BO	AD	OP	AD	MED	MED	HVY	LT	RAND	VOICE	PC	
Health Director		↕ INFO	↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Welfare Director		↕ INFO	↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Public Works Director		↕ INFO	↕ COORD	BRF	NF	OP	AD	BO	AD	MED	LT	MED	LT	RAND	VOICE	PC	
Utilities Director		↕ INFO	↕ COORD	BRF	NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Rescue field organization	↓ C[2]	↕ INFO		BRF-MED	F NF	BO	AD	OP	AD	HVY	LT	MED	LT	RAND	VOICE	R-W	SU
Shelter Complex Headquarters (or shelter)	↕ REQ	↕ INFO	↕ COORD	BRF-MED	NF	BO	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	R-W	CU
Emergency broadcast networks	Traffic for broadcast to be cleared with CD Director																
Other communities	↕ REQ	↕ INFO	↕ COORD	BRF-MED	NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	R-W	CU
State EOC (state area EOC)																	
Public Safety Director		↕ INFO	↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	R-W	CU
Intelligence and statistical analysis		↕ INFO		MED	F	AD	AD	AD	AD	LT	LT	LT	LT	PER	VOICE-TTY	R-W	CU CU

Table 7

WEAPONS EFFECTS DIRECTOR: LOCAL LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow		Message: Length	Message: Form	Urgency: TS	Urgency: IS	Urgency: E	Urgency: RCV	Density: TS	Density: IS	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
Within EOC																
Mayor		↓ INFO	BRF	F	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC-W	CU
CD Director	↑ C²	↓ INFO ↓ COORD	BRF	F NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND PER	VOICE	PC	
Police Director		↓ INFO ↓ COORD	BRF	NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Fire Director		↓ INFO ↓ COORD	BRF	NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Rescue Director		↓ INFO ↓ COORD	BRF	NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Medical Director		↓ INFO ↓ COORD	BRF	NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Health Director		↓ INFO ↓ COORD	BRF	NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Welfare Director		↓ INFO ↓ COORD	BRF	NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Public Works Director		↓ INFO ↓ COORD	BRF	NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Utilities Director		↓ INFO ↓ COORD	BRF	NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Weapons effects field organization	↓ C²	↓ INFO	BRF-MED	F NF	RO	OP	RO	AD	HVY	MED	HVY	LT	RAND PER	VOICE	R-W	SU
Shelter Complex Headquarters (or shelter)		↑ REQ ↓ COORD	BRF-MED	F NF	RO	OP	RO	AD	MED	LT	MED	LT	RAND PER	VOICE	R-W	CU
Emergency broadcast networks	Traffic for broadcast to be cleared through CD director															
Other communities		↓ INFO	BRF-MED	F NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND PER	VOICE-TTY	R-W	CU CU
State EOC (state area EOC) Intelligence and statistical analysis		↓ INFO	MED-LONG	F	AD	AD	AD	AD	LT	LT	LT	LT	PER RU	VOICE-TTY DATA	R-W	CU CU

Table 8

MEDICAL DIRECTOR:
LOCAL LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: TS	Urgency: IS	Urgency: E	Urgency: RCV	Density: TS	Density: IS	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
Within EOC															
Mayor	↕ INFO	BRF	F	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC-W	CU
CD Director	↑ C[a] ↕ INFO ↕ COORD	BRF	F NF	OP	OP	OP	AD	LT	LT	LT	LT	RAND PER	VOICE	PC	
Police Director	↕ INFO ↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Fire Director	↕ INFO ↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Rescue Director	↕ INFO ↕ COORD	BRF	NF	EO	OP	OP	AD	HVY	HVY	MED	LT	RAND	VOICE	PC	
Weapons Effects Director	↕ INFO ↕ COORD	BRF	NF	OP	OP	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Health Director	↕ INFO ↕ COORD	BRF	NF	OP	OP	OP	AD	LT	MED	MED	LT	RAND	VOICE	PC	
Welfare Director	↕ INFO ↕ COORD	BRF	NF	AD	OP	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Public Works Director	↕ INFO ↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Utilities Director	↕ INFO ↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Medical field agencies															
Hospital complex headquarters	↕ C[a] ↑ REQ ↕ INFO	BRF-MED	F NF	EO	OP	OP	AD	HVY	MED	HVY	MED	RAND	VOICE	R-W	SU
Ambulance services	↕ C[a] ↑ REQ ↕ INFO	BRF	NF	EO	OP	OP	AD	HVY	MED	HVY	MED	RAND	VOICE	R-W	SU
Shelter Complex Headquarters (or shelter)	↑ REQ ↕ INFO ↕ COORD	BRF-MED	F NF	EO	OP	OP	AD	MED	MED	LT	LT	RAND PER	VOICE	R-W	CU
Emergency broadcast networks	Traffic for broadcast to be cleared through CD director														
Other communities	↕ INFO ↕ COORD	BRF	F NF	AD	AD	AD	AD	MED	MED	LT	LT	RAND	VOICE	R-W	CU
State EOC (state area EOC)															
Medical, public health, and welfare	↕ INFO ↕ COORD	BRF	F NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	R-W	CU
Intelligence and statistical analysis	↕ INFO	MED-LONG	F	AD	AD	AD	AD	LT	LT	LT	LT	PER	VOICE-TTY DATA	R-W	CU CU

Table 9

HEALTH DIRECTOR:
LOCAL LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow			Message: Length	Message: Form	Urgency: TS	Urgency: IS	Urgency: E	Urgency: RCV	Density: TS	Density: IS	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
Within EOC																	
Mayor																	
CD Director	↕ C[a]	↕ INFO	↕ COORD	BRF	F	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC-W	CU
Police Director		↕ INFO	↕ COORD	BRF	NF	AD	OP	OP	AD	LT	LT	LT	LT	RAND PER	VOICE	PC	
Fire Director		↕ INFO	↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Rescue Director		↕ INFO	↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Weapons Effects Director		↕ INFO	↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Medical Director		↕ INFO	↕ COORD	BRF	NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Welfare Director		↕ INFO	↕ COORD	BRF	F NF	AD	OP	OP	AD	LT	MED	MED	LT	RAND	VOICE	PC	
Public Works Director		↕ INFO	↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Utilities Director		↕ INFO	↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Health field agency	↕ C[a]	↕ INFO		BRF-MED	F NF	AD	OP	HO	AD	LT	MED	HVY	MED	RAND	VOICE	R-W	SU
Shelter Complex Headquarters (or shelter)	↕ REQ	↕ INFO	↕ COORD	BRF-MED	F NF	AD	OP	OP	AD	LT	MED	MED	MED	RAND	VOICE	R-W	CU
Emergency broadcast networks	Traffic for broadcast to be cleared through CD director																
Other communities		↕ INFO	↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	R-W	CU
State EOC (state area EOC) Medical, public health, and welfare		↕ INFO	↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	R-W	CU
Intelligence and statistical analysis		↕ INFO		MED-LONG	F	AD	AD	AD	AD	LT	LT	LT	LT	PER	VOICE-TTY DATA	R-W	CU CU

Table 10

WELFARE DIRECTOR:
LOCAL LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: TS	Urgency: IR	Urgency: E	Urgency: RCV	Density: TS	Density: IS	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
Within EOC															
Mayor	↕ INFO	BRF	F	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC-W	CU
CD Director	↕ INFO ↕ COORD	BRF	F NF	AD	OP	OP	AD	LT	LT	LT	LT	RAND PER	VOICE	PC	
Police Director	↕ INFO ↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Fire Director	↕ INFO ↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Rescue Director	↕ INFO ↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Weapons Effects Director	↕ INFO ↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Medical Director	↕ INFO ↕ COORD	BRF	NF	AD	OP	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Health Director	↕ INFO ↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Public Works Director	↕ INFO ↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Utilities Director	↕ INFO ↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Welfare field agencies															
Storage points	↕ C ↕ INFO	BRF-MED	F NF	OP	AD	OP	AD	HVY	MED	HVY	MED	RAND PER	VOICE	R-W	SU CU
Red Cross	↕ C ↕ INFO	BRF-LONG	F NF	OP	AD	OP	AD	LT	HVY	HVY	MED	RAND PER	VOICE	R-W	SU CU
Religious service organizations	↕ REQ ↕ INFO ↕ COORD	MED-LONG	NF	OP	AD	OP	AD	LT	HVY	MED	LT	RAND PER	VOICE	R-W	SU CU
Shelter Complex Headquarters (or shelter)	↕ REQ ↕ INFO ↕ COORD	BRF-LONG	F NF	AD	OP	OP	AD	LT	MED	MED	LT	RAND PER	VOICE	R-W	CU
Emergency broadcast networks	Traffic for broadcast to be cleared through CD director														
Other communities	↕ REQ ↕ INFO ↕ COORD	BRF-LONG	F NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	R-W	CU
State EOC (state area EOC)															
Medical, public health, and welfare	↕ REQ ↕ INFO	BRF-MED	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	R-W	CU
Intelligence and statistical analysis	↕ INFO	MED-LONG	F	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE-TTY DATA	R-W	CU CU

Table 11

PUBLIC WORKS DIRECTOR: LOCAL LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: TS	Urgency: IS	Urgency: E	Urgency: RCV	Density: TS	Density: IS	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
Within EOC															
Mayor	↓ INFO	BRF	F	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC-W	CU
CD Director	↓ INFO ↕ COORD	BRF	F NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND PER	VOICE	PC	
Police Director	↓ INFO ↕ COORD	BRF	NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Fire Director	↓ INFO ↕ COORD	BRF	NF	EO	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Rescue Director	↓ INFO ↕ COORD	BRF	NF	EO	AD	OP	AD	MED	LT	MED	LT	RAND	VOICE	PC	
Weapons Effects Director	↓ INFO ↕ COORD	BRF	NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Medical Director	↓ INFO ↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Health Director	↓ INFO ↕ COORD	BRF	NF	AD	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Welfare Director	↓ INFO ↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Utilities Director	↓ INFO ↕ COORD	BRF-MED	NF	OP	AD	OP	AD	MED	LT	MED	LT	RAND	VOICE	PC	
Public works field agencies															
Heavy equipment	↓ INFO	BRF-MED	F NF	EO	AD	OP	AD	HVY	LT	HVY	MED	RAND	VOICE	R-W	SU CU
Contractors' heavy equipment	↓ INFO	BRF-MED	F NF	EO	AD	OP	AD	HVY	LT	HVY	MED	RAND	VOICE	R-W	SU CU
Shelter Complex Headquarters (or shelter)	↑ REQ ↕ INFO ↕ COORD	BRF-MED	NF	EO	AD	OP	OP	LT	LT	MED	LT	RAND	VOICE	R-W	CU
Other communities	↕ REQ ↕ INFO ↕ COORD	BRF-MED	NF	OP	AD	OP	AD	MED	LT	MED	LT	RAND	VOICE	R-W	CU
Emergency broadcast networks	Traffic for broadcast to be cleared through CD director														
State EOC (state area EOC)															
Engineering, utilities, and land resources	↑ REQ ↕ INFO ↕ COORD	BRF-MED	NF	OP	AD	OP	OP	MED	LT	MED	MED	RAND	VOICE	R-W	CU
Intelligence and statistical analysis	↓ INFO	MED-LONG	F	AD	AD	AD	AD	LT	MED	MED	MED	PER	VOICE-TTY DATA	R-W	CU CU

Table 12

UTILITIES DIRECTOR:
LOCAL LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: TS	Urgency: IS	Urgency: E	Urgency: RCV	Density: TS	Density: IS	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
Within EOC															
Mayor	↓ INFO	BRF	F	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC-W	CU
CD Director	↕ INFO ↕ COORD	BRF	F NF	OP	OP	OP	AD	LT	LT	LT	LT	RAND PER	VOICE	PC	
Police Director	↕ INFO ↕ COORD	BRF	NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Fire Director	↕ INFO ↕ COORD	BRF	NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Rescue Director	↕ INFO ↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Weapons Effects Director	↕ INFO ↕ COORD	BRF	NF	OP	AD	OP	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Medical Director	↕ INFO ↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Health Director	↕ INFO ↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Welfare Director	↕ INFO ↕ COORD	BRF	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	PC	
Public Works Director	↕ INFO ↕ COORD	BRF-MED	NF	OP	OP	OP	OP	MED	LT	MED	MED	RAND	VOICE	PC	
Utilities field organization (water, power, gas, telephone)	↓ C ↕ INFO	BRF-MED	F NF	EO	AD	OP	OP	HVY	LT	HVY	MED	RAND	VOICE	R-W	SU
Shelter Complex Headquarters (or shelter)	↑ REQ ↕ INFO ↕ COORD	BRF-MED	NF	EO	OP	OP	AD	LT	LT	LT	LT	RAND	VOICE	R-W	CU
Emergency broadcast networks	Traffic for broadcast to be cleared through CD director														
Other communities	↕ REQ ↕ INFO ↕ COORD	BRF-MED	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	R-W	CU
State EOC (state area EOC) Engineering, utilities, and land resources	↕ REQ ↕ INFO ↕ COORD	BRF-MED	NF	AD	AD	AD	AD	LT	LT	LT	LT	RAND	VOICE	R-W	CU
Intelligence and statistical analysis	↓ INFO	MED-LONG	F	AD	AD	AD	AD	LT	LT	LT	LT	PER	VOICE-TTY DATA	R-W	CU CU

V STATE CIVIL DEFENSE INFORMATION FLOWS

General

An analytical framework for study of state and state area CD communications requirements can be derived using tools similar to those used in the local case: functional area organization and time-phases. Although states vary widely in population, geography, and governmental structure, it is assumed that all have similar qualitative needs in a CD emergency. State agencies having responsibility for given CD tasks may differ from state to state, but each state is assumed to have a CD organization and similar functional area breakdowns. The CD organization serving the state government will in many cases be organized in two levels: state and state area.

It is assumed that state level operations will be centralized in a state Emergency Operating Center made up of decision-makers and analysts representing the governor and key state agencies.

Where enough state areas exist, they will encompass counties and communities to ensure a survival capability to assist damaged locales within their respective juri dictions. When local governments cannot handle the disaster situation with their existing resources, the state area EOC will act as a focal point for providing assistance to local (including municipal and county) governments. Assistance will come from the resources of the state government, the military, local governments relatively unaffected by the attack, various federal agencies, and elements of the private economy.

In addition to performing operational functions, each state area will provide state officials with selected data on corditions within its jurisdiction. State EOCs will fill primarily administrative and planning roles for the largely operational activities at state area and local levels. State area EOC functional areas will be counterparts of those at the state EOC and will perform the same general functions, although one individual at a state area EOC may be responsible for more than one function. The division of responsibility for specific functions between state and state area levels will vary by function and by state.

State adjutant generals will be federalized and will have jurisdiction over military organizations having CD missions within the state. State adjutant generals will report directly to their respective Zone of the Interior (ZI) Army Headquarters.

Organization

The state level responsibilities for civil defense can be organized into the following functional areas:

- Governor
- Civil Defense Director (including Military Coordination)
- Planning Director
- Intelligence and Statistical Analysis
- Information
  - Warning
  - Public Information
  - Communications
- Resources Management
  - Manpower
  - Food
  - Water
  - Agriculture
  - Industrial
  - Petroleum
- Public Safety
  - Law Enforcement
  - Fire
- Medical and Public Health
  - Medical
  - Public Health
- Welfare
- Public Works
  - Engineering
  - Utilities
  - Transportation
- General Administration

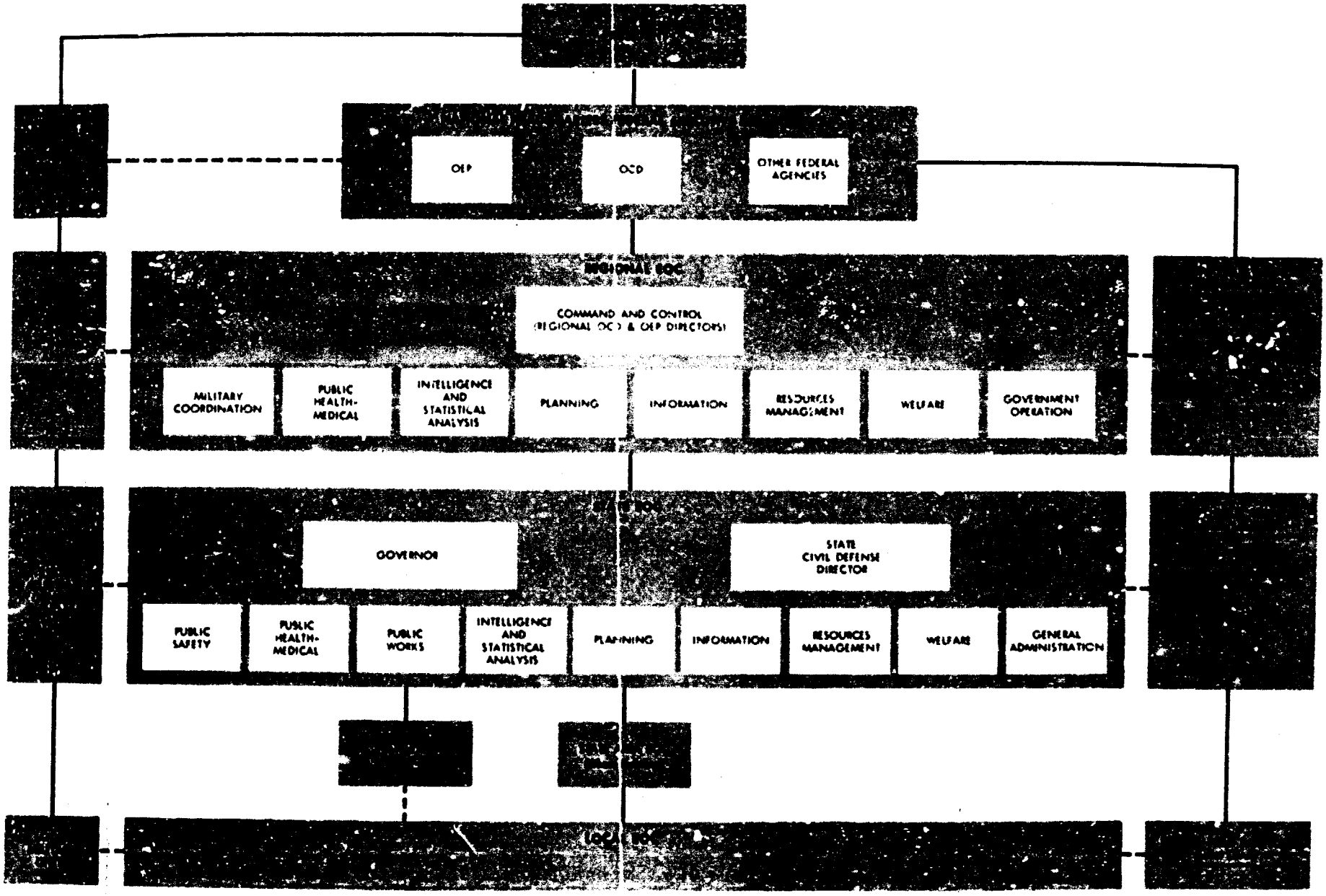
State areas can be organized in roughly the same form. An overall organization of state and regional functional areas is shown in Figure 1.

Time Phases

For both state and regional levels of responsibility, three time phases appear appropriate: prewarning, emergency, and recovery. Prewarning (PW) designates the period before the first receipt of warning (either strategic warning of attack likelihood or tactical warning of actual weapon launches or impacts). This phase is characterized by an international environment of nominal peace, cold war, or limited hostilities, and involves efforts to plan and organize local, state, and federal resources to cope with possible nuclear warfare. Typical activities

FIGURE 1

STATE AND REGIONAL CIVIL DEFENSE ORGANIZATION



in this phase are the licensing, marking, and stocking of fallout shelters, establishment of CD organizations and operational plans and procedures at various levels of government, and inventorying of resources for use in the event of emergency.

The emergency (E) phase covers the period from first receipt of warning of impending attack until the radiation dangers of the external environment over wide areas are reduced to the point where external habitation is again feasible. Included in this phase are the take shelter, in shelter, and brief emergence phases, and the initial stages of the general emergence phase, which were used in the analysis of local CD communications.

The recovery (RCV) phase commences once emergence is sufficiently general to permit intercommunity efforts directed toward restoration of the physical and social fabric of the area concerned. The participation of state and federal agencies in furnishing resources and guidance will increase markedly once recovery measures begin. A precise termination point for the recovery phase cannot readily be discerned, but will depend on whether, in the opinion of national leadership, a satisfactory and viable pattern of socioeconomic life has been established. Since most problems of a civil defense nature focus on the emergency phase and the early stages of the recovery phase, lack of a clearly defined termination point offers no difficulty for the analysis which follows.

At the political subdivision level (city, county, town) a detailed picture of the emergency phase is necessary for analysis of specific actions of components of the local organization (fire department, medical staff, etc.). Whereas the local level analysis employs a breakdown of the emergency phase into the further phases of warning, take shelter, in shelter, brief emergence, and general emergence, this level of detail is inappropriate in treating the state and regional organizations, since resources controlled by these levels are brought to bear largely in preparing a locale to withstand the nuclear attack environment prior to attack and later in recovering once habitation external to shelters is again possible.

As the vagaries of attack (target locations, weapon yields, wind patterns, timing of launches, etc.) create widely differing local environments, the transition from emergency to recovery may occur at different times--varying from days to weeks--in different communities, state areas, states, and even regions. Consequently, within a given state, recovery could begin with the employment of state and federal resources in an area relatively unaffected by direct weapon effects, under the guidance of the state CD headquarters which may be still under emergency (in shelter) conditions. The boundary between emergency and recovery phases is ill-defined when applied to larger political entities such as states and regions. The physical environment at the state or regional emergency operating center should not be the controlling factor.

Functional Area Responsibilities and Information Flows on the State Level

Governor (Table 13)*

	Responsibility	Time Phase
1.	To exert leadership in formulating policy for civil defense within state.	All
2.	To direct actions of state agencies with CD responsibilities by use of state CD chain of command.	All
3.	To coordinate policy-making with the federal government at the regional and national levels and with neighboring states, including OCD, OEP, and other federal civilian agencies, as necessary.	All
4.	To coordinate CD policy-making with appropriate Zone of the Interior Army commanders.	All
5.	To ensure maintenance of government continuity within the state via use of civilian and, when necessary, military control.	E, RCV

Civil Defense Director (Tables 14 and 15)

1.	To perform all tasks necessary to ensure, within the limits of available resources, the safety of the populace and the preservation of property during periods of emergency.	All
2.	To report to OCD regional headquarters on status of organization, emergency operations, and resources within state, as required.	E, RCV
3.	To coordinate plans and activities with participating federal agencies to achieve optimum allocation of effort and physical resources.	All

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* Tables detailing information flows and communications media for each functional area are grouped at the end of this section.

Civil Defense Director (continued)

	Responsibility	Time Phase
4.	To disseminate emergency reports, warnings, and all-clear messages to political subdivisions, as required by OCD regional headquarters or by intrastate conditions.	E, RCV
5.	To coordinate CD efforts with bordering states and military CD organization at the state level.	All
6.	To coordinate with CD directors within local political subdivisions to ensure compatibility of local activities with state or state area operating plans, and to provide guidance and advice to local directors on matters of policy and operational decision-making.	All
7.	To maintain continuous coordination with state level military organizations performing CD functions within state and with other military activities located within state, as required.	E, RCV
8.	To facilitate coordination of state and military CD activities in the various functional areas to the extent possible.	E, RCV

Planning Director (Table 16)

1.	To plan comprehensive programs of activities to be performed by the state CD organization during the various phases of the emergency period.	All
2.	To coordinate with directors of various state CD functional areas and with state military CD planning director.	All
3.	To coordinate plan development by state CD director and federal regional OCD planning organization.	All
4.	To advise state CD director on status of plans, as requested and as significant planning changes become apparent.	All

Planning Director (continued)

	Responsibility	Time Phase
5.	To advise interested parties on planning status, as required.	All
6.	To disseminate approved programs to persons concerned at appropriate times.	All
7.	To provide advice and guidance on plan implementation, as required.	E, RCV

Intelligence and Statistical Analysis Director (Table 17)

1.	To estimate nature and scope of attacks promptly, disseminate attack information, as received, to regional headquarters and to other interested offices, as required.	E, RCV
2.	To develop and maintain procedures for assessing surviving critical resources after attack.	All
3.	To estimate resource damage, analyze capability, and report findings to regional OCD headquarters, governments of other states, and other interested offices, as required.	E, RCV
4.	To record and report NUDET information, as received, to regional OCD headquarters.	E
5.	To assess, on a continuing basis, dose rate conditions within state.	E, RCV
6.	To assess, on a continuing basis, fallout spread within state.	E, RCV
7.	To report to nearby states on: (a) dose rate conditions within state, as appropriate; (b) fallout spread across state, during 12 hours following attack.	E, RCV
8.	To collect, analyze, evaluate, and disseminate, as required, information on chemical and biological conditions within state.	E, RCV

Intelligence and Statistical Analysis Director (continued)

	Responsibility	Time Phase
9	To maintain current RADEF, NUDET, damage assessment, surviving critical resources (as designated) and population status information in a form readily usable by other state EOC organizational components.	E, RCV

Information--Warning Director (Table 18)

1.	To maintain continuous liaison with federal CD warning system(s), military warning systems within state, and Intelligence and Statistical Analysis section for purposes of receiving, evaluating, disseminating, and anticipating warning messages to be used within state.	All
2.	To advise state CD director of significant warning instructions received from other authorities.	All
3.	To disseminate urgent warning messages as required by higher authority, standing operating procedures, or intrastate conditions.	E, RCV
4.	To coordinate with Public Information section in the timely development of warning and warning instruction messages.	E, RCV

Information--Public Information Director (Table 19)

1.	To develop necessary narrative material for dissemination over emergency broadcast networks and other media, including: warning messages, end of warning period messages, special announcements by various government officials and others, general information and instructions.	All
2.	To process and disseminate official instructions and declarations, as required.	E, RCV

Information--Public Information Director (continued)

	Responsibility	Time Phase
3.	To gather, process, and disseminate other essential material as required.	E, RCV
4.	To advise state CD director and other government officials on requirements for essential public information messages.	All
5.	To coordinate with state Warning section in determining timing and scope of required warning messages.	All

Information--Communications Director (Table 20)

1.	To provide and maintain communications links from state EOC to local EOCs and to offices of state field agencies.	All
2.	To provide and maintain an internal communications center for the state EOC.	All
3.	To provide and maintain communications links to state level military and others as required by state CD director.	All

Resources Management--Manpower Director (Table 21)

1.	To maintain current information on location and status of personnel in critical skill categories and professions (through coordination with welfare census activity in emergency and recovery phases).	All
2.	To report status of manpower resources to interested parties, as requested or appropriate.	E, RCV
3.	To advise state CD director on status of manpower resources, as requested and as significant changes in status or numbers become apparent.	E, RCV
4.	To provide advice and guidance on status and use of manpower resources to interested parties, as required.	E, RCV

Resources Management--Manpower Director (continued)

Responsibility	Time Phase
5. To assign and direct selected manpower resources under state control, as conditions require.	E, RCV

Resources Management--Food Director (Table 22)

1. To maintain current information on the location and status of wholesale, producer, distributor, and other bulk storage facilities for processed foodstuffs; food preparation facilities, and food service personnel within state.	All
2. To report status of processed food resources to interested parties, as requested or appropriate.	E, RCV
3. To advise state CD director on status of processed food resources, as requested and as significant changes in status become apparent.	E, RCV
4. To provide advice and guidance on processed food matters to interested parties, as required.	E, RCV
5. To allocate and provide for transport of processed foodstuffs under state control, as conditions require.	E, RCV

Resources Management--Water Director (Table 23)

1. To maintain current information on location and status of water resources and distribution systems within state, including reservoirs, water lines and aqueducts, watersheds, purification plants, and water treatment chemicals and equipment.	All
2. To maintain current information on location and status of water resource personnel, supplies, and equipment within state.	All

Resources Management--Water Director (continued)

Responsibility	Time Phase
3. To report status of various water resources to interested parties, as requested or appropriate.	E, RCV
4. To advise state CD director on status of various water resources and required servicing resources, as requested and as significant changes in status become apparent.	E, RCV
5. To assign and direct water resources personnel under state control, as conditions require.	E, RCV

Resources Management--Agriculture Director (Table 24)

1. To maintain current information on location and status of stores of unprocessed foodstuffs (e.g., grain elevators, warehouses, canneries, cold storage plants, feedlots, field crops, livestock) within the state.	All
2. To report status of unprocessed foodstuffs to interested parties, as requested or as otherwise appropriate.	E, RCV
3. To advise state CD director on status of unprocessed foodstuffs, as requested and as significant changes in status become apparent.	E, RCV
4. To provide advice and guidance on handling or processing, or other matters pertaining to unprocessed foodstuffs, to interested parties, as required.	E, RCV
5. To coordinate with Intelligence and Statistical Analysis section on maintaining current information on the distribution and severity of fallout in agricultural areas within the state.	E, RCV
6. To allocate and coordinate with recipients and directors of supply, transportation, and manpower on final processing and distribution of unprocessed foodstuffs under state control, as conditions require.	E, RCV

Resources Management--Industrial Director (Table 25)

	Responsibility	Time Phase
1.	To maintain current information on status and location of large and/or critical industrial resources (including raw materials) within state.	All
2.	To report status of various industrial resources to interested parties, as requested or appropriate.	E, RCV
3.	Advise state CD director on status of various industrial resources, as requested and as significant changes in status become apparent.	E, RCV
4.	To provide advice and guidance on matters pertaining to industrial resources to interested parties, as required.	E, RCV
5.	To assist and coordinate with industrial representatives and manpower director on use of industrial resources during emergency period.	E, RCV

Resources Management--Petroleum Director (Table 26)

1.	To maintain current information on location and status of petroleum and petroleum product stores, refineries, and distribution facilities within state.	All
2.	To report status of petroleum and petroleum product resources to interested parties, as requested or appropriate.	E, RCV
3.	To advise state CD director on status of petroleum and petroleum product resources, as requested and as significant changes in status become apparent.	E, RCV
4.	To provide advice and guidance on petroleum and petroleum product matters to interested parties, as required.	E, RCV
5.	To allocate and provide for distribution of petroleum and petroleum products under state control, as conditions require.	E, RCV

Public Safety--Law Enforcement Director (Table 27)

	Responsibility	Time Phase
1.	To maintain current information on location and status of regular, reserve, and auxiliary law enforcement personnel and supporting resources within state, including state police, highway patrols, and state correctional institutions.	All
2.	To maintain current information on situations requiring law enforcement resources within the state.	E, RCV
3.	To advise the state CD director on the status of conditions requiring law enforcement activity and/or law enforcement resources within the state, as requested and as significant changes in status become apparent.	E, RCV
4.	To provide advice and guidance on law enforcement matters to interested parties, as required.	E, RCV
5.	To dispatch and direct the law enforcement resources under state control, as conditions require.	E, RCV

Public Safety--Fire Director (Table 28)

1.	To maintain current information on location and status of federal, state, county, and local fire equipment, supplies, and personnel within state, including Federal Forest Service and military resources in varying amounts.	All
2.	To maintain current information on fire damage and current fire conditions within state.	E, RCV
3.	To advise state CD director on status of fire conditions within state, as requested and as significant changes in status become apparent.	E, RCV
4.	To report status of fire conditions to interested parties, as requested or appropriate.	E, RCV

Public Safety--Fire Director (continued)

Responsibility	Time Phase
5. To provide advice and guidance on fire conditions to interested parties, as required.	E, RCV
6. To dispatch and direct the use of fire fighting resources under state control, as conditions require.	E, RCV

Medical and Public Health--Medical Director (Table 29)

1. To maintain current information on location and status of public and private medical facilities, supplies, personnel, and equipment within state.	All
2. To report status of medical resources to interested parties, as requested or appropriate.	E, RCV
3. To advise state CD director on status of medical resources, as requested and as significant changes in status become apparent.	E, RCV
4. To provide advice and guidance on medical matters to interested parties, as required.	E, RCV
5. To assign and direct medical resources under state control, as conditions require.	E, RCV

Medical and Public Health--Public Health Director (Table 30)

1. To maintain current information on location and status of federal, state, and local public health personnel, facilities, and supplies within state.	All
2. To maintain current information on public health (environmental) conditions within state.	E, RCV
3. To advise state CD director on status of public health matters within state, as requested and as significant changes in status become apparent.	E, RCV

Medical and Public Health--Public Health Director (continued)

Responsibility	Time Phase
4. To report status of public health conditions to interested parties, as requested or appropriate.	E, RCV
5. To provide advice and guidance on public health matters to interested parties, as required.	E, RCV
6. To assign and direct public health personnel under state control, as conditions require.	E, RCV

Welfare Director (Table 31)

1. To maintain current information on location and status of public and private welfare and service personnel, facilities, and supplies within state.	All
2. To maintain current information on locations and numbers of persons requiring and receiving welfare services within state.	E, RCV
3. To advise state CD director on status of welfare matters within state, as requested and as significant changes in status become apparent.	E, RCV
4. To report information on welfare matters to interested parties, as requested or appropriate.	E, RCV
5. To allocate welfare resources under state control, as conditions require.	E, RCV
6. To provide advice and guidance on welfare matters to interested parties, as required.	E, RCV

Public Works--Engineering Director (Table 32)

1. To maintain current information on public and major private engineering personnel, equipment, supplies, and facilities within state.	All

Public Works--Engineering Director (continued)

	Responsibility	Time Phase
2.	To maintain liaison with city and county engineer groups and with private groups throughout state.	E, RCV
3.	To coordinate engineering efforts among communities and between communities and state EOC, including damage surveys, in coordination with Intelligence and Statistical Analysis section and various resources sections; demolition; emergency repair and construction; and provision of engineering to other state functional areas.	E, RCV
4.	To advise state CD director on status of engineering resources and activities, as requested and as significant changes in status become apparent.	E, RCV
5.	To assign and direct engineering personnel and resources under state control, as conditions require.	E, RCV

Public Works--Utilities Director (Table 33)

1.	To maintain current information on location and status of public and private power, gas, telephone, and water resources and distribution systems within state.	All
2.	To maintain current information on the location and status of power, gas, telephone, and water utility personnel, equipment, and supplies within state.	E, RCV
3.	To report status of various utilities and servicing resources to interested parties, as requested or appropriate.	E, RCV
4.	To advise state CD director on status of various utilities and resources, as requested and as significant changes in status become apparent.	E, RCV

Public Works--Utilities Director (continued)

Responsibility	Time Phase
5. To provide advice and guidance on matters involving various utilities and servicing resources to interested parties, as required.	E, RCV
6. To direct the operation and maintenance of utilities under state control (if any), as conditions require.	E, RCV

Public Works--Transportation Director (Table 34)

1. To maintain current information on location and status of rail, trucking, air, bus, water, and automobile resources within state.	All
2. To report status of various transportation resources to interested parties, as required or appropriate.	E, RCV
3. To advise state CD director on status of transportation resources, as requested and as significant changes in status become apparent.	E, RCV
4. To provide advice and guidance on transportation matters to interested parties, as required.	E, RCV
5. To dispatch and direct transportation resources under state control, as conditions require.	E, RCV
6. To maintain current information on status of highways, bridges, overpasses, and major secondary roadways within state.	E, RCV

General Administration Director (Table 35)

1. To establish procedures for procurement of resources required by various state EOC organizational components.	All

General Administration Director (continued)

Responsibility	Time Phase
2. To maintain current records, such as invoice files, of state expenditures for resources, services, etc.	E, RCV
3. To coordinate with resources directors to ensure comprehensive financial records on procurement.	E, RCV
4. To coordinate with manpower director in furnishing administrative personnel to functional areas, as required.	All

Table 13

GOVERNOR:
STATE LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: FW	Urgency: E	Urgency: RCV	Density: FW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State area or local EOCs	↓ C[a] ↑ REQ ↕ INFO	BRF	NF	•	AD OP	AD	•	LT	LT	RAND	VOICE	R-W	CU
Regional CD headquarters	↓ C[a] ↑ REQ ↕ INFO	BRF	NF	•	AD	AD	•	LT	LT	RAND	VOICE	R-W	CU
Field offices of federal agencies	↕ INFO ↕ COORD	BRF	NF	†	AD	AD	†	LT	LT	RAND	VOICE	R-W	CU
Bordering states	↕ INFO ↕ COORD	BRF	NF	†	AD	AD	†	LT	LT	RAND	VOICE	R-W	CU
Military CD director	↓ REQ ↕ INFO ↕ COORD	BRF	NF	†	AD	AD	†	LT	LT	RAND	VOICE	R-W	CU

• No traffic
† Normal peacetime CD preparatory traffic

Table 14

CIVIL DEFENSE DIRECTOR:
STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow				Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State level																
State area or local EOCs	↓ C[2] ↑ C[2]	↑ REQ	↕ INFO		BRF	NF	•	ED	OP	•	LT	LT	RAND PER	VOICE-TTY	R-W	CU
Regional CD headquarters	↑ C[2]		↕ INFO	↕ COORD	BRF	NF	†	ED	OP	†	LT	LT	RAND PER	VOICE-TTY	R-W	CU
Field offices of federal agencies			↕ INFO	↕ COORD	BRF	NF	†	AD	AD	†	LT	LT	RAND	VOICE	R-W PC if together	CU
Bordering states		↓ REQ	↕ INFO	↕ COORD	BRF	NF	†	AD	AD	†	LT	LT	RAND	VOICE-TTY	R-W	CU
State area level																
Local EOCs	↓ C[2] ↑ C[2]	↑ REQ	↕ INFO		BRF	NF	•	ED	OP	•	LT	LT	RAND PER	VOICE-TTY	R-W	CU
State EOC	↑ C[2]		↕ INFO	↕ COORD[3]	BRF-MED	NF	†	ED	OP	†	MED	MED	RAND PER	VOICE-TTY	R-W	CU
Bordering state areas			↕ INFO	↕ COORD	BRF-MED	NF	†	OP	AD	†	LT	LT	RAND	VOICE-TTY	R-W	CU
Field offices of federal agencies			↕ INFO	↕ COORD	BRF-MED	NF	†	AD	AD	†	LT	LT	RAND	VOICE	R-W	CU

* No traffic
† Normal peacetime CD preparatory traffic
‡ Includes coordination with military civil defense officials

Table 15

CIVIL DEFENSE DIRECTOR (MILITARY COORDINATION): STATE LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow			Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State military CD headquarters*	↓ C²	↕ INFO	↕ COORD	BRF	NF	†	OP	AD	†	LT	MED	RAND	VOICE	PC if in same location	CU
Non-CD military organizations		↕ INFO	↕ COORD	BRF	NF	‡	OP	AD	‡	LT	MED	RAND	VOICE	R-W	CU

* This may be incorporated within the state EOC or military representatives may be stationed at the state EOC (with communications facilities) for coordination purposes.

† Normal peacetime CD preparatory traffic.

‡ No traffic.

Table 16

PLANNING DIRECTOR:
STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow		Information Flow: Message Length	Information Flow: Message Form	Information Flow: Urgency PW	Information Flow: Urgency E	Information Flow: Urgency RCV	Information Flow: Density PW	Information Flow: Density E	Information Flow: Density RCV	Information Flow: Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State level														
State area or local EOCs		⇕INFO ⇕COORD	MED	NF	*	AD	AD	*	MED	MED	PER	VOICE	R-W	CU
Bordering states		⇕INFO ⇕COORD	MED	NF	†	AD	AD	†	MED	MED	PER	VOICE	R-W	CU
Regional CD headquarters		⇕INFO ⇕COORD	MED	NF	†	AD	AD	†	MED	MED	PER	VOICE-TTY	R-W	CU
Military CD headquarters		⇕INFO ⇕COORD	MED	NF	†	AD	AD	†	MED	MED	PER	VOICE	R-W	CU
State area level														
Local EOCs		⇕INFO ⇕COORD	MED	NF	*	AD	AD	*	MED	MED	PER	VOICE	R-W	CU
State EOC	⇕ C[a]	⇕INFO ⇕COORD	MED	NF	†	AD	AD	†	LT	LT	RAND PER	VOICE-TTY	R-W	CU
Bordering state areas		⇕INFO ⇕COORD	MED	NF	†	AD	AD	†	LT	LT	RAND	VOICE-TTY	R-W	CU

* No traffic.
† Normal peacetime CD preparatory traffic.

Table 17

INTELLIGENCE AND STATISTICAL ANALYSIS DIRECTOR: STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow											Communications Medium		
	Kind of Traffic and Direction of Flow	Message		Urgency			Density			Occurrence		Mode of Transmission	Nature of Circuit	Circuit Use
		Length	Form	PW	E	RCV	PW	E	RCV					
State level														
State area or local EOCs	↕ INFO	MED	P	•	AD	AD	•	HVY‡	HVY‡		PER	TTY	R-W	CW
Bordering states	⇕ INFO	BRF	P NP	†	AD	AD	†	MED	MED	RAND		TTY	R-W	CW
Military CD organization	⇕ INFO	MED	P NP	†	AD	AD	*	HVY	MED		PER	TTY	R-W	CW
Regional CD headquarters	↕ INFO	LONG	P	†	AD	AD	*	HVY	HVY		PER	VOICE-TTY	R-W	CW
State area level														
Local EOCs	↕ INFO	MED	P	•	AD	AD	•	HVY‡	HVY‡		PER	TTY	R-W	CW
State EOC	⇕ INFO	BRF-LONG	P NP	†	AD	AD	*	HVY	HVY	RAND	PER	VOICE-TTY	R-W	CW
Bordering state areas	⇕ INFO	BRF-MED	P NP	†	AD	AD	*	MED	MED		PER	TTY	R-W	CW

• No traffic.
* Normal peacetime CD preparatory traffic.
‡ Many ASGS funnel into state EOC.

Table 18

INFORMATION—WARNING DIRECTOR: STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State level													
State area or local EOCs	↓ INFO	BRF	NF	*	EO	EO	*	LT	LT	SO SU	VOICE	R-W	SU
Federal CD and military warning nets	↑ INFO	BRF	NF	†	EO	EO	†	LT	LT	SO SU	VOICE	R-W	SU
Regional CD headquarters	↕ INFO	BRF	NF	†	EO	OP	†	LT	LT	SO SU	VOICE	R-W	SU
Point of entry to emergency broadcast networks	↓ INFO	BRF	NF	*	EO	OP	*	LT	LT	SO SU	VOICE	R-W	SU CU
State area level													
Local EOCs	↑ INFO	BRF	NF	*	EO	EO	*	LT	LT	SO SU	VOICE	R-W	SU
State EOC	↕ INFO	BRF	NF	†	EO	EO	†	LT	LT	SO SU	VOICE	R-W	SU
Point of entry to emergency broadcast networks	↓ INFO	BRF	NF	†	EO	EO	†	LT	LT	SO SU	VOICE	R-W	SU

* No traffic.
† Normal peacetime CD preparatory traffic.

Table 19

INFORMATION—PUBLIC INFORMATION DIRECTOR: STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: PW	Urgency: R	Urgency: RCV	Density: PW	Density: R	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State level													
State area or local EOCs*	↕ INFO	BRF	NF	†	EO	OP	†	LT	LT	RAND PER	VOICE	R-W	CU
Point of entry to emergency broadcast networks	↓ INFO	BRF	NF	†	EO§	EO§	†	LT	LT	RAND PER	VOICE	R-W	SU program link
Regional CD headquarters	↕ INFO	BRF	NF	‡	EO	AD	‡	LT	LT	PER	VOICE	R-W	CU
State area level													
Local EOCs	↕ INFO	BRF	NF	†	EO	OP	†	LT	LT	RAND PER	VOICE	R-W	CU
State EOC	↕ INFO	BRF	NF	‡	OP	AD	‡	LT	LT	RAND PER	VOICE	R-W	CU
Point of entry to emergency broadcast networks	↓ INFO	BRF	NF	†	EO	OP	†	LT	LT	RAND PER	VOICE	R-W	SU program link**

* May include some public announcements by state governor.
† No traffic.
‡ Normal peacetime CD preparatory traffic.
§ EBS only.
** SU to information functional area.

Table 20

INFORMATION--COMMUNICATIONS DIRECTOR: STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State level													
Point of entry to emergency broadcast networks	↓ C[2] ↕ INFO	BRF	F NF	*	OP	OP	*	MED	MED	RAND	VOICE	R-W	SU CU
Regional CD headquarters	↕ INFO ↕ COORD	BRF	NF	*	AD	AD	*	LT	LT	RAND	VOICE	R-W	CU
State EOC Internal Communications Center	↓ C[2]	BRF	NF	*	OP	OP	*	HVY	HVY	RAND	VOICE	PC	SU
State area level													
State EOC	↕ INFO ↕ COORD	BRF	NF	*	AD	AD	*	LT	LT	RAND	VOICE	R-W	CU
Point of entry to emergency broadcast networks	↕ INFO	BRF	F NF	†	OP	OP	†	LT	LT	RAND	VOICE	R-W	SU program link

* Normal peacetime CD preparatory traffic.
† No traffic.

Table 21

RESOURCES MANAGEMENT--MANPOWER DIRECTOR: STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Information Flow: Message Length	Information Flow: Message Form	Information Flow: Urgency PW	Information Flow: Urgency E	Information Flow: Urgency RCV	Information Flow: Density PW	Information Flow: Density E	Information Flow: Density RCV	Information Flow: Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State level													
State area or local EOCs	↑ INFO ↓ COORD	MED-LONG	F NF	*	AD	AD	*	LT	MED	PER	VOICE-TTY	R-W	CU
Selected industrial facilities (where not connected to local EOC)	↑ REQ ↓ INFO ↓ COORD	MED	F NF	†	AD	AD	†	LT	MED	RAND PER	VOICE-TTY	W	SU
Bordering states	↓ INFO ↓ COORD	MED	NF	†	AD	AD	†	LT	LT	RAND PER	VOICE-TTY	R-W	CU
Regional CD headquarters	↓ INFO ↓ COORD	LONG	F NF	†	AD	AD	†	LT	MED	PER	VOICE-TTY	R-W	CU
State area level													
Local EOCs	↑ INFO ↓ COORD	MED-LONG	F NF	*	AD	AD	*	LT	MED	PER	VOICE-TTY	R-W	CU
State EOC	↓ INFO ↓ COORD	MED	F NF	†	AD	AD	†	LT	MED	PER	VOICE-TTY	R-W	CU
Selected industrial facilities	↑ REQ ↓ INFO ↓ COORD	MED	NF	†	AD	AD	†	LT	MED	RAND PER	VOICE-TTY	W	SU
Bordering state areas	↓ INFO ↓ COORD	BRF	NF	†	AD	AD	†	LT	LT	RAND PER	VOICE-TTY	R-W	CU

* No traffic.
† Normal peacetime CD preparatory traffic.

Table 22

RESOURCES MANAGEMENT--FOOD DIRECTOR: STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State level													
State area or local EOCs	↓ REQ ↓ INFO	BRF-MED	F NF	*	AD	OP	*	LT	MED	RAND PER	VOICE-TTY	R-W	CU
Bordering states	↕ REQ ↕ INFO ↕ COORD	BRF-MED	F NF	†	AD	AD	†	LT	LT	RAND	VOICE-TTY	R-W	CU
Processed food storage and preparation facilities	↓ C[2] ↓ INFO	BRF-MED LONG	F NF	†	OP	OP	†	MED	MED	RAND PER	VOICE-TTY	R-W	SU
Regional CD headquarters	↓ REQ ↕ INFO ↕ COORD	BRF-LONG	F NF	†	AD	AD	†	LT	MED	RAND PER	VOICE-TTY	R-W	CU
Field offices of federal agencies	↕ INFO ↕ COORD	BRF-LONG	F NF	†	AD	AD	†	LT	MED	RAND PER	VOICE	R-W	CU
State area level													
Local EOCs	↓ REQ ↓ INFO	BRF-MED	F NF	*	AD	OP	*	LT	MED	RAND PER	VOICE-TTY	R-W	CU
State EOC	↓ REQ ↕ INFO ↕ COORD	BRF-MED	F NF	†	AD	AD	†	LT	MED	RAND PER	VOICE-TTY	R-W	CU
Processed food storage and preparation facilities	↓ C[2] ↕ INFO ↕ COORD	BRF-LONG	F NF	†	OP	OP	†	LT	MED	RAND	VOICE-TTY	W	SU CU
Bordering state areas	↕ REQ ↕ INFO ↕ COORD	BRF-MED	F NF	†	AD	AD	†	LT	MED	RAND	VOICE-TTY	R-W	CU

* No traffic.
† Normal peacetime CD preparatory traffic

Table 23

RESOURCES MANAGEMENT--WATER DIRECTOR: STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow		Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State level														
State area or local EOCs	↕ INFO		BRF	F NF	*	AD	OP	*	LT	LT	PER	VOICE-TTY	R-W	CU
Specific field facilities (when not connected to local EOC)	↕ C[a]		MED	F NF	†	OP	OP	†	MED	MED	SO RAND PER	VOICE	R-W	SU
Bordering states	↕ INFO	↕ COORD	BRF-MED	NF	†	AD	AD	†	LT	LT	PER	VOICE	R-W	CU
Regional CD headquarters	↕ INFO	↕ COORD	MED	F NF	†	AD	AD	†	LT	LT	PER	VOICE-TTY	R-W	CU
Field offices of federal agencies	↕ INFO	↕ COORD	BRF-MED	F NF	†	AD	AD	†	LT	MED	RAND PER	VOICE	R-W	CU
State area level														
Local EOCs	↕ INFO		BRF	F NF	*	AD	OP	*	LT	LT	PER	VOICE-TTY	R-W	CU
State EOC	↕ INFO	↕ COORD	BRF-MED	F NF	†	AD	AD	†	LT	MED	RAND PER	VOICE-TTY	R-W	CU
Specific field facilities (when not connected to local EOC)	↕ C[a]													
	↕ INFO	↕ COORD	BRF-MED	F NF	†	OP	OP	†	LT	LT	RAND PER	VOICE	W	SU
Bordering state areas	↕ INFO	↕ COORD	BRF-MED	NF	†	AD	AD	†	LT	LT	RAND	VOICE	R-W	CU

* No traffic

† Normal peacetime CD preparatory traffic.

Table 24

RESOURCES MANAGEMENT--AGRICULTURE DIRECTOR: STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow		Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State level														
State area or local EOCs	↑ INFO		BRF	NF	*	AD	AD	*	LT	LT	PER	VOICE-TTY	R-W	CU
Unprocessed food storage (if assigned)	↑ C[2]	↑ INFO ↓ COORD	MED	F NF	†	AD	OP	†	MED	MED	PER	VOICE	R-W	SU
Food processing facilities (if assigned)	↑ C[2]	↑ INFO ↓ COORD	MED	F NF	†	AD	OP	†	MED	MED	PER	VOICE	R-W	SU
Regional CD headquarters	↑ C[2]	↑ INFO ↕ COORD	MED	F NF	†	AD	AD	†	LT	LT	PER	VOICE-TTY	R-W	CU
Bordering states		↕ INFO ↕ COORD	BRF-MED	NF	†	AD	AD	†	LT	LT	PER	VOICE-TTY	R-W	CU
Field offices of federal agencies		↕ INFO ↕ COORD	BRF-MED	F NF	†	AD	AD	†	LT	MED	RAND PER	VOICE	R-W	CU
State area level														
Local EOCs		↑ INFO	BRF	NF	*	AD	AD	*	LT	LT	PER	VOICE-TTY	R-W	CU
State EOC	↑ C[2]	↕ INFO ↕ COORD	BRF-MED	F NF	†	AD	AD	†	LT	LT	RAND PER	VOICE-TTY	R-W	CU
Unprocessed food storage (if assigned)	↑ C[2]	↕ INFO ↕ COORD	MED	F NF	†	AD	OP	†	LT	LT	RAND PER	VOICE	R-W	SU
Field offices of federal agencies		↕ INFO ↕ COORD	MED	F NF	†	AD	AD	†	LT	MED	RAND PER	VOICE	R-W	CU
Food processing facilities (if assigned)	↑ C[2]	↕ INFO ↕ COORD	MED	F NF	†	AD	OP	†	LT	LT	RAND PER	VOICE	R-W	SU

* No traffic.
† Normal peacetime CD preparatory traffic.

Table 25

RESOURCES MANAGEMENT--INDUSTRIAL DIRECTOR: STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State level													
State area or local EOCs	↓ INFO	BRF	F	*	AD	AD	*	LT	LT	PER	VOICE	R-W	CU
Selected industrial facilities (where no link to local EOC exists)	↓ INFO ↑ COORD	MED	F NF	†	AD	OP	†	MED	MED	RAND PER	VOICE	R-W	SU
Bordering states	↕ INFO ↕ COORD	BRF-MED	NF	†	AD	AD	†	LT	LT	RAND PER	VOICE	R-W	CU
Regional CD headquarters	↓ INFO	MED	F NF	†	AD	AD	†	LT	LT	RAND PER	VOICE-TTY	R-W	CU
State area level													
Local EOCs	↓ INFO	BRF	F	*	AD	AD	*	LT	LT	PER	VOICE	R-W	CU
State EOC	↓ INFO	BRF-MED	F NF	†	AD	AD	†	LT	LT	RAND PER	VOICE-TTY	R-W	CU
Selected industrial facilities (when not connected to local EOCs)	↓ INFO ↑ COORD	BRF-MED	F NF	†	AD	OP	†	LT	MED	RAND PER	VOICE	R-W	SU

* No traffic.
† Normal peacetime CD preparatory traffic.

Table 26

RESOURCES MANAGEMENT--PETROLEUM DIRECTOR: STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State level													
State area or local EOCs	↓ REQ ↑ INFO	BRF	F	*	AD	AD	*	LT	MED	PER	VOICE	R-W	CU
Storage points and refineries	↓ C² ↕ INFO	MED	F NF	†	OP	OP	†	LT	MED	RAND PER	VOICE	R-W	SU
Bordering states	↕ INFO ↕ COORD	MED	NF	†	AD	AD	†	LT	MED	PER	VOICE	R-W	CU
Regional CD headquarters	↕ INFO ↕ COORD	MED	F NF	†	AD	AD	†	MED	MED	PER	VOICE-TTY	R-W	CU
State area level													
Local EOCs	↓ REQ ↑ INFO	BRF	F	*	AD	AD	*	LT	MED	PER	VOICE	R-W	CU
State EOC	↕ INFO ↕ COORD	BRF-MED	F NF	†	AD	AD	†	MED	MED	RAND PER	VOICE-TTY	R-W	CU
Storage points and refineries‡	↓ C² ↕ INFO ↕ COORD	MED	F NF	†	OP	OP	†	LT	MED	RAND PER	VOICE	R-W	SU

* No traffic.
† Normal peacetime CD preparatory traffic.
‡ Where not connected to local EOCs.

Table 27

PUBLIC SAFETY--LAW ENFORCEMENT DIRECTOR: STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State level													
State area or local EOCs	↓ REQ ↕ INFO	BRF-MED	F NF	*	OP AD	OP	*	HVY	MED	BU RAND PER	VOICE-TTY	R-W	CU
State law enforcement field agencies	↓C[c] ↕ INFO	BRF-LONG	F NF	*	EO	OP	†	HVY	HVY	BU RAND PER	VOICE-TTY	R-W	CU
State military CD organization	↕ INFO ↕ COORD	BRF-MED	NF	†	OP	OP	†	LT	MED	BU RAND	VOICE-TTY	PC if at same location R-W if separate	CU
Bordering states	↕ INFO ↕ COORD	BRF-MED	NF	†	OP	AD	†	LT	MED	RAND	VOICE-TTY	R-W	CU
State area level													
Local EOCs	↓ REQ ↕ INFO	BRF-MED	F NF	*	OP AD	OP	*	HVY	MED	BU RAND PER	VOICE-TTY	R-W	CU
State EOC†	↓C[c] ↕ INFO	BRF-MED	F NF	†	EO	AD	†	LT	MED	BU RAND PER	VOICE-TTY	R-W	CU
State law enforcement field agencies	↓C[c] ↕ INFO	BRF-MED	F NF	†	EO	OP	†	HVY	MED	BU RAND PER	VOICE-TTY	R-W	CU
Bordering state areas	↕ INFO ↕ COORD	BRF-MED	F NF	†	EO	OP	†	MED	LT	RAND	VOICE-TTY	R-W	CU

* No traffic.
† Normal peacetime CD preparatory traffic.
‡ Includes coordination with state military CD organizations.

Table 28

PUBLIC SAFETY--FIRE DIRECTOR: STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Information Flow: Message Length	Information Flow: Message Form	Information Flow: Urgency PW	Information Flow: Urgency E	Information Flow: Urgency RCV	Information Flow: Density PW	Information Flow: Density E	Information Flow: Density RCV	Information Flow: Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State level													
State area or local EOCs	↑ REQ ↕ INFO ↕ COORD	BRF-MED	F NF	*	EO	OP	*	AVY	MED	RAND PER BU	VOICE	R-W	CU
U.S. (federal) Forest Service	↓ REQ ↕ INFO ↕ COORD	MED-LONG	NF	†	EO	OP	†	HVY	MED	RAND	VOICE	PC if in same location R-W if elsewhere	SU
State fire and rescue field organizations	↓ C[2] ↕ INFO	MED-LONG	NF	†	EO	OP	†	HVY	MED	RAND BU	VOICE	R-W	SU
Bordering states	↕ INFO ↕ COORD	BRF-LONG	NF	†	EO	OP	†	MED	MED	RAND	VOICE	R-W	CU
State area level													
Local EOCs	↑ REQ ↕ INFO ↕ COORD	BRF-MED	F NF	*	EO	OP	*	HVY	MED	RAND PER BU	VOICE	R-W	CU
State EOC	↑ C[2] ↕ INFO	BRF-MED	F NF	†	EO	OP	†	MED	MED	RAND PER	VOICE-TTY	R-W	CU
U S Forest Service	↕ REQ ↕ INFO ↕ COORD	BRF-LONG	F KF	†	EO	OP	†	MED	MED	RAKD PER	VOICE	R-W	SU
State fire and rescue field organizations	↕ REQ ↕ INFO ↕ COORD ↓ C[2]	BRF-LONG	F NF	†	EO	OP	†	HVY	MED	RAND PER BU	VOICE	R-W	SU
Bordering state areas	↕ REQ ↕ INFO ↕ COORD	BRF-MED	F NF	†	EO	OP	†	MED	MED	RAND	VOICE	R-W	CU

* No traffic.
† Normal peacetime CD preparatory traffic.

Table 29

MEDICAL AND PUBLIC HEALTH--MEDICAL DIRECTOR: STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow			Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State level															
State area or local EOCs		↕ INFO		BRF-MED	F NF	*	OP	AD	*	MED	LT	RAND PER	VOICE	R-W	CU
Bordering states		↕ INFO	↕ COORD	MED	F NF	†	AD	OP	†	LT	MED	RAND PER	VOICE	R-W	CU
State medical field facilities	↕ C[2]	↕ INFO		BRF-LONG	F NF	†	BO	OP	†	HVY	MED	RAND PER	VOICE	R-W	SU
Regional CD headquarters		↕ INFO	↕ COORD	BRF-LONG	F NF	†	AD	AD	†	MED	MED	RAND PER	VOICE	R-W	CU
State area level															
Local EOCs		↕ INFO		BRF-MED	F NF	*	OP	AD	*	MED	LT	RAND PER	VOICE	R-W	CU
State EOC	↕ C[2]	↕ REQ ↕ INFO	↕ COORD	BRF-MED	F NF	†	OP	AD	†	MED	MED	RAND PER	VOICE-TTY	R-W	CU
State medical field facilities	↕ C[2]	↕ REQ ↕ INFO	↕ COORD	BRF-LONG	F NF	†	BO	OP	†	HVY	MED	RAND PER SU	VOICE	R-W	SU

* No traffic.

† Normal peacetime CD preparatory traffic.

Table 30

MEDICAL AND PUBLIC HEALTH--PUBLIC HEALTH DIRECTOR: STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State level													
State area or local EOCs	↕ INFO	MED-LONG	F NF	*	AD	OP	*	MED	MED	RAND PER	VOICE-TTY	R-W	CU
Bordering states	↕ INFO ↕ COORD	MED	NF	†	AD	AD	†	L/T	MED	RAND PER	VOICE	R-W	CU
State public health resources	↓ C[2] ↕ INFO	BRF-LONG	F NF	†	OP	OP	†	HVY	HVY	RAND PER	VOICE-TTY	R-W	SU
Regional CD headquarters	↕ INFO ↕ COORD	BRF-LONG	F NF	†	AD	OP	†	MED	MED	RAND PER	VOICE-TTY	R-W	CU
State area level													
Local EOCs	↕ INFO	MED-LONG	F NF	*	AD	OP	*	MED	MED	RAND PER	VOICE-TTY	R-W	CU
State EOC	↓ C[2] ↕ REQ ↕ INFO ↕ COORD	BRF-MED	F NF	†	AD	OP	†	L/T	MED	RAND PER	VOICE-TTY	R-W	CU
State public health resources and field organizations	↓ C[2] ↕ REQ ↕ INFO ↕ COORD	BRF-MED	F NF	†	OP	OP	†	MED	MED	RAND PER	VOICE-TTY	R-W	SU

* No traffic.
† Normal peacetime CD preparatory traffic.

Table 31

WELFARE DIRECTOR:
STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State level													
State area or local EOCs	↑ REQ ↑ INFO	BRF-MED	F NF	* AD	AD		* LT	MED		RAND PER	VOICE-TTY	R-W	CU
Bordering states	↕ INFO ↕ COORD	MED	NF	* AD	AD		* LT	LT		PER	VOICE	R-W	CU
State welfare field organizations	↑ C[a] ↕ INFO	BRF-LONG	F NF	* OP	OP		* HVY	HVY		RAND PER	VOICE-TTY	R-W	SU
Regional CD headquarters (if channels are available)	↕ INFO ↕ COORD	MED	F NF	* AD	AD		* LT	LT		PER	VOICE-TTY	R-W	CU
State area level†													
Local EOCs	↑ REQ ↑ INFO	BRF-MED	F NF	* AD	AD		* LT	MED		RAND PER	VOICE-TTY	R-W	CU
State EOC	↑ C[a] ↕ REQ ↕ INFO ↕ COORD	BRF-MED	F NF	* AD	AD		* MED	MED		RAND PER	VOICE-TTY	R-W	CU
State welfare field organizations	↑ C[a] ↕ REQ ↕ INFO ↕ COORD	BRF-LONG	F NF	* OP	OP		* MED	HVY		RAND PER	VOICE-TTY	R-W	SU

* Normal peacetime CD preparatory traffic.
† Includes: Census, Welfare Distribution, Relocation.

Table 32

PUBLIC WORKS--ENGINEERING DIRECTOR: STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: PW	Urgency: R	Urgency: RCV	Density: PW	Density: R	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State level													
State area or local EOCs	↕ INFO	BRF-MED	NF	*	AD	OP	*	MED	HVY	RAND	VOICE	R-W	CU
Military organizations	↕ REQ ↕ INFO ↕ COORD	BRF	NF	*	AD	OP	*	LT	LT	RAND	VOICE	DC if at same location R-W if separate	CU
Bordering states	↕ INFO ↕ COORD	BRF	NF	†	AD	AD	†	LT	LT	RAND	VOICE	R-W	CD
State field engineering resources	↓ C[2] ↕ INFO	BRF-LONG	NF	†	AD	OP	†	MED	MED	RAND	VOICE	R-W	SU
State area level													
Local EOCs	↕ INFO	BRF-MED	NF	*	AD	OP	*	MED	HVY	RAND	VOICE	R-W	CU
State EOCs	↑ C[2] ↕ REQ ↕ INFO ↕ COORD	BRF-MED	NF	†	AD	AD	†	LT	MED	RAND	VOICE	R-W	CU
State field engineering resources	↓ C[2] ↕ INFO ↕ COORD	BRF-LONG	NF	†	AD	OP	†	LT	MED	RAND	VOICE	R-W	SU

* No traffic.
† Normal peacetime CD preparatory traffic.
[2] Includes coordination with military engineering organizations.

Table 33

PUBLIC WORKS--UTILITIES DIRECTOR: STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State level													
State area or local EOCs	† REQ ‡ INFO ‡ COORD	BRF	F NF	•	AD	OP	•	LT	MED	RAND PER BU	VOICE-TTY	R-W	CU
Private utilities companies (headquarters)	‡ INFO ‡ COORD	BRF-MED	F NF	†	AD	OP	†	LT	MED	RAND PER BU	VOICE	R-W	CU SU
Operating field station (private companies)	‡ C[2] ‡ REQ ‡ INFO ‡ COORD	BRF-LONG	NF	†	OP	AD	†	LT	MED	RAND PER BU	VOICE	R-W	SU
Bordering states	‡ INFO ‡ COORD	MED	F NF	†	AD	AD	†	LT	LT	RAND PER	VOICE-TTY	R-W	CU
State repair and maintenance field units	‡ C[2] ‡ INFO	BRF-MED	F NF	†	OP	OP	†	MED	HVY	RAND PER	VOICE	R-W	SU
Operating facilities (when under state Utilities Director)	‡ C[2] ‡ INFO	BRF-MED	F NF	†	OP	OP	†	MED	HVY	RAND PER BU	VOICE	R-W	SU
Regional EOC	‡ INFO ‡ COORD	BRF-MED	F NF	†	AD	OP	†	LT	MED	RAND PER	VOICE-TTY	R-W	CU
Field offices of federal agencies	‡ INFO ‡ COORD	BRF-MED	NF	†	AD	OP	†	LT	LT	RAND	VOICE	R-W	CU
State area level													
Local EOCs	† REQ ‡ INFO ‡ COORD	BRF	F NF	•	AD	OP	•	LT	MED	RAND PER BU	VOICE-TTY	R-W	CU
State EOC	‡ REQ ‡ INFO ‡ COORD	BRF-MED	F NF	†	AD	AD	†	LT	MED	RAND PER	VOICE-TTY	R-W	CU
Field offices of federal agencies[1]	‡ INFO ‡ COORD	BRF-MED	NF	†	AD	AD	†	LT	LT	RAND	VOICE	R-W	SU
Operating field stations (private companies)	‡ REQ ‡ INFO ‡ COORD	BRF-LONG	F NF	†	OP	OP	†	LT	MED	RAND PER BU	VOICE	R-W	SU
State repair and maintenance field units	‡ C[2] ‡ INFO ‡ COORD	BRF-MED	NF	†	OP	OP	†	MED	HVY	RAND PER BU	VOICE	R-W	SU
Operating facilities (when under state control)	‡ C[2] ‡ INFO ‡ COORD	BRF-MED	F NF	†	OP	OP	†	MED	HVY	RAND PER BU	VOICE	R-W	SU

* No traffic.
† Normal peacetime CD preparatory traffic.
‡ Where these exist at state area level.

Table 34

PUBLIC WORKS--TRANSPORTATION DIRECTOR: STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Nature of Circuit	Circuit Use
State level													
State area or local EOCs	↑ INFO	BRF	NF	*	AD	OP	*	LT	MED	RAND	VOICE	R-W	CU
Bordering states	↕ INFO ↕ COORD	BRF	NF	*	AD	OP	†	LT	LT	RAND	VOICE-TTY	R-W	CU
Regional headquarters	↓ INFO	MED	F NF	†	AD	AD	†	LT	LT	RAND PER	VOICE-TTY	R-W	CU
Large transport facilities	↓ C[a] ↑ INFO	BRF-LONG	F NF	†	AD	OP	†	LT	HVY	RAND PER	VOICE	R-W	SU
Field offices of federal agencies	↕ INFO ↕ COORD	BRF-LONG	NF	*	AD	OP	*	LT	LT	RAND	VOICE	R-W	CU
State area level													
Local EOCs	↑ INFO	BRF	NF	*	AD	OP	*	LT	MED	RAND	VOICE	R-W	CU
State EOC	↕ INFO ↕ COORD	BRF-MED	F NF	†	AD	AD	†	LT	MED	RAND PER	VOICE-TTY	R-W	CU
Large transport facilities[a]	↓ C[a] ↕ INFO ↕ COORD	BRF-LONG	NF	†	AD	OP	†	LT	HVY	RAND PER	VOICE-TTY	R-W	SU
Field offices of federal agencies**	↕ INFO ↕ COORD	BRF-MED	NF	†	AD	AD	†	LT	LT	RAND	VOICE	R-W	CU

* No traffic.
* Normal peacetime CD preparatory traffic.
† Where not connected to local EOCs.
‡ Where these fall under state control.
** Where these exist within the state area

Table 35

GENERAL ADMINISTRATION DIRECTOR: STATE AND STATE AREA LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
State level													
State area or local EOCs	↕ INFO ↕ COORD	BRF	F NF	*	AD	AD	*	LT	LT	RAND PER	VOICE-TTY	R-W	CU
Bordering states	↕ INFO ↕ COORD	BRF	NF	†	AD	AD	†	LT	LT	RAND	VOICE-TTY	R-W	CU
Regional CD headquarters	↕ INFO	BRF-MED	F NF	†	AD	AD	†	LT	MED	RAND PER	VOICE-TTY	R-W	CU
State military CD headquarters	↕ INFO ↕ COORD	MED	NF	†	AD	AD	†	LT	LT	RAND	VOICE-TTY	R-W	CU
State area level													
Local EOCs	↕ INFO ↕ COORD	BRF	F NF	*	AD	AD	*	LT	LT	RAND PER	VOICE-TTY	R-W	CU
State EOC‡	↕ REQ ↕ INFO ↕ COORD	BRF-MED	F NF	†	AD	AD	†	LT	MED	RAND PER	VOICE-TTY	R-W	CU

* No traffic.
† Normal peacetime CD preparatory traffic.
‡ Includes coordination and information exchange with state military CD headquarters.

VI REGIONAL CIVIL DEFENSE INFORMATION FLOWS

General

Primary responsibility for administering national resources to protect lives and property during an emergency lies with the Office of Civil Defense. Recovery efforts after the emergency are directed by the Office of Emergency Planning, an agency of the Executive Office of the President. Both agencies function through national headquarters and eight respective regional administrative offices. Since the transition from the emergency phase to the recovery phase is ill-defined, and since the phases are interdependent, the activities of these agencies overlap, as do those of other federal, state, and local organizations concerned with civil defense. The effectiveness of efforts made by all such agencies depends to a large extent on good contingency planning and organization carried out before warning.

The study of regional level CD communications requirements utilized the same three time phases used at the state level, with responsibilities for anticipated activities organized by means of functional areas. The following considerations and assumptions concerning organization of these activities were employed in the regional analysis.

The eight regional organizations of the Office of Civil Defense and the Office of Emergency Planning will be responsible for coordinating the emergency period efforts of the various states within regional boundaries. The OCD and OEP regional directors will have responsibility for allocating or coordinating the allocation of federally controlled resources within the region, either to states within the region or to other regions, as desirable. The various federal agencies having CD and OEP responsibilities will be represented at the regional level and will coordinate with the two regional directors in decision-making relevant to their respective areas of jurisdiction, including resources over which they have control.

Regional level operations will be centralized in a multiactivity regional Emergency Operating Center,* which will include:

1. Regional directors of both the Office of Civil Defense and the Office of Emergency Planning, and their immediate assistants and clerical staffs.

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* See Appendix C, References 5 and 6.

2. Regional level representatives of federal agencies assigned CD emergency period responsibilities by executive order of the President and normally responsible for activities or resources within the region.

3. Representatives of the ZI Army commander in whose area the region is located.

4. Functional areas, comprising combined OCD and OEP operating staffs, with specific emergency and recovery period functions; staff members will be analysts and decision-makers experienced in fields covered by the specific functional areas and obtained from the various federal agencies, departments, and commissions having CD and resources management responsibilities.

5. Common sources of information for use by analysts and decision-makers of the several agencies and offices involved.

Emergency and recovery period responsibilities of the various federal offices and agencies are those specified in the OEP National Plan for Emergency Preparedness.*

The OCD regional director will be responsible for coordination with the ZI Army commander whose territorial jurisdiction coincides with his own.

Organization

The functional areas included in the regional analysis are:

Command and Control
Military Coordination
Planning
Information
  Warning
  Public Information
  Communications
Intelligence and Statistical Analysis
Health-Medical
Welfare
Resource Management
  Manpower
  Food
  Water
  Fuel and Energy

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* See Reference 3.

Minerals
Transportation
Production
Telecommunications
Housing
Government Operation

Functional Area Responsibilities and Information Flows on the Regional Level

Civil Defense Director--Command and Control, and Military Coordination (Table 36)*

	Responsibility	Time Phase
1.	To supply advice, information, and guidance, as required, to state and local CD officials in the fulfillment of their respective emergency period responsibilities.	All
2.	To provide continuous coordination with the OEP regional director and his staff in areas of mutual responsibility or interest.	All
3.	To provide continuous coordination with representatives of the military and of federal civilian agencies implementing emergency period tasks in areas of mutual responsibility or interest.	E, RCV
4.	To coordinate with directors of adjacent OCD regions in areas of mutual responsibility or interest.	All
5.	To provide continuous coordination with OCD national headquarters, including submission of various operating and status reports as required by national OCD policy, NREC, or special circumstances.	All
6.	To implement CD measures in response to needs within the region, and to the extent allowed by resources either under the director's control or otherwise at his disposal.	All

* Tables detailing information flows and communications media for each functional area are grouped at the end of this section.

Civil Defense Director--Command and Control, and Military Coordination (continued)

Responsibility	Time Phase
7. To provide necessary guidance and decisions to various governmental levels, in cooperation with OEP, to ensure continuity of government during the emergency period	E, RCV
8. To maintain current information on the status of OCD and normal governmental organization and control at all levels within the region.	All

Planning Director (Table 37)

1. To coordinate state and local plans of political subdivisions within the region with national policies and plans.	All
2. To foster mutual aid agreements among states and political subdivisions within the region.	All
3. To coordinate regional plans with those of adjacent OCD regions and with appropriate army commands.	All
4. To coordinate plans with counterpart OEP regional and other federal civilian and military agencies, as required or appropriate.	All

Information Director (Table 38)

1. To maintain continuous contact with the National Warning Center and NORAD regional warning centers and with warning points throughout the respective regions, including the state warning points in each of the several states within the region.	All
2. To relay and, as appropriate, initiate various air raid warning and other warning messages to authorities concerned; these messages will include NUDET and FLASH NUDET reports, and FLASH radiological information.	E, RCV

Information Director (continued)

	Responsibility	Time Phase
3.	To receive, initiate, and disseminate public information messages to areas within the region, as appropriate.	E, RCV
4.	To provide guidance, information, and advice on public information efforts to be made at state and local levels, as appropriate.	All
5.	To coordinate with broadcasting systems and stations and other principal public information media to assure appropriate dissemination techniques.	All
6.	To coordinate with other federal agencies in developing and disseminating CD information during the emergency.	E, RCV
7.	To coordinate with OEP in the development and dissemination of emergency information on matters of common concern.	E, RCV
8.	To coordinate with adjacent OCD regions on development and dissemination of relevant information.	E, RCV
9.	To install communications facilities required for CD use during the emergency.	All

Intelligence and Statistical Analysis Director (Table 39)

1.	To collect, analyze, and evaluate on a continuous basis, information on NUDETS, RADEF, damage assessment, critical resources status, and population status; this information will be collected from states and locales within the region, from the various federal agencies responsible for particular resource and service functions, and from national OCD headquarters.	E, RCV
2.	To provide information concerning the above areas to OCD, OEP, the military and federal civilian agencies at the regional level and to state and local authorities, as requested or appropriate.	E, RCV

Intelligence and Statistical Analysis Director (continued)

	Responsibility	Time Phase
3.	To coordinate with counterpart authorities in adjacent OCD regions in the collection, analysis, evaluation, and dissemination of information concerning areas of common responsibility or interest.	E, RCV
4.	To coordinate with OEP counterpart officials in the exchange of relevant information, as this information becomes available.	E, RCV

Public Health-Medical Director (Table 40)

1.	To provide direction, advice, information, guidance, and material assistance to state and local level CD efforts to the extent allowed by resources under the control of the Public Health-Medical Director, or otherwise available to him.	All
2.	To coordinate, on a continuous basis, with OEP Public Health-Medical officials to achieve optimum use of resources available at the regional level.	E, RCV
3.	To coordinate with representatives of the military and of federal civilian agencies in medical and public health activities of mutual responsibility or interest.	All
4.	To coordinate, on a continuous basis, with national level OCD medical and public health officials, including submission of operating and status reports required by national OCD policy, NREC, or special circumstances.	E, RCV
5.	To maintain current data on the status and location of medical and public health stores, facilities, and personnel resources existing within the region.	All
6.	To coordinate with OCD Public Health-Medical officials in adjacent OCD regions on matters of mutual responsibility or interest.	E, RCV

Welfare Director (Table 41)

	Responsibility	Time Phase
1.	To lend support in the form of direction, advice, information, guidance, and material assistance to state and local level CD efforts to the extent allowed by resources under the control of the welfare area or otherwise available to it.	All
2.	To coordinate with federal agencies with responsibilities and/or capabilities in this area.	All
3.	To provide continuous coordination with national level OCD welfare officials, including submission of operating and status reports required by national OCD policy, NREC, or special circumstances.	E, RCV
4.	To maintain current data on the status and location of welfare stores, facilities, and personnel resources existing within the region.	All
5.	To coordinate with OCD welfare officials in adjacent regions on matters of mutual responsibility or interest.	E, RCV

Resources Management Director (Table 42)

1.	To coordinate with representatives of the military and of federal civilian agencies in the carrying out of emergency period resources management tasks in areas of mutual responsibility and/or interest.	E, RCV
2.	To allocate resources and services under its control in assistance to state and local jurisdictions within the region.	E, RCV
3.	To lend advice, information, and guidance, as appropriate, to state and local jurisdictions and resource points, and to private utilities and resources authorities for the purpose of overall optimization of usage of available survival and recovery resources.	All

Resources Management Director (continued)

Responsibility	Time Phase
4. To coordinate with resources management officials in adjacent OCD regions on matters of mutual responsibility and/or interest.	All
5. To provide continuous coordination with national OCD headquarters resources management officials, including submission of operating and status reports required by national OCD policy, NREC, or special circumstances.	E, RCV
6. To maintain current data on the location and status of resources management controlled stocks, facilities, and personnel within the region.	All

Government Operation Director (Table 43)

1. To formulate plans for monitoring government continuity during emergency and recovery time phases; update as required.	All
2. To provide plans and procedures for establishment of alternate regional headquarters.	All
3. To disseminate to states within region all changes in federal government plans and policies relevant to state operations.	E, RCV
4. To coordinate with states and federal agencies in carrying out plans for interstate and, as required, intrastate law enforcement operations.	E, RCV
5. To coordinate with military coordinator functional area on all matters involving the use of armed forces to assist state and local police where such action is requested.	E, RCV
6. To forward to states, as required, all national policies in the area of economic stabilization through the regional level officials of the federal agencies involved.	E, RCV

Government Operation Director (continued)

Responsibility	Time Phase
7. To coordinate with regional public information functional area on all matters requiring mass dissemination of federal policy information.	E, RCV
8. To assist in restoration of government control at all levels, as requested or otherwise desired.	E, RCV

Table 36

CIVIL DEFENSE DIRECTOR: REGIONAL LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
Command and control													
National OCD headquarters	↑ C* ↕ REQ ↕ INFO	BRF-LONG	F NF	*	AD	AD	*	LT	MED	RAND PER	VOICE-TTY DATA VIDEO	R-W	CU
National OEP headquarters (including NMRC)	↕ REQ ↕ INFO ↕ COORD	BRF-LONG	NF	*	AD	AD	*	LT	MED	RAND PER	VOICE DATA VIDEO	R-W	CU
State EOCs (CD directors)	↓ C* ↕ REQ ↕ INFO ↕ COORD	BRF-LONG	F NF	*	AD	AD	*	LT	MED†	RAND PER	VOICE	R-W	CU
ZI Army headquarters	↕ REQ ↕ INFO ↕ COORD	BRF-LONG	NF	*	AD	AD	*	LT	LT	RAND	VOICE	R-W	CU
Bordering regional EOCs	↕ INFO ↕ COORD	BRF-MED	F NF	*	AD	AD	*	LT	LT	RAND	VOICE	R-W	CU
Military coordination													
ZI Army headquarters	↕ REQ ↕ INFO ↕ COORD	BRF-LONG	NF	*	AD	AD	*	MED	MED	RAND PER	VOICE-TTY	R-W	CU

* Normal peacetime CD preparatory traffic.

† Includes both state CD director's and governor's communications requirements.

Table 37

PLANNING DIRECTOR: REGIONAL LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
National OCD headquarters	↕ REQ ↕ INFO	BRF	NF	*	AD	AD	*	LT	LT	RAND	VOICE-TTY DATA VIDEO	R-W	CU
State EOCs (planning directors)	↕ REQ ↕ INFO ↕ COORD	BRF-MED	NF	*	AD	AD	*	MED	MED	RAND	VOICE	R-W	CU
Bordering region EOCs (planning directors)	↕ REQ ↕ INFO ↕ COORD	BRF-MED	NF	*	AD	AD	*	LT	LT	RAND	VOICE-TTY	R-W	CU
ZI Army planning officials (ZI Army headquarters)	↕ REQ ↕ INFO ↕ COORD	BRF-MED	NF	*	AD	AD	*	LT	MED	RAND	VOICE	R-W	CU

* Normal peacetime CD preparatory traffic.

Table 38

INFORMATION DIRECTOR:*
REGIONAL LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Information Flow: Message Length	Information Flow: Message Form	Information Flow: Urgency PW	Information Flow: Urgency E	Information Flow: Urgency RCV	Information Flow: Density PW	Information Flow: Density E	Information Flow: Density RCV	Information Flow: Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
NORAD (NAWAS)	⇕ INFO	BRF-MED	F	↑	BO	BO	↑	LT	LT	SO	VOICE	W	SU
Other military warning systems within region	⇕ INFO	BRF-MED	F NF	↑	BO	BO OP	↑	LT	LT	RAND SO	VOICE-TTY DATA	R-W	SU CU
National OCD headquarters	↑ C[2] ⇕ REQ ⇕ INFO ⇕ COORD	BRF-LONG	F NF	↑	AD	AD	↑	LT	MED	RAND PER	VOICE-TTY DATA	R-W	CU
State EOCs (information directors)	⇕ REQ ⇕ INFO ⇕ COORD	BRF-LONG	F NF	↑	AD	AD	↑	LT	MED	RAND PER	VOICE-TTY	R-W	CU
Bordering region EOCs	⇕ REQ ⇕ INFO ⇕ COORD	BRF-MED	F NF	↑	AD	AD	↑	LT	LT	RAND	VOICE-TTY	R-W	CU

* Includes warning, public information, communications.
↑ Normal peacetime CD preparatory traffic.

Table 39

INTELLIGENCE AND STATISTICAL ANALYSIS DIRECTOR: REGIONAL LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Information Flow: Message Length	Information Flow: Message Form	Information Flow: Urgency PW	Information Flow: Urgency R	Information Flow: Urgency RCV	Information Flow: Density PW	Information Flow: Density R	Information Flow: Density RCV	Information Flow: Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
National OCD headquarters	↕ REQ ↕ INFO	BRF-LONG	F NF	*	AD	AD	*	MED	MED	RAND PER	VOICE-TTY DATA	R-W	CU
National OEP headquarters (including NREC)†	↕ REQ ↕ INFO	BRF-LONG	F NF	*	AD	AD	*	MED	MED	RAND PER	VOICE-TTY DATA	R-W	CU
State EOCs (I and SA directors)	↕ REQ ↕ INFO	BRF-LONG	F NF	*	AD	AD	*	HVY	HVY	RAND PER	VOICE-TTY	R-W	CU
Bordering region EOCs (I and SA directors)	↕ REQ ↕ INFO	BRF-LONG	NF	*	AD	AD	*	LT	LT	RAND PER	VOICE-TTY	R-W	CU

* Normal peacetime CD preparatory traffic.
† Includes reporting of OCD information to NREC, but does not include information required to be reported to NREC by other federal departments and agencies.

Table 40

PUBLIC HEALTH-MEDICAL DIRECTOR: REGIONAL LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Information Flow: Message Length	Information Flow: Message Form	Information Flow: Urgency PW	Information Flow: Urgency E	Information Flow: Urgency RCV	Information Flow: Density PW	Information Flow: Density E	Information Flow: Density RCV	Information Flow: Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
National OCD-OEP headquarters	↕C* ↕REQ ↕INFO	BRF-MED	F NF	•	AD	AD	•	LT	LT	RAND PER	VOICE-TTY DATA	R-W	CU
State EOCs (public health-medical directors)	↕C* ↕REQ ↕INFO ↕COORD	BRF-LONG	F NF	•	AD	AD	•	MED	MED	RAND PER	VOICE-TTY	R-W	CU
Bordering region EOCs (public health-medical directors)	↕REQ ↕INFO ↕COORD	BRF-MED	NF	•	AD	AD	•	LT	LT	RAND	VOICE-TTY	R-W	CU
ZI Army headquarters (public health-medical officials)	↕REQ ↕INFO ↕COORD	BRF-MED	NF	•	AD	AD	•	MED	MED	RAND	VOICE-TTY	R-W	CU

* Normal peacetime CD preparatory traffic

Table 41

WELFARE DIRECTOR: REGIONAL LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
National OCD-OEP headquarters	↕ C* ↕ REQ ↕ INFO ↕ COORD	BRF-MED	F NF	*	AD	AD	*	IT	LT	RAND PER	VOICE-TTY DATA	R-W	CU
State EOCs (welfare directors)	↕ C* ↕ REQ ↕ INFO ↕ COORD	BRF-MED	F NF	*	AD	AD	*	LT	MED LT	RAND PER	VOICE-TTY	R-W	CU
Bordering region EOCs (welfare directors)	↕ REQ ↕ INFO ↕ COORD	BRF-MED	NF	*	AD	AD	*	LT	LT	RAND	VOICE-TTY	R-W	CU
ZI Army headquarters (welfare officials)	↕ REQ ↕ INFO ↕ COORD	BRF-MED	NF	*	AD	AD	*	LT	LT	RAND	VOICE-TTY	R-W	CU

* Normal peacetime CD preparatory traffic

Table 42

RESOURCES MANAGEMENT DIRECTOR:* REGIONAL LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
National OCD-OEP headquarters	↑ C[1] ↕ REQ ↕ INFO	BRF-LONG	F NF	†	AD	AD	†	LT	LT	RAND PER	VOICE-TTY DATA VIDEO	R-W	CU
State EOCs (resources directors)	↓ C[2] ↕ REQ ↕ INFO ↕ COORD	BRF-LONG	F NF	†	AD	AD	†	LT	MED	RAND PER	VOICE-TTY	R-W	CU
Bordering region EOCs (resource management)	↕ REQ ↕ INFO ↕ COORD	BRF-LONG	F NF	†	AD	AD	†	LT	LT	RAND	VOICE-TTY	R-W	CU
ZI Army headquarters (officials in areas allied to resource management)†	↕ REQ ↕ INFO ↕ COORD	BRF-LONG	F NF	†	AD	AD	†	LT	LT	RAND	VOICE-TTY	R-W	CU

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* This table represents links for each of the following resource areas: manpower, food, water, fuel and energy, minerals, transportation, production, telecommunications, and housing

[1] Normal peacetime CL preparatory traffic

† Includes following only: food, water, fuel and energy, transportation, and housing

Table 43

GOVERNMENT OPERATION DIRECTOR: REGIONAL LEVEL CIVIL DEFENSE COMMUNICATIONS LINKS

Correspondent	Information Flow: Kind of Traffic and Direction of Flow	Message: Length	Message: Form	Urgency: PW	Urgency: E	Urgency: RCV	Density: PW	Density: E	Density: RCV	Occurrence	Communications Medium: Mode of Transmission	Communications Medium: Nature of Circuit	Communications Medium: Circuit Use
National OCD headquarters	↑ C* ↕ INFO ↕ COORD	BRF-LONG	F NF	•	AD	AD	•	LT	MED	RAND	VOICE-TTY	R-W	CU
State EOCs†	↓ C* ↕ INFO ↕ COORD	BRF-LONG	F NF	•	AD	AD	•	LT	MED	RAND	VOICE-TTY	R-W	CU

* Normal peacetime CD preparatory traffic
† Traffic directed to governor and CD director.

VII DERIVATION OF COMMUNICATIONS CIRCUITS FOR LOCAL, STATE AREA, STATE, AND REGIONAL CIVIL DEFENSE

Discussion of Tables

The various nuclear emergency information flow paths between local, state area, state, and regional EOCs and points external to the EOCs have been summarized in tables that show the nature and volume of the information flows occurring relevant to a given functional area during each of the three time phases.

In this section the information flows again are summarized, but this time they are grouped according to paths between a given EOC and each of a number of points external to it. From an analysis of the tables in Sections IV, V, and VI, the necessary communications links are derived. Specifically, the tables presented in this section summarize the size, nature, and occurrence patterns of traffic load for each major location outside the local, state area, state, or regional EOC to which persons within the EOC may be expected to communicate. Table 44 covers circuit requirements for communities, Table 45 for state areas, Table 46 for states, and Table 47 for regions. Examples of external points are: state military headquarters, ZI Army headquarters, and EOCs of neighboring communities, states, or regions, as shown in the left-hand column of the tables. In each table the second column from the left lists the functional area directors within the EOC who were described earlier as communicating with a particular outside agency. The various flow paths between the state EOC and the regional EOC are grouped in Table 46 by nature and by mode of transmission.

Next, time-urgency is listed for the three time phases. Density of traffic flow is also listed for each time phase. The circuit classes (voice, TTY, etc.) are then summarized vertically for a given set of links (between a local EOC and its several shelter complex headquarters, for example) for each time phase. The phase with maximum circuit loading is selected as generating the demand for which the system must be engineered. In the example furnished by Table 44 (p. 110) there are requirements for a maximum of 17 common user (CU) voice paths with light loading and 2 CU voice of medium loading established between a local EOC in a city of 500,000 or larger and its state EOC. Also 10 CU teletype links with light loading and 1 with medium loading are required--all during the emergence and recovery phases.*

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* Text continues on page 129.

Table 11

COMMUNICATIONS CIRCUITS TO SUPPORT LOCAL CIVIL DEFENSE OPERATIONS FOR CITIES OF 500,000 POPULATION OR LARGER

Fallout Shelter Case

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency				Density				Summary for Links	Derived Number and Kinds of Circuits	Notes
					TS	IS	E	RCV	TS	IS	E	RCV			
State EOC													30 Links		
Governor	Mayor	R-W	VOICE	CU	OP	AD	OP	AD	LT	LT	LT	LT	Heaviest demand occurs in emergence and recovery phases:		
CD Director	CD Director	R-W	VOICE	CU	AD	AD	OP	AD	LT	LT	LT	LT			
Public safety	Police	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
		W	TTY	CU	AD	AD	AD	AD	LT	LT	LT	LT			
Intelligence and statistical analysis	Police	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
		W	TTY-DATA	CU	AD	AD	AD	AD	LT	LT	LT	LT	17 CU VOICE LT	3.4 CU VOICE systems	
Public safety	Fire	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT	2 CU VOICE MED	1.0 CU VOICE system	
		W	TTY	CU	AD	AD	AD	AD	LT	LT	LT	LT	10 CU TTY LT	2.0 CU TTY systems	
Intelligence and statistical analysis	Fire	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
		W	TTY-DATA	CU	AD	AD	AD	AD	LT	LT	LT	LT	1 CU TTY MED	0.5 CU TTY system	
Public safety	Rescue	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT		Σ: 4 CU VOICE circuits	
Intelligence and statistical analysis	Rescue	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT		3 CU TTY circuits	
		W	TTY-DATA	CU	AD	AD	AD	AD	LT	LT	LT	LT			
Intelligence and statistical analysis	Weapons Effects	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
		W	TTY-DATA	CU	AD	AD	AD	AD	LT	LT	LT	LT			
Medical health	Medical	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
Intelligence and statistical analysis	Medical	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
		W	TTY-DATA	CU	AD	AD	AD	AD	LT	LT	LT	LT			
Medical health	Health	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
Intelligence and statistical analysis	Health	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
		W	TTY-DATA	CU	AD	AD	AD	AD	LT	LT	LT	LT			
Medical health and welfare	Welfare	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
Intelligence and statistical analysis	Welfare	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
		W	TTY-DATA	CU	AD	AD	AD	AD	LT	LT	LT	LT			
Engineering and utilities	Public works	R-W	VOICE	CU	OP	AD	OP	OP	MED	LT	MED	MED			
Intelligence and statistical analysis	Public works	R-W	VOICE	CU	AD	AD	AD	AD	LT	MED	MED	MED			
		W	TTY-DATA	CU	AD	AD	AD	AD	LT	MED	MED	MED			
Engineering and utilities	Utilities	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
Intelligence and statistical analysis	Utilities	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
		W	TTY-DATA	CU	AD	AD	AD	AD	LT	LT	LT	LT			

Table 11 (continued)

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency TS	Urgency IS	Urgency E	Urgency RCV	Density TS	Density IS	Density E	Density RCV	Summary for Links	Derived Number and Kinds of Circuits	Notes
Other communities	Mayor	R-W	VOICE	CU	OP	AD	OP	AD	LT	LT	LT	LT	13 Links		
	CD Director	R-W	VOICE	CU	AD	AD	OP	AD	LT	LT	LT	LT	Heaviest demand occurs in take shelter phase:		
	Police	R-W	VOICE	CU	EO	OP	OP	AD	LT	LT	LT	LT			
		W	TTY	CU	EO	OP	OP	AD	LT	LT	LT	LT			
	Fire	R-W	VOICE	CU	EO	AD	OP	AD	LT	LT	LT	LT			
	Rescue	R-W	VOICE	CU	OP	AD	OP	AD	LT	LT	LT	LT			
	Weapons Effects	R-W	VOICE	CU	OP	AD	OP	AD	LT	LT	LT	LT	9 CU VOICE LT	1.8 CU VOICE systems	
		W	TTY	CU	OP	AD	OP	AD	LT	LT	LT	LT			
	Medical	R-W	VOICE	CU	AD	AD	AD	AD	MED	MED	LT	LT	2 CU VOICE MED	1.0 CU VOICE system	
	Health	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
	Welfare	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT	2 CU TTY LT	0.4 CU TTY system	
	Public works	R-W	VOICE	CU	OP	AD	OP	AD	MED	LT	MED	LT		Σ: 3 CU VOICE circuits 1 CU TTY circuit	
	Utilities	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
Shelter Complex Headquarters (or shelters)	Mayor	R-W	VOICE	CU	OP	AD	OP	AD	LT	LT	LT	LT	11 Links		
	CD Director	R-W	VOICE	CU	EO	OP	OP	AD	MED	MED	LT	LT	Heaviest demand occurs in in shelter and emergence phases:		
	Police	R-W	VOICE	CU	EO	OP	OP	AD	LT	LT	LT	LT			
	Fire	R-W	VOICE	CU	EO	AD	OP	AD	LT	LT	LT	LT			
	Rescue	R-W	VOICE	CU	EO	AD	OP	AD	LT	LT	LT	LT			
	Weapons Effects	R-W	VOICE	CU	EO	OP	EO	AD	MED	LT	MED	LT			
	Medical	R-W	VOICE	CU	EO	OP	OP	AD	MED	MED	LT	LT	7 CU VOICE LT	1.4 CU VOICE system	
	Health	R-W	VOICE	CU	AD	OP	OP	AD	LT	MED	MED	MED		2.0 CU VOICE systems	
	Welfare	R-W	VOICE	CU	AD	OP	OP	AD	LT	MED	MED	LT	4 CU VOICE MED		
	Public works	R-W	VOICE	CU	EO	AD	OP	OP	LT	LT	MED	LT		Σ: 3 CU VOICE circuits	
	Utilities	R-W	VOICE	CU	EO	OP	OP	AD	LT	LT	LT	LT			
Emergency broadcast networks	Mayor	R-W	VOICE	SU	EO	OP	AD	AD	MED	LT	MED	LT	13 Links		Program circuits
		R-W	VOICE	CU	EO	OP	AD	AD	LT	LT	LT	LT			Administrative circuits
	CD Director	R-W	VOICE	SU	OP	OP	OP	AD	HVY	MED	LT	LT	Heaviest demand occurs in take shelter phase:		Program circuits
		R-W	VOICE	CU	OP	OP	OP	AD	MED	MED	LT	LT			Administrative circuits
	Police Fire Rescue Weapons Effects Medical Health Welfare Public works Utilities	Traffic for emergency broadcast networks to be cleared through CD director											1 SU VOICE HVY 1 SU VOICE MED 1 CU VOICE MED 10 CU VOICE LT	1.0 SU VOICE system 0.5 SU VOICE system 0.5 CU VOICE system 2.0 CU VOICE systems Σ: 1 SU VOICE program circuit 1 CU VOICE administrative circuit	Program circuit shared by mayor and CD director

Table 14 (continued)

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency				Density				Summary for Links	Derived Number and Kinds of Circuits	Notes
					TS	IS	E	RCV	TS	IS	E	RCV			
Local military units	Mayor	R-W	VOICE	SU	AD	AD	AD	AD	LT	LT	LT	LT	2 SU VOICE MED	1 SU VOICE system	Part of multi-station system, terminal installed by military unit
	CD Director	R-W	VOICE	SU	AD	AD	AD	AD	LT	LT	LT	LT			
Police field organization	Police	R	VOICE	SU	EO	OP	OP	AD	HVY	MED	HVY	MED	1 SU VOICE HVY	1 SU VOICE RADIO system	•
		W	VOICE	SU	EO	OP	OP	AD	HVY	MED	HVY	MED	1 SU VOICE HVY	1 SU VOICE WIRE system	
Fire field organization	Fire	R	VOICE	SU	EO	AD	EO	AD	HVY	MED	HVY	MED	1 SU VOICE HVY	1 SU VOICE RADIO system	•
		W	VOICE	SU	EO	AD	EO	AD	HVY	MED	HVY	MED	1 SU VOICE HVY	1 SU VOICE WIRE system	
Rescue field organization	Rescue	R	VOICE	SU	EO	AD	OP	AD	HVY	LT	MED	LT	1 SU VOICE HVY	1 SU VOICE RADIO system	•
		W	VOICE	SU	EO	AD	OP	AD	HVY	LT	MED	LT	1 SU VOICE HVY	1 SU VOICE WIRE system	
Weapons Effects field organization	Weapons Effects	R	VOICE	SU	EO	OP	EO	AD	HVY	MED	HVY	LT	1 SU VOICE HVY	1 SU VOICE RADIO system	•
		W	VOICE	SU	EO	OP	EO	AD	HVY	MED	HVY	LT	1 SU VOICE HVY	1 SU VOICE WIRE system	
Medical field organization															
Hospital complex headquarters	Medical	R	VOICE	SU	EO	OP	OP	AD	HVY	MED	HVY	MED	1 SU VOICE HVY	1 SU VOICE RADIO system	•
		W	VOICE	CU	EO	OP	OP	AD	HVY	MED	HVY	MED	1 CU VOICE HVY	1 CU VOICE WIRE system	
Ambulance services	Medical	R	VOICE	SU	EO	OP	OP	AD	HVY	MED	HVY	MED	1 SU VOICE HVY		
		W	VOICE	CU	EO	OP	OP	AD	HVY	MED	HVY	MED	1 CU VOICE HVY		
Health field agencies	Health	R	VOICE	SU	AD	OP	EO	AD	LT	MED	HVY	MED	1 SU VOICE HVY	1 SU VOICE RADIO system	•
		W	VOICE	CU	AD	OP	EO	AD	LT	MED	HVY	MED	1 CU VOICE HVY	1 CU VOICE WIRE system	
Welfare field agencies	Welfare	R	VOICE	SU	OP	AD	OP	AD	HVY	MED	HVY	MED	1 SU VOICE HVY	1 SU VOICE RADIO system	•
		W	VOICE	CU	OP	AD	OP	AD	HVY	MED	HVY	MED	1 CU VOICE HVY	1 CU VOICE WIRE system	

Table 14 (concluded)

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency				Density				Summary for Links	Derived Number and Kinds of Circuits	Notes
					TS	IS	E	RCV	TS	IS	E	RCV			
Public works field agencies	Public works	R	VOICE	SU	EO	AD	OP	AD	HVY	LT	HVY	MED	1 SU VOICE HVY	1 SU VOICE RADIO system	•
		W	VOICE	CU	EO	AD	OP	AD	HVY	LT	HVY	MED	1 CU VOICE HVY	1 CU VOICE WIRE system	
Utilities field agencies	Utilities	R	VOICE	SU	EO	AD	OP	OP	HVY	LT	HVY	MED	1 SU VOICE HVY	1 SU VOICE RADIO system	•
		W	VOICE	CU	EO	AD	OP	OP	HVY	LT	HVY	MED	1 CU VOICE HVY	1 CU VOICE WIRE system	

• Great variability may be expected in existing and planned communications systems for police, fire, and other field agencies. Cities of 500,000 or greater population will require several radio channels for each field agency, depending on existing and expected loads. They may possess private telephone systems as well. While this report touches on the derivation of numbers of channels for these kinds of field agencies, futher study is required to derive the detailed requirements.

Table 15

STATE AREA LEVEL COMMUNICATIONS CIRCUIT REQUIREMENTS FOR STATE AREAS WITH 0-2 MILLION POPULATION

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency PW	Urgency E	Urgency RCV	Density PW	Density E	Density RCV	Summary for Links	Derived Number and Kinds of Circuits	Notes
Local EOCs	CD Director	R-W	VOICE	CU	*	EO	OP	†	LT	LT	31 Links		
		W	TTY	CU	*	EO	OP	†	LT	LT			
	Planning	R-W	VOICE	CU	*	AD	AD	*	MED	MED	Heaviest demand occurs in recovery phase:		
	Intelligence and statistical analysis	R-W	TTY	CU	*	AD	AD	*	HVY	HVY			
	Warning	R-W	VOICE	SU	*	EO	EO	*	LT	LT	10 CU VOICE MED	0.5 CU VOICE system	
	Public information	R-W	VOICE	CU	*	EO	OP	*	LT	LT			
	Manpower	R-W	VOICE	CU	*	AD	AD	*	LT	MED	9 CU VOICE LT	0.18 CU VOICE system	
		W	TTY	CU	*	AD	AD	*	LT	MED			
	Food	R-W	VOICE	CU	*	AD	OP	*	LT	MED	1 CU TTY HVY	0.1 CU TTY system	
		W	TTY	CU	*	AD	OP	*	LT	MED	6 CU TTY MED	0.3 CU TTY system	
	Water	R-W	VOICE	CU	*	AD	OP	*	LT	LT	4 CU TTY LT	0.2 CU TTY system	
		W	TTY	CU	*	AD	OP	*	LT	LT			
	Agriculture	R-W	VOICE	CU	*	AD	AD	*	LT	LT		Σ: 1 CU VOICE circuits	Cities with >500,000 population will require more CU VOICE circuits
		W	TTY	CU	*	AD	AD	*	LT	LT			
	Industrial	R-W	VOICE	CU	*	AD	AD	*	LT	LT			
	Petroleum	R-W	VOICE	CU	*	AD	AD	*	LT	MED			
	Law enforcement	R-W	VOICE	CU	*	OP AD	OP	*	HVY	MED			
		W	TTY	CU	*	OP AD	OP	*	HVY	MED	1 SU VOICE LT	1 CU TTY circuit	
	Fire	R-W	VOICE	CU	*	EO	OP	*	HVY	MED		1 SU VOICE circuit	Warning: preemption right on CU circuit may be substituted
	Medical	R-W	VOICE	CU	*	OP	AD	*	MED	LT			
	Public health	R-W	VOICE	CU	*	AD	OP	*	MED	MED			
		W	TTY	CU	*	AD	OP	*	MED	MED			
	Welfare	R-W	VOICE	CU	*	AD	AD	*	LT	MED			
		W	TTY	CU	*	AD	AD	*	LT	MED			
	Engineering	R-W	VOICE	CU	*	AD	AD	*	LT	LT			
	Utilities	R-W	VOICE	CU	*	AD	OP	*	LT	MED			
		W	TTY	CU	*	AD	OP	*	LT	MED			
	Transportation	R-W	VOICE	CU	*	AD	OP	*	LT	MED			
	General administration	R-W	VOICE	CU	*	AD	AD	*	LT	LT			
		W	TTY	CU	*	AD	AD	*	LT	LT			
State EOCs	State area CD Director	R-W	VOICE	CU	†	EO	OP	†	MED	MED			
		R-W	TTY	CU	†	EO	OP	†	MED	MED			
	Planning	R-W	VOICE	CU	†	AD	AD	†	LT	LT			
		R-W	TTY	CU	†	AD	AD	†	LT	LT			
	Intelligence and statistical analysis	R-W	VOICE	CU	†	AD	AD	†	HVY	HVY			
		R-W	TTY	CU	†	AD	AD	†	HVY	HVY			
	Warning	R-W	VOICE	SU	*	EO	EO	†	LT	LT			
	Public information	R-W	VOICE	CU	*	OP	AD	*	LT	LT			

Table 15 (continued)

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency PW	Urgency E	Urgency RCV	Density PW	Density E	Density RCV	Summary for Links	Derived Number and Kinds of Circuits	Notes
State EOCs (cont.)	Communications	R-W	VOICE	CU	†	AD	AD	†	LT	LT	38 Links		
	Manpower	R-W	VOICE	CU	†	AD	AD	†	LT	MED	Heaviest demand occurs in recovery phase:		
		R-W	TTY	CU	†	AD	AD	†	LT	MED			
	Food	R-W	VOICE	CU	†	AD	AD	†	LT	MED			
		R-W	TTY	CU	†	AD	AD	†	LT	MED			
	Water	R-W	VOICE	CU	†	AD	AD	†	LT	MED			
		R-W	TTY	CU	†	AD	AD	†	LT	MED	1 CU VOICE HVY	0.1 CU VOICE circuit	
	Agriculture	R-W	VOICE	CU	†	AD	AD	†	LT	LT	14 CU VOICE MED	0.7 CU VOICE circuit	
		R-W	TTY	CU	†	AD	AD	†	LT	LT			
	Industrial	R-W	VOICE	CU	†	AD	AD	†	LT	LT	5 CU VOICE LT	0.1 CU VOICE circuit	
		R-W	TTY	CU	†	AD	AD	†	LT	LT			
	Petroleum	R-W	VOICE	CU	†	AD	AD	†	MED	MED			
		R-W	TTY	CU	†	AD	AD	†	MED	MED	1 CU TTY HVY	0.1 CU TTY circuit	
	Law enforcement	R-W	VOICE	CU	†	EO	AD	†	LT	MED	13 CU TTY MED	0.65 CU TTY circuit	
		R-W	TTY	CU	†	EO	AD	†	LT	MED			
	Fire	R-W	VOICE	CU	†	EO	OP	†	MED	MED	3 CU TTY LT	0.06 CU TTY circuit	
		R-W	TTY	CU	†	EO	OP	†	MED	MED			
	Public health	R-W	VOICE	CU	†	AD	OP	†	LT	MED			
		R-W	TTY	CU	†	AD	OP	†	LT	MED	1 SU VOICE LT	0.02 SU VOICE circuit	
	Medical	R-W	VOICE	CU	†	OP	AD	†	MED	MED			
		R-W	TTY	CU	†	OP	AD	†	MED	MED		Σ: 1 CU VOICE circuit 1 CU TTY circuit 1 SU VOICE circuit	
	Welfare	R-W	VOICE	CU	†	AD	AD	†	MED	MED			
		R-W	TTY	CU	†	AD	AD	†	MED	MED			
	Engineering	R-W	VOICE	CU	†	AD	AD	†	LT	MED			
	Utilities	R-W	VOICE	CU	†	AD	AD	†	LT	MED			
		R-W	TTY	CU	†	AD	AD	†	LT	MED			
	Transportation	R-W	VOICE	CU	†	AD	AD	†	LT	MED			
		R-W	TTY	CU	†	AD	AD	†	LT	MED			
	General administration	R-W	VOICE	CU	†	AD	AD	†	LT	MED			Warning: To close down critical facilities
		R-W	TTY	CU	†	AD	AD	†	LT	MED			
Bordering State Areas	State area CD Director	R-W	VOICE	CU	†	EO	OP	†	MED	MED	13 Links		
		R-W	TTY	CU	†	EO	OP	†	MED	MED			
	Planning	R-W	VOICE	CU	†	AD	AD	†	LT	LT	Heaviest demand occurs in recovery phase:		
		R-W	TTY	CU	†	AD	AD	†	LT	LT			
	Intelligence and statistical analysis	R-W	VOICE	CU	†	AD	AD	†	MED	MED			
											4 CU VOICE MED	0.2 CU VOICE circuit	
	Manpower	R-W	VOICE	CU	†	AD	AD	†	LT	LT	4 CU VOICE LT	0.08 CU VOICE circuit	
		R-W	TTY	CU	†	AD	AD	†	LT	LT			
	Food	R-W	VOICE	CU	†	AD	AD	†	LT	MED	2 CU TTY MED	0.1 CU TTY circuit	
		R-W	TTY	CU	†	AD	AD	†	LT	MED	3 CU TTY LT	0.06 CU TTY circuit	
	Water	R-W	VOICE	CU	†	AD	AD	†	LT	LT			
	Law enforcement	R-W	VOICE	CU	†	EO	OP	†	MED	LT		Σ: 1 CU VOICE circuit 1 CU TTY circuit	
		R-W	TTY	CU	†	EO	OP	†	MED	LT			
	Fire	R-W	VOICE	CU	†	EO	OP	†	MED	MED			

Table 45 (continued)

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency PW	Urgency E	Urgency RCV	Density PW	Density E	Density RCV	Summary for Links	Derived Number and Kinds of Circuits	Notes
Field offices of federal agencies (links per user per agency)	State area CD Director	R-W	VOICE	CU	†	AD	AD	†	LT	LT	Range: 1 CU VOICE MED – 1 CU VOICE LT	0.05 CU VOICE circuit	
	Agriculture‡	R-W	VOICE	CU	†	AD	AD	†	LT	MED		0.02 CU VOICE circuit	
	Fire§	R-W	VOICE	SU	†	EO	OP	†	MED	MED			
	Utilities‡	R-W	VOICE	SU	†	AD	AD	†	LT	LT		Σ: 1 CU VOICE circuit	Per agency per user
	Transportation‡	R-W	VOICE	CU	†	AD	AD	†	LT	LT			
											1 SU VOICE MED	1 SU VOICE circuit	U.S. Forest Service only
Point of entry to emergency broadcast networks	Warning	R-W	VOICE	SU	†	EO	EO	†	LT	LT	3 SU VOICE LT	1 SU VOICE circuit	For use of information functional area only
	Public information	R-W	VOICE	SU	†	EO	EO	†	LT	LT			
	Communications	R-W	VOICE	SU	†	OP	OP	†	LT	LT			
Selected industrial facilities (links per user per facility)	Manpower	W	VOICE	SU	†	AD	AD	†	LT	MED	Range: 1 SU VOICE HVY – 1 SU VOICE LT; 1 SU TTY HVY – 1 SU TTY LT	Σ:	
		W	TTY	SU	†	AD	AD	†	LT	MED			
	Food**	W	VOICE	SU	†	OP	OP	†	LT	MED		1 SU VOICE circuit	To each facility from each user
		W	TTY	SU	†	OP	OP	†	LT	MED			
	Agriculture††	R-W	VOICE	SU	†	AD	AD	†	LT	LT		1 SU TTY circuit	To manpower, food, and transportation facilities only
	Industrial	R-W	VOICE	SU	†	AD	OP	†	LT	MED			
	Petroleum‡‡	R-W	VOICE	SU	†	OP	OP	†	LT	MED			
	Utilities§§	R-W	VOICE	SU	†	OP	OP	†	LT	MED			
	Utilities***	R-W	VOICE	SU	†	OP	OP	†	MED	HVY			
	Transportation	R-W	VOICE	SU	†	AD	OP	†	LT	HVY			
		R-W	TTY	SU	†	AD	OP	†	LT	HVY			
State law enforcement field agencies (links per agency)	Law enforcement	R-W	VOICE	SU	†	EO	OP	†	HVY	MED	1 SU VOICE HVY	0.1 SU VOICE circuit	
		R-W	TTY	SU	†	EO	OP	†	HVY	MED	1 SU TTY HVY	0.1 SU TTY circuit	
												Σ: 1 SU VOICE circuit; 1 SU TTY circuit	May include mobile radio nets

Table 45 (continued)

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency PW	Urgency E	Urgency RCV	Density PW	Density E	Density RCV	Summary for Links	Derived Number and Kinds of Circuits	Notes
State fire and rescue field organizations (links per organization)	Fire	R-W	VOICE	SU	†	EO	OP	†	HVY	MED	1 SU VOICE HVY	0.2 SU VOICE circuit Σ: 1 SU VOICE circuit	May include mobile radio nets
State public health resources and field organizations (links per organization)	Public health	R-W R-W	VOICE TTY	SU SU	† †	OP OP	OP OP	† †	MED MED	MED MED	1 SU VOICE MED 1 SU TTY MED	0.1 SU VOICE circuit 0.1 SU TTY circuit Σ: 1 SU VOICE circuit 1 SU TTY circuit	May include mobile radio nets
State medical field facilities (links per facility)	Medical	R-W	VOICE	SU	†	EO	OP	†	HVY	MED	1 SU VOICE HVY	0.1 SU VOICE circuit Σ: 1 SU VOICE circuit	
State welfare field organizations (links per organization)	Welfare	R-W R-W	VOICE TTY	SU SU	† †	OP OP	OP OP	† †	HVY MED	HVY HVY	1 SU VOICE HVY 1 SU TTY HVY	0.1 SU VOICE circuit 0.1 SU TTY circuit Σ: 1 SU VOICE circuit 1 SU TTY circuit	
State field engineering resources (links per resource point)	Engineering	R-W	VOICE	SU	†	AD	OP	†	LT	MED	1 SU VOICE MED	0.1 SU VOICE circuit Σ: 1 SU VOICE circuit	May include mobile radio nets

Table 15 (concluded)

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency PW	Urgency E	Urgency RCV	Density PW	Density E	Density RCV	Summary for Links	Derived Number and Kinds of Circuits	Notes
State utilities repair and maintenance field units, where these exist in state area (links per field unit)	Utilities	R-W	VOICE	··	†	OP	OP	†	MED	HVY	1 SU VOICE HVY	0.1 SU VOICE circuit 1 SU VOICE circuit	May include mobile radio nets

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• No traffic.
† Normal peacetime CD preparatory traffic.
‡ Where these agencies exist within state area.
! Link to U.S. Forest Service.
•• Processed food storage and preparation facilities.
†† Unprocessed food storage facilities (if assigned to state area control).
‡‡ Storage points and refineries not linked to local EOCs.
;; Private companies.
••• State controlled companies.

Table 46

STATE LEVEL COMMUNICATIONS CIRCUIT REQUIREMENTS FOR STATES WITH 2-5 MILLION POPULATION

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency PW	Urgency E	Urgency RCV	Density PW	Density E	Density RCV	Summary for Links	Derived Number and Kinds of Circuits	Notes
State area or local EOCs (links per EOC)	Governor	R-W	VOICE	CU	•	AD OP	AD	•	LT	LT	31 Links		
	CD Director	R-W	VOICE	CU	•	EO	OP	†	LT	LT	Heaviest demand occurs in recovery phase:		
		W	TTY	CU	•	EO	OP	†	LT	LT			
	Planning	R-W	VOICE	CU	•	AD	AD	•	MED	MED			
	Intelligence and statistical analysis	R-W	TTY	CU	•	AD	AD	•	HVY ‡	HVY ‡	10 CU VOICE MED	1 CU VOICE system	
	Warning	R-W	VOICE	SU	•	EO	EO	•	LT	LT	9 CU VOICE LT	0.45 CU VOICE system	
	Public information	R-W	VOICE	CU	•	EO	OP	•	LT	LT			
	Manpower	R-W	VOICE	CU	•	AD	AD	•	LT	MED			
		W	TTY	CU	•	AD	AD	•	LT	MED	1 CU TTY HVY	0.2 CU TTY system	
	Food	R-W	VOICE	CU	•	AD	OP	•	LT	MED	6 CU TTY MED	0.6 CU TTY system	
		W	TTY	CU	•	AD	OP	•	LT	MED	4 CU TTY LT	0.2 CU TTY system	
	Water	R-W	VOICE	CU	•	AD	OP	•	LT	LT	Σ: 2 CU VOICE circuits		Cities with >500,000 population will require more CU VOICE circuits
		W	TTY	CU	•	AD	OP	•	LT	LT			
	Agriculture	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		W	TTY	CU	•	AD	AD	•	LT	LT			
	Industrial	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
	Petroleum	R-W	VOICE	CU	•	AD	AD	•	LT	MED		1 CU TTY circuit	
	Law enforcement	R-W	VOICE	CU	•	AD OP	OP	•	HVY	MED	1 SU VOICE LT		
		W	TTY	CU	•	AD OP	OP	•	HVY	MED		1 SU VOICE circuit	Warning: preemption right on CU circuit may be substituted
	Fire	R-W	VOICE	CU	•	EO	OP	•	HVY	MED			
	Medical	R-W	VOICE	CU	•	OP	AD	•	MED	LT			
	Public health	R-W	VOICE	CU	•	AD	OP	•	MED	MED			
		W	TTY	CU	•	AD	OP	•	MED	MED			
	Welfare	R-W	VOICE	CU	•	AD	AD	•	LT	MED			
		W	TTY	CU	•	AD	AD	•	LT	MED			
	Engineering	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
	Utilities	R-W	VOICE	CU	•	AD	OP	•	LT	MED			
		W	TTY	CU	•	AD	OP	•	LT	MED			
	Transportation	R-W	VOICE	CU	•	AD	OP	•	LT	MED			
	General administration	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		W	TTY	CU	•	AD	AD	•	LT	LT			
Regional CD headquarters	Governor	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
	CD Director	R-W	VOICE	CU	†	EO	OP	•	LT	LT			
		W	TTY	CU	†	EO	OP	•	LT	LT			
	Planning	R-W	VOICE	CU	†	AD	AD	•	MED	MED			
		W	TTY	CU	†	AD	AD	†	MED	MED			
	Intelligence and statistical analysis	R-W	VOICE	CU	†	AD	AD	†	HVY	HVY			
		W	TTY	CU	†	AD	AD	†	HVY	HVY			
	Warning	R-W	VOICE	SU	†	EO	OP	†	LT	LT			
	Public informatio.	R-W	VOICE	CU	†	EO	AD	†	LT	LT			
	Communications	R-W	VOICE	CU	†	AD	AD	†	LT	LT			

Table 46 (continued)

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency PW	Urgency E	Urgency RCV	Density PW	Density E	Density RCV	Summary for Links	Derived Number and Kinds of Circuits	Notes
Regional CD headquarters (cont.)	Manpower	R-W	VOICE	CU	†	AD	AD	†	LT	LT	33 Links		
		W	TTY	CU	†	AD	AD	†	LT	LT			
	Food	R-W	VOICE	CU	†	AD	AD	†	LT	MED	Heaviest demand occurs in recovery phase:		
		W	TTY	CU	†	AD	AD	†	LT	MED			
	Water	R-W	VOICE	CU	†	AD	AD	†	LT	LT			
		W	TTY	CU	†	AD	AD	†	LT	LT			
	Agriculture	R-W	VOICE	CU	†	AD	AD	†	LT	LT	1 CU VOICE HVY	0.2 CU VOICE system	
		W	TTY	CU	†	AD	AD	†	LT	LT			
	Industrial	R-W	VOICE	CU	†	AD	AD	†	LT	LT	6 CU VOICE MED	0.6 CU VOICE system	
		W	TTY	CU	†	AD	AD	†	LT	LT			
	Petroleum	R-W	VOICE	CU	†	AD	AD	†	MED	MED	11 CU VOICE LT	0.55 CU VOICE system	
		W	TTY	CU	†	AD	AD	†	MED	MED			
	Medical	R-W	VOICE	CU	†	AD	AD	†	MED	MED			
	Public health	R-W	VOICE	CU	†	AD	OP	†	MED	MED	1 CU TTY HVY	0.2 CU TTY system	
		W	TTY	CU	†	AD	OP	†	MED	MED	5 CU TTY MED	0.5 CU TTY system	
	Welfare	R-W	VOICE	CU	†	AD	AD	†	LT	LT	8 CU TTY LT	0.4 CU TTY system	
		W	TTY	CU	†	AD	AD	†	LT	LT		Σ: 2 CU VOICE circuits	
	Utilities	R-W	VOICE	CU	†	AD	OP	†	LT	MED		1 CU TTY circuit	
		W	TTY	CU	†	AD	OP	†	LT	MED	1 SU VOICE LT	1 SU VOICE circuit	Warning: preemption right on CU circuit may be substituted
	Transportation	R-W	VOICE	CU	†	AD	AD	†	LT	LT			
		W	TTY	CU	†	AD	AD	†	LT	LT			
	General administration	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		W	TTY	CU	•	AD	AD	•	LT	LT			
Field offices of federal agencies (links per agency office)	Governor	R-W	VOICE	CU	†	AD	AD	•	LT	LT	7 Links		
	CD Director	R-W	VOICE	CU	†	AD	AD	†	LT	LT			
	Food	R-W	VOICE	CU	†	AD	AD	†	MED	MED	Heaviest demand occurs in recovery phase:		
	Water	R-W	VOICE	CU	†	AD	AD	†	LT	MED			
	Agriculture	R-W	VOICE	CU	†	AD	AD	†	LT	MED			
	Utilities	R-W	VOICE	CU	†	AD	OP	†	LT	LT			
	Transportation	R-W	VOICE	CU	•	AD	OP	•	LT	LT	3 CU VOICE MED	0.3 CU VOICE system	
											4 CU VOICE LT	0.2 CU VOICE system	
												Σ: 1 CU VOICE circuit	
State fire and rescue field organizations (links per organization or station)	Fire	R-W	VOICE	SU	†	EO	OP	†	HVY	MED	1 Link		
											1 SU VOICE HVY	SU VOICE circuit	

Table 16 (continued)

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency			Density			Summary for Links	Derived Number and Kinds of Circuits	Notes
					Pk	E	RCV	Pk	E	RCV			
State field engineering resources (links per resource point)	Engineering	R-W	VOICE	SU	†	AD	OP	†	MED	MED	1 Link 1 SU VOICE MED	1 SU VOICE circuit	
Bordering and nearby State EOCs (links per EOC)	Governor	R-W	VOICE	CU	†	AD	AD	†	LT	LT	27 Links Heaviest demand occurs in recovery phase: 4 CU VOICE MED 13 CU VOICE LT 1 CU TTY MED 9 CU TTY LT	0.40 CU VOICE system 0.65 CU VOICE system 0.10 CU TTY system 0.45 CU TTY system	
	CD Director	R-W	VOICE	CU	†	AD	AD	†	LT	LT			
		W	TTY	CU	†	AD	AD	†	LT	LT			
	Planning	R-W	VOICE	CU	†	AD	AD	†	MED	MED			
	Intelligence and statistical analysis	W	TTY	CU	†	AD	AD	†	MED	MED			
	Manpower	R-W	VOICE	CU	†	AD	AD	†	LT	LT			
		W	TTY	CU	†	AD	AD	†	LT	LT			
	Food	R-W	VOICE	CU	†	AD	AD	†	LT	LT			
		W	TTY	CU	†	AD	AD	†	LT	LT			
	Water	R-W	VOICE	CU	†	AD	AD	†	LT	LT			
	Agriculture	R-W	VOICE	CU	†	AD	AD	†	LT	LT			
		W	TTY	CU	†	AD	AD	†	LT	LT			
	Industrial	R-W	VOICE	CU	†	AD	AD	†	LT	LT			
		W	TTY	CU	†	AD	AD	†	LT	LT			
	Petroleum	R-W	VOICE	CU	†	AD	AD	†	LT	LT			
		W	TTY	CU	†	AD	AD	†	LT	LT			
	Law enforcement	R-W	VOICE	CU	†	AD	AD	†	LT	LT			
		W	TTY	CU	†	AD	AD	†	LT	LT			
	Fire	R-W	VOICE	CU	*	EO	OP	†	MED	MED			
	Medical	R-W	VOICE	CU	†	AD	OP	†	LT	MED			
	Public health	R-W	VOICE		†	AD	AD	†	LT	MED			
	Welfare	R-W	VOICE	CU	†	AD	AD	†	LT	LT			
	Engineering	R-W	VOICE	CU	†	AD	OP	†	LT	LT			
	Utilities	R-W	VOICE	CU	†	AD	AD	†	LT	LT			
		W	TTY	CU	†	AD	AD	†	LT	LT			
	General administration	R-W	VOICE	CU	†	AD	AD	†	LT	LT			
		W	TTY	CU	†	AD	AD	†	LT	LT			
Utility repair and maintenance field units (links per unit)	Utilities	R-W	VOICE	SU	†	OP	OP	†	MED	HVY	1 Link 1 SU VOICE HVY	1 SU VOICE circuit	
State utility operating facilities (links per facility)	Utilities	R-W	VOICE	SU	†	OP	OP	†	MED	HVY	1 Link 1 SU VOICE HVY	1 SU VOICE circuit	

Table 46 (continued)

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency			Density			Summary for Links	Derived Number and Kinds of Circuits	Notes
					FW	E	RCV	FW	E	RCV			
Military CD director (adjutant general of state)	Governor	R-W	VOICE	CU	†	AD	AD	†	LT	LT	8 Links		
	CD Director	R-W	VOICE	CU	†	OP	OP	†	LT	LT	2 CU VOICE MED	0.2 CU VOICE system	
	Planning	R-W	VOICE	CU	†	AD	AD	†	MED	MED	3 CU VOICE LT	0.15 CU VOICE system	
	Intelligence and statistical analysis	W	TTY	CU	†	AD	AD	†	HVY	MED	2 CU TTY MED	0.2 CU TTY system	
	Law enforcement	R-W	VOICE	CU	†	OP	OP	†	LT	MED	1 CU TTY LT	0.05 CU TTY system	
		W	TTY	CU	†	OP	OP	†	LT	MED			
	General administration	R-W	VOICE	CU	†	AD	AD	†	LT	LT		Σ: 1 CU VOICE circuit	
		W	TTY	CU	†	AD	AD	†	LT	LT		1 CU TTY circuit	
State medical field facilities (links per facility)	Medical	R-W	VOICE	SU	†	EO	OP	†	HVY	MED	1 Link		
											1 SU VOICE HVY	1 SU VOICE circuit	
Non-CD military organization (links per organization)	CD Director (military coordination)	R-W	VOICE	CU	†	OP	AD	†	LT	MED	1 Link		
											1 CU VOICE MED	1 CU VOICE circuit	
Federal CD and military warning nets (links per net)	Warning	R-W	VOICE	SU	†	EO	EO	†	LT	LT	1 Link		
											1 SU VOICE LT	1 SU VOICE circuit	
State public health field resources (links per resource point)	Public health	R-W	VOICE	SU	†	OP	OP	†	HVY	HVY	2 Links	Σ:	
		W	TTY	SU	†	OP	OP	†	HVY	HVY	1 SU VOICE HVY	1 SU VOICE circuit	
											1 SU TTY HVY	1 SU TTY circuit	
Point of entry to emergency AM broadcast networks	Warning	R-W	VOICE	SU	†	EO	OP	†	LT	LT	1 Link		
											1 SU VOICE LT	1 SU VOICE circuit	

Table 16 (concluded)

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency PW	Urgency E	Urgency RCV	Density PW	Density E	Density RCV	Summary for Links	Derived Number and Kinds of Circuits	Notes
State and/or local radio stations	Public information Communications	R-W R-W	VOICE VOICE	SU SU or CU	* †	 OP	EO OP	† †	 MED	LT MED	2 Links 1 SU VOICE LT 1 SU or CU VOICE MED	0.05 CU VOICE system 0.10 CU VOICE system Σ: 1 CU VOICE circuit	
Selected industrial facility (link per facility per user at EOC.	Manpower	R-W W	VOICE TTY	SU SU	† †	AD AD	AD AD	† †	LT LT	MED MED	10 Links Heaviest demand occurs in recovery phase: 8 SU VOICE MED 2 SU TTY MED	0.8 SU VOICE system 0.2 SU TTY system Σ: 1 SU VOICE circuit 1 SU TTY circuit	Large facilities will not increase circuit requirements measurably
	Food	R-W W	VOICE TTY	SU SU	† †	OP OP	OP OP	† †	MED MED	MED MED			
	Water	R-W	VOICE	SU	†	OP	OP	†	MED	MED			
	Agriculture	R-W	VOICE	SU	†	AD	OP	†	MED	MED			
	Industrial	R-W	VOICE	SU	†	AD	OP	†	MED	MED			
	Petroleum	R-W	VOICE	SU	†	OP	OP	†	MED	MED			
	Utilities	R-W	VOICE	SU	†	OP	OP	†	LT	MED			
	Transportation	R-W	VOICE	SU	†	AD	OP	†	LT	MED			
State law enforcement field agencies (links per agency or station)	Law enforcement	R-W W	VOICE TTY	SU SU	† †	EO EO	OP OP	† †	HVY HVY	HVY HVY	2 Links 1 SU VOICE HVY 1 SU TTY HVY	1 SU VOICE circuit 1 SU TTY circuit	
State welfare field organizations (links per organization or station)	Welfare	R-W W	VOICE TTY	SU SU	† †	OP OP	OP OP	† †	HVY HVY	HVY HVY	2 Links 1 SU VOICE HVY 1 SU TTY HVY	1 SU VOICE circuit 1 SU TTY circuit	

* No traffic.
† Normal peacetime CD preparatory traffic.
‡ Many messages funnel into state EOC.

Table 47

REGIONAL LEVEL COMMUNICATIONS CIRCUIT REQUIREMENTS FOR REGIONS WITH 10-20 MILLION POPULATION

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency PW	Urgency E	Urgency RCV	Density PW	Density E	Density RCV	Summary for Links	Derived Number and Kinds of Circuits	Notes
National OCD headquarters	Command and control	R-W	VOICE	CU	•	AD	AD	•	LT	MED			
		R-W	TTY	CU	•	AD	AD	•	LT	MED			
		R-W	DATA	CU	•	AD	AD	•	LT	MED			
		R-W	VIDEO	CU	•	AD	AD	•	LT	MED			
	Planning	R-W	VOICE	CU	•	AD	AD	•	LT	MED			
		R-W	TTY	CU	•	AD	AD	•	LT	MED			
		R-W	DATA	CU	•	AD	AD	•	LT	MED			
		R-W	VIDEO	CU	•	AD	AD	•	LT	MED			
	Information	R-W	VOICE	CU	•	AD	AD	•	LT	MED			
		R-W	DATA	CU	•	AD	AD	•	LT	MED			
		R-W	TTY	CU	•	AD	AD	•	LT	MED			
	Intelligence and statistical analysis	R-W	VOICE	CU	•	AD	AD	•	MED	MED			
		R-W	DATA	CU	•	AD	AD	•	MED	MED			
		R-W	TTY	CU	•	AD	AD	•	MED	MED			
	Public health-medical	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	DATA	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
	Welfare	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	DATA	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
	Resources management												
	Manpower	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
		R-W	DATA	CU	•	AD	AD	•	LT	LT			
		R-W	VIDEO	CU	•	AD	AD	•	LT	LT			
	Food	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
		R-W	DATA	CU	•	AD	AD	•	LT	LT			
		R-W	VIDEO	CU	•	AD	AD	•	LT	LT			
	Water	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
		R-W	DATA	CU	•	AD	AD	•	LT	LT			
		R-W	VIDEO	CU	•	AD	AD	•	LT	LT			
	Fuel and energy	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
		R-W	DATA	CU	•	AD	AD	•	LT	LT			
		R-W	VIDEO	CU	•	AD	AD	•	LT	LT			
	Minerals	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
		R-W	DATA	CU	•	AD	AD	•	LT	LT			
		R-W	VIDEO	CU	•	AD	AD	•	LT	LT			
	Transportation	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
		R-W	DATA	CU	•	AD	AD	•	LT	LT			
		R-W	VIDEO	CU	•	AD	AD	•	LT	LT			

Table 47 (continued)

EOC Communications Links to	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency PW	Urgency E	Urgency RCV	Density PW	Density E	Density RCV	Summary for Links	Derived Number and Kinds of Circuits	Notes
National OCD headquarters (cont.)	Resources management (cont.) Production	R-W	VOICE	CU	•	AD	AD	•	LT	LT	58 Links		
		R-W	TTY	CU	•	AD	AD	•	LT	LT	Heaviest demand occurs in recovery phase:		
		R-W	DATA	CU	•	AD	AD	•	LT	LT			
		R-W	VIDEO	CU	•	AD	AD	•	LT	LT			
	Telecommunications	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
		R-W	DATA	CU	•	AD	AD	•	LT	LT	5 CU VOICE MED	0.50 CU VOICE system	
		R-W	VIDEO	CU	•	AD	AD	•	LT	LT	11 CU VOICE LT	0.55 CU VOICE system	
	Housing	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT	5 CU TTY MED	0.50 CU TTY system	
		R-W	DATA	CU	•	AD	AD	•	LT	LT			
		R-W	VIDEO	CU	•	AD	AD	•	LT	LT			
	Government operation	R-W	VOICE	CU	•	AD	AD	•	LT	MED	11 CU TTY LT	0.55 CU TTY system	
		R-W	TTY	CU	•	AD	AD	•	LT	MED		or	
											4 CU DATA MED	0.4 CU DATA system	
											11 CU DATA LT	0.55 CU DATA system	Optional to TTY system
												or	
											2 CU VIDEO MED	0.2 CU VIDEO system	
											9 CU VIDEO LT	0.45 CU VIDEO system	Optional to TTY system
												Σ: 1 CU VOICE circuit 1 CU TTY, DATA, or VIDEO circuit	
National OEP headquarters (including NREC)	Command and control	R-W	VOICE	CU	•	AD	AD	•	LT	MED	6 Links		
		R-W	DATA	CU	•	AD	AD	•	LT	MED	2 CU VOICE MED	0.2 CU VOICE system	
		R-W	TTY	CU	•	AD	AD	•	LT	MED	2 CU DATA MED	0.2 CU DATA system	
	Intelligence and statistical analysis	R-W	VOICE	CU	•	AD	AD	•	MED	MED	2 CU TTY MED	0.2 CU TTY system	
		R-W	DATA	CU	•	AD	AD	•	MED	MED			
		R-W	TTY	CU	•	AD	AD	•	MED	MED		Σ: 1 CU VOICE circuit 1 TTY or DATA circuit	

Table 47 (continued)

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency PW	Urgency E	Urgency RCV	Density PW	Density E	Density RCV	Summary for Links	Derived Number and Kinds of Circuits	Notes
State EOCs (links per EOC in states with 2-5 million population)	Command and control	R-W	VOICE	CU		AD	AD	•	LT	MED	40 Links		
	Planning	R-W	VOICE	CU	•	AD	AD	•	MED	MED			
	Information	R-W	VOICE	CU	•	AD	AD	•	LT	MED	Heaviest demand occurs in recovery phase:		
		W	TTY	CU	•	AD	AD	•	LT	MED			
	Intelligence and statistical analysis	R-W	VOICE	CU	•	AD	AD	•	HVY	HVY	1 CU VOICE HVY	1.65 CU VOICE systems	
		W	TTY	CU	•	AD	AD	•	HVY	HVY			
	Public health-medical	R-W	VOICE	CU	•	AD	AD	•	MED	MED	14 CU VOICE MED	1.60 CU TTY systems	
		W	TTY					•	MED	MED			
	Welfare	R-W	VOICE	CU	•	AD	AD	•	LT	LT	1 CU VOICE LT	0.90 CU DATA system	Optional to TTY system
		W	TTY	CU	•	AD	AD	•	LT	LT			
	Resources management												
	Manpower	R-W	VOICE	CU	•	AD	AD	•	MED	MED	1 CU TTY HVY 13 CU TTY MED 1 CU TTY LT 9 CU DATA MED	Σ: 2 CU VOICE circuits 1 CU TTY or DATA circuit	See Table 46, state EOC-region EOC links
		W	TTY	CU	•	AD	AD	•	MED	MED			
		W	DATA	CU	•	AD	AD	•	MED	MED			
	Food	R-W	VOICE	CU	•	AD	AD	•	MED	MED			
		W	TTY	CU	•	AD	AD	•	MED	MED			
		W	DATA	CU	•	AD	AD	•	MED	MED			
	Water	R-W	VOICE	CU	•	AD	AD	•	MED	MED			
		W	TTY	CU	•	AD	AD	•	MED	MED			
		W	DATA	CU	•	AD	AD	•	MED	MED			
	Fuel and energy	R-W	VOICE	CU	•	AD	AD	•	MED	MED			
		W	TTY	CU	•	AD	AD	•	MED	MED			
		W	DATA	CU	•	AD	AD	•	MED	MED			
	Minerals	R-W	VOICE	CU	•	AD	AD	•	MED	MED			
		W	TTY	CU	•	AD	AD	•	MED	MED			
		W	DATA	CU	•	AD	AD	•	MED	MED			
	Transportation	R-W	VOICE	CU	•	AD	AD	•	MED	MED			
		W	TTY	CU	•	AD	AD	•	MED	MED			
		W	DATA	CU	•	AD	AD	•	MED	MED			
	Production	R-W	VOICE	CU	•	AD	AD	•	MED	MED			
		W	TTY	CU	•	AD	AD	•	MED	MED			
		W	DATA	CU	•	AD	AD	•	MED	MED			
	Telecommunications	R-W	VOICE	CU	•	AD	AD	•	MED	MED			
		W	TTY	CU	•	AD	AD	•	MED	MED			
		W	DATA	CU	•	AD	AD	•	MED	MED			
	Housing	R-W	VOICE	CU	•	AD	AD	•	MED	MED			
		W	TTY	CU	•	AD	AD	•	MED	MED			
		W	DATA	CU	•	AD	AD	•	MED	MED			
	Government operation	R-W	VOICE	CU	•	AD	AD	•	LT	MED			
		W	TTY	CU	•	AD	AD	•	LT	MED			

Table 47 (continued)

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency PW	Urgency E	Urgency RCV	Density PW	Density E	Density RCV	Summary for Links	Derived Number and Kinds of Circuits	Notes
ZI Army headquarters (links per headquarters within the OCD region)	Command and control	R-W	VOICE	CU	•	AD	AD	•	LT	LT	18 Links		
	Military coordination	R-W	VOICE	CU	•	AD	AD	•	MED	MED	Heaviest demand occurs in recovery phase		
		R-W	TTY	CU	•	AD	AD	•	MED	MED			
	Planning	R-W	VOICE	CU	•	AD	AD	•	LT	MED			
	Public health-medical	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
	Welfare	R-W	VOICE	CU	•	AD	AD	•	LT	LT	2 CU VOICE MED	0.2 CU VOICE system	
		R-W	TTY	CU	•	AD	AD	•	LT	LT	6 CU VOICE LT	0.4 CU VOICE system	
	Resources management												
	Food	R-W	VOICE	CU	•	AD	AD	•	LT	LT	1 CU TTY MED	0.1 CU TTY system	
		R-W	TTY	CU	•	AD	AD	•	LT	LT	7 CU TTY LT	0.35 CU TTY system	
	Water	R-W	VOICE	CU	•	AD	AD	•	LT	LT		Σ: 1 CU VOICE circuit	
		R-W	TTY	CU	•	AD	AD	•	LT	LT		1 CU TTY circuit	
	Fuel and energy	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
	Transportation	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
	Housing	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
Bordering region EOCs (links per region)	Command and control	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
	Planning	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
	Information	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
	Intelligence and statistical analysis	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
	Public health-medical	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
	Welfare	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU		AD	AD	•	LT	LT			
	Resources management												
	Manpower	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
	Food	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
	Water	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
	Fuel and energy	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
	Minerals	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
	Transportation	R-W	VOICE	CU	•	AD	AD	•	LT	LT			
		R-W	TTY	CU	•	AD	AD	•	LT	LT			

Table 47 (concluded)

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency PW	Urgency E	Urgency RCV	Density PW	Density E	Density RCV	Summary for Links	Derived Number and Kinds of Circuits	Notes
Bordering region EOCs (cont.)	Resources management (cont.)												
	Production	R-W	VOICE	CU	•	AD	AD	•	LT	LT	29 Links		
		R-W	TTY	CU	•	AD	AD	•	LT	LT			
	Telecommunications	R-W	VOICE	CU	•	AD	AD	•	LT	LT	15 CU VOICE LT	0.75 CU VOICE system	
		R-W	TTY	CU	•	AD	AD	•	LT	LT	14 CU TTY LT	0.70 CU TTY system	
	Housing	R-W	VOICE	CU	•	AD	AD	•	LT	LT		Σ: 1 CU VOICE circuit	
		R-W	TTY	CU	•	AD	AD	•	LT	LT		1 CU TTY circuit	
NORAD (NAWAS)	Information (warning)	W	VOICE	SU	•	EO	EO	•	LT	LT	1 SU Link	1 SU VOICE circuit	
Other military warning systems within region	Information (warning)	R-W	VOICE	SU CU	•	EO	EO	•	LT	LT	3 Links		
		R-W	TTY	SU CU	•	EO	EO	•	LT	LT	1 SU or CU VOICE LT	1 SU or CU VOICE system or	DATA system optional to TTY system
		R-W	DATA	SU CU	•	EO	EO	•	LT	LT	1 SU or CU TTY LT	1 SU or CU TTY system	
											1 SU or CU DATA LT		

• Normal peacetime CD preparatory traffic.

From the Summary for Links the number and kinds of circuits are derived by multiplying the percentage of estimated circuit loading (Table 50, p. 138) per link (20% for light, 50% for medium, 100% for heavy in cities > 500,000) by the number of each type of link. For example, 17 CU voice links lightly loaded x 20% loading = 3.4 CU voice circuits. Two CU medium loaded voice links x 50% loading factor = 1 additional CU circuit or 4.4 in all. Similarly TTY circuits total 3.5. Rounding up or down, on the basis of the following, accounts for a total of 4 CU voice circuits and 3 CU TTY circuits connecting state and local EOCs in this case. In some cases, the rounding off process resulted in the next lower number of whole circuits when the decimal was less than 0.5. In other cases, as in the CU voice example above, the rounding off resulted in the next higher whole number of circuits even though the decimal was less than 0.5. The increase or decrease was adopted after a study of the expected nature of circuit loadings for each path being considered. That is, if the expected flows of information in the majority of paths were likely to be bunched occasionally, that is, to follow a diurnal pattern of increased loading--such as first thing in the morning and late in the afternoon--the next higher number was adopted despite the value of the fraction. Time-urgency of traffic was also a factor in these cases. Where traffic occurrence was expected to be truly random throughout any 24-hour period in the time phase under consideration, and where the time-urgency was relatively low for the majority of paths being considered, the next lower whole number of circuits was adopted even when the fraction was 0.5 or slightly more. In practice, it will be necessary to make judgments in each specific case.

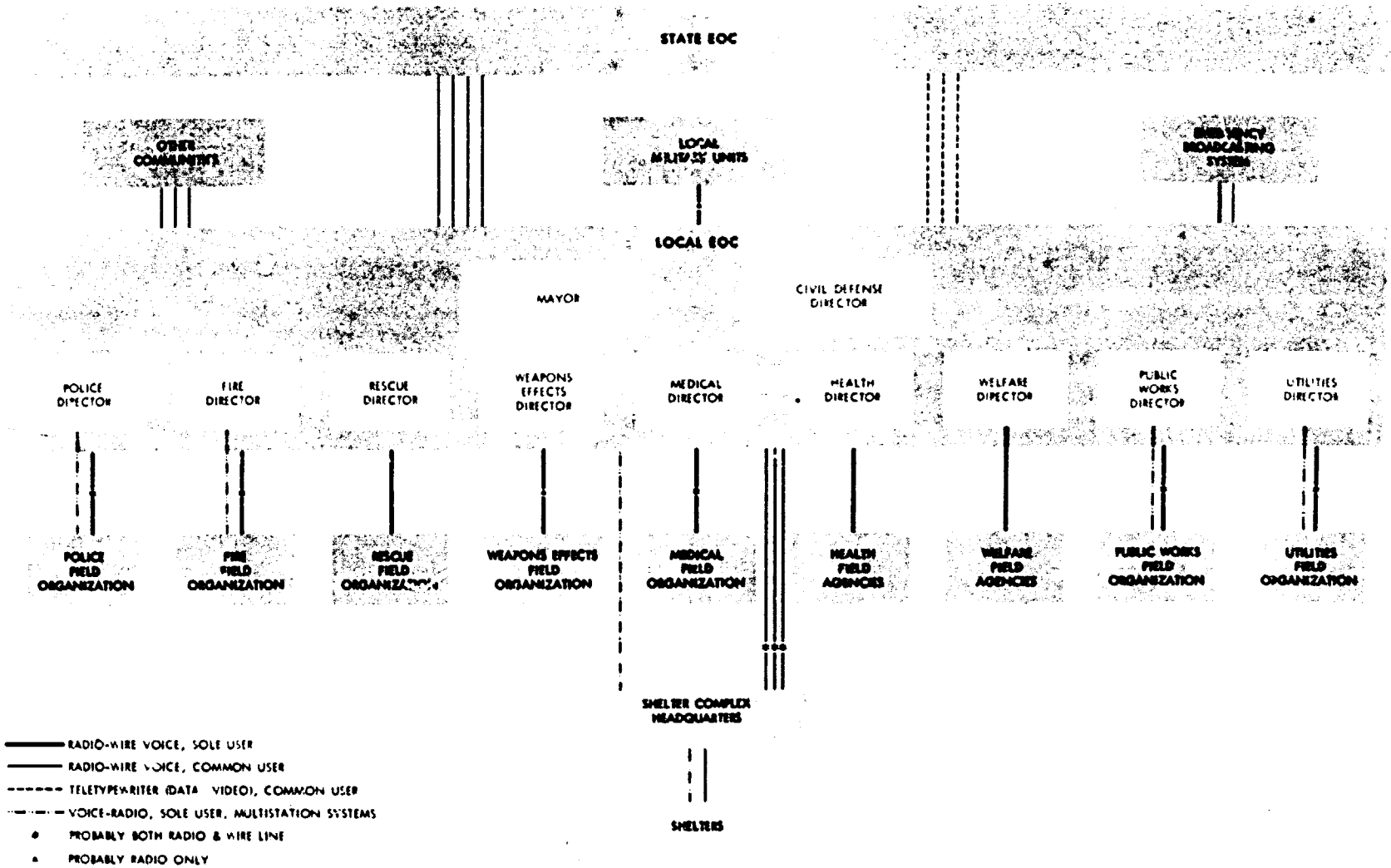
Communications Circuit Diagrams

Local

The communications circuit diagram in Figure 2 depicts the local EOC as a block containing the several functional area directors and their executive staffs. This block also depicts a communications switchboard, signifying that most of the incoming circuits are not actually connected directly to any single functional area. Thus, all these circuits are available to anyone in the EOC. However, as indicated in the tables and diagrams, certain circuits are sole user in nature and normally are considered associated with a specific EOC functional area director. This is because certain functional area directors normally have available to them sole-user multistation radio nets which they may be expected to control in an emergency situation. For example, police, fire, public works, and utilities organizations frequently have mobile communications systems that may be used in the emergency situation. These circuits are shown in Figure 2 as lines going directly to the functional area director; this indicates that he is the person in the EOC with direct access to the mobile radio net in question.

FIGURE 2

DERIVED COMMUNICATIONS CIRCUIT REQUIREMENTS BETWEEN LOCAL LEVEL EOC AND OUTSIDE AGENCIES FOR CITIES OVER 500,000 POPULATION



The Fallout Shelter Case

The local communications requirements shown in Figure 2 were derived for cities with populations of over 500,000, given the existence of a fallout shelter posture. This case reflects the movement of the populace to local fallout shelter protection with the community experiencing fallout and lower order blast and fire effects, if any.

The Blast Shelter Case

At the local level, the blast shelter case occasions some increases in density of traffic flow. These increases reflect the case where blast has occurred leaving sheltered survivors with little or no immediately external resources and therefore making them dependent on extra-local support in several areas. Where blast has not occurred, communications requirements will in general be the same as those in the fallout shelter case. The increases are derived in Table 48 and are summarized in Table 49. The derivations were obtained using the same logic as that discussed above, and may be described as follows.

EOC to State. Circuit loading increases from light to medium during one or more time phases for rescue, medical, welfare, and utilities directors. The loading increases from medium to heavy during one phase for the public works director.

EOC to Other Communities. Circuit loading increases from light to medium in one or more phases for the police, medical, health, and welfare directors.

EOC to Shelter Complex Headquarters. Circuit loading increases from light to medium in one or more phases for the police, fire, rescue, weapons effects, and utilities directors. It increases from medium to heavy in one phase for the medical and welfare directors.

The field organizations managed by the various functional directors--particularly rescue, weapons effects, medical, health, and welfare--may be expected to experience circuit load increases in the blast shelter case.

Table 48

COMMUNICATIONS CIRCUITS TO SUPPORT LOCAL CIVIL DEFENSE OPERATIONS FOR CITIES OF 500,000 POPULATION OR LARGER
Blast Shelter Case

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency				Density				Summary for Links	Derived Number and Kinds of Circuits	Notes
					TS	IS	E	RCV	TS	IS	E	RCV			
State EOC													30 Links		
Governor	Mayor	R-W	VOICE	CU	OP	AD	OP	AD	LT	LT	LT	LT	Heaviest demand occurs in emergence phase:		
CD Director	CD Director	R-W	VOICE	CU	AD	AD	OP	AD	LT	LT	LT	LT			
Public Safety	Police	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
		W	TTY	CU	AD	AD	AD	AD	LT	LT	LT	LT			
Intelligence and statistical analysis	Police	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT	1 CU VOICE HVY	1.0 CU VOICE system	
		W	TTY-DATA	CU	AD	AD	AD	AD	LT	LT	LT	LT	3 CU VOICE MED	1.5 CU VOICE systems	
Public safety	Fire	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT	15 CU VOICE LT	3.0 CU VOICE systems	
		W	TTY	CU	AD	AD	AD	AD	LT	LT	LT	LT			
Intelligence and statistical analysis	Fire	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT	2 CU TTY MED	1.0 CU TTY system	
		W	TTY-DATA	CU	AD	AD	AD	AD	LT	LT	LT	LT			
Public safety	Rescue	R-W	VOICE	CU	AD	AD	AD	AD	MED	MED	LT	LT	9 CU TTY LT	1.8 CU TTY systems	
Intelligence and statistical analysis	Rescue	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT		Σ: 5 CU VOICE circuits	
		W	TTY-DATA	CU	AD	AD	AD	AD	LT	LT	LT	LT		3 CU TTY circuits	
Intelligence and statistical analysis	Weapons Effects	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
		W	TTY-DATA	CU	AD	AD	AD	AD	LT	LT	LT	LT			
Medical and health	Medical	R-W	VOICE	CU	AD	AD	AD	AD	LT	MED	LT	LT			
Intelligence and statistical analysis	Medical	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
		W	TTY-DATA	CU	AD	AD	AD	AD	LT	MED	MED	LT			
Medical and health	Health	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
Intelligence and statistical analysis	Health	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
		W	TTY-DATA	CU	AD	AD	AD	AD	LT	LT	LT	LT			
Medical, health, and welfare	Welfare	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	MED	LT			
Intelligence and statistical analysis	Welfare	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
		W	TTY-DATA	CU	AD	AD	AD	AD	LT	LT	LT	LT			
Engineering and utilities	Public works	R-W	VOICE	CU	OP	AD	OP	OP	MED	LT	HVY	MED			
Intelligence and statistical analysis	Public works	R-W	VOICE	CU	AD	AD	AD	AD	LT	MED	MED	MED			
		W	TTY-DATA	CU	AD	AD	AD	AD	LT	MED	MED	MED			
Engineering and utilities	Utilities	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	MED	LT			
Intelligence and statistical analysis	Utilities	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT			
		W	TTY-DATA	CU	AD	AD	AD	AD	LT	LT	LT	LT			

Table 48 (continued)

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency TS	Urgency IS	Urgency E	Urgency RCV	Density TS	Density IS	Density E	Density RCV	Summary for Links	Derived Number and Kinds of Circuits	Notes
Other communities	Mayor	R-W	VOICE	CU	OP	AD	OP	AD	LT	LT	LT	LT	13 Links		
	CD Director	R-W	VOICE	CU	AD	AD	OP	AD	LT	LT	LT	LT			
	Police	R-W	VOICE	CU	EO	OP	OP	AD	LT	LT	MED	LT	Heaviest demand occurs in emergence phase:		
		W	TTY	CU	EO	OP	OP	AD	LT	LT	MED	LT			
	Fire	R-W	VOICE	CU	EO	AD	OP	AD	LT	LT	LT	LT			
	Rescue	R-W	VOICE	CU	OP	AD	OP	AD	LT	LT	LT	LT			
	Weapons Effects	R-W	VOICE	CU	OP	AD	OP	AD	LT	LT	LT	LT	5 CU VOICE MED	2.5 CU VOICE systems	
		W	TTY	CU	OP	AD	OP	AD	LT	LT	LT	LT			
	Medical	R-W	VOICE	CU	AD	AD	AD	AD	MED	MED	MED	LT	6 CU VOICE LT	1.2 CU VOICE systems	
	Health	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	MED	MED			
	Welfare	R-W	VOICE	CU	AD	AD	AD	AD	LT	MED	MED	MED	1 CU TTY MED	0.5 CU TTY system	
	Public works	R-W	VOICE	CU	OP	AD	OP	AD	MED	LT	MED	LT	1 CU TTY LT	0.2 CU TTY system	
	Utilities	R-W	VOICE	CU	AD	AD	AD	AD	LT	LT	LT	LT		Σ: 4 CU VOICE circuits 1 CU TTY circuit	
Shelter Complex Headquarters (or shelters)	Mayor	R-W	VOICE	CU	OP	AD	OP	AD	LT	LT	LT	LT	11 Links		
	CD Director	R-W	VOICE	CU	EO	OP	OP	AD	MED	MED	LT	LT			
	Police	R-W	VOICE	CU	EO	OP	OP	AD	MED	LT	MED	LT	Heaviest demand occurs in emergence phase:		
	Fire	R-W	VOICE	CU	EO	AD	OP	AD	LT	LT	MED	LT			
	Rescue	R-W	VOICE	CU	EO	AD	OP	AD	LT	LT	MED	LT			
	Weapons Effects	R-W	VOICE	CU	EO	OP	EC	AD	MED	LT	HVY	LT			
	Medical	R-W	VOICE	CU	EO	OP	OP	AD	MED	HVY	MED	LT	3 CU VOICE HVY	3.0 CU VOICE systems	
	Health	R-W	VOICE	CU	AD	OP	OP	AD	LT	MED	MED	MED	6 CU VOICE MED	3.0 CU VOICE systems	
	Welfare	R-W	VOICE	CU	AD	OP	OP	AD	LT	HVY	HVY	LT			
	Public works	R-W	VOICE	CU	EO	AD	OP	OP	LT	LT	HVY	LT	2 CU VOICE LT	0.4 CU VOICE system	
	Utilities	R-W	VOICE	CU	EO	OP	OP	AD	LT	LT	MED	LT		Σ: 6 CU VOICE circuits	
Emergency broadcast networks	Mayor	R-W	VOICE	SU	EO	OP	OP	AD	HVY	HVY	HVY	LT	13 Links	Same as fallout shelter case:	Facilities shared by mayor and CD director
	CD Director	R-W	VOICE	CU	EO	OP	OP	AD	HVY	HVY	HVY	LT			
	Functional area directors	Traffic for emergency broadcast networks to be cleared through CD director											SU and CU circuits fully loaded during take shelter, in shelter, and emergence phases	1 SU VOICE program circuit 1 CU VOICE administrative circuit	
Local military units	Mayor CD Director	Same as fallout shelter case												Same as fallout shelter case	

Table 48 (concluded)

EOC Communications Links to:	EOC User	Mode of Transmission	Nature of Circuit	Circuit Use	Urgency TS	Urgency IS	Urgency E	Urgency RCV	Density TS	Density IS	Density E	Density RCV	Summary for Links	Derived Number and Kinds of Circuits	Notes
Police field organization	Police	Same as fallout shelter case												Same as fallout shelter case	•
Fire field organization	Fire	Same as fallout shelter case												Same as fallout shelter case	•
Rescue field organization	Rescue	R	VOICE	SU	EO	AD	EO	OP	HVY	LT	HVY	LT	1 SU VOICE HVY	1 SU VOICE RADIO system	•
		W	VOICE	SU	EO	AD	EO	OP	HVY	LT	HVY	LT	1 SU VOICE HVY	1 SU VOICE WIRE system	
Weapons Effects field organization	Weapons Effects	R	VOICE	SU	EO	OP	EO	OP	HVY	MED	HVY	MED	1 SU VOICE HVY	1 SU VOICE RADIO system	•
		W	VOICE	SU	EO	OP	EO	OP	HVY	MED	HVY	MED	1 SU VOICE HVY	1 SU VOICE WIRE system	
Medical field organization															
Hospital complex headquarters	Medical	R	VOICE	SU	EO	OP	OP	OP	HVY	HVY	HVY	MED	1 SU VOICE HVY	1 SU VOICE RADIO system	•
		W	VOICE	CU	EO	OP	OP	OP	HVY	MED	HVY	MED	1 CU VOICE HVY	1 CU VOICE WIRE system	
Ambulance services	Medical	R	VOICE	SU	EO	OP	OP	OP	HVY	HVY	HVY	MED	1 SU VOICE HVY		
		W	VOICE	CU	EO	OP	OP	OP	HVY	MED	HVY	MED	1 CU VOICE HVY		
Health field agencies	Health	R	VOICE	SU	AD	OP	EO	OP	LT	MED	HVY	HVY	1 SU VOICE HVY	1 SU VOICE RADIO system	•
		W	VOICE	CU	AD	OP	EO	OP	LT	MED	HVY	HVY	1 CU VOICE HVY	1 CU VOICE WIRE system	
Welfare field agencies	Welfare	R	VOICE	SU	OP	AD	OP	OP	HVY	MED	HVY	HVY	1 SU VOICE HVY	1 SU VOICE RADIO system	•
		W	VOICE	CU	OP	AD	OP	OP	HVY	MED	HVY	HVY	1 CU VOICE HVY	1 CU VOICE WIRE system	
Public works field agencies	Public works	R	VOICE	SU	EO	AD	OP	OP	HVY	LT	HVY	HVY	1 SU VOICE HVY	1 SU VOICE RADIO system	•
		W	VOICE	CU	EO	AD	OP	OP	HVY	LT	HVY	HVY	1 CU VOICE HVY	1 CU VOICE WIRE system	
Utilities field agencies	Utilities	R	VOICE	SU	EO	AD	OP	OP	HVY	LT	HVY	HVY	1 SU VOICE HVY	1 SU VOICE RADIO system	•
		W	VOICE	CU	EO	AD	OP	OP	HVY	LT	HVY	HVY	1 CU VOICE HVY	1 CU VOICE WIRE system	

* Great variability may be expected in existing and planned communications systems for police, fire, and other field agencies. Cities of 500,000 or greater population will require several radio channels for each field agency, depending on existing and expected loads. They may possess private telephone systems as well. While this report touches on the derivation of numbers of channels for these kinds of field agencies, further study is required to derive the detailed requirements.

Table 49

NET CHANGE, FALLOUT TO BLAST CASES
LOCAL CIVIL DEFENSE EOC COMMUNICATIONS CIRCUITS

EOC to:	Fallout Case (circuits)	Blast Case (circuits)	Net Change (circuits)
State	4 CU voice 3 CU TTY	5 CU voice 3 CU TTY	+1 0
Other communities	3 CU voice 1 CU TTY	4 CU voice 1 CU TTY	+1 0
Shelter Complex Headquarters	3 CU voice	6 CU voice	+3
Emergency broadcast networks	1 SU program 1 CU administrative	1 SU program 1 CU administrative	0 0
Field organizations Police Fire Rescue Weapons Effects Medical Health Welfare Public Works Utilities	Each has: 1 multichannel SU voice radio system + 1 SU or LLC voice telephone system	Each has: 1 multichannel SU voice radio system + 1 SU or LLC voice telephone system	 0 0
Local military organization	1 SU voice radio	1 SU voice radio	0

However, the increases will probably not be sufficient to require increases in the communications systems already derived for those agencies in the fallout case. As noted elsewhere in this report, the exact nature of the communications circuits between these field agencies and the EOC is subject to considerable variability, depending on the kinds of existing systems, as well as on numerous ancillary factors whose consideration is beyond the scope of this study.

State and Region

The communications circuit diagram shown in Figure 3 combines state area, state, and regional requirements. The state and regional EOC blocks contain their respective several functional area directors and their executive staffs, but the diagram indicates that most of the incoming circuits are not actually connected directly to any single functional area. Rather, they will pass through the communications center supervised by the communications director. Thus, as in the case of the local EOC, most of these circuits are available for use by anyone in the EOC. Exceptions are certain circuits that are sole-user in nature and normally considered associated with a specific EOC functional area director such as the state public safety field unit radio nets. These circuits should be assumed to go directly to the functional area director in question; the implication is that he is the person in the EOC with direct access to the radio net (usually, in part, mobile) in question.

The state and regional EOC communications requirements shown in Figure 3 were derived for state areas, states, and regions with populations of 0 to 2 million, 2 to 5 million, and 10 to 20 million, respectively.

Derivation of Circuit Loading Factors for Different Size Populations

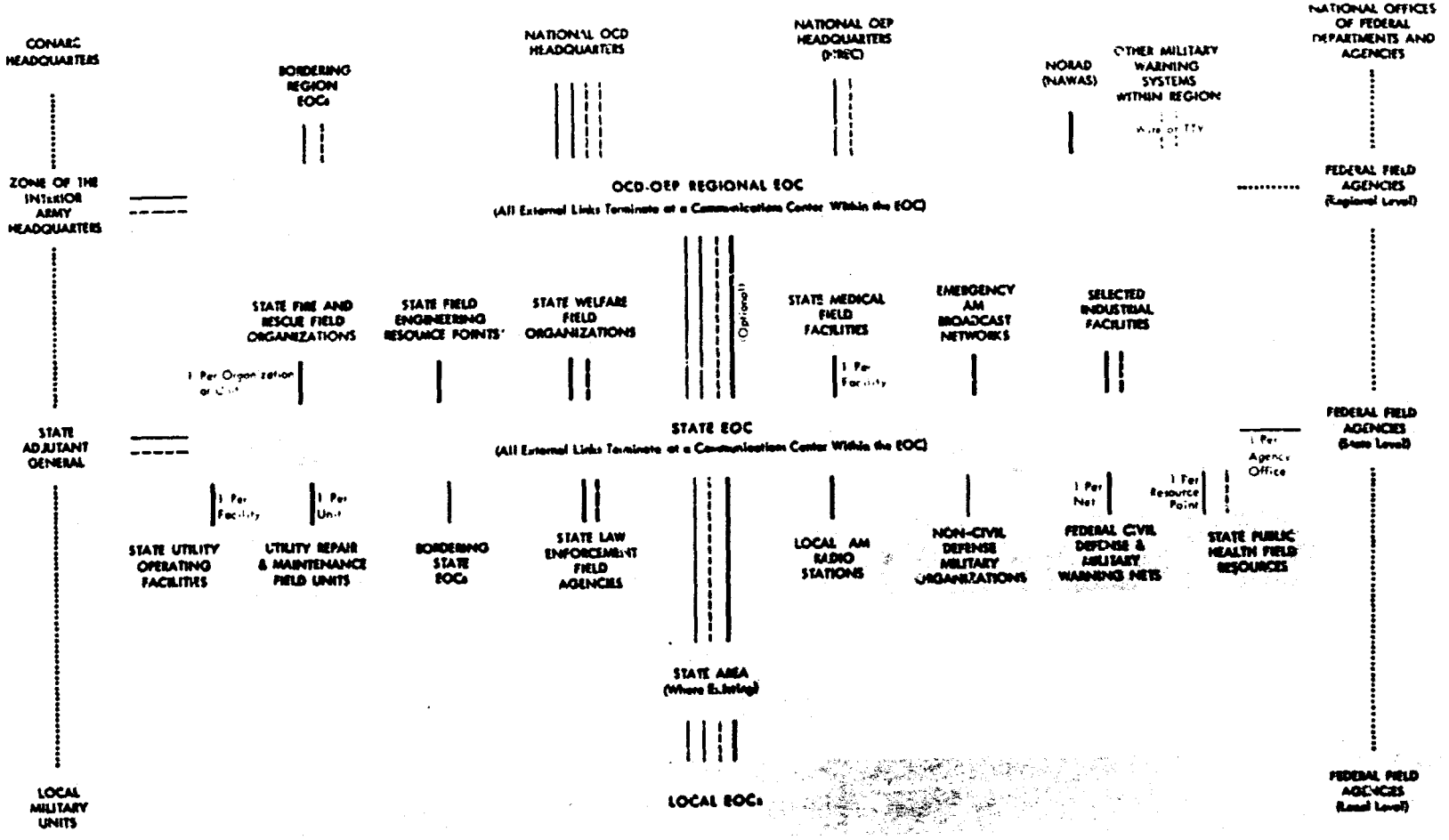
Scaling factors have been applied to adjust the communications circuit requirements to levels suitable for other size communities, state areas, states, and regions.

The following population groupings were selected for general quantification of communications traffic loadings:

Communities (thousands)	States and State Areas (millions)	Regions (millions)
<25	0-2	0-10
25-100	2-5	10-20
100-500	5-10	20-30
>500	>10	30-40

FIGURE 3

DERIVED COMMUNICATIONS CIRCUIT REQUIREMENTS FOR STATE AND REGIONAL LEVEL CIVIL DEFENSE *



RADIO-WIRE VOICE, SOLE USER
RADIO-WIRE VOICE, COMMON USER
TELETYPEWRITER (DATA, VIDEO), SOLE USER
TELETYPEWRITER (DATA, VIDEO), COMMON USER
RESPONSIBILITY OF RESPECTIVE AGENCY

NOTE: These agencies are represented at the regional OCD-OEP EOC in accordance with existing orders assigning them specific emergency responsibilities.

* Assumes Regions with 10-20 million population
States with 2-5 million population
State Areas with 0-2 million population

Within these broad population categories, flow density was analyzed in the light of probable percentage loading of voice circuits and teletype or data circuits. The circuit loading factors were derived from assumptions made of the daily numbers of message initiations and average lengths of messages for the various functional areas. The percent circuit loading estimates in Table 50 were developed using the above guidelines.

Table 50

PERCENT OF CIRCUIT LOADING (VOICE OR TELETYPE)
FOR VARIOUS POPULATION CATEGORIES

Population	Flow Density		
	Light	Medium	Heavy
Communities (thousands)			
>500	20%	50%	80-100%
100-500	10	25	50
25-100	5	10	20
<25	2	5	10
States and State Areas (millions)			
>10	20	50	80-100+
5-10	10	25	50
2-5	5	10	20
0-2	2	5	10
Regions (millions)			
30-40	20	50	80-100+
20-30	10	25	50
10-20	5	10	20
0-10	2	5	10

For purposes of this discussion, percent circuit loading is the ratio of actual circuit time usage to time availability, times 100, as follows:

$$\frac{\text{Number of minutes per day receiving and transmitting traffic}}{24 \times 60 \text{ minutes}} \times 100$$

It should be noted that the percent loading of circuits recognizes the varying ability of different types of communications circuits to handle traffic. For example, a 60-speed teletype circuit will pass a different amount of information per day than will a voice circuit. Thus, the percentage loading factor is considered in the context of the particular type of communications circuit to which it is applied (e.g., teletype or voice).

Using these percentage circuit loading factors, Tables 51, 52, 53, and 54 translate light, medium, and heavy loads into the circuit requirements for the four community, four state, four state area, and four region size groupings, respectively.

Table 51

CIVIL DEFENSE LOCAL LEVEL COMMUNICATIONS CIRCUIT REQUIREMENTS FOR DIFFERENT SIZE CITIES WITH FALLOUT SHELTERS*

EOC Communications Circuit to:	Number of Each Kind of Communications Circuit			
	Cities with 500,000 Population or Greater	Cities with 100,000-500,000 Population	Cities with 25,000-100,000 Population	Cities with less than 25,000 Population
State EOC (state area EOC)				
CU VOICE channels	4	2	1	1
CU TTY channels	3	1	1	1 (possibly)
Other communities				
CU VOICE channels	3	1	1	1
CU TTY channels	1	1	0 (probably)	0
Shelter Complex Headquarters (or shelters)				
CU VOICE channels	3	2	1†	1†
Emergency AM broadcast networks				
SU program channel	1	1	1 (serves both purposes)	1 (if broadcast station available)
CU administrative channel	1	1		
Local military units				
SU VOICE system	1‡	1‡	1‡	1‡
Local field organizations				
Police Fire Rescue Weapons Effects Medical Health Welfare Public works Utilities	Multichannel, SU voice radio systems with supporting SU voice wire systems in some cases.§		Single to multichannel SU voice radio systems, possibly supported by SU voice wire systems. Increasing incidence of facility sharing as size of community decreases.§	

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* Requirements for 500,000 population are diagrammed in Figure 1. See text for methods used to develop these scaling factors.

† Shelters will probably be used in these communities. This assumes the following rough ratios:

1. An average of 500 shelter spaces per shelter, with a range of 50-5,000.
2. Where Shelter Complex Headquarters exist: (a) there will be 10-15 shelters per SCH, with the smaller number in cities of smaller population, i.e., 100,000-500,000; (b) there will be 30-40 SCHs per EOC.

‡ Probably supplied by the military.

§ These field organizations can be expected to vary greatly in size, nature, and complexity, depending on their peacetime structures and the expected needs of the community. Their exact nature requires separate study.

Table 52

CIVIL DEFENSE COMMUNICATIONS CIRCUIT REQUIREMENTS FOR VARIOUS SIZE STATES (Number of Circuits)

State EOC to:	0-2 Million Population	2-5 Million Population	5-10 Million Population	Over 10 Million Population
Local EOCs (links per EOC)	1 CU voice 1 CU TTY 1 SU voice (optional)	2 CU voice 1 CU TTY 1 SU voice (optional)	2 CU voice* 1 CU TTY 1 SU voice (optional)	2 CU voice* 1 CU TTY 1 SU voice (optional)
OCD regional headquarters	1 CU voice 1 CU TTY 1 SU voice (optional)	2 CU voice 1 CU TTY 1 SU voice (optional)	2 CU voice 1 CU TTY 1 SU voice (optional)	3 CU voice 2 CU TTY 1 SU voice (optional)
Field offices of federal agencies (links per office)	1 CU voice	1 CU voice	1 CU voice	1 CU voice
State fire and rescue field organizations (links per fire origin or station)	1 SU voice	1 SU voice	1 SU voice	1 SU voice
State field engineering resources (links per resource point)	1 SU voice	1 SU voice	1 SU voice	1 SU voice
Bordering and nearby state EOCs (links per EOC)	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY
Utility repair and maintenance field units (links per unit)	1 SU voice	1 SU voice	1 SU voice	1 SU voice
State utility operating facilities (links per facility)	1 SU voice	1 SU voice	1 SU voice	1 SU voice
State military CD director (adjutant general of state)	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY
State medical field facilities (links per facility)	1 SU voice	1 SU voice	1 SU voice	1 SU voice
Non-CD military organizations (links per organization)	1 CU voice	1 CU voice	1 CU voice	1 CU voice

* More circuits will be required by cities over 500,000 population (see Reference 1).

Table 52 (concluded)

State EOC to:	0-2 Million Population	2-5 Million Population	5-10 Million Population	Over 10 Million Population
Federal CD and military warning nets (links per net)	1 SU voice	1 SU voice	1 SU voice	1 SU voice
State public health field resources (links per resource point)	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY
Point of entry to AM emergency broadcast networks (for warning dissemination)	1 SU voice	1 SU voice	1 SU voice	1 SU voice
State and/or local radio stations	1 SU voice	1 SU voice	1 SU voice	1 SU voice
Selected industrial facilities (links per facility per user at EOC)	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY
State law enforcement field agencies (links per agency or station)	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY
State welfare field organizations (links per organization or station)	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY

Table 53

CIVIL DEFENSE COMMUNICATIONS CIRCUIT REQUIREMENTS
FOR VARIOUS SIZE STATE AREAS
(Number of Circuits)

State Area EOC to:	0-2 Million Population	2-5 Million Population	5-10 Million Population	Over 10 Million Population
Local EOCs (links per EOC)	1 CU voice 1 CU TTY 1 SU voice (optional)	2 CU voice 1 CU TTY 1 SU voice (optional)	2 CU voice* 1 CU TTY 1 SU voice (optional)	2 CU voice* 1 CU TTY 1 SU voice (optional)
State EOCs (links per EOC)	1 CU voice 1 CU TTY 1 SU voice (optional)	2 CU voice 1 CU TTY 1 SU voice (optional)	2 CU voice 1 CU TTY 1 SU voice (optional)	3 CU voice 2 CU TTY 1 SU voice (optional)
Bordering state area EOCs (links per EOC)	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY
Field offices of federal agencies (links per user per agency)	1 CU voice (1 SU voice for U.S. Forest Service only)	1 CU voice	1 CU voice	1 CU voice
Point of entry to AM emergency broadcast networks	1 SU voice	1 SU voice	1 SU voice	1 SU voice
Selected industrial facilities (links per user per facility)	1 SU voice	1 SU voice	1 SU voice	1 SU voice
State law enforcement field agencies (links per agency)	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY
State fire and rescue field organizations (links per organization)	1 SU voice	1 SU voice	1 SU voice	1 SU voice
State public health resources and field organizations (links per organization)	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY
State medical field facilities (links per organization)	1 SU voice	1 SU voice	1 SU voice	1 SU voice

* More circuits will be required by cities over 500,000 population (see Reference 1).

Table 53 (concluded)

State Area EOC to:	0-2 Million Population	2-5 Million Population	5-10 Million Population	Over 10 Million Population
State welfare field organizations (links per organization)	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY	1 SU voice 1 SU TTY
State field engineering resources	1 SU voice	1 SU voice	1 SU voice	1 SU voice
State utilities repair and maintenance field units, where they exist in state area (links per field unit)	1 SU voice	1 SU voice	1 SU voice	1 SU voice

Table 54

CIVIL DEFENSE COMMUNICATIONS CIRCUIT REQUIREMENTS FOR VARIOUS SIZE REGIONS (Number of Circuits)

Region EOC to:	0-10 Million Population	10-20 Million Population	20-30 Million Population	30-40 Million Population
National OCD headquarters	1 CU voice 1 CU TTY, data, or video	1 CU voice 1 CU TTY, data, or video	2 CU voice 2 CU TTY, data, or video	2 CU voice 2 CU TTY, data, or video
National OEP headquarters (including NREC)	1 CU voice 1 TTY or data	1 CU voice 1 TTY or data	1 CU voice 1 TTY or data	1 CU voice 1 TTY or data
State EOCs (links to each state with 2-5 million population)	1 CU voice 1 CU TTY 1 SU voice (optional)	2 CU voice 1 CU TTY or data 1 SU voice (optional)	2 CU voice 1 CU TTY or data 1 SU voice (optional)	3 CU voice* 2 CU TTY or data 1 SU voice (optional)
ZI Army headquarters (links to each headquarters within OCD region)	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY
Bordering region EOCs (links per EOC)	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY	1 CU voice 1 CU TTY
NORAD (NAWAS)	1 SU voice	1 SU voice	1 SU voice	1 SU voice
Other military warning systems within region (links per system)	1 SU or CU voice or 1 SU or CU TTY or data	1 SU or CU voice or 1 SU or CU TTY or data	1 SU or CU voice or 1 SU or CU TTY or data	1 SU or CU voice or 1 SU or CU TTY or data

* Where regions of this size contain states of over 10 million population; in the case of smaller states within such regions, use figures for regions with 10-30 million population and 0-10 million population.

Appendix A

RESPONSIBILITIES OF SELECTED FEDERAL AGENCIES FOR CIVIL DEFENSE AND RECOVERY

Appendix A

RESPONSIBILITIES OF SELECTED FEDERAL AGENCIES FOR CIVIL DEFENSE AND RECOVERY*

Office of Civil Defense (OCD)

- Coordinate federal activities in support of situation analysis for CD purposes.
- Serve as a depository for preattack and postattack resource data related to civil defense, and as a point of information exchange.
- Serve as a situation-analysis center for CD planning and operations.

OCD regional offices will:

- Analyze the status of the population and resources vital to CD operations.
- Warn or alert federal military and civilian authorities, state officials, and the civilian population at large.
- Undertake a nationwide postattack assessment of the nature and extent of the damage resulting from enemy attack and the surviving resources, including systems to monitor and report specific hazards resulting from the detonation or use of nuclear weapons.
- Serve as the point of coordination of all information affecting the emergency operations of civil government in each region.
- Coordinate with federal agency field establishments operating within the respective regions and performing emergency period roles.
- Collect and evaluate OCD operations reports and disseminate the resulting operational information, as required.
- Issue consolidated attack reports to federal agencies and states from which a damage assessment can be made.
- Provide information to states, as developed by the federal government, on critical facilities, services, geographic areas, installations, or commodity resources of priority concern, which would influence the status of local emergency plans or operations.

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* See Appendix C, References 3, 4, 5, 6, and 7.

OCD Regional Headquarters will:

- During the preattack period (increased readiness), submit to OCD National Headquarters, the Regional Civil Defense Coordinating Board (RCDCB), states within the respective regions, and alternate regional headquarters, by 1300Z each day, summary reports of increased readiness actions accomplished within the region as of 1700 local time the previous day.

- During the transattack period, submit to OCD National Headquarters flash NUDET and fallout reports as they become available.

- During the postattack period, submit to OCD National Headquarters, the RCDCB, ZI Army commanders, states within the region, and alternate regional headquarters, by 1300Z each day, regional "Operational Information" reports reflecting the status within the region as of 1700 local time the previous day.

- Provide emergency public information which would increase chances of survival.

- In cooperation with state and local governments, arrange to the extent possiole for civil support to ZI Army commanders for maintaining continuity of appropriate military operations.

- Provide a constant source of information to OCD National Headquarters as to significant occurrences and developments in the form of "Region-wide Situation Summaries."

OCD regional directors will:

- Serve as chairmen of the RCDCB.

- On behalf of civil governments, coordinate with ZI Army commanders, as required, in considering state requests for military support.

- Provide national command authorities information as a basis for formulating national policy guidance and operational priorities in support of national objectives.

- Define operational priorities to guide activities of federal agencies in the field to support state and local government emergency operations.

- Provide a facility from which federal and state representatives can coordinate emergency operations and receive and transmit national issues of essential public information to states and regional news media in the event other means for transmittal of emergency public information have been denied.

Office of Emergency Planning (OEP)

- Promulgate national policies and program directives governing priority use of resources and direct compliance with these and related orders of the other federal agencies.

- Utilize federal agencies in assessing the effects of the attack on the nation's resources, in total and by geographic area, and on a continuing basis report to the President on such assessments together with actions being taken or proposed for meeting the situation.

The OEP will, through its regional offices:

- Coordinate, and as soon as conditions permit, report to the Director of OEP on all federal, state, and local resource mobilization and management activities within the respective regions.

- Inform the states and the federal field offices in the regions of national policy and program directives from the OEP National Office on resources use.

- Authorize the release of strategic and critical materials from national stockpiles in accordance with criteria established by the OEP National Office.

- Adjudicate appeals submitted by federal field offices and states from resource allocation decisions.

- Maintain a national resource evaluation capability to support emergency preparedness planning at all levels of government by predicting and monitoring the condition of resources under all degrees of emergency, ranging from international tension to postattack recovery.

- Serve as a depository (through NREC) for preattack and postattack resource data and as an information exchange mechanism to support emergency decision-making.

Regional OEP offices will:

- Continually analyze the status of government continuity and operations, resource mobilization and use, and economic stabilization measures taken within the region as a basis for regional office action and for national reporting.

Department of the Interior

- Maintain and operate selected radiological monitoring stations.

- Provide appropriate (jurisdictional) resources situation data to OEP (NREC).
- Have primary responsibility for meeting postattack fuel and power needs.
- Control construction, operation, and use of petroleum and gas pipelines.
- Direct allocation of electric power to essential users (DEPA).
- Collect damage assessment data on utilities.
- Hear appeals on decisions made by state level DEPA representatives.
- Order restoration and repair of power facilities to serve essential needs.
- Coordinate with each state the federal and state plans for petroleum and gas emergency functions as outlined in memoranda of agreement (EPGA).
- Order curtailment of nonessential uses and conservation of petroleum or gas, should the supply be insufficient for all essential purposes.
- Keep informed of principal commitments of petroleum and gas supplies, shortages and surpluses, and needs for replenishment.
- Assess damage to petroleum, petrochemical, and gas facilities, and determine remaining capabilities, forwarding this information to OEP (NREC).
- Submit to OEP regional offices for adjudication appeals from allocation decisions.
- Assist, as appropriate, in the transfer of manpower, equipment, and materials among petroleum and gas companies.
- Direct the production, distribution, and best use of solid fuels (ESFA), and determine, in accordance with OEP directives, the priority of solid fuels use when supplies are insufficient for all essential purposes.
- Collect data on available solid fuels production capacity.
- Plan, direct, and control all phases of solid fuels production.
- Direct emergency shipments to fill approved state and local government requests for solid fuels.

- In coordination with the appropriate federal agency, reconsign and divert shipments in transit to meet urgent needs.

- Compile and transmit to ESFA national headquarters information obtained from solid fuel producers of equipment and materials required for the rehabilitation of damaged facilities.

- Issue orders and regulations controlling the opening of new production facilities and the reconstruction of damaged facilities.

- Allocate among minerals producers and processors the materials and equipment assigned to the mineral programs.

- Advise OEP regional directors on all matters pertaining to minerals resources and availability within their respective regions.

- Compile and analyze damage reports on mineral facilities as received at OCD/OEP regional offices, and estimate surviving production capability.

- Obtain data from appropriate sources on the condition and accessibility of federal stockpiles of mineral resources.

- Assist the Department of Commerce in preparing recommendations to OEP regional directors on authorizing the General Services Administration (GSA) to release stockpiled mineral resources to plants producing high-priority goods in the immediate postattack period.

- Issue to mineral producers spot directives channeling minerals to meet any urgent survival needs within their respective regions (with centralized control of mineral resources).

- Assess damage to mineral facilities, using all available information sources, and estimate surviving production capability.

- Direct operations of the mineral industries and allocate mineral raw materials to attain most effective operation of surviving facilities.

- Provide NREC with data required for plans, programs, and operations in the fields of continuity of government and central resource programming and management.

- Provide through the regional offices a channel for resource evaluation data flow between the states and the national evaluation centers.

- Participate in the development of consumer rationing policies and procedures.

- Advise state and local resource agencies and federal agency administering rationing procedures on the availability of goods for consumer rationing.

- Provide the Economic Stabilization Agency with information and advice in connection with the formulation and effect of direct controls pertinent to Department of Interior production and distribution responsibilities.

Department of Agriculture (USDA)

- Maintain and operate selected radiological monitoring stations.

- Provide appropriate resource situation data to OEP (NREC).

- Meet postattack requirements for production and allocation of food.

- Protect animals and crops against CB agents.

- Direct harvesting or salvaging of crops and salvaging of stored foods required for immediate consumption or preservation for future use.

- On the regional level, issue policy guidance when direction is not available from USDA national headquarters.

- Assist OEP regional director in coordinating and expediting distribution of resources to meet urgent needs.

- In postattack period, help maintain flow of food from farm through the food trade to consumers.

- Establish USDA defense boards to collect information on food shortages and excesses, and to advise state and local governments.

- Cooperate with DOD in postattack period for procurement of food for military.

- Claim water for food production and processing.

- Provide NREC with data required for plans, programs, and operations in the fields of continuity of government and central resource programming and management.

- Provide, through the regional offices, a channel for agricultural resource evaluation data flow between the states and the national evaluation centers.

- Participate in the development of consumer rationing policies and procedures.

- Advise state and local agricultural resource agencies and the federal agency administering rationing procedures on the availability of agricultural goods for consumer rationing.

- Provide the Economic Stabilization Agency with information and advice in connection with the formulation and effect of direct controls pertinent to agricultural production and distribution responsibilities.

Department of Commerce

- Generate and disseminate meteorological data and fallout forecasts.

- Provide appropriate resource information to OEP (NREC).

- Have primary responsibility for provision of clothing and other essential commodities to the populace in the postattack period.

- Issue regulations and orders controlling the production, use, and distribution of products and materials for industrial use, and the construction and use of industrial facilities.

- Allocate facilities for specified production and provide necessary support for production of equipment and machine tools.

- Establish inventory restrictions, and release requirements and criteria.

- Issue production and distribution directives requiring specific actions on the part of individuals or individual companies.

- Provide, through the regional offices, guidance to state emergency industrial production agencies.

- Provide NREC with data required for plans, programs, and operations in the fields of continuity of government and central resource programming and management.

- Provide, through the regional offices, a channel for resource evaluation data flow between the states and the national evaluation centers.

- Participate in the development of consumer rationing policies and procedures.

- Advise state and local resource agencies and the federal agency administering rationing procedures on the availability of goods for consumer rationing.

- Provide the Economic Stabilization Agency with information and advice in connection with the formulation and effect of direct controls pertinent to their production and distribution responsibilities.

Department of Health, Education and Welfare (DHEW)

- Maintain and operate selected radiological monitoring stations.
- Provide federal assistance for emergency water and sanitation facilities.
- Provide appropriate resource situation information to OEP (NREC).
- Estimate postattack requirements for manpower, essential welfare facilities, consumer survival goods, household equipment, and other emergency welfare supplies and services.
- Assist states on welfare matters as required.
- Allocate national health resources for domestic nonmilitary requirements.
- Manage federal emergency medical stockpiles and CD emergency hospitals.
- Operate, repair, and restore facilities to provide water for essential needs.
- Ensure execution of the emergency billeting program.
- Develop and coordinate an emergency water supply program.
- Provide guidance to assure that health and sanitary requirements have been considered and carried out to the extent practicable.
- Provide NREC with data required for plans, programs, and operations in the fields of continuity of government and central resource programming and management.
- Provide, through the regional offices, a channel for resource evaluation data flow between the states and the national evaluation centers.
- Participate in the development of consumer rationing policies and procedures.
- Advise state and local resource agencies and the federal agency administering rationing procedures on the availability of goods for consumer rationing.

- Provide the Economic Stabilization Agency with information and advice in connection with the formulation and effect of direct controls pertinent to their production and distribution responsibilities.

Housing and Home Finance Agency (HHFA)

- Provide federal assistance for emergency water facilities.
- Provide essential housing and facilities.
- Construct emergency water and sanitary sewage facilities.
- Claim necessary materials and equipment for repair, restoration, and construction of water supply utilities.
- Organize and proceed with the provision and management of emergency housing and community facilities.
- Provide NREC with data required for plans, programs, and operations in the fields of continuity of government and central resource programming and management.
- Provide, through the regional level, a channel for resource evaluation data flow between the states and the national evaluation centers.

Federal Aviation Agency (FAA)

- Maintain and operate selected radiological monitoring stations.
- Maintain operating continuity of the National Airspace system.
- Direct clearance and restoration of essential civil airports in damaged areas.
- Provide NREC with data required for plans, programs, and operations in the fields of continuity of government and central resource programming and management.
- Provide, through the regional offices, a channel for resource evaluation data flow between the states and the national evaluation centers.

Tennessee Valley Authority (TVA)

- Maintain and operate selected radiological monitoring stations.
- Provide vector control, waste disposal, and production of sanitary water supplies in the TVA area.

- Construct any facilities necessary to move goods and materials around inoperative locks.

- Coordinate use of terminal facilities along the Tennessee River waterway.

- Provide NREC with data required for plans, programs, and operations in the fields of continuity of government and central resource programming and management.

- Provide, through the regional offices, a channel for resource evaluation data flow between the states and the national evaluation centers.

Veterans Administration (VA)

- Maintain and operate selected radiological monitoring stations.

- Provide NREC with data required for plans, programs, and operations in the fields of continuity of government and central resource programming and management.

- Provide, through the regional offices, a channel for resource evaluation data flow between the states and the national evaluation centers.

General Services Administration (GSA)

- Supply general transportation and motor vehicle services to federal civilian agencies.

- Provide general transportation and traffic management services to OCD (MTMTS).

- Provide NREC with data required for plans, programs, and operations in the fields of continuity of government and central resource programming and management.

- Provide, through the regional offices, a channel for resource evaluation data flow between the states and the national evaluation centers.

Department of Defense, ZI U.S. Army Headquarters

- Provide military support for CD activities during emergency.

Post Office Department

- Establish and operate Emergency Welfare Registration and Inquiry program.
- Assist in locating and reuniting family members.
- Establish and operate central postal directories.
- Provide NREC with data required for plans, programs, and operations in the fields of continuity of government and central resource programming and management.
- Provide a channel for resource evaluation data flow between states and the national evaluation centers.

Department of Labor (DOL)

- Assume primary responsibility for meeting postattack manpower needs.
- Assist state employment agencies in meeting welfare needs.
- Administer manpower mobilization programs.
- Support state employment agencies.
- Assess manpower supply, in total, by geographic location, by industry, and, as appropriate, by location.
- Initiate and administer wage and salary controls through regional offices of the Wage and Hour Division, pending establishment of the Economic Stabilization Agency, and then assist in the absorption of those operations by that agency.
- Provide NREC with data required for plans, programs, and operations in the fields of continuity of government and central resource programming and management.
- Provide, through the regional offices, a channel for resource evaluation data flow between the states and the national evaluation centers.

Selective Service System

- Help mobilize manpower through the occupational deferment process.
- Coordinate with military and Department of Labor representatives on availability of manpower resources.

- Provide NREC with data required for plans, programs, and operations in the fields of continuity of government and central resource programming and management.

- Provide, through the regional offices, a channel for resource evaluation data flow between the states and the national evaluation centers.

National Science Foundation

- Provide a clearing house for information on all scientific and technical personnel in the United States and its possessions.

- Provide NREC with data required for plans, programs, and operations in the fields of continuity of government and central resource programming and management.

- Provide, through the regional offices, a channel for resource evaluation data flow between the states and the national evaluation centers.

Civil Service Commission

- Operate a nationwide system of postattack registration of federal civilian employees to provide a means for returning displaced employees to duty.

- Provide NREC with data required for plans, programs, and operations in the fields of continuity of government and central resource programming and management.

- Provide, through the regional offices, a channel for resource evaluation data flow between the states and the national evaluation centers.

Office of Emergency Transportation (OET)

- Establish emergency period transportation policy.

- Assist state and local governments with transportation matters, through regional offices.

- Recommend (Air Carrier Division) to OET Director the allocation and reallocation of civil air carrier aircraft.

- Provide NREC with data required for plans, programs, and operations in the fields of continuity of government and central resource programming and management.

- Provide, through the regional offices, a channel for resource evaluation data flow between the states and the national evaluation centers.

Interstate Commerce Commission (ICC)

- Provide transportation data and assistance for national resource evaluation purposes.
- Salvage and rehabilitate domestic surface transportation and storage facilities.
- Allocate the use of domestic interstate surface transportation and storage to operators and users.
- Administer priorities systems as necessary to assure the movement of essential freight and passengers.

Civil Aeronautics Board (CAB)

- Assess damage to air carrier aircraft.
- Assist FAA in maintaining War Air Service Program.
- Provide NREC with data required for plans, programs, and operations in the fields of continuity of government and central resource programming and management.
- Provide, through the regional offices, a channel for resource evaluation data flow between the states and the national evaluation centers.

Maritime Administration

- Control forwarding of cargo to ocean port areas where Mar Ad maintains control of ocean shipping.
- Allocate and reallocate ports and port facilities as necessary.
- Provide NREC with data required for plans, programs, and operations in the fields of continuity of government and central resource programming and management.
- Provide, through the regional offices, a channel for resource evaluation data flow between the states and the national evaluation centers.

Bureau of Public Roads (BPR)

- Assess highway damage and continuously evaluate highway needs.
- Provide NREC with data required for plans, programs, and operations in the fields of continuity of government and central resource programming and management.
- Provide, through the regional offices, a channel for resource evaluation data flow between the states and the national evaluation centers.

Coast and Geodetic Survey

- Establish emergency geodetic control for special purpose surveys.
- Provide NREC with data required for plans, programs, and operations in the fields of continuity of government and central resource programming and management.
- Provide, through the regional offices, a channel for resource evaluation data flow between the states and the national evaluation centers.

Department of Defense, U.S. Army Corps of Engineers

- Improve, restore, rehabilitate, and operate components of federally authorized river and harbor projects.
- Provide NREC with data required for plans, programs, and operations in the fields of continuity of government and central resource programming and management.
- Provide, through the regional offices, a channel for resource evaluation data flow between the states and the national evaluation centers.

Appendix B

JOINT OCD-OEP REGIONAL EMERGENCY OPERATING CENTER ORGANIZATION, BY FUNCTIONAL AREA

Appendix B

JOINT OCD-OEP REGIONAL EMERGENCY OPERATING CENTER ORGANIZATION, BY FUNCTIONAL AREA

State Level Functional Area	Regional Level	
	Functional Area	Responsible Federal Entity*
Civil Defense Director	Command & Control	OCD Regional Director
	Military Coordination	OEP Regional Director
Planning Director	Planning	OCD Planning Director OEP Planning Director Planning representatives of other state and federal agencies
Intelligence & Statistical Analysis	Intelligence and Statistical Analysis	
Information	Information	AM Radio Warning Networks
Resources Management	Resources Management	
	Manpower	Department of Labor (Office of Mobilization Planning and Coordination) Office of Emergency Planning Department of Defense (various subcomponents, including OCD) Department of Health, Education and Welfare Selective Service System Atomic Energy Commission Railroad Retirement Board Department of Commerce Maritime Administration National Science Foundation Civil Service Commission National Labor-Management Manpower Policy Committee Inter-Agency Manpower Mobilization Committee

* Including supporting agencies, departments, commissions, etc.

State Level Functional Area	Regional Level	
	Functional Area	Responsible Federal Entity
Resources Management (cont.)	Resources Management (cont.)	
	Food	Department of Agriculture Office of Emergency Planning Department of Defense (DSA, DSSC) Department of Interior Department of Commerce General Services Administration Department of Health, Education and Welfare
	Water	Department of Health, Education and Welfare Office of Emergency Planning Department of Agriculture Department of Commerce Department of Interior Department of Defense (local commanders, Corps of Engineers) Housing and Home Finance Agency Department of State Tennessee Valley Authority
	Fuel and Energy	Department of Interior (DEPA, EPGA, Bureau of Mines; Geological Survey, Office of Minerals and Solid Fuels, ESFA) Office of Emergency Planning Department of Defense (Corps of Engineers,OCD) Federal Power Commission Tennessee Valley Authority Rural Electrification Agency Atomic Energy Commission Department of Commerce (OET) Department of Labor Department of State Economic Stabilization Agency* National Defense Executive Reserve

* If established.

State Level Functional Area	Regional Level	
	Functional Area	Responsible Federal Entity
Resources Management (cont.)	Resources Management (cont.)	
	Minerals	Department of Interior (Office of Minerals and Solid Fuels, Emergency Minerals Administration, Geological Survey, Bureau of Mines) Office of Emergency Planning Department of Defense National Defense Executive Reserve Department of Commerce General Services Administration Department of State Department of Agriculture Department of Labor
	Transportation	Department of Commerce (Office of Emergency Transportation) Office of Emergency Planning Transportation Allocations, Priorities, and Controls Committee Interstate Commerce Commission Civil Aeronautics Board Federal Aviation Agency Department of Interior Tennessee Valley Authority Maritime Administration Bureau of Public Roads Coast and Geodetic Survey Air Carrier Division of OET St. Lawrence Seaway Development Corp. Department of Defense (Corps of Engineers, DMS)

State Level Functional Area	Regional Level	
	Functional Area	Responsible Federal Entity
Resources Management (cont.)	Resources Management (cont.)	
	Production	Department of Commerce (Business and Defense Services Administration) Department of Agriculture Department of Interior National Defense Executive Reserve
	Telecommunications	Office of Emergency Planning Office of Civil Defense Department of Defense (National Communications System) Federal Communications Commission General Services Administration (Federal Communications Service) Department of State Federal Aviation Agency National Aeronautics and Space Agency Department of Labor Department of Commerce
	Housing	Housing and Home Finance Agency Department of Defense (OCD) Office of Emergency Planning Department of Health, Education and Welfare Department of Interior Department of Commerce Department of Agriculture Atomic Energy Commission
Public Works	Resources Management	
General Administration	Government Operations	OEP plus All levels and branches of the federal government Office of Emergency Planning (NREC)

State Level Functional Area	Regional Level	
	Functional Area	Responsible Federal Entity
General Administration (cont.)	Government Operations (cont.)	Department of Defense (OCD) Department of State Department of Treasury Department of Interior Department of Agriculture Department of Commerce Atomic Energy Commission Export-Import Bank Federal Communications Commission
Public Safety	Government Operation	ZI Army
Medical and Public Health	Medical-Public Health	Department of Health, Education and Welfare Office of Civil Defense Office of Emergency Planning Department of Defense (various subcomponents) Department of Labor Department of Agriculture Veterans Administration General Services Administration Tennessee Valley Authority Atomic Energy Commission Housing and Home Finance Agency Red Cross Other agencies, as required
Welfare	Welfare	Department of Health, Education and Welfare Office of Civil Defense Office of Emergency Planning Department of Labor Department of Agriculture Department of Interior Veterans Administration Railroad Retirement Board Civil Service Commission

State Level Functional Area	Regional Level	
	Functional Area	Responsible Federal Agency
Welfare (cont.)	Welfare (cont.)	Red Cross Post Office Department Housing and Home Finance Agency Other agencies, as required

Appendix C

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Appendix C

REFERENCES

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