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MANUAL FOR DEVELOPING EOC STANDARD OPERATING PROCEDURES

Prepared for

Federal Emergency Management Agency
Washington, D.C. 20472

Contract DCPA01-77-C-0231
Work Unit 2614B

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August 1980

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Center for Planning and Research, Inc.

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By: Kent F. Paxton

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FEMA Review Notice

This report has been reviewed in the Federal Emergency Management Agency and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the Federal Emergency Management Agency.

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FOREWORD

This manual presents an approach to development of local EOC operating procedures. Because EOCs vary widely in size and sophistication, the manual can only be a guide; users should tailor the material herein to their own particular jurisdictions and facilities, and to the preferences of their direction and control staffs.

New emergency management coordinators may find the manual a helpful source book on how to organize and operate an EOC. Experienced hands may glean a few fresh ideas from its contents and find it a useful reference or training document. The manual also provides a quick refresher on crisis EOC operations in the event of nuclear threat, including practical suggestions on how to upgrade existing EOCs for NCP operations and how to quickly develop EOCs where none now exist.

A sample EOC Standard Operating Procedure for a county jurisdiction is included in an appendix to demonstrate the principles discussed in the text and to show one way in which an EOC SOP can be constructed.

This manual was developed by the Center for Planning and Research, Inc. under Federal Emergency Management Agency Contract number DCPA-01-77-C0231.

INTRODUCTION

Purpose and Scope

This Emergency Operating Center (EOC) Procedure Manual is designed to provide guidelines on establishing, readying, and operating EOCs, and to serve as a model for locally developed procedure manuals or SOPs. The manual is also intended to be used as a training device for EOC staffs.

EOCs and EOC staffs must be prepared to function in a wide range of operating situations. This manual reflects that requirement for EOC flexibility and adaptability, particularly in community shelter (CSP) and crisis relocation (CRP) operating modes. Some of the more common events that could require the central information-gathering and decision-making of an EOC are listed, in Figure 1. The list does not cover all of the contingencies that might require a central control point. In addition, many of the disasters listed can be compounded by ensuing threats. Earthquakes, for instance, can cause landslides or dam failures. Blackouts can lead to civil disturbances. A train derailment can result in a hazardous materials incident. A resource boycott of the United States can escalate to conventional war and then to nuclear war.

The emergency situation will determine, to a large extent, the direction and control function that the EOC will perform, and the human and material resources required to perform it. As an example, a larger EOC staff will usually be required to cope with a tornado than with a pollution episode. The situation will also influence EOC layouts, communications, and data display needs. This manual reflects the differing requirements of the various disaster agents and emergency situations.

Emergencies also vary in their frequency of occurrence, in our ability to predict them (and the length of forewarning such predictions provide), and in the force, physical scope, and duration of their impacts. All of these variables will also affect EOC requirements and staffing, and are considered in this manual.

Figure 1 TYPES OF EMERGENCIES

International Crises

Resource Boycott of the United States
Terrorism Directed Against the United States
Accidental Missile Launch
Conventional War
Nuclear War

Natural Disasters

Avalanche	Landslide
Conflagration	Sand or Dust Storm
Cyclone	Snow, ice, Hail Storm
Drought	Tornado
Earthquake	Tsunami
Flood	Volcanic Eruption
Hurricane or Tropical Storm	Wind Storm

Technological Incidents and Accidents

Blackout or Brownout	Nuclear Reactor Accident
Dam Failure	Oil Spill
Hazardous Materials Accident	Pipeline Explosion, Fire, or Leak
Industrial Explosion	Transportation Accident
Mine Accident	Water, Gas Main, or Sewer Break

Social Emergencies

Arson
Bombing or Bomb Threat
Civil Disturbance, Demonstration, or Riot
Labor Strife
Terrorism or Hostage Incident

Health Emergencies

Epidemic	Infestation
Famine	Pollution Episode

Manual Organization

This manual is divided into two parts. In Part One, Establishing and Preparing the EOC, issues of choosing a site, designing the room layout, and protecting, upgrading, and expanding the EOC are discussed. Issues of what equipment and communications will be required are addressed, as well as data and display needs and training requirements. Part Two, Operating the EOC, suggests standard operating procedures that can be used to organize and operate the EOC efficiently in time of emergency.

A model EOC Standard Operating Procedure is provided in the Appendix. The model can be used as a guide for those jurisdictions that have not yet developed EOC SOPs, or as a review and checklist for those jurisdictions that have. It is designed to be used either as a stand-alone SOP or as part of a Direction and Control Annex of the EOC.

PART ONE - ESTABLISHING AND PREPARING THE EOC

I. FACILITY, SITING, AND LAYOUT.

Facility

Designing, building and equipping a new Emergency Operating Center is a major effort, and a detailed description of the steps involved in such an effort is beyond the scope of this manual. Other Federal Emergency Management Agency publications (Civil Preparedness Guide 1-3, Federal Assistance Handbook, and CPG 1-5, Standards for Local Civil Preparedness) provide basic information on EOC standards and funding policies and procedures.

There are, however, several considerations that should be kept in mind by the emergency coordinator of a jurisdiction that does not yet have an EOC and that may not qualify for current federal EOC construction assistance funds. First, the coordinator should remain alert for other local planned construction that may be able to provide space for an EOC. A new school, library, city hall, public works facility, or other public building may be able to be designed to permit eventual EOC operations. The architects and planners of such a facility must be influenced early in the design process, if effective protection factors and communications capabilities (or the ability to quickly upgrade protection or add communications later) are to be included. Siting factors (discussed below) are particularly important and should be brought to the attention of the design team.

If no new public facilities are planned for the foreseeable future, the emergency management coordinator may also consider whether new privately owned buildings, such as private schools, colleges, office buildings, or hotels might be available to serve as host to an Emergency Operating Center. As yet, there are no financial incentives in U.S. laws to encourage such public/private cooperation, but an effective coordinator might be able to work out a local agreement for use of a well-constructed, well-located private building by the local government. Such an agreement should include provisions for occasional testing of the facility as an EOC by the emergency management staff.

If no new construction, public or private, is contemplated in the jurisdiction, or if no suitable arrangements can be made to include potential EOC spaces in any new construction, the emergency coordinator interested in developing an EOC should consider the availability of some existing facility in the community that could, in time of emergency, be converted to EOC use.

Location and space will be the prime requisites for selection of an existing building as a site for an Emergency Operating Center. Siting factors are discussed below.

Privately owned facilities should not be overlooked if no public spaces suitable for EOC operations are available. Private schools, churches, clubs, or meeting rooms could be pressed into service as an EOC if appropriate preplanning is undertaken. It is particularly important to reach agreement on how and in what circumstances the facility will become an EOC; how displays, furniture, communications, and other equipment and supplies will be provided; and whether the facility can be used for tests and exercises to determine its readiness and basic fitness for EOC operations.

Siting

The decision on where to locate an EOC is the most important decision to be made in preparing to perform direction and control functions in an emergency. In order to effectively manage an emergency, the crisis center and its basic emergency communications and support system must survive relatively undamaged; the initial decisions on siting and construction are the major factors in determining the survivability and operability of the emergency center and its emergency systems. Some major decision criteria regarding siting are discussed below.

- o Government-owned facility: An EOC located in a facility owned by the jurisdiction that will operate it is advantageous from several points of view. First, necessary modifications and enhancement of protection factors will be more easily accommodated if the jurisdiction owns the building. If it does not, permission to make modifications and to increase protection factors must be sought from the owner or lessor. Second, access to the Emergency Operating Center is more easily controlled and secured if the jurisdiction owns the facility.
- o Location at or near administrative headquarters: Since the core of the emergency management staff will be employees of the jurisdiction with offices in its administrative center, location of the EOC near city hall or the county seat will allow more rapid notification and assembly of the EOC team and will provide easier access to resource material filed

in the departments' normal work spaces. If the EOC is located at or near the administrative headquarters, it will also be easier to expand or contract the EOC staff as necessary.

- o Location remote from hazards: An EOC expected to perform direction and control functions in an emergency should be insulated, to the extent possible, from disaster effects. Preferably an EOC should be sited at the periphery or outside of known risk areas. In flood-prone areas, the EOC should be located away from the flood plain, dam, or tsunami inundation areas. In earthquake regions, EOCs should be sited away from fault lines and failure-prone soils. If an existing EOC is already located in a potentially hazardous area, alternate EOCs in better locations should be selected and plans and mobile equipment readied for their activation.
- o Location in well-constructed building: The EOC must not only be sited to avoid or minimize disaster effects, but also be constructed to insure survival and operability in an emergency. The next chapter discusses important protection principles regarding nuclear crises; in natural disasters, protection against likely disaster effects should also be incorporated. In flood-prone areas, special efforts should be made to protect the EOC facility (and particularly its power and communications systems) against floodwaters. In earthquake areas, the building that houses the EOC should be built to special earthquake structural standards, and non-structural elements critical to the effective operation of the EOC should be anchored to the building, tied down, or otherwise protected.
- o Location near centroid of area served: If the EOC and the resources it controls are located near the center of the jurisdiction it serves, faster response to problems in remote areas will be possible and radio propagation (see below) may also be enhanced.
- o Location in uncongested area: To insure clear access to and exit from the EOC, it is desirable that the EOC be sited in an area unlikely to become congested in disaster conditions.
- o Location in good position for radio propagation: Normal communication systems are frequently damaged in an emergency by the disaster agent or degraded through heavy use. The requirement of assured capability

to communicate with response elements calls for selection of an EOC site with good propagation characteristics, so that reliance on remote (and therefore vulnerable) repeaters is minimized.

- o Location in expandable spaces: Different types of emergencies will require differing direction and control staff sizes; at various phases of the emergency, staff size will also vary. It is therefore important to have the capability of expanding the EOC to accommodate additional personnel. This issue is discussed more fully in the following chapter.

All of these criteria, of course, cannot usually be satisfied in selecting an EOC site. To the extent that they conflict, the first four factors listed above are more crucial to the survivability and operability of the EOC.

Layout

The basic layout of the EOC will be determined by the size and shape of the room, the size of the crisis management team it must accommodate, and the location of supporting communications systems. The basic layout should be shown as a floorplan in the EOC SOP. Arrangement of furniture, assigned positions, location of displays, and communications connections should all be clearly indicated on the floorplan.

Different disaster agents may require modified EOC layouts, which should also be included as floorplan sketches in the EOC SOP. The EOC may also require differing arrangements at different stages of the disaster, reflecting changes in the size and composition of the EOC staff as the emergency progresses.

Preferences of the emergency management director and his or her crisis staff will also influence the choice of a basic EOC layout. Despite all these variables, a few general principles on EOC layout should be observed:

- o The director should be placed in a position from which he or she can observe the entire EOC operation, particularly the major displays.
- o Staff members who will be interacting frequently during the course of the emergency should be located near each other (Red Cross and medical, as an example).
- o Sections of the EOC staff should be placed close to the displays they are required to maintain.

- o Sections should be located close to the communications and power outlets they will be using.

The general configurations of EOCs shown in Figures 2 to 6 are based on staffing requirements and represent a standard-sized county EOC. Smaller counties and cities could use the same basic layouts by eliminating some of the tables, positions, and displays.

In rectangular-shaped rooms, two basic configurations are possible. The crisis staff elements can face either one of the shorter walls or one of the longer ones. Figures 2 and 3 show typical layouts for this type of EOC room.

If the jurisdiction (and therefore its emergency staff) is very large, the EOC can be laid out in classroom style, with tables and chairs facing the shorter wall. The problem log, damage assessment display, and jurisdiction map can be mounted on the forward wall. Subsidiary displays maintained by staff elements can be mounted along the longer side walls near the table of the element responsible for maintaining each display. Figure 2 shows an arrangement of this type.

Alternatively, all tables may be oriented to face a longer wall in a rectangular EOC. This layout will provide more wall space for mounting displays; the disadvantage is that persons maintaining the displays will have to leave their tables to do so. Figure 3 shows one example of this type of arrangement.

In a square room, either of the above configurations is possible but may not be advantageous. Other arrangements may be better suited to the geometry. One such arrangement is a U-shaped layout, with the director of civil defense at the closed end of the U facing the rest of the staff and the main displays; another arrangement is a T-shaped configuration which is well-adapted to this type of room. With the U shape, chiefs of services can be seated on the inside of the U for ease in conferencing with the director and in observing the displays. Also, operational staff members responsible for maintaining displays can be positioned on the outside of the U, facing their chiefs, but still be able to move frequently to and from the wall displays. Finally, cooperating elements of the emergency staff can be clustered at tables without a common orientation toward any one wall. These three configurations are shown in Figures 4, 5, and 6.

Figure 2 - EOC LAYOUT: CLASSROOM STYLE

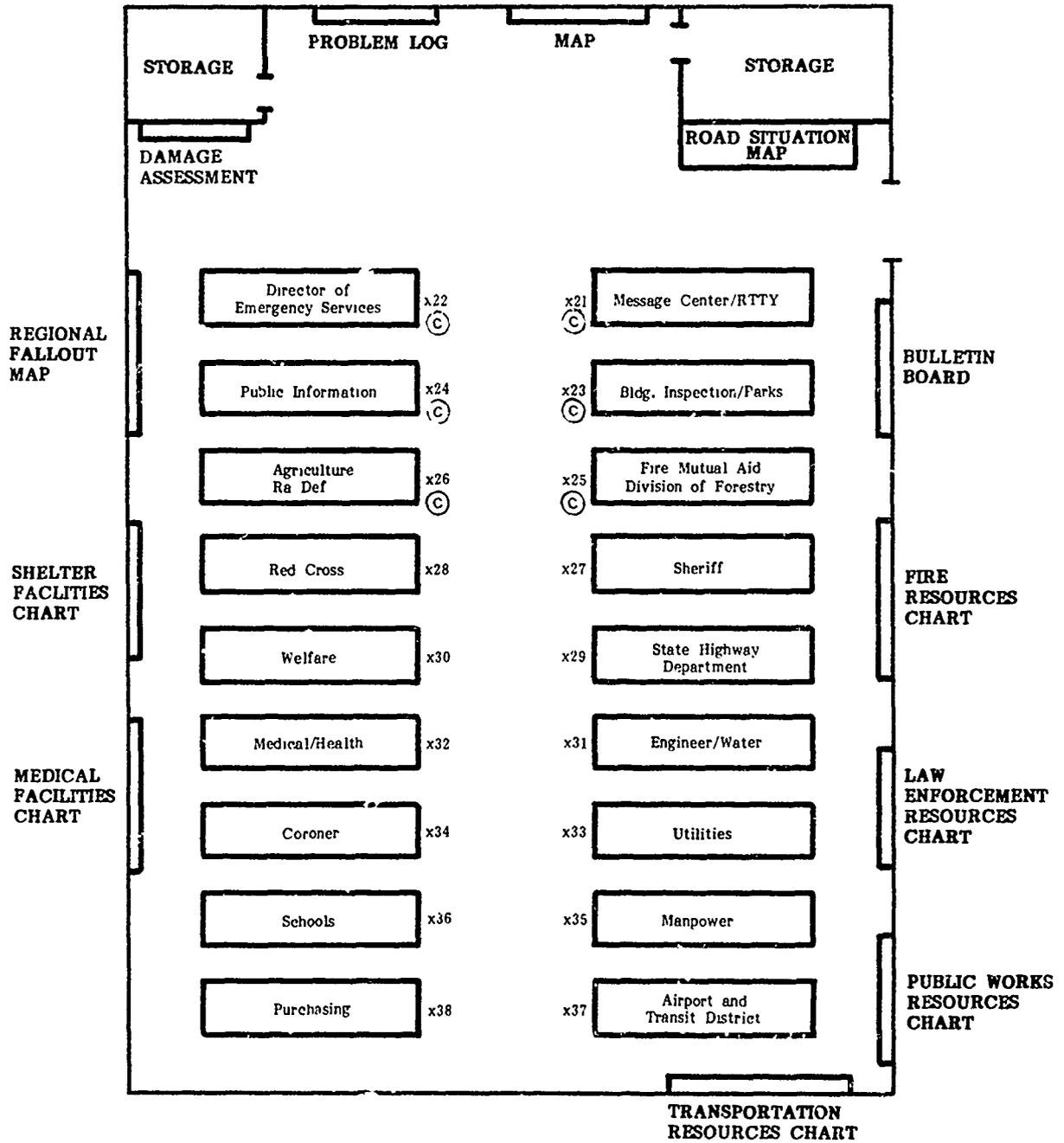


Figure 3 - EOC LAYOUT: ARC STYLE

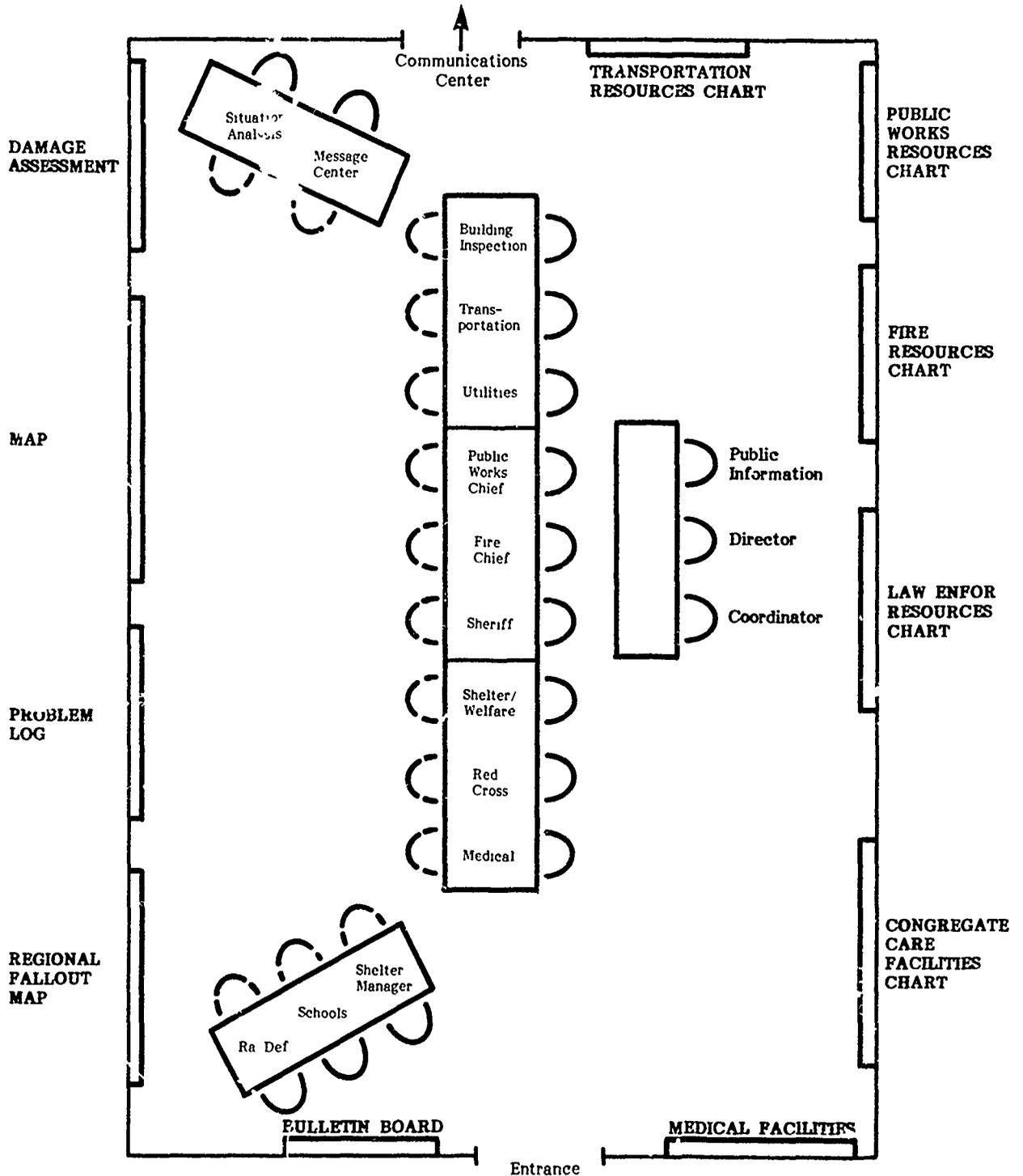


Figure 4 - EOC LAYOUT: U SHAPE

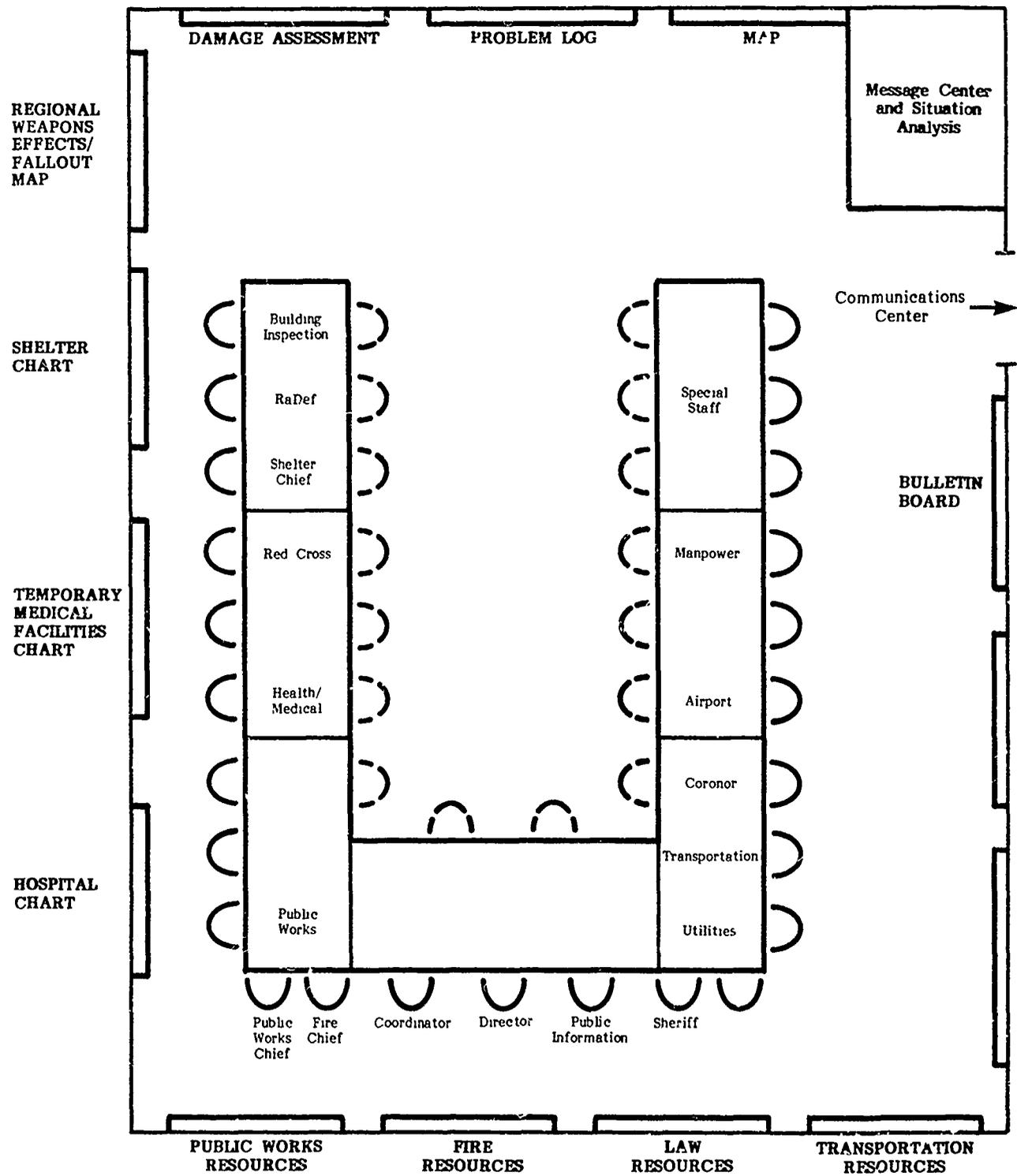


Figure 5 - EOC LAYOUT: T SHAPE

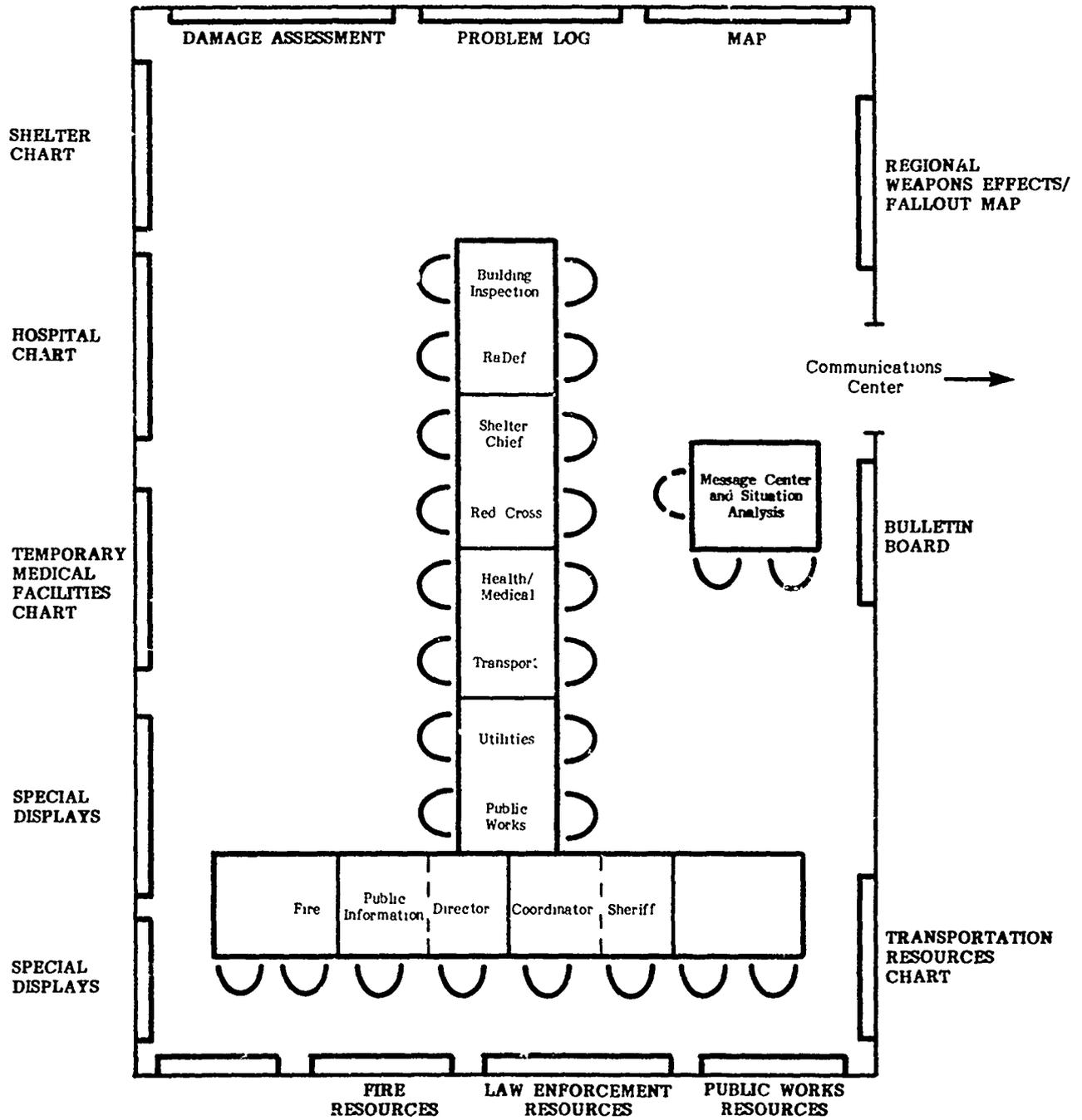
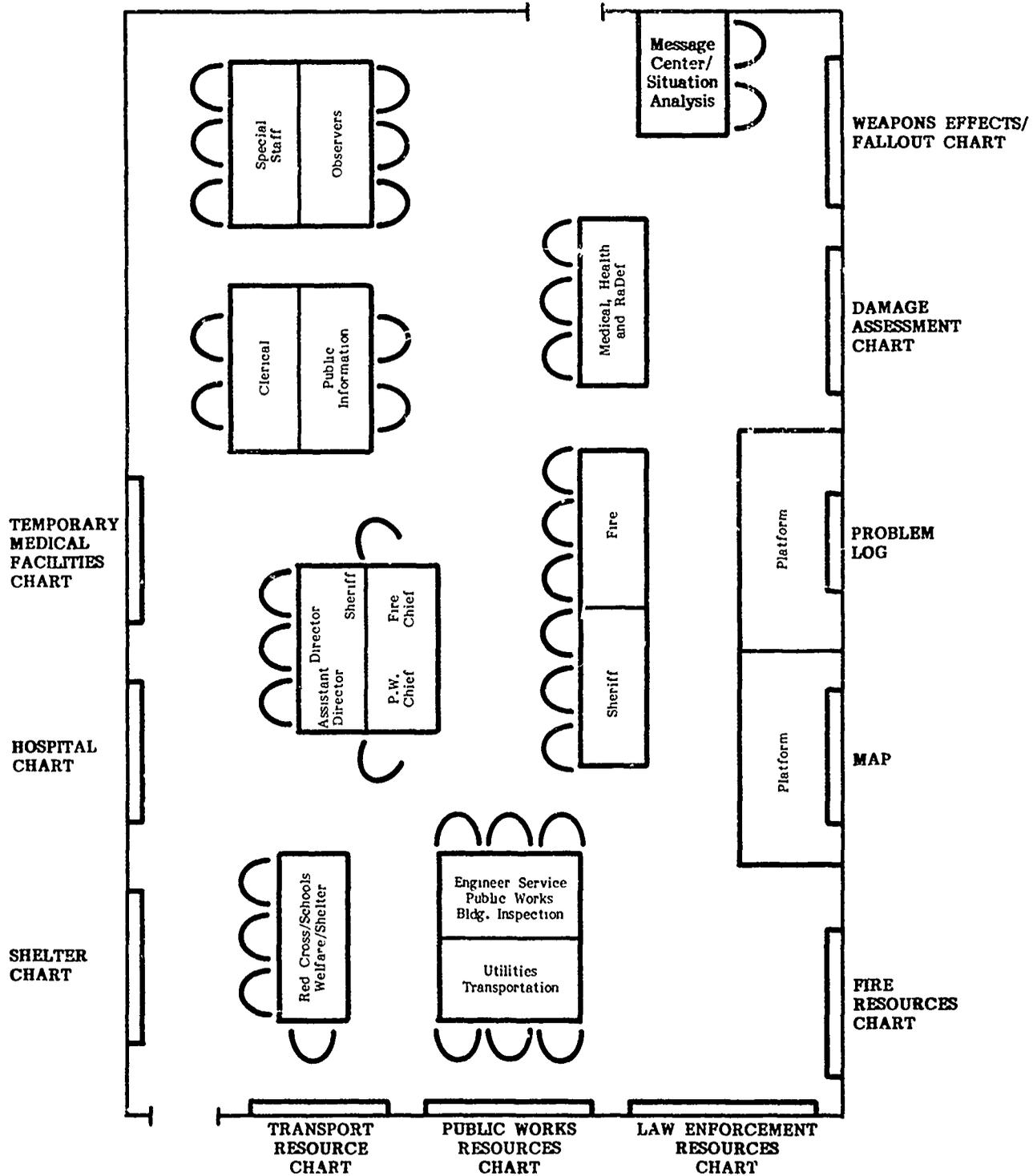


Figure 6 - EOC LAYOUT: CLUSTER STYLE



Summary

A single standardized EOC layout that will meet the requirements of all potential emergencies and of all phases of each emergency is seldom feasible. Differing emergencies require different displays, staffing levels, communications systems, and occasionally, different (alternate) EOCs. The recovery phase of an emergency also frequently requires changes in staff size, staff composition, and display and communications arrangements.

Even within one jurisdiction, there are often differences of opinion regarding the optimum EOC layout. EOCs in existence over a period of time are also frequently rearranged as tests and actual emergencies suggest improved layouts. All these factors lead to the conclusion that EOCs should be designed and prepared with flexibility as a major objective. Quick modification of the EOC will be made easier if the following points are kept in mind.

- o Detachable displays: EOC displays should be detachable and movable. Alternate EOCs should include wall mountings for standard EOC display charts.
 - o Movable storage: Materials maintained in the EOC by each section or department (plans, forms, logs, resource lists, radio and telephone equipment) can be stored in cabinets or surplus hospital bed tables that can be rolled within the EOC to new positions or carried to alternate centers.
 - o Portable power: A towable generator pre-wired for easy installation at alternate EOCs is necessary if no emergency power is available at the alternate site. It may also prove useful in other emergency situations where a power source at a field location is needed.
 - o Quick-Disconnect communications: Telephone and radios used in the EOC should be capable of movement within the EOC and to other locations. Alternate EOCs should be pre-wired to accept these devices.
- Portable furniture: Furniture and equipment required in the EOC should be capable of relocation to alternate sites.

II. PROTECTION, UPGRADING, AND EXPANSION

Protection

General

In order to manage preparations for, response to, and recovery from emergencies, the first requirement is that the emergency management system itself survive. The EOC structure and EOC communications and support systems should therefore be engineered to insure their survival in any major hazard that threatens the jurisdiction. This protection should include measures to insure the survivability of the EOC structure itself, and also measures to insure safety and survivability of non-structural equipment needed in the aftermath (communications, emergency power, medical stores and equipment, kitchen equipment, computer equipment, fire suppression systems, ceiling and wall panels, miscellaneous office equipment, etc.).

After structural and non-structural integrity of the EOC and its major systems has been assured through proper engineering, construction, and maintenance, there is a second line of defense to increase survivability. Preparations should be made and equipment stockpiled for repair and replacement of fragile components of essential EOC systems. Especially important is a basic stock of generator spare parts and batteries and communications systems antennas, crystals, and parts critically needed in the emergency response period.

A third line of defense to guarantee survival and operational capability of a direction and control staff is a preselected alternate EOC, equipped (or capable of rapid activation) and tested in one or more emergency exercises conducted by the jurisdiction's emergency management staff.

Nuclear Civil Protection

The design and construction of EOC facilities with combined effects protection is a matter for experienced structural engineers, and detailed description of design techniques is beyond the scope of this manual. Civil defense officials should nevertheless be aware of the basic measures for nuclear blast and fallout protection and of the need for incorporating these techniques into EOC design early in the EOC planning phase. They should also be aware that not all or even many structural engineers have

knowledge and experience in building blast and fallout protected structures. Special technical assistance is available from FEMA.

Beyond the critical factor of appropriate siting discussed above, engineering design techniques commonly used to strengthen EOC structures include:

- o Build the facility underground. Because layers of earth will both absorb blast shock waves and filter radiation, underground EOCs are preferred.
- o Reinforce ceilings slabs and walls. Upgrading measures discussed below involve: (a) increasing dynamic load strength of walls and ceilings by adding reinforcing columns, and (b) enhancing blast and fallout protection by adding earth to walls and ceilings. To the extent that upgrading requirements are considered in initial design, subsequent upgrading efforts in time of crisis can proceed more expeditiously. Reinforced concrete (with reinforcement bars tied by vertical stirrups, not welded) is the preferred technique.
- o Seal the EOC against radiation. Techniques include air filtration equipment and blast and fire doors.
- o Protect the EOC against Electromagnetic Pulse (EMP).

The level of protection designed and built into the EOC should be appropriate to the direction and control role it is expected to perform during and after the attack. Thus, risk area EOCs which are planned to remain operational through the crisis must be protected against blast and radiation, but those risk area EOCs planned to be relocated do not need such protection. Host area EOCs need radiation protection and sustenance capability beyond that of the shelter complexes and the population they are designed to manage.

Protection Against Natural and Other Disasters

Siting issues in natural disasters have already been reviewed. Specific disaster agents may require differing structural and non-structural protective measures to insure EOC survivability, although there are many commonalities in engineering a facility—for example, to withstand earthquakes, or to survive and remain operable after a tornado. Among the disaster-specific protection methods are:

- o Flood-proofing.
- o Earthquake-resistant construction: lateral support and non-structural element support and anchoring.
- o Social emergency: security systems.

Upgrading

When an emergency is preceded by some period of warning, opportunities exist to enhance the protection of the EOC and its critical systems.

- o Nuclear Crisis. Have structural engineer inspect the facility for capability to withstand expected overpressures. Under supervision of engineer, add layer of earth above ceiling (and, if EOC is above ground, to sides of building); close and seal all windows with plywood and/or bricks; and determine best EMP countermeasure. Test radiological monitoring devices in EOC; tie down and sandbag critical communications equipment, lighting, heating, and ventilating devices.
- o Flood. If a flood is forecast and the EOC is located in or near its predicted path, upgrading efforts should focus on sandbagging the exterior ground level of the building; acquiring and testing pumping systems; and cleaning and preparing runoff channels. Communications and electrical lines should be rerouted, raised, or isolated from expected flood waters. At the same time, alternate EOCs should be brought to full readiness and the emergency management staff advised of call-up, activation, and plans for movement to alternate EOC.
- o Tornado. Forecast tornados, like some floods, may leave little time for upgrading measures. Lateral bracing of above-ground EOCs may add a measure of protection; external antennas should be reinforced and replacement units acquired and stored. Non-structural elements of the EOC should be tied down or otherwise braced.
- o Earthquake Prediction. Depending on the length of forewarning, lateral bracing can be added to above-ground EOCs and critical non-structural EOC components such as communications, emergency power, and fire suppression systems can be bolted to floors, tied to structural members, or otherwise anchored.

Expansion

As the phases of an emergency proceed, the staff required to operate the EOC will expand and contract. Many studies have identified the problem of conversion in EOC operations, where personnel not directly needed to manage the emergency are present in the EOC and add to security and crowding problems. The conversion phenomenon should be anticipated by emergency management coordinators and compensated either through rigorous security at entrances or through expanding EOC work spaces to accommodate additional EOC staff.

Expanding the EOC may also be required for several other purposes. If the EOC is large and noisy, a room should be preselected to which members of the crisis management staff can retreat for short briefings or critical meetings away from the

bustle in the main EOC room. A conference room or office near the EOC can fill this need, and at the same time serve as a mini-EOC for small-scale disasters or as a simulator room for exercises. Necessary communications links should be established to insure that important developments in the EOC can be relayed quickly, and important decisions reported to the EOC room via public address system or intercom.

During international crises which could lead to nuclear confrontation, additional workspace will be needed to complete the readiness actions described in CPG 1-7, Guide for Increasing Local Government Civil Defense Readiness During Periods of International Crisis (interim version published by the Defense Civil Preparedness Agency in April 1979). Much of the in-place (CSP) and relocation (CRP) planning can be conducted in normal office workspaces. The EOC should be at least partially activated, however, to test systems and train or retrain EOC staff in operational procedures.

The public information officer should also consider in advance (and include in the EOC SOP) the designation of a room in which media can be advised of disaster-related progress and problems. This room should have adequate telephones (or the capability of adding telephones) and chalk or bulletin boards for routine and special announcements. The press room or media information center should be close enough to the EOC so that the public information officer can get to it quickly, but far enough removed so that EOC operations can be conducted with security and without disruption.

Some emergencies, particularly natural, technological, social, and health disasters, may require the establishment of a rumor control center or a call-in public information center. Locations of these centers should be thought out in advance and included in the EOC SOP or other planning document. Telephones and bulletin or chalk boards for displaying current information are needed here as well.

Potential expansion requirements are summarized in Figure 7.

Figure 7 POTENTIAL EOC EXPANSION REQUIREMENTS

1. CONFERENCE ROOM

Use: Allow core staff to confer on major issues away from distractions of main EOC room; permit management of small-scale disasters without full activation of main EOC; permit separation of "simulators" during EOC exercises and drills; serve as general purpose meeting and training room.

Necessary Equipment: Tables and chairs; chalkboards or bulletin boards; telephone (or capability to rapidly install telephones); intercom links to EOC.

Optional Equipment: Radio and television monitors; public address system link to EOC; wall display systems.

Potential Location: Any town, city, or county hall conference room reasonably close to the EOC.

2. MEDIA CENTER

Use: Briefing center for media representatives; possibly combined with rumor control or public information center (see below).

Necessary Equipment: Capability of rapid installation of telephones; dais or lectern and public address system.

Optional Equipment: Maps, charts, display materials.

Potential Locations: Council, commission, or other legislative chambers; publicly or privately owned theater; courtroom; any large public hall (such as a fraternal or veteran organization building); school classroom or assembly room. Should be relatively near (but separate from) EOC.

3. RUMOR CONTROL CENTER/PUBLIC INFORMATION CENTER

Use: Advise public of what is happening and what is being done, and respond to questions such as what roads are open, what schools are open, where injured victims have been taken, etc.

Figure 7 (Continued)

Necessary Equipment: Capable of rapid installation of phone equipment, or already equipped with multiple phones with the same dialing number; links to EOC, shelters, hospitals, Disaster Assistance Centers, and other sources of emergency information; adequate wall space and chalk or bulletin board space for listing current information; copying machine for insuring that all center workers are apprised of current status and developments.

Optional Equipment: Public address system; exterior signs and walkup information desk.

Potential Locations: Same as media centers.

4. CRISIS RELOCATION PLANNING ROOM(S)

Use: Review, revise, and complete crisis relocation plans during increased readiness periods.

Necessary Equipment: Telephones; CRP plans, shelter surveys, census data, road and food data; standard office machines (typewriters, copiers, calculators).

Optional Equipment: Data processing equipment.

Potential Locations: Any public or private office space with necessary equipment.

III. EQUIPMENT, FURNISHINGS, AND COMMUNICATIONS

General

Much of the equipment required in an EOC in time of emergency is often used day-to-day for other purposes. The task of the emergency management coordinator is to identify this equipment, insure its compatibility with EOC systems, and arrange for its availability during the emergency.

Equipment that is potentially movable (to alternate EOCs) is also preferred to equipment that is mounted permanently in place or is too bulky or heavy to move easily. Equipment should also be selected that can be relied on to operate under expected emergency conditions; any electrical equipment should be tested on emergency power to insure operability.

The following sections identify key EOC equipment supplies, furniture, and communications that should be set aside or identified for emergency center use.

Equipment and Supplies

All EOCs should have medical, bedding, food, fuel, water, lubrication, backup lighting, and sanitation supplies and equipment adequate to permit two weeks of EOC operation without resupply. In practical terms, however, it is difficult to maintain such supplies in usable form over long periods of time. An alternative is to identify nearby commercial, public, and private organizations that do have necessary equipment and supplies in stock and can be counted on to support the EOC when it is activated.

To prepare for nuclear civil protection operations, the emergency management coordinator should acquire, store, and maintain: equipment to sense radiation levels within and outside the EOC; equipment to assist in decontamination; air filtration devices; and emergency power systems. Full confidence cannot and should not be placed in generator systems, particularly those that are old or infrequently used and tested. Backup flashlights, lanterns, and fresh batteries are needed to guarantee continued operability of the EOC in a major emergency.

In any emergency, a complement of standard office equipment will be necessary, including office machines such as typewriters, copying machines, computer terminals, calculators, cameras, and dictation machines or other recording devices.

Because of the possibility of power interruption, manual typewriters (which can be procured cheaply through surplus programs) and other non-electrical equipment, or equipment that can operate on battery power, should be on hand. Support supplies for such office equipment (batteries, paper, standard repair parts) should also be stored in or near the EOC.

Stationery supplies for EOC operations should also be stocked in or near the EOC in sufficient quantity to insure immediate availability. These supplies include paper, pens, pencils, crayons, staplers, staple removers, paper clips, in/out boxes, thumb tacks, and magnets or magnetic strips (if magnetic display media are used).

Forms necessary for record keeping and information exchange should also be stocked in the EOC. During the emergency response and recovery period, these forms should be stocked on open shelves or bins so that the crisis managers have easy access to them and know at a glance what forms are available. Forms are discussed in Part Two; at a minimum, however, the emergency management coordinator should obtain adequate supplies of logs, message forms, damage assessment worksheets, weapons effects reports, disaster declarations, and other standard forms suggested by FEMA or the State or adopted for use by the jurisdiction.

Extra copies of current emergency plans, SOPs, contingency plans, and checklists should also be available in or near the EOC.

Furnishings

Tables and chairs should be permanently located in the EOC or stored nearby. EOC furniture arrangements and layouts should be understood by all personnel responsible for setting up EOC furniture that is stored. A floor plan should be posted (along with the rest of the EOC operating procedures) somewhere in the facility itself for rapid reference when the EOC is activated.

Lightweight, folding EOC furniture is preferred for several reasons: it is easier to store; it permits rapid rearrangement of the EOC when necessary; and it can be relocated to alternate EOC sites as required.

Movable chalkboards and/or easels and paper (with adequate supplies of chalk and marking pens) will add to the briefing and information dissemination functions of the EOC. Similar equipment and supplies should be identified or acquired near predesignated media or public information centers.

Communications

The ability to communicate with field forces, allied agencies, and the public lies at the heart of the EOC's emergency management role. (Communicate refers here to both transmitting and receiving.) The EOC must be able to communicate downward to and from subordinate jurisdictions and to and from field forces, laterally to and from adjacent jurisdictions and agencies to request (or receive requests) for assistance, and upward to and from higher level jurisdictions and agencies to report conditions and to ask for help. These two-way communications links are shown in Figure 8.

Other Federal Emergency Management Agency publications discuss communications requirements and systems in greater detail. For purposes of this EOC Procedures Manual, only the major communications possibilities will be listed. Information on protecting communications systems is contained in Chapter II; Chapter VII reviews standard communications procedures that should be included in EOC SOPs.

Systems that should be considered for use (and for which EOC communications procedures should be developed and disseminated) are shown in Figure 9.

FIGURE 8 - FLOW OF INFORMATION AND RESOURCES

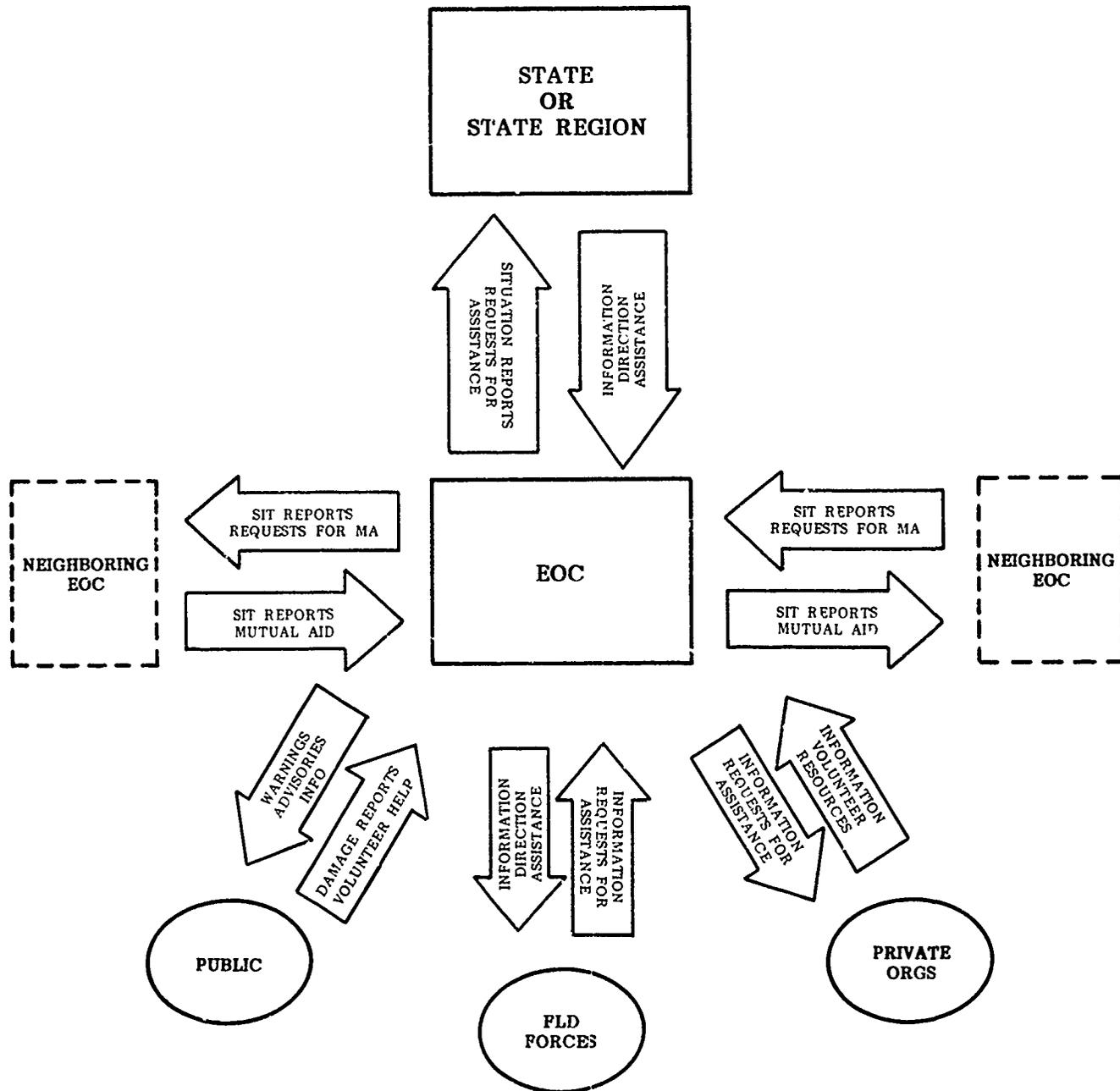


FIGURE 9 - POTENTIAL EOC COMMUNICATIONS SYSTEMS

National Warning System

Access to Media

- Emergency Broadcast System
- Commercial Radio Stations
- Television
- Cable Television

Government Emergency Radio Systems

- Law Enforcement Voice Radio Systems
- Law Enforcement Teletype Radio Systems
- Fire Radio Systems
- Medical Radio Systems (hospitals, ambulances)

Private Commercial Systems

- Taxi Fleets and Railroads (Land Transportation Radio Service)
- Business/Industrial Systems (Industrial Radio Service)
- Fishing Fleets (Marine Service)

Radio Amateur Systems

- RACES - Radio Amateur Civil Emergency Service
- *AREC - Amateur Radio Emergency Corps
- *NTS - National Traffic System

Citizens Band Systems

- REACT - Radio Emergency Associated Citizen Teams
- ALERT - Associated Law Enforcement Radio Teams
- NEAR - National Emergency Aid Radio
- CRW - Community Radio Watch

Personal Radio Service

Other Systems

- Civil Air Patrol
- Red Cross Radio

*Part of Amateur Radio Service Corps of the American Radio Relay League. Under current FCC rules, these systems may not legally operate during war or declared national emergencies.

IV. DATA AND DISPLAY

General

Data and resource information requirements in an Emergency Operating Center vary greatly with the size of the jurisdiction and its available resources. There is a basic set of data, however, that should be compiled and be accessible in or near the EOC, either in emergency plans, in resource manuals, in files, or in data processing systems. Some of the major data needs are listed in Figure 10. Resource compendiums should include alert lists, hazard information, mutual aid assistance, media contact points, and general information on potential public and private sources of equipment, manpower, and supplies.

The critical early function of an EOC is to ascertain what has happened or is likely to happen and what all public/private agencies are doing or planning to do about it. Only when this picture of the general scope of the problem and response is understood can the crisis management team begin to coordinate and direct the response effort. To assist the EOC staff in its situation evaluation, displays of current problems, responses, and available resources are necessary. Several display techniques are discussed below; the one(s) chosen will depend on the preferences and means of the jurisdiction.

Methods of Display

Of the many ways to display critical information in EOCs, three are discussed below. They range from inexpensive, completely manual systems through relatively expensive and more vulnerable data processing systems.

1. Charts and maps, either magnetic or plastic overlay or both. This is the least expensive and most flexible display medium. Charts and maps are easy to store, use, and relocate when necessary. The disadvantages of this medium should also be considered in developing EOCs and EOC information systems. Wall charts are often difficult to keep current in the hectic early activity of EOC operations, when the data they are designed to display are most needed. Wall charts are also easily obstructed by normal traffic in the EOC. When a chart (such as a problem log) is filled, it must be erased, thus losing data on early problems and responses. Erasure can be compensated for by taking instant photographs of the chart at given intervals.

Figure 10 EOC DATA REQUIREMENTS

1. Alert Lists

Names, addresses, and day and night numbers of members of EOC staff, cooperating agencies, and nearby jurisdictions.

2. Hazard Information

Maps of risk areas, flood zones, landslides; maps of community with locations of hospitals, schools, nuclear reactors, hazardous materials storage areas, and other critical facilities identified (including addresses and day and night contact procedures).

3. Mutual Aid

List of nearby communities with day and night phone numbers and communications links; names of contact persons; and types of resources available.

Lists of state and federal agencies with day and night phone numbers and communications links.

Lists of predesignated Multipurpose Staging Areas with addresses, day and night phone numbers, and resources available (fuel and maintenance facilities; feeding and sleeping capacities).

4. Warning and Public Information

Procedures for receiving warning over National Warning System and activating local warning system.

Procedure for accessing Emergency Broadcast System.

Lists of radio, print, and television media with day and night phone numbers.

Prepared advisory information for major disasters which threaten area, especially shelter and medical facility locations, instructions for building hasty shelter, and health and safety precautions.

5. Resource Information

Law Enforcement: Police equipment, manpower, facilities and supplies in or near community; auxiliary police forces or reserve manpower and alerting procedure; law enforcement explorer scouts and alerting procedures; private security companies with manpower and equipment information and address/telephone numbers.

Fire: Fire station locations and communications in and near jurisdiction with manpower, equipment, and supply information; lists of private or public owners of pumps, compressors, and other supplies; locations of swimming pools, wells, and other water sources in or near community; addresses and phone numbers of volunteer support groups (fire buffs, explorer scouts, etc.).

Figure 10 (continued)

Public Works: locations and communications with public and private equipment yards and Multipurpose Staging Areas; day and night phone numbers and addresses of supply and equipment vendors, heavy equipment contractors, and fuel suppliers; maps of utility systems, station and substation locations, and communications.

Medical: lists of medical facilities, capacities, and communications links; lists of ambulance services with addresses and phone numbers; lists of secondary medical facilities (nursing homes, clinics, medical office complexes) with locations and contact procedures; lists of blood, drug, and medical supply houses with contacts; lists of predesignated temporary first aid stations and Packaged Disaster Hospitals with locations and communications links.

Transportation: lists of transportation resources, including public and private agencies with vehicle fleets.

Communications: lists of CB and amateur radio clubs with frequencies, assignments, and contact procedures; lists of government and commercial radio networks with frequencies, assignments, and contact arrangements.

Supplies: lists of suppliers of bulk fuels, foods, and specialized equipment (sandbags, lighting, generators, pumps, respirators, etc.) with day and night numbers.

Congregate Care: lists of fallout shelters, capacities, stocks, and designated managers; lists of other mass care facilities with organizations designated to operate them, and contact procedures.

2. Overhead projectors. Alone or in combination with other charts, overhead projectors (viewgraphs) can be used to record important information. The plastic sheets used with the projector can be saved and reproduced for record, thus avoiding lost data as operations proceed. But such projectors may require a low EOC light level, interfering with other important EOC activities. They can also be frequently obscured in a busy EOC by passing traffic. When an overhead projector is used, it should probably be reserved for the problem log, and a backup chart should be available if power or the projector itself fails. In any case, it would be used in conjunction with a map, either with plastic overlay or with magnetic symbols.

3. Computers. Computers provide excellent storage, display, and printing capabilities; can store emergency plans, SOPs, checklist, and resource files; and can manipulate figures and produce reports and public information releases. If a jurisdiction has the resources to purchase dedicated microcomputers, or can use space on a larger computer already owned by the jurisdiction, this approach to EOC displays and data storage problems may solve many of the problems associated with the manual techniques discussed above. It should be remembered, however, that computers depend on reliable and consistent power. EOCs choosing this alternative should thoroughly test their systems on generator power, and should have backup manual systems in case of failure of the system or the emergency generator that is expected to power it.

Each jurisdiction must make its own choice regarding display mediums. Consideration should be given to redundant systems (that is, when a microcomputer is used for display, charts should still be available if the computer goes down). Display systems should be regularly tested in EOC drills, both in the main EOC and in any alternative EOCs that have been preselected.

Display Types

The following charts, maps, and displays are recommended as a basic package for an EOC. Format samples are included in Figures 11 through 17. All of the suggested charts lend themselves to any of the display media discussed above.

Problem Log

Some sort of log of incidents and problems to which emergency forces will be called upon to respond is necessary for effective crisis management. The log should include a sequential problem number, the time the problem was first reported to the

EOC, a short description of the problem, the location of the problem, the departments or agencies to which the problem has been assigned for response, and the time and nature of the initial response. A remarks section is also helpful to allow comments on frequencies in use, special equipment requirements at the site, and designation of incident commanders at the scene. A sample log is shown in Figure 11. The problem log will be a major source of information for the emergency management director, public information officer, and other elements of the emergency staff. It is therefore very important that the log be kept current; this is best assured by routing all incoming messages into the EOC through a central situation analysis section which has responsibility for maintaining the log.

Bulletin Board

All EOCs should have a bulletin board near the main entrance/exit. Items to be displayed on the bulletin board include briefing, shift, and report schedules, announcement of special frequency assignments, and other information needed by relief personnel so that they can rapidly assume their duties. In normal times, a copy of the EOC Procedure Manual should be posted on the bulletin board for reference purposes.

Maps

A map of the jurisdiction and a separate map of the larger region in which it is located should be included in the EOC. Maps should include hazard data (for example, risk areas on the regional map and flood areas on the local map), permanent facilities with disaster responsibilities (hospitals, police and fire stations), and major transportation routes with alternates indicated. During the course of the emergency, other information such as locations of blast and fallout shelters, or temporary medical or congregate care facilities can be added on the overlay. Jurisdictional and regional maps are also needed to plot weapons effects and fallout information as well as meteorological data in NCP operations.

In a major emergency situation in a large jurisdiction, more than one local map may be required. Separate maps of traffic interruptions and detours, evacuation area perimeters, and weather data will avoid crowding too much information onto one map to the extent that it is unrecognizable.

The incident log should be located close to and correlated with the basic map of the jurisdiction. The sequential numbers assigned to problems as they are reported can be entered on the map to give a better picture of the overall impact of the emergency. The map thus posted will also make it easier to identify areas from which

Figure 11 PROBLEM LOG

Incident Number	Date/Time of Report	Problem/Location	Assigned To	Response

no damage or incident reports have been received, so that reconnaissance activities can be started. (It is frequently the case that the most seriously affected areas in a major disaster are the last to be heard from.)

NUDET (nuclear detonation) sighting reports in particular should be promptly posted so that fallout can be plotted and countermeasures undertaken.

Damage Assessment

Damage information is extremely important in all emergencies so that adjacent and higher level jurisdictions can effectively plan for and provide appropriate assistance. The emergency management staff should have a structured method to collect, compile, and report damage information in timely fashion. The larger the scope of the emergency, the more important a damage assessment capability becomes. In NCP operations, accurate local damage assessment is absolutely necessary so that state and federal level agencies can undertake remedial actions, allocate surviving resources, and begin recovery planning. In natural and technological disasters, of course, damage assessments are required in order to trigger state and federal disaster declarations.

A sample damage assessment chart is shown in Figure 12. It includes major categories of life and property loss and will provide fairly accurate assessments if the persons charged with maintaining the chart are familiar with it and have used it in an exercise or drill.

At the zone or local level, each line across the chart will represent one incident. When a subsequent report from the same incident scene is received, the entire line is erased and the new figures are entered. At any time a damage report is requested, either by a higher level jurisdiction or by the public information officer, columns are totalled and the report is forwarded. Dollar loss figures can be estimated by assessors or building inspectors by noting the location of the incident, assigning approximate values to buildings or homes in that area, and multiplying by the number of units destroyed or damaged. These figures will be extremely rough and subject to substantial revision after on-site inspections, but will be of great use in establishing the scope of the emergency so that rough calculations of assistance required can begin to be made.

At area (county) and sub-state or state level EOCs, the damage assessment chart is used in basically the same way, except that each line now represents a single jurisdiction within the larger unit. Information releases can be generated by totalling the columns; a release might begin by stating "At 4:15 PM, with 10 of 18 jurisdictions reporting, initial damage estimates are..."

Figure 12. DAMAGE ASSESSMENT

PUBLIC SECTOR DAMAGE	Total Public Damage	\$		
	Public Facilities	\$	3D	
	Federal Facilities	\$	3C	
	Schools Grades 1-12	\$	3B	
	Fed Aid System Roads	\$	3A	
PRIVATE SECTOR DAMAGE	Total Private Damage	\$		
	Private Utilities	\$	2I	
	Private Schools	\$	2H	
	Private Hospitals	\$	2G	
	Railroads	\$	2F	
	Agriculture	\$	2E	
	Businesses Destroyed	#	2D	
	Businesses Damaged	#	2C	
	Homes Destroyed	#	2B	
	Homes Damaged	#	2A	
	Number Dead	#	1B	
	Number Injured	#	1A	
TIME OF REPORT				
INCIDENT AND LOCATION				

Law Enforcement Resources

Emergency organizations generally expand considerably in order to respond to an emergency, and effective crisis management requires that the local law enforcement chief be fully aware of the resources at his or her command. A chart on which law enforcement reserves, auxiliaries, mutual aid units, and volunteer resources are displayed will assist in meeting this need. In Figure 13, a sample chart (with sample entries) demonstrates how the chart is used. Columns are available for unit designations, location to which the unit has been assigned, composition of the unit, assignment, communications (e.g., radio frequencies or other means), and remarks, which can be used to note special equipment needs, replacement schedules, or other miscellaneous information. By maintaining a resources chart like this, the police chief or sheriff can better anticipate mutual aid requirements, which are generally smaller than initially assumed once the full resources of the jurisdiction are accurately catalogued. The chart will also be helpful in constructing after-action reports and crediting assisting organizations.

Fire Resources

The fire resource chart provides the same data for the fire chief as the law enforcement chart described above, and includes the same columns. The format used in Figure 13 can also be used in the fire resources chart, or another column can be added which identifies the equipment with each unit more precisely.

Public Works Resources

The jurisdiction's engineer or public works chief should also maintain a listing of available and deployed resources, both public and private. The format is the same as that of the law enforcement resources chart in Figure 13. Public works personnel should also maintain and post a list of Multipurpose Staging Areas for reference by other departments and agencies, or enter the locations of the MSAs on the jurisdictional map.

Transportation Resources

In smaller jurisdictions, transportation resources can be included in the public works resources chart. In larger cities and counties, a separate chart identifying all public and private transportation resources should be developed and maintained by the local transit agency. An example is shown in Figure 14.

Figure 13 - LAW ENFORCEMENT RESOURCES

UNIT	LOCATION	COMPOSITION	ASSIGNMENT	COMMO	REMARKS
Wilton County Sheriff-Mutual Aid Law Enforcement Explorer Post 32	VFW Hall 42 Elm Hillbrook School 202 Maple St.	1 Lt. 5 officers 2 leaders 24 scouts	Search and Rescue Highlands Area Search and Rescue Brookdale Area	765-1861 TAC 3 323-4884 REACT Tm 7778 Ch. 15	
Woodville Mounted Patrol	Woodville Stables 100 Woodville Rd.	12 horses and riders	Search and Rescue Big Rock State Park	ALERT 174 Ch. 19	
Sheriff's Reserves	County Government Center	1 Lt, 1 Sgt, 16 officers	Downtown patrol	TAC 2	

Figure 14 - TRANSPORTATION RESOURCES

ORGANIZATION	DISPATCH LOCATION	VEHICLE FLEET COMPOSITION	ASSIGNMENT	COMMO	REMARKS
123 ^d Transportation Co. National Guard	Armory, 137 Main	40 2½ ton trucks 8 5 ton tractors 16 semi-trailers		328-1617	
School Bus Yard	939 Oak St.	53 25 passenger buses		323-4888	
Mountain Charter Bus	144 S. 17th St.	4 50 passenger buses		764-5310	
Bud's Taxi	87 Main	8 taxis		764-1818	
U.S. Postal Service	457 Willow	24-½ ton, 6-1 ton trucks		323-9999	
Burke Airport Shuttle Service	Burke Airport	17 9 passenger vans		328-6410	
Red Cross	40 Main St.	1 disaster bus 3 station wagons		764-8812	
<u>Aviation</u>					
Civil Air Patrol	Greenville Airport	Numerous private aircraft		323-3088	VHF 127.5
Sheriff's Air Squadron	Greenville Airport	12 private aircraft		323-3055	VHF 125.8
Coast Guard	Burke Airport	3 H-61 helicopters		328-6410	
223 ^d MedEvac (MAST)	Fort William	25 UH-1 helicopters		281-MAST	

Medical Facilities

All permanent and temporary medical facilities should be listed on a chart. A sample medical facilities chart is shown in Figure 15. The chart should indicate at a minimum the facility name and location, the number of beds in each facility, beds currently available, number of patients sent, and number of burn cases sent. The communications column can be used to enter phone numbers of the hospital emergency control center; any temporary communications links that have been established (such as radio amateurs, citizens band, or personal radio service); and frequency, call sign, and operator identification. The remarks column can be used to enter any special needs of the facility, such as blood or water.

Large jurisdictions should consider two medical facility charts, one for the general hospitals and one for any temporary facilities (first aid stations, packaged disaster hospitals) that are established. An example is shown in Figure 16. It is particularly important to identify temporary facilities prominently in the Emergency Operating Center so that public information personnel can inform the public as to where to go for minor medical treatment, and so that law enforcement, fire, and public works representatives can alert field personnel to the locations of these facilities.

Fallout Shelters

All existing or potential shelter spaces should be identified on a fallout shelter status chart. Chart information should include: the protection factor; location; capacity; current occupancy; status of food, water, and medical stocks; communications links and reporting schedules; and names of designated shelter managers. An example is shown in Figure 17. If one or more Shelter Complex Headquarters are established, this type of detailed display will be used at each SCH, and the main EOC would maintain only a chart showing locations, managers, and communications of the subordinate headquarters, along with summary data on total shelter status.

Congregate Care Facilities

This chart should include the same general information as the fallout shelter status report for facilities used in emergencies in which fallout protection is not needed. The organization operating the facility should also be identified (Red Cross, Salvation Army, Church or veterans' group). The format used in Figure 17 can be used for this chart as well.

Figure 15 - HOSPITAL STATUS

	BEDS	BEDS AVAILABLE	PATIENTS SENT	BURN CASES SENT	COMMUNICATIONS	REMARKS
Hospital A 110 Main	120				368-1464	
Hospital B 847 Spruce	75				362-1211	
Hospital C 2028 Elm	50				493-1080	
PDH #704 Weldon Rec Ctr 85 Mission	200				493-6861	

Figure 16 - TEMPORARY MEDICAL FACILITIES

FACILITY	LOCATION	PATIENTS TREATED	COMMUNICATIONS	REMARKS
FAS-St Lukes Church	475 Walnut		362-1848	
FAS-Central High School	47 Grove		367-8613	
FAS-Morton Community Center	1083 Pine		492-8486	
Downtown Clinic	1430 Main		493-1444	

Figure 17 - FAJ LOU T SHELTER STATUS

LOCATION			FACILITY NAME STREET ADDRESS	CAPACITY			Current Occupancy	STOCKS (Person/Day)		Manager	Commo	Remarks
Zip Code	Census Tract	Std Loc 3834-		Map Grid	PP 0-1	PP 2-8		Total	Food			
60000	3147	0011	25-A7	Hillside High School 247 Main	1080	20	1100	1,000	1,200	R. Wilcox	328-6147	
60001	3148	0014	25-B4	Greenville High School 501 N. 12th Street	1200	300	1500	11,500	11,500	B. Defoe	328-1388 REACT CH 23	
60001	3149	0018	25-D8	Railroad Tunnel 5 Frontage Road at Elm		6000	6000	60,000	60,000	R. Renzi	Alert Ch 14	
60001	3148	0016	25-B2	Greenville College 100 Campus Drive	600	10,100	10,700	50,000	50,600	V. Brown	328-5400 WA-4XY2	
60000	3147	0012	25-A6	Belton Office Building 118 Main Street	110	50	160	900	900	C. Wong	764-7118	

Other Displays

Other displays may be needed according to the nature and scope of the emergency, such as evacuation maps for crisis relocation, nuclear reactor, hazardous materials, or dam failure operations. In addition, the EOC should have available maps of utility systems and rolling blackout block assignments; fault line, soil, landslide and liquefaction and tsunami or seiche threatened areas; locations of hazardous materials storage, manufacturing, and disposal sites; and other data that may be required in responding to the range of hazards that could affect the community.

The emergency management coordinator should also assure that materials are available in the EOC for creating new charts as required: paper, art board, acetate, magnetic strips, marker pens, tacks, and so forth.

Summary

The purpose of all data and display devices in the Emergency Operating Center is to provide the crisis management team with the information needed to successfully manage the emergency to its conclusion. The charts and data files described above are only tools to summarize information and permit rapid analysis and response. In any data and display system, no matter how simple or complex, there are basic principles which should be understood and observed by those responsible for maintaining the system. Some of the major system requirements are summarized below.

- o Displays should be frequently updated. Particularly in fast-developing emergencies, current information is critical for effective response. Entering the date and time of entries on charts can assist in assuring crisis managers of the validity of the information on the display.
- o Displays should be flexible. They should be flexible in use (appropriate for a wide range of emergency situations) and flexible in their ability to be moved to alternate operating centers if the need arises.
- o Displays should be easily interpreted. Many persons in the Emergency Operating Center will refer to information on a given chart; the information provided should be clearly written in a format that is easily understandable.
- o Displays should be saved in some form for historical record. If computers are used, data should frequently be stored, or printed out so that information is not lost irretrievably if power or the computer itself fails. If overhead projectors are used, early sheets should be reproduced on copying machines and saved. If acetate-covered or magnetic charts are used, a camera should be available and all charts photographed on a specific schedule so that early entries are not lost.

- o Displays should be accessible to the entire staff. They should be visible from all parts of the EOC without moving from one's seat, and the most important displays should be centered before the emergency management director.
- o Display systems should be tested frequently. EOC drills and exercises conducted regularly will give EOC staff members responsible for maintaining displays training in how to keep them updated, and will alert senior members of the EOC staff to the types of information that will be available to them in an emergency. Frequent testing will also permit modifications and improvements of charts to increase their usefulness.

Finally, it should be noted that not all of the displays discussed above will be needed by every jurisdiction and for every emergency. Flexibility in EOC design will allow substitution of some displays for others, depending on the emergency type. Figure 18 suggests what displays may be needed in a basic set of major disasters. Charts attached on some hard surface that can be quickly attached to hooks on the EOC wall will provide the most flexibility and will permit changing displays as the emergency progresses. It is important, however, to have a suitable range of display devices prepared in advance for all of the emergencies likely to occur in the jurisdiction. Scout troops or other volunteer agencies may be willing to prepare the displays for the emergency management coordinator, thus cutting costs and providing useful work for community organizations that would like to make a contribution.

Figure 18 EOC DISPLAY REQUIREMENTS IN VARIOUS EMERGENCIES

	.CRP-Risk	.CRP-Host	.CSP	.Earthquake	.Tornado	.Hurricane	.Flood	Reactor . Accident	Hazardous . Materials	Civil . Disturbance	Hostage incident
Problem Log	X	X	X	X	X	X	X	X	X	X	
Damage Assessment	X	X	X	X	X	X	X	X	X	X	
Bulletin Board	X	X	X	X	X	X	X	X	X	X	X
Maps											
Local-General	X	X	X	X	X	X	X	X	X	X	X
Local-Evac Routes	X			X		X	X	X	X	X	
Local-Flood Areas				X		X	X				
Local-Geologic				X							
Local-Utilities	X	X	X	X	X	X	X		X	X	X
Regional-General	X	X		X	X	X	X	X	X		
Regional-Weather	X	X	X		X	X	X	X	X	X	
Law Resources	X	X	X	X	X	X	X	X	X	X	X
Fire Resources	X	X	X	X	X	X	X		X	X	
Public Works Resources	X	X	X	X	X	X	X		X	X	X
Transportation Resources	X	X		X	X	X	X	X	X	X	
Hospital Status		X	X	X	X	X	X	X	X	X	X
Temporary Med Facilities	X	X	X	X	X	X	X	X	X	X	
Fallout Shelter Status		X	X					X			
Congregate Care Facilities				X	X	X	X	X	X	X	X

V. STAFFING, TRAINING, AND TESTING

Staffing

The emergency staff required to operate the EOC will depend on the size of the jurisdiction, the size of its day-to-day managerial staff, and the nature of the emergency. The EOC crisis management team will also expand and contract during various phases of the emergency, with the largest commitment of manpower during the response phase.

In all disasters, a tendency toward convergence has been observed. The EOC will typically attract many persons whose presence is not essential to the effective management of the response. Interested local staff without assigned emergency responsibilities, volunteers, and the merely curious frequently gravitate toward the crisis center to find out what is happening and, in many cases, volunteer their assistance. All actual or potential members of the EOC staff should be advised of their roles and responsibilities through the jurisdiction's basic emergency plan or some other document that delegates emergency management responsibilities. This information need not be included in the EOC SOP.

When assignments are made or changed, alert lists in the SOP should also be changed, and correction pages sent to all original recipients of the SOP. Alert lists are typically very difficult to keep current, and a conscientious effort to review and revise them should be made every six months. Dating each page of the SOP will help the user in assessing the currency of the information contained in it.

Training

Once assigned emergency responsibilities, emergency staff members must be trained in what response plans exist, how they are to be implemented and how the EOC is to be used. The emergency management coordinator should also assure that adequate clerical staff has been trained in maintenance of data and charts, EOC liaison roles, and communications systems and procedures. Training should be given to three or four members of each department both to insure that trained individuals are available to operate the EOC in an emergency and to give field personnel an understanding of the EOC's role in emergency management and the EOC's information requirements.

Training for volunteer groups that will support EOC operations is also important, both to convey practical information on how the EOC functions and to impart a sense of participation and collaborative support. Training should include informational tours and briefings on procedure, as well as opportunities to participate in tests of the EOC facility and its systems.

Testing

Two major components of the Emergency Operating Center need to be tested at regular intervals: the emergency staff, and the facility.

The common method of testing the EOC staff is through emergency simulations. These simulations may take the form of discussion type exercises (seminars or group problem-solving), table-top exercises (slow-paced walk-throughs), operational exercises (testing all EOC systems and staff), and field type exercises. Emergency management coordinators should organize exercises of each type over a period of time, but those most valuable for EOC procedures testing and training are generally operational exercises, in which simulators send preplanned problem messages into the EOC for resolution. Operational exercises provide relatively realistic stresses on EOC systems and personnel, allow familiarization and training in EOC procedures, and can help identify problem areas in EOC systems and procedures that need to be corrected.

Along with full-scale operational exercises, occasional tests of mechanical and communications systems should be conducted as well. Alternate EOC sites also need to be tested from time to time.

Emergency management coordinators should invite auxiliary and volunteer groups to participate in EOC tests, to familiarize them with EOC procedures and to promote understanding of the total crisis management system and its requirements, to provide recognition and appreciation of volunteer contributions to community preparedness; and to insure that task assignments are clearly defined.

All EOC-based tests should include opportunities to exercise EOC paper flow, message handling, and display posting.

Standby communications systems not in frequent use should be tested at least quarterly, along with emergency power systems, outdoor warning systems, and computers and other equipment.

Including field personnel in EOC exercises serves the same purposes as including volunteers: to raise awareness of what the overall emergency management problems are; to show how important information from outside the EOC is to effective crisis management; and to insure that trained backup staff will be ready in cases where the first-line EOC staff is unavailable.

PART TWO - OPERATING THE EOC

VI. ACTIVATION PROCEDURES

At some time during the development of an emergency situation, activation of the Emergency Operating Center may become necessary. Simple procedures for opening the EOC should be clearly delineated in an EOC SOP or plan. The following elements should be included:

- o Authority: Who has authority to open the EOC and to call in the crisis management staff? The SOP should list at least three officials with authority to activate the facility. Authorized persons should be listed by title, not by name.
- o Conditions: Under what conditions can the EOC be activated? May authorized individuals activate EOC and emergency staff for a surprise emergency exercise? These questions should be clearly resolved in the SOP or in some other document.
- o Alerting: An alert list of all crisis management team members should be included in the SOP, with work, home, and any other phone numbers at which they might be reached. The SOP should also designate outside agencies which should be alerted in an emergency. Who is alerted within and outside of the jurisdiction will depend in large measure on the nature of the emergency situation itself. One way to graphically preselect the crisis management staff needed for a given type of emergency is shown in Figure 19; Figure 20 presents the same device for use in alerting outside organizations.

Some disaster agents will disable the system relied upon to alert the staff and cooperating agencies (usually phone or beeper systems). To remedy this problem, the alert list should be self-triggering. A statement should be included on the top of the alert list that "In the event of an emergency in which telephone (or beeper, or radio) service is interrupted, EOC staff members should see to the safety of their families and then report to the Emergency Operating Center to assume their duties."

- o Set-up: If the Emergency Operating Center is not a 24-hour facility, the EOC SOP or plan should specify how to set up the room quickly, and who is responsible for various set-up tasks. At a minimum, the following information should be included:
 - Keys - who has them, or where are they located?
 - Furniture - where is it stored, and where does it go? (A floorplan of the EOC arrangement should be included.) What persons are responsible for furniture set-up and how are they alerted?
 - Communications - if communications are not permanently installed in the EOC, where are the devices stored (phone sets, government radio transceivers, intercom systems, commercial radio or television receivers, scanners, etc.) and where should they be located and connected in the EOC room? (Again, a floorplan is needed.) What technical staff is charged with communications set-up and how is it alerted?

Figure 19 ALERT LIST

Self-Triggering: In the event of a disaster in which telephone or beeper service is interrupted, staff members should see to the safety of their families and then report to the Emergency Operating Center.

Phone Alert: The Fire Department or Sheriff will normally receive first notification of an emergency or disaster. The agencies notified first will insure that the other is aware of the situation, and will then notify the civil defense director or coordinator, who will initiate further notifications as shown in the cascade alert list.

POSITION	INCUMBENT	WORK #	HOME #	OTHER #
EM Director	May Smith	323-4567	765-4321	567-8910
Asst EM Dir	Will Uttley	323-8691	765-5747	-----
EM Coordinator	Fred Jones	323-7C45	766-2181	-----
EOC Opns Chief	Ann South	323-6848	765-1188	323-7771
Sit Analysis Ch	Mark Wells	323-2122	766-8743	-----
Pub Info Off	Beth Price	323-4568	765-8841	-----
Sheriff	Sue Munoz	323-1134	765-4030	-----
Fire Chief	Al Wiikes	323-2121	765-8841	-----
Public Works Chief	Herb Taney	323-4131	765-5741	323-8123
Red Cross Coord	Nan Shultz	764-8811	765-4877	764-8822
Housing Chief	Bill Mabey	323-7463	766-8780	-----
Transport Chief	Ann Kalb	323-2483	766-3665	-----
Utilities Chief	Pete Pipes	328-9411	765-4186	-----
Health/Med Chief	Dr. Ross	764-1212	766-2739	764-2479

COUNTY BOARD MEMBERS

Chair	Pat Chance	765-4281	765-4281	-----
Vice Chair	Earl Roth	764-7120	765-3939	-----
Board Member	Sher Kalb	764-2348	766-0198	-----
Board Member	Wes Long	765-6661	766-5012	-----
Board Member	Bea Stings	328-0645	766-8125	-----

Figure 20 NOTIFICATION TABLE

	Earth- quake	Tor- nado	Nuke Incdt	Haz Mat	Air Crash	Flood or Dam Fail
COUNTY STAFF						
EM Director	x	x	x	x	x	x
EM Coordinator	x	x	x	x	x	x
Asst Coord	x	x	x	x	x	x
Sheriff	x	x	x	x	x	x
FD Chief	x	x	x	x	x	x
PW Chief	x	x	x	x	x	x
Transprt	x	x	x			x
Utilities	x	x	x			x
OTHER AGENCIES						
Red Cross	x	x	x	x	x	x
Salvation Army	x	x			x	x
State EM Office			x	x	x	x
State Hiwy Dept				x		x
State Police			x	x	x	x
National Guard	x	x				x
Schools	x	x	x	x		x

- Display devices - if display devices are not permanently mounted, where are they stored and where and how should they be placed when the EOC is activated? Who is responsible for these devices?
- Equipment and supplies - copying machines, typewriters, calculators, cameras, maps, grease pencils, cloth and chalkboard erasers, forms, staplers, staple removers, pens, pencils, paper, and other such items -where are they stored and who is responsible for bringing them into the EOC?
- o Termination/Deactivation: who determines that operations should be wound down, and who is responsible for clean-up, equipment and furniture storage, and replenishment of expendables?

After-action reports serve a valuable purpose in identifying EOC operational deficiencies or lessons learned, and in making this information available to state, federal, and cooperating agencies and jurisdictions. A suggested format for these reports is shown in Figure 21.

Like any other aspect of emergency operations, EOC activation and setup procedures must be tested occasionally in drills or training sessions. Through such tests, procedures can be modified to fit the particular needs of a given jurisdiction, and the changing capabilities of its crisis management staff and emergency equipment.

The EOC SOP itself should be reviewed annually to insure consistency with current plans, procedures, equipment, record-keeping systems, display devices, and communication capabilities. As the SOP is updated and distributed, short training sessions or exercises can be scheduled to test and disseminate any changes in operating procedures.

Figure 21 AFTER ACTION REPORT FORMAT

Contents

- Executive Summary
- Chronology of Events and Responses
- Agencies Involved
- Total Losses
- Assistance Rendered
- Lessons Learned
- Recommended Remedial Actions

Annexes

- Problem Log
- Damage Assessment Totals
- Local and Mutual Aid Forces Deployed
- Public Information Releases
- Media Coverage

Distribution

- County Board or Commission
- Departments
- Cooperating Agencies
- Neighboring Counties
- State Emergency Management Agency
- FEMA
- Other (Industries, Universities, Media)

VII. COMMUNICATIONS PROCEDURES

General

This chapter reviews basic procedures for communicating with the outside world to and from the EOC that should be explained in the EOC SOP. The following chapter discusses internal EOC communications procedures.

An understanding of the basic purposes of a Standard Operating Procedure is necessary so that appropriate material can be included in the local SOP, and inappropriate information reserved for other components of the jurisdiction's emergency plan. An SOP should be designed with two separate objectives and uses in mind:

1. **Training Document.** Before an emergency, the SOP should be capable of use as a training document for new members of the emergency organization and as a reference document for more experienced members of the emergency management team. This means that the SOP should explain, briefly and clearly, all the communications and other EOC systems and their emergency use. As a reference document, it should be organized in a manner to permit rapid access to whatever information is sought.
2. **Emergency Reference.** During the response and recovery phases of an emergency, there is seldom time to read through large amounts of text; the use of an SOP will usually be limited to quick reference to needed information, such as communications set placement and installation instructions, codes, message priorities, frequencies, and report formats. One of the best ways to present this information is through a combination of checklists and tabs. To improve accessibility, sections of the SOP containing information likely to be needed during the emergency period can be color coded (as they are in the same EOC SOP in the appendix) or set off in some other way (by tabs, margin cuts, or other such techniques).

In a major emergency, there are many sources of information needed in the EOC, and many mediums through which this information reaches the EOC. Communications procedures can only cover information to and from the EOC over communications

channels such as radio and teletype; information brought to the EOC by messengers, citizen walk-ins, or other means is discussed in the following chapter.

The body of the EOC SOP should include a listing of all potential communications systems available to the jurisdiction and primary and secondary task assignments for each system. Frequencies should also be listed, particularly in cases where privately owned systems are to be utilized. The SOP should also specify alerting and call-up procedures for communicators, and reference information on repair and resupply sources (batteries, crystals, replacement parts, and blank forms) in the community.

A thorough understanding of communications protocols and procedures on the part of all EOC emergency management personnel who may use various communications systems during an emergency is necessary. The context in which the systems are used in an emergency should also be understood. Communications typically are strained well past their design capacities in major emergencies. Some of the more vulnerable types of communications systems are destroyed or damaged and are therefore unusable. This complicates the management and utilization of other surviving systems. Frequency crowding, in the form of lengthy transmissions, increased numbers of reports, increased numbers of users, and increased transmission difficulties caused by physical damage (which require repetition of transmissions) further degrade surviving systems.

In addition to destruction, damage, or degradation of critical communications systems, additional problems arise in the communications process in the form of unnecessary transmissions, inaccurate or unauthenticated information, and incomplete reports requiring further clarification over the air.

None of the major problems can be totally solved through the development of an EOC SOP (and through the training necessary to support it), but well thought out procedures backed up by frequent testing and training can help ameliorate at least part of the potential problem. Communications procedures are therefore a key component of a well organized EOC SOP.

Physical Issues

Physical issues that should be discussed and resolved in the SOP include inventories and locations of communications equipment, installation instructions for main and alternate EOCs, sources of repair or replacement assistance, locations call up procedures

for community based volunteer communications groups, and other such resource and inventory information.

Set-up and installation procedures should be clearly and concisely outlined in chronological order in the SOP set-up checklist. In very large jurisdictions, where separate SOPs are preferred for each department or service, a separate EOC set-up checklist for the communications section or department can be developed. Whichever approach is selected, the SOP and associated checklists should include specific instructions on relocating to alternate EOCs, and specific information on repair and replacement resources in the governmental unit involved and in the community.

Date on inventories, locations, volunteer groups and their capabilities, and other resource information are best presented in tabs, either to the SOP itself (as in the sample SOP in the appendix), or to the checklists.

Communications Principles

While it is unlikely that a new communicator will have the time or inclination for a basic course in the principles of good radio procedure in the midst of an emergency situation, the SOP, if it is to be used as a training or reference document in the pre-emergency period, should include a short review of accepted principles and standard usages. If volunteers are relied on extensively, local and national code systems (particularly non-routine Nuclear Civil Protection reporting procedures) must be included in the SOP.

Other publications available from the Federal Emergency Management Agency (FEMA), the Associated Public-Safety Communications Officers (APCO), and other communications groups and sources discuss communications principles and techniques in greater detail. For the purposes of this manual, and for the purposes of a local EOC SOP, the following basic rules can be restated:

- o All transmissions should be precise, concise, and clear. Precision refers to accuracy in sending and receiving all transmitted information. Numbers, in particular, should be carefully spoken (a tab in the sample SOP in the appendix shows standard pronunciations for numbers, which helps reduce misunderstandings).

Communicators should also be aware of and guard against the common problem of transposing (changing the order of) numbers. Conciseness means that all messages should use the minimum number of words, numbers, or codes necessary to successfully convey the complete message to the receiving party. The use of standard codes (which should be listed in tabs in the SOP and posted in EOC communications sections and in mobile communications units) will help to keep the message short. Clearness involves preparing and sending messages so that they will be readily understandable to the receiver. Particularly in responding to requests for information from other EOCs, the original query should be referenced so that the receiver can match answer to question and route the message appropriately.

- o All messages sent should be acknowledged by the receiver. With the heavy communications burdens of most emergency situations, this does not mean that each message needs to be read back for correction; the sender need only be assured that the message has been received. Message forms should include a block in which the sender can check that a message has been acknowledged, and include the time and date.
- o Senders should be authenticated in certain types of emergencies to guard against deliberate interference with emergency response efforts. Social disasters, such as riots or other forms of civil disturbance, and NCP operations both by their nature require authentication procedures.
- o All messages sent and received should include time and date of transmission. Copies of all messages sent and received should be safeguarded for record and for post-emergency analysis.
- o To the extent possible, communicators should work only frequencies and systems with which they are familiar. Although there is often a strong urge to allow inter-service use of a given frequency during emergencies (medical people sending and receiving on a fire frequency, for instance), this can lead to major problems in network discipline and a decline in effectiveness because of increased frequency loading and longer transmissions. Typically, each radio network and service has its own codes, jargon, and shorthand; adding new parties to the net in the midst of a disaster response can cripple the system. To accommodate the need to know what others are doing, receive-only monitors, command posts, and EOCs themselves are the best solutions—not frequency sharing.

Communications Procedures

The following remarks review basic send and receive procedures that should be outlined in the EOC SOP.

Send Procedures

Message-writing. The basic principles discussed above should be observed. The message should be precise, concise, and clear. Codes and coding systems (10 code, Q

code, etc.) should be used whenever possible, but the sender should consider whether the receiver has access to or is familiar with the coding system used. All communications codes and reports that use coded formats should be included in the EOC SOP.

Priorities. The first step after drafting an outgoing message for transmission is to assign it a priority. This should be done by the message originator in the EOC, not left to the communicator to judge. Message priorities and codes should be clearly stated in the EOC SOP and used in communications and EOC exercises to insure familiarity. Unfamiliar priority code systems will seldom be used in a major emergency when they are most needed.

The priority code used in the sample SOP in the appendix is simple and straightforward. The number one is highest priority and should be used only for those messages and reports that require immediate attention and response. The lowest priority (number four) is reserved for routine logistics and data reports which can be transmitted at any time there is a lull in communications traffic. The priorities should be clearly set forth in the SOP, both in the text portion and as a tab. In the sample SOP, the list of priorities is accented in the text portion through the use of a box. A tab is also included. It is also a good idea to post a copy of them in the communications room. The priority number code is displayed below.

- Priority 1 - Lives endangered - immediate response required
- Priority 2 - Lives endangered - prompt response required
- Priority 3 - Timely operational response required
- Priority 4 - Routine data and logistics messages

Logging. All outgoing messages should be logged chronologically by time/date sending party, and addressee.

Time/Date. The communicator is responsible for noting on the message form the time and date the message was sent. The 24-hour system should be used to indicate time. Standard time/date format should be used: 241300MAR80 means 1 PM, March 24, 1980.

Some reports essential for national analysis in a nuclear emergency are designed for sending by zulu time (Greenwich Mean Time). A conversion chart for zulu time should be included in the SOP as a tab and posted in the communications room. The sample SOP includes a zulu time conversion chart.

Transmission. Experienced communicators know to wait for a clear frequency, then read the message at medium speed. Acknowledgement that the message has been received should also be recorded by time, date, and initials of receiving communicator, if given.

File. Message forms should be designed so that both the originator and the communicator can remove copies and file them. Chronological files of all radio communications sent and received serve important post-emergency legal and analytical needs in determining what occurred during the response period.

Receive Procedures

Acknowledge/Authenticate. All messages received should be acknowledged and, if requested, the receiving station should provide appropriate authentication.

Time/Date. As soon as the message is received and acknowledged, the operator should time and date it as discussed above.

Log. All messages received should be logged chronologically. The log should indicate time/date of receipt, sender, and addressee.

Disseminate. After receipt, acknowledgement, and logging procedures are completed, the message should be forwarded to the message center desk for analysis and distribution. The main features of the internal EOC information routing system are presented in the next chapter.

File. A file should be kept of all messages received for post-emergency analysis and audit.

Communications Training and Testing

All of the communications principles and procedures outlined above and reflected in the sample EOC SOP are of little value if communications training and testing activities are not included in the jurisdiction's on-going preparedness program. Training and testing of operators, equipment, and critical support systems (such as emergency power) will raise their effectiveness in major emergencies effectively. Communications procedures, codes, and forms which are not used and tested frequently are unlikely to be employed during the course of an emergency.

VIII. INFORMATION-HANDLING PROCEDURES

General

In the last chapter, communications principles and procedures for communication between the outside world and the EOC were discussed. This chapter outlines basic internal communications principles and procedures within the EOC. Both external and internal procedures should be set forth in the EOC Operating Procedure for both training and reference purposes.

Face-to-face contact is one of the principal benefits of drawing together key public and private emergency managers in the EOC. The ability to 'send' and 'receive' face-to-face helps assure that information is clearly understood and available when needed. The EOC should therefore be configured to promote and facilitate face-to-face communication with managers who must share and act on information frequently. The section on Siting and Layout in Chapter I stressed this requirement in its discussion of EOC layout alternatives.

While face-to-face information exchange is preferred in the EOC, it carries with it some risks that can be avoided by proper planning and procedures. First, unrecorded information can easily be lost if 'sender' and 'receiver' neglect to note the substance of their conversation. The experienced emergency management coordinator will always have a notebook or dictaphone at hand, in which he or she can record significant events, conversations, decisions, data (phone numbers, as an example), and results. The more desk-bound EOC staff members should always maintain a time/date log of events and responses.

A second potential problem of face-to-face communication is that one of the parties may neglect to pass on the information to other EOC staff members who may need it. A central principle of EOC operations is to insure that all who need to know are kept informed of major developments. Two-party conversations can sometimes lead to serious interruptions in the flow of information to subordinate levels that must analyze the emergency situation, organize response, and implement decisions.

The remedy for these potential sources of information loss lies in a simple and orderly procedure to record and maintain all important data flowing into and out of the EOC. Message forms, if used consistently, can insure that vital information is not lost and is appropriately shared with EOC managers who need it. A sample message form is reproduced in Figure 22.

Consistently-used message forms can also help avoid the problem of recording and acting on reports to the EOC through non-conventional communications modes. A walk-in report from a citizen brought directly to the EOC, for example, could bypass the communications and distribution procedures of the EOC and thus be lost, misrouted, or not added to important displays. The same situation can occur if EOC staffers reporting for work observe a major problem on the way and neglect to put it in writing in a form in which it can be analyzed and disseminated. A standard policy of writing down on a message form and forwarding to the message control desk every major problem received from a non-standard source (telephone, personal contact or observation) should be included in the EOC SOP and tested in exercises. This procedure is particularly important in large-scale emergencies in which communications systems are damaged or degraded and information, especially from the center of the impact area, is fragmentary or non-existent. In an emergency of this scope, messengers and word-of-mouth reports carry a relatively larger amount of information to the EOC.

This procedure may lead to duplication of reports already received through conventional channels, but duplication of problem and incident reports will occur in any case and can best be weeded out or combined at the message center or situation analysis desk.

Information-Handling Principles

In developing EOC information-handling procedures and setting them forth in the EOC SOP, the following basic requirements of efficient information flow should be observed.

- o Speed. The EOC, its systems, and its procedures should be designed so that information can be assessed, plotted, and relayed quickly to interested parties. Rapid dissemination contributes to rapid response and effective decision-making during the emergency.
- o Appropriate Distribution. Everyone who needs a given piece of information to dispatch or coordinate a response, to adjust manpower or resources, or to inform others should receive that piece of information. Conversely, those who do not need the information should not receive it. Decisions on who gets what information are generally made at the message center, and it is therefore critically important that experienced personnel (preferably from the emergency management office) perform this initial assessment and distribution function.

- o Permanent Record. A permanent record of all messages to and from the EOC should be kept for subsequent analysis and review. The master chronological file at the message center should include all important written messages that have been sent or received during the emergency.

Information-Handling Procedures

From the message center, messages are distributed to appropriate services in the EOC, and outgoing messages are retrieved for subsequent transmission. The EOC SOP should specify the distribution procedure. Multiform message forms (shown in Figure 22) can reinforce the procedure through a clear printed indication of where each copy is to go. The message center should retain one copy and forward one copy to the situation analysis desk. One clear copy should be delivered to the action agency for the given problem, and other copies distributed to coordinating agencies for information. Messages distributed from the message center should show the time and date the information was received.

To actually deliver the messages, secretarial staff, scout groups, volunteers or others can assist. If they have been trained during an EOC exercise, information will flow more smoothly. Signs on or over desks which identify the department or agency will also help assure that all messages reach their intended recipients.

Information-handling procedures outlined in the SOP should be structured to accommodate the information needs of outside agencies as well. The web of direction and control nodes illustrated in Figure 8 suggests the range of users of EOC-accumulated information. Display and reporting procedures, discussed below, determine how the EOC organizes and passes on the important information it has developed.

Information Display

Display media and a family of suggested charts were discussed in earlier sections of this manual. From the perspective of information-handling, a final few points should be stressed.

- o Currency. Those responsible for maintaining charts with vital data should be instructed, through the EOC SOP and through frequent EOC tests, that charts to be useful must be frequently updated. To insure currency, it can be helpful

to indicate on the chart the date/time information was entered. This technique will also serve as a reminder to those responsible for the charts when information begins to get stale.

- o Visibility. Charts must be seeable and readable to be of value to the emergency staff. This requires that those maintaining the charts must make their entries in a clear and bold script.
- o Understandability. For a chart to be understandable to all members of the emergency staff, it first must be designed cleanly. The second major factor leading to understandability of a display is familiarity, which is gained through regular tests of the EOC and its systems.
- o Permanent Record. Some means of keeping records of early chart entries should be devised for post-emergency analysis and reporting. If viewgraph systems are used, the plastic sheets can be duplicated and filed. Charts can be photographed with an instant camera; care should be taken to time/date each picture.

Forms and Reports

Forms needed for internal EOC operations include event/action logs (patterned on the Problem Log depicted in Figure 11); message forms (Figure 22); and damage assessment worksheets (similar to the sample wall chart shown in Figure 12). Supplies of these basic forms should be stored in or near the EOC and references to them included in the SOP. An office copier in or near the EOC can assure continuing supplies of simple logs and worksheet forms, but multiform message forms should be stocked in adequate amounts for extended operations.

As information is gathered and assessed by the emergency management staff, it is used to generate direct response from the EOC and to inform higher, lower, and parallel emergency organizations regarding status, problems, progress, and prospects. In the early stages of an emergency, the information is typically forwarded by radio communications systems. This requires pre-agreement up and down the chain on basic reporting formats and content. Formalizing reporting forms cuts down on air time and allows state and federal level agencies to more accurately compile and evaluate information from numerous reporting points.

Nuclear Civil Protection operations, in particular, require rigorous adherence to established reporting protocols and procedures. These protocols and procedures are described in detail in the Civil Preparedness Guide series 2-10. The EOC SOP should reiterate those NCP reporting procedures appropriate to its level in the national direction and control system.

Natural disasters and technological emergencies generate varying information requirements and require many different types of reports. Standard report forms and reporting systems have not yet been developed nationwide, but many states do have a standardized protocol which should be included in the SOP.

APPENDIX

**SAMPLE EMERGENCY OPERATING CENTER
STANDARD OPERATING PROCEDURE**

APPENDIX

SAMPLE EMERGENCY OPERATING CENTER STANDARD OPERATING PROCEDURE

This is a sample Emergency Operating Center Standard Operating Procedure, prepared for illustrative purposes only. Checklists are printed at the front of the document on pink paper to make them easy to read. Explanatory material for training and general reference follows. Easily accessible tabs with reference data are at the end of the SOP on yellow paper.

SAMPLE EOC SOP
Greenfield County

CHECKLIST - ACTIVATION
CHECKLIST - SET-UP
CHECKLIST - DEACTIVATION

ACTIVATION
 Authority
 Alerting
 Set-up

COMMUNICATIONS PROCEDURES
 General
 Incoming Messages
 Outgoing Messages

DISPLAY PROCEDURES

OPERATIONAL PROCEDURES

TAB A - Alerting Information
 Alert List
 Cooperating Agency Alert List

TAB B - Floorplans
 EOC Floorplan Sketch
 Alternate EOC Floorplan
 Expansion Rooms

TAB C - Forms
 Message Form
 Local Emergency Declaration
 DCPA 902 - Increased Readiness Reporting (IRR) Local Status Form
 Local EOC Weapons-Effects Message Form

TAB D - Displays
 Problem Log
 Damage Assessment Chart
 Medical Facility Chart
 Fallout Shelter Status Chart
 Law Enforcement Resources Chart
 Fire Resources Chart
 Transportation Resources Chart

TAB E - Communications Reference Information
 Priority Code
 10 Code
 Radio Amateur Q Code
 Radio Amateur Continuous Wave Code
 Transmitting Numbers
 Phonetic Alphabet
 Time Conversion Chart

TAB F - After-Action Report Format

EOC ACTIVATION CHECKLIST

1. ALERT ONE EACH OF THE FOLLOWING GROUPS:

- Alerted Director
 Ass. Dir at _____(time)
 EM Coord
- Alerted Sheriff
 Asst Sheriff at _____(time)
 Patrol Lt
- Alerted Fire Chief
 Asst Fire Chief at _____(time)
 Fire Bn Chief
- Alerted Public Works Chief
 Asst Pub Wrks Chief at _____(time)
 Road Division Supervisor

2. ALERT THE FOLLOWING:

- Alerted ambulances:
 Mercy Ambulance at _____(time)
 Med Serv Ambulance at _____(time)
- Alerted Hospitals:
 County Hospital at _____(time)
 Good Samaritan Hospital at _____(time)
 VA Hospital at _____(time)
- Alerted Planning Department at _____(time)
- Alerted Building Department at _____(time)
- Alerted Transportation District at _____(time)
- Alerted Health Department at _____(time)
- Alerted Jackson County at _____(time)
- Alerted State Emergency Management Agency at _____(time)
- Alerted State National Guard at _____(time)
- Alerted Red Cross at _____(time)
- Alerted Salvation Army at _____(time)
- Alerted Water Company at _____(time)

Greenfield County EOC SOP Revised 6/1/80

___ Alerted Gas and Electric Company at ___(time)
___ Alerted Telephone Company at ___(time)
___ Alerted airport at ___(time)

3. DETERMINE WHETHER TO USE MAIN OR ALTERNATE EOC.

EOC SET-UP CHECKLIST

- Setup furniture (stored behind stage)
Floorplan at TAB B; keys at Sheriff's patrol desk
- Mount displays (stored behind stage)
Floorplan at TAB B
- Connect phones, radios, and scanners (stored in closet)
Floorplan at TAB B
- Distribute stationery supplies to each desk (stored in Emergency
Management Coordinator's Office)
- Inspect generator, antennas, food and water stocks, and
fuel supply
- Standby to set up media center (Holloway Hotel).
Chalkboards, chalk, and erasers are in Sheriff's Training
Room
- Standby to set up public information center (Wilkins School)
- Standby to move to alternate EOC (Public Works Yard).

EOC DEACTIVATION CHECKLIST

ACTION	RESPONSIBILITY
<input type="checkbox"/> Store furniture behind stage	General Services
<input type="checkbox"/> Clean and store displays	Planning Dept
<input type="checkbox"/> Disconnect and store communications	Commo Dept
<input type="checkbox"/> Inventory and store supplies	Civil Defense
<input type="checkbox"/> Replenish supplies	Civil Defense
<input type="checkbox"/> Prepare after-action report	Civil Defense

ACTIVATION

Authority

The EOC will be activated, as required for exercises of impending or actual emergencies, on order of the County Administrator, the Civil Defense Coordinator, the Sheriff, the County Engineer, or any other duly constituted authority. The EOC shall not be activated for surprise exercises without the knowledge and consent of both the County Executive and the Sheriff.

Alerting

The County Communications Center is responsible for alerting EOC staff (Alert list TAB B). County Communications is also responsible for alerting cooperating agencies, neighboring jurisdictions, and state and federal agencies (Alert list, TAB B).

Set-up

1. Furniture will be brought into the EOC from the storage area behind the stage and set up according to the EOC sketch in TAB B. General Services Department is responsible for this action. Keys for the backstage storage area are kept at the Sheriff's patrol desk.
2. Communications equipment is stored in the closet next to the County Communications Center. The Senior Dispatcher on duty has the key. County Communications radio shop is responsible for hook-up of communications systems in the EOC. EOC sketch in TAB B shows locations of connections.
3. EOC charts and display materials are also located in the backstage storage area. The County Planning Department is responsible for set-up according to the EOC sketch in TAB B. Keys to the storage area are kept at the Sheriff's patrol desk.
4. The Emergency Management Office is responsible for moving the following equipment from its office into the EOC: copying machine, two manual typewriters, two battery-powered calculators, battery-powered radio receiver, box of message and report forms, and other stationery supplies. The Civil Defense Department is also responsible for insuring that extra copies of the County Emergency Plan and related annexes, SOPs, and checklists are available in the EOC.
5. The designated alternate EOC is the Public Works Yard. General Services is responsible for moving EOC furniture, displays, and supplies to the yard when directed to do so by the Emergency Management Coordinator. County Communications is responsible for moving the communications van to the yard when so directed.
6. The following facilities may be opened on order of the Director of Emergency Management:

Media Center - Holloway Hotel
Public Information Center - Wilkins School

General Services is responsible for moving equipment to these locations.

COMMUNICATIONS PROCEDURES

General

One of the primary functions of the EOC in an emergency is to collect and disseminate information. Information will reach the EOC through many different channels: telephone, teletype, government radio, amateur radio (RACES), citizens band radio, commercial radio, runners, etc. The following paragraphs describe the responsibilities of the various elements of the EOC staff in receiving and processing incoming and outgoing information. A sample message form is given in TAB D.

Responsibilities - INCOMING Information

1. Receiver

Message Form Entry

Upon Receipt of a message reporting a new development or problem, write it down on the INCOMING section of a message form. Time and date of receipt should be entered on the DATE/TIME line at the top of the form.

Message Number and Section Identifiers

Enter a message number at the top of the form. The message number should begin with a two-letter service (department) identifier and then a number. Incoming messages should be numbered consecutively

EXAMPLES

DR-1 First message received by Director of CD

MD-3 Third Message received by medical section

PW-5 Fifth message received by public works

Section identifiers are as follows:

DR - Director of CD

CM - Communications

PI - Public Information

SC - Schools

SA - Situation Analysis

TR - Transportation

FR - County Fire

RD - RaDef

LE - Sheriff

RC - Red Cross

MD - Health/Medical

WL - Welfare

PW - Public Works/Roads

UT - Utilities

Message priority

Assign a priority from 1 (highest) to 4 (lowest) as follows:

Priority 1 - Lives endangered - immediate response required

Priority 2 - Lives endangered - fast response required

Priority 3 - Timely operational response required

Priority 4 - Routine data and logistics messages

Action

Take any immediate action required by the message, remove the last (pink) copy for record (noting action and time the action was taken), and send the rest of the form to the message center desk.

2. Message Center

Log

Log all incoming messages in order received

Action

Retain yellow 'data board' copy for record and route remaining copies to appropriate action or coordination sections. Route white 'action/data board' copy to Situation Analysis section.

3. Action Section

Action

Take any necessary action and coordinate with other sections as required. Note actions taken and time on message form.

Display

Make entries or update displays as required.

Follow-up

Continue follow-ups until problem is solved or no further action is necessary.

4. Coordinating Section

Take appropriate action and note time and action taken on copy of message form.

5. Situation Analysis

Post status boards with major emergency information, problems, and actions taken. Alert director of civil defense and public information officer to major problems and to large areas from which no reports have been received.

6. Messengers

Distribute messages from message center to data board and to sections. Pick up messages from sections and deliver to message center.

Responsibilities - OUTGOING Information

1. Originator

Write message in OUTGOING section of message form. Enter priority (see above) at top of form. Remove last copy of message form and retain. Pass message form to message center.

2. Message Center

Log message in outgoing message log and enter time on message form. Remove last copy for file. Send message to Communications Center or RACES room for transmission.

3. Messengers

Take OUTGOING messages from message center to communications center or to RACES room as directed by message center.

4. Communicator

Send message. Time-stamp copy and retain for record.

DISPLAY PROCEDURES

General

Because the major purpose of the Emergency Operating Center is to accumulate and share information to insure coordinated and timely emergency response, all EOC sections must maintain display devices so that other sections can quickly comprehend what actions have been taken and what resources are available. Display needs will vary with the nature and scope of the emergency, but the following charts are the core of the EOC display system whenever the facility is activated. All display charts, boards, and materials are located in the storage area behind the stage.

Problem Log

The County Planning Department (Situation Analysis Section) is responsible for maintaining the problem log. All major problems should be entered on the log as they are received. The log is a large, plastic-covered board with columns for problem number, nature of problem, response section, response, and remarks. A copy of the Problem log is shown in TAB D, with sample entries.

Damage Assessment Chart

The County Building Department representatives in the Situation Analysis Section are responsible for maintaining the damage assessment chart. The chart contains columns showing cities in the county reporting damage, time of report, and extent of the reported damage. A copy is presented in TAB D, with sample entries.

County Map

The County Planning Department (Situation Analysis Section) is responsible for maintaining current information on the County map. The following information is particularly important to all sections in the EOC and should be posted immediately:

- Transportation routes closed or impeded
- Areas of major damage
- Locations of medical treatment and congregate care facilities open
- Expected inundation area (in flood emergencies)
- Limits of evacuation area, control points, and exit routes.

Weather Map

The Emergency Management Office is responsible for maintaining a weather map showing current forecasts and wind patterns, and for plotting fallout predictions in cases of threatened or actual nuclear attack.

Medical Facility Chart

The medical section is responsible for maintaining current information on the status of permanent and temporary medical facilities, including location, beds available, blood and other critical supply needs, manpower requirements, and communications links. The chart on which this information is to be displayed is shown in TAB D, with sample entries. It is particularly important to note locations of temporary medical facilities so that the public information officer and other EOC elements can instruct the public on where to seek help.

Fallout Shelter Status Chart

The Emergency Management Office is responsible for maintaining the fallout shelter status chart (TAB D), which includes information on location and capacity of shelter; current loading; status of food, water, and medical stocks; name of shelter manager; and communications links.

Congregate Care Facility Chart

The Red Cross is responsible for maintaining the congregate care facility chart, which includes information on shelter locations, spaces still available, and communications links.

Law Enforcement Resources Chart

Sheriff's representatives in the EOC are responsible for maintaining the law enforcement resources chart. The chart provides information on numbers and locations of sworn, reserve, and auxiliary manpower, as well as status of mutual aid units. The chart is shown in TAB D with sample entries.

Fire Resources Chart

The County Fire Department is responsible for maintaining the fire resources chart, which displays deployment and availability of fire units, and status of fire mutual aid forces.

Transportation Resources Chart

The County Transportation District is responsible for maintaining current status and availability of all public and private transportation (chart shown in TAB D).

Other Displays

The County Planning Department (Situation Analysis Section) is responsible for maintaining other general and disaster-specific displays which may be needed in the EOC. These may include evacuation route maps for crisis relocation and for nuclear reactor incidents; utility system maps; rolling blackout block assignments; fault line, soil, and landslide potential maps; maps of predicted inundation in the tsunami areas and below dams, flood plain maps; locations of hazardous materials storage sites; and other such materials.

OPERATIONAL PROCEDURES

Declarations

Early in the emergency, the Director of Emergency Management will determine whether to declare a local emergency. A fill-in declaration form is included at TAB C.

Security and Sign-In

Depending on the nature of the emergency, the Director of Emergency Management may decide to establish special security for the EOC. The Sheriff is responsible for physical security of the EOC and its critical systems. The Sheriff shall establish an EOC roster and sign-in sheet as conditions require or at the request of the Director of Emergency Management.

Shift Scheduling

As soon as possible after the onset of the emergency, 12-hour shift schedules should be prepared by each EOC section and posted on the bulletin board. Relief shifts should arrive 30 minutes early so that briefings can be conducted on what has occurred, on what decisions have been reached, and on what problems remain.

Briefings and Conferences

Briefings for the Director of Emergency Management, the County Board, and the Public Information Officer should be scheduled at 6-hour intervals. The Emergency Management Coordinator will post a briefing schedule on the bulletin board. EOC section chiefs should be prepared to participate in these briefings with a 3-minute summary of their section's progress. The briefing by each section will include:

- 1 - unresolved problems;
- 2 - major new problems during previous six hours;
- 3 - assistance needed from other Greenfield County agencies or outside organizations;
- 4 - information developed by the section that should be passed to other EOC sections or to the public.

Additional briefings may be organized at the request of the Emergency Management Director or Coordinator. These may include VIP, new media briefings, and situation reviews for newly arrived state or federal representatives.

Conferences of key EOC personnel may be convoked at any time by the Emergency Management Director to discuss and resolve major issues. These conferences will be held in the emergency management office.

The Emergency Management Coordinator is responsible for insuring that any decisions reached at conferences are quickly relayed to all EOC personnel.

Reports

The Emergency Management Coordinator is responsible for insuring that all required reports are forwarded to the next higher EOC (State Regional EOC at Barnardstown) on time. He or she is also responsible for preparing and sending any special reports on damages, threats, and assistance needed.

The public information officer is responsible for informing all EOC sections of special information needed by county personnel in the field in order to respond to citizen inquiries. Locations and services offered at temporary medical, feeding, or congregate care facilities, in particular, should be rapidly disseminated to all emergency workers in the county.

TAB A
ALERTING INFORMATION

Alert List
Cooperating Agency Alert List

ALERT LIST

SELF-TRIGGERING - In the event of a disaster in which telephone or beeper service is interrupted, staff members should see to the safety of their families and then report to the Emergency Operating Center.

PHONE ALERT - The Fire Department or Sheriff will normally receive first notification of an emergency or disaster. Whichever agency is first notified, it will insure that the other is aware of the situation, and then notify the emergency management director or coordinator, who will initiate further notifications as shown in the fan-out sketch.

POSITION	INCUMBENT	WORK PHONE	HOME PHONE	OTHER PHONE
EM Director	Mary Smith	323-4567	765-4321	567-8910
EM Coordinator	Fred Jones	323-7645	766-2181	_____
Asst EM Dir	Will Uttley	323-8691	765-5749	_____
EOC Opns Chief	Ann South	323-6848	765-1188	323-7771
Sit Analysis Ch	Mark Wells	323-2122	765-8743	_____
Pub Info Off	Beth Price	323-4568	765-8841	_____
Sheriff	Sue Munoz	323-1134	765-4030	_____
Fire Chief	Al Wilkes	323-2121	765-8841	_____
Public Works Chief	Herb Taney	323-4131	765-5741	323-8123
Red Cross Coord	Nan Shultz	764-8811	765-4877	764-8822
Housing Chief	Bill Mabey	323-7462	766-8780	_____
Transport Chief	Ann Kalb	323-2483	765-3665	_____
Utilities Chief	Pete Pipes	328-9411	765-4186	_____
Health/Med Chief	Dr. Ross	764-1212	766-2739	764-2479

CITY COUNCIL MEMBERS

Mayor	Pat Chance	765-4281	765-4281	_____
Vice Mayor	Earl Roth	764-7120	765-3939	_____
Councilwoman	Sher Kalb	764-2348	766-0198	_____
Councilman	Wes Long	765-6661	766-5012	_____
Councilwoman	Bea Stings	328-0645	766-8125	_____

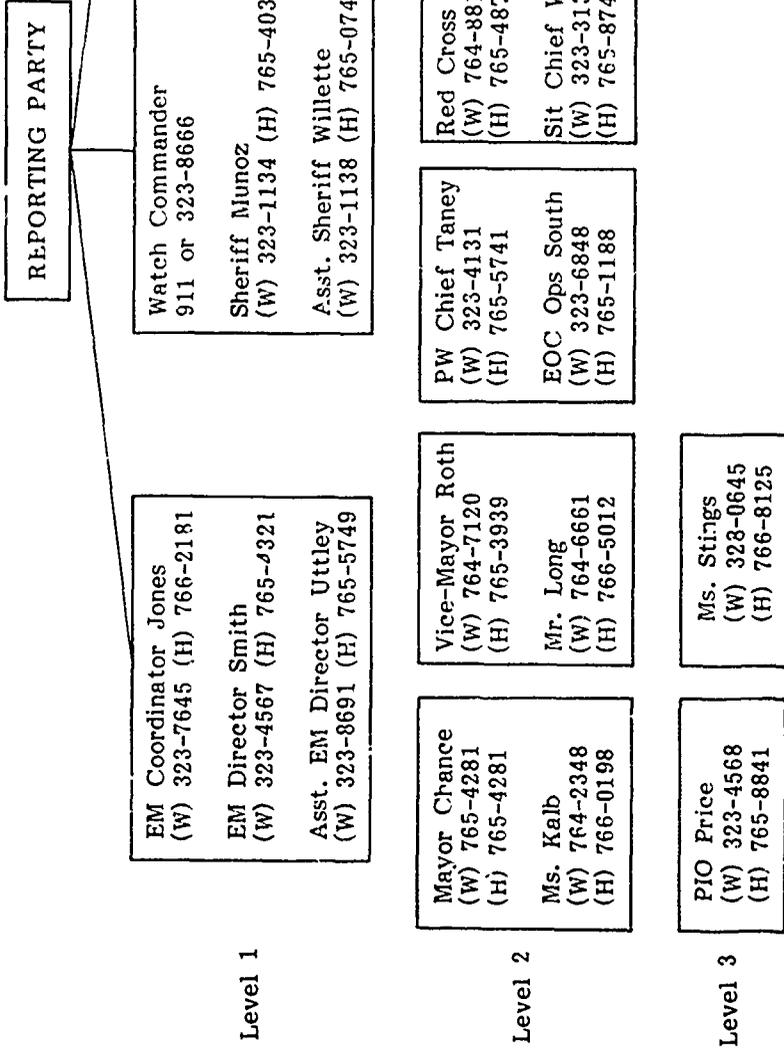
6/1/80

CASCADE ALERT SYSTEM

Step One: The party reporting an impending or actual emergency should contact at least one of the persons in each of the three boxes at Level 1.

Step Two: The person at Level One alerted by the reporting party should first contact at least one of the persons in the Level 2 boxes, then contact the other persons within his own box.

Step Three: Persons at Level 2 who receive an alert message should contact the person in the Level 3 box, then contact the other persons within his own box.



NOTIFICATION TABLE

	<u>EARTH- QUAKE</u>	<u>TOR- NADO</u>	<u>NUKE INCDT</u>	<u>HAZ MAT</u>	<u>AIR CRASH</u>	<u>FLOOD OR DAM FAIL</u>
<u>COUNTY STAFF</u>						
EM Director	X	X	X	X	X	X
Asst Director	X	X	X		X	X
EM Coordinator	X	X	X	X	X	X
Sheriff	X	X	X	X	X	X
FD Chief	X	X	X	X	X	X
PW Chief	X	X	X	X	X	X
Transport	X	X	X			X
Utilities	X	X	X			X
<u>OTHER AGENCIES</u>						
Red Cross	X	X	X	X	X	X
Salvation Army	X	X			X	X
State EM Office			X	X	X	X
State Hiwy Dpt			X		X	
State Police		X	X	X	X	X
Nat Guard	X	X				X
Schools	X	X	X	X		X
Airport			X	X		X
Seaport			X	X		X
Phone Company					X	X

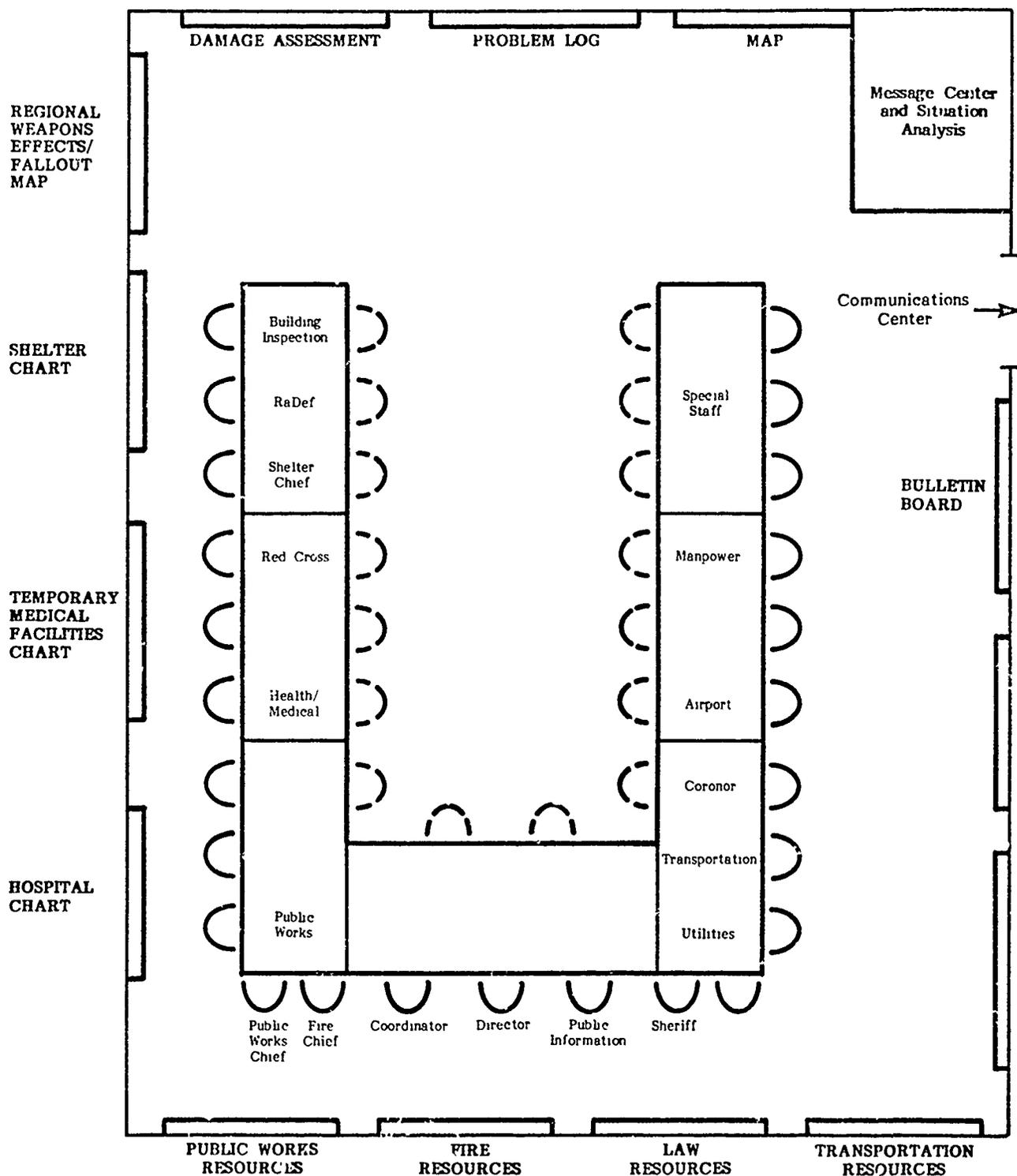
TAB B

FLOORPLANS

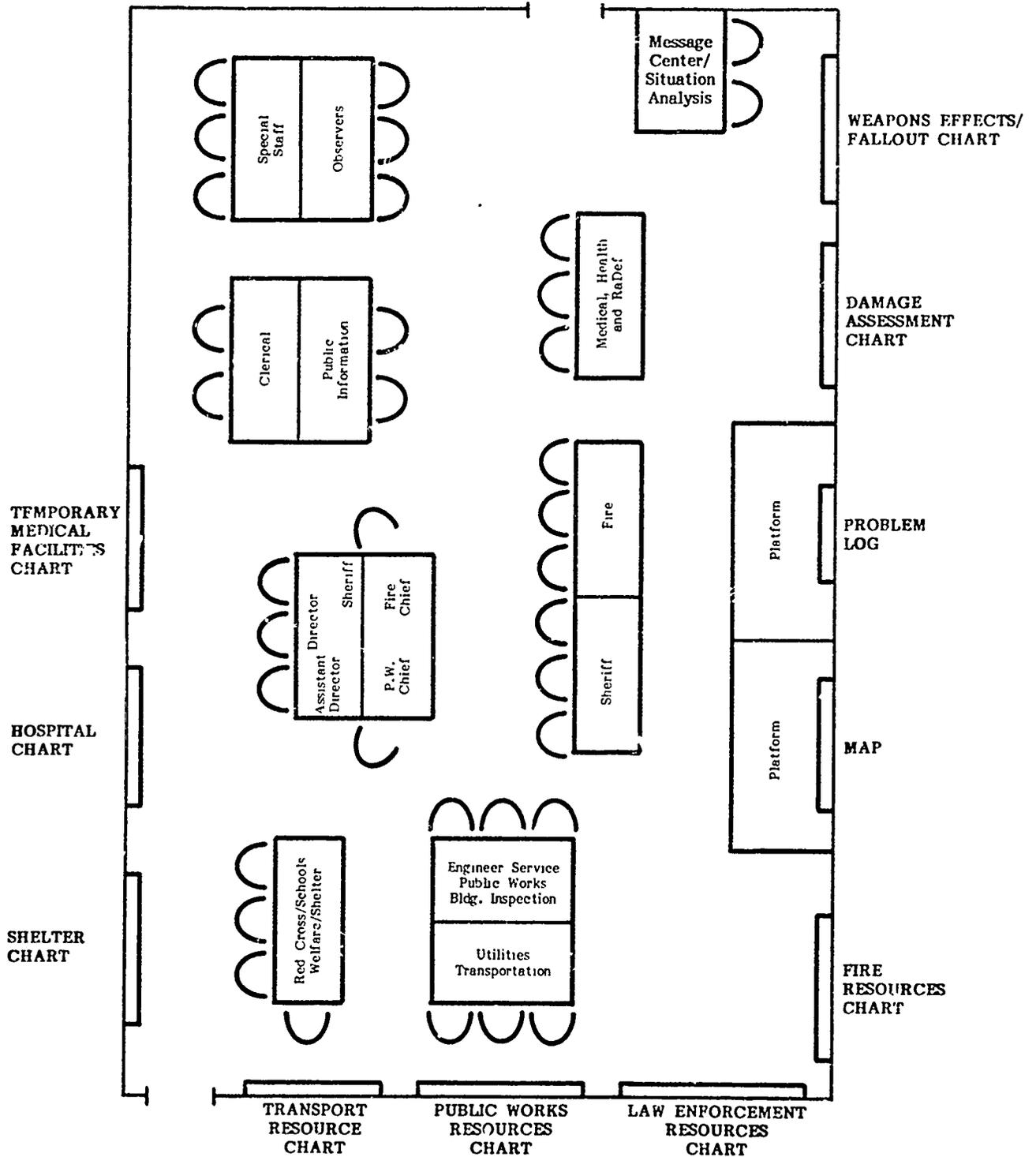
**EOC Floorplan Sketch
Alternate EOC Floorplan
Expansion Rooms**

EOC FLOORPLAN

(For major emergencies, add chairs to inside of U)



**ALTERNATE EOC FLOORPLAN
(Corporate Yard Training Room)**



TAB C

FORMS

Message Forms

Local Emergency Declaration

IRR Local Status Form

**Local EOC Weapons-Effects Mes-
sage Form**

Date:

Time:

PROCLAMATION OF EXISTENCE OF A LOCAL EMERGENCY

WHEREAS, Ordinance 1478 of Greenfield County empowers the Director of Emergency Management to proclaim the existence or threatened existence of a local emergency when said county is affected or likely to be affected by a public calamity and the County Board is not in session; and

WHEREAS, the Director of Emergency Management of Greenfield County does hereby find:

That conditions of extreme peril to the safety of person and property have arisen within said County, caused by _____ ; and

That the County Board of Greenfield County is not in session;

NOW, THEREFORE, IT IS HEREBY PROCLAIMED that a local emergency now exists throughout said County; and

IT IS FURTHER PROCLAIMED AND ORDERED that during the existence of said local emergency the powers, functions and duties of the emergency organization of this County shall be those prescribed by state law, by ordinances and resolutions of this County, and by the Greenfield County Emergency Plan, as approved by the County Board.

Mary Smith
Director of Emergency Management

IRR LOCAL STATUS FORM

DEFENSE CIVIL PREPAREDNESS AGENCY
DEPARTMENT OF DEFENSE

From: _____

INCREASED READINESS REPORTING (IRR) LOCAL STATUS FORM	DATE: _____	REPORT NO. _____
INCREASED READINESS (IR) ACTIONS TO BE REPORTED		TODAY'S REPORT
BASIC ACTIONS TO INCREASE LOCAL GOVERNMENT READINESS		
1A	Head of government briefed and checklist of IR actions reviewed	1A
1B	Local Emergency Operations Plans reviewed and/or updated	1B
EMERGENCY PUBLIC INFORMATION		
2A	Moderate step-up in local CD public information activities	2A
2B	Local CSP-type information disseminated to public	2B
2C	Final public information crisis preparations short of taking shelter	2C
SIGNIFICANT PUBLIC ACTIONS DURING IR PERIOD		
3A	Estimated level of retail food sales above normal	3A
3B	Estimated level of retail gasoline sales above normal	3B
3C	Estimated number of persons who have evacuated	3C
3D	Estimated number of evacuees arriving	3D
ACCELERATED TRAINING		
4A	Accelerated training started	4A
4B	Number of shelter managers completing training	4B
4C	Number of radiological monitors completing training	4C
EOC FACILITY IMPROVEMENT		
5A	Improvement or development of EOC completed	5A
DIRECTION AND CONTROL READINESS		
6A	EOC manned 24 hours at standby level	6A
6B	EOC manned at minimum operational level	6B
6C	EOC fully manned	6C
PUBLIC SHELTER IMPROVEMENT		
10A	Expedient group shelter improvement and/or construction started	10A
10B	Expedient group shelter improvement and/or construction completed	10B
TEXT:		
		Comm. Initial
		Time sent

E X A M P L E

LOCAL EOC WEAPONS-EFFECTS MESSAGE FORM

From: WERS # 1 Date: Nov. 11, 1978

To: POLK CO. EOC Msg. Time: 0823

NUDET SIGHTING DIRECTION NNE AT 0817

DAMAGE STRUCTURAL GLASS

FORWARDED TO STATE-AREA OR STATE EOC AT 0825

MAJOR FIRE

FALLOUT

_____ 0.5 R/hr and rising at _____

_____ ^{1/} 5 R/hr and rising at _____

_____ 50 R/hr and rising at _____

_____ Peak _____ R/hr at _____

_____ ^{1/} 5 R/hr and falling at _____

_____ 0.5 R/hr and falling at _____

_____ New fallout arrival _____ R/hr at _____

Hourly reading _____ at _____

1/ONLY if required by State or local EOC.

TAB D

DISPLAYS

Problem Log

Damage Assessment Chart

Medical Facility Charts

Fallout Shelter Status Chart

Law Enforcement Resources Chart

Fire Resources Chart

Transportation Resources Chart

PROBLEM LOG

Incident Number	Date/Time of Report	Problem/Location	Assigned To	Response

DAMAGE ASSESSMENT

PUBLIC SECTOR DAMAGE	Total Public Damage	\$		
	Public Facilities	\$	3D	
	Federal Facilities	\$	3C	
	Schools Grades 1-12	\$	3B	
	Fed Aid System Roads	\$	3A	
	Total Private Damage	\$		
PRIVATE SECTOR DAMAGE	Private Utilities	\$	2I	
	Private Schools	\$	2H	
	Private Hospitals	\$	2G	
	Railroads	\$	2F	
	Agriculture	\$	2E	
	Businesses Destroyed	#	2D	
	Businesses Damaged	#	2C	
	Homes Destroyed	#	2B	
	Homes Damaged	#	2A	
	Number Dead	#	1B	
Number Injured	#	1A		
TIME OF REPORT				
INCIDENT AND LOCATION				

HOSPITAL STATUS

	BEDS	BEDS AVAILABLE	PATIENTS SENT	BURN CASES SENT	COMMUNICATIONS	REMARKS
Hospital A 110 Main	120				368-1464	
Hospital B 847 Spruce	75				362-1211	
Hospital C 2028 Elm	50				493-1080	
PDH #704 Weldon Rec Ctr 85 Mission	200				493-6861	

TEMPORARY MEDICAL FACILITIES

FACILITY	LOCATION	PATIENTS TREATED	COMMUNICATIONS	REMARKS
FAS- St Lukes Church	475 Walnut		362-1848	
FAS- Central High School	47 Grove		367-8613	
FAS- Morton Community Center	1083 Pine		492-8486	
Downtown Clinic	1430 Main		493-1444	

FALLOUT SHELTER STATUS

LOCATION			FACILITY NAME STREET ADDRESS	CAPACITY			Current Occupancy	STOCKS (Person/Day)		Manager	Commo	Remarks	
Zip Code	Census Tract	Std Loc 3834-		Map Grid	PF 0-1	PF 2-8		Total	Food				Water
60000	3147	0011	25-A7	Hillside High School 247 Main	1080	20	1100	1,000	1,200	R. Wilcox	328-6147		
60001	3148	0014	25-B4	Greenville High School 501 N. 12th Street	1200	300	1500	11,500	11,500	B. Defoe	328-1363 REACT CH 23		
60001	3149	0018	25-D8	Railroad Tunnel 5 Frontage Road at Elm		6000	6000	60,000	60,000	R. Renzi	Alert Ch 14		
60001	3148	0016	25-B2	Greenville College 100 Campus Drive	600	10,100	10,700	50,000	50,000	V. Brown	328-5400 WA-4XY2		
60000	3147	0012	25-A6	Belton Office Building 118 Main Street	110	50	160	900	900	C. Wong	764-7118		

LAW ENFORCEMENT RESOURCES

UNIT	LOCATION	COMPOSITION	ASSIGNMENT	COMMO	REMARKS
Wilton County Sheriff-Mutual Aid	VFW Hall 42 Elm	1 Lt. 5 officers	Search and Rescue Highlands Area	765-1861 TAC 3	
Law Enforcement Explorer Post 32	Hillbrook School 202 Maple St.	2 leaders 24 scouts	Search and Rescue Brookdale Area	323-4834 REACT Tm 7778 Ch. 15	
Woodvill Mounted Patrol	Woodvill Stables 100 Woodville Rd.	12 horses and riders	Search and Rescue Big Rock State Park	ALERT 174 Ch. 19	
Sheriff's Reserves	County Government Center	1 Lt, 1 Sgt, 16 officers	Downtown Patrol	TAC 2	

TRANSPORTATION RESOURCES

ORGANIZATION	DISPATCH LOCATION	VEHICLE FLEET COMPOSITION	ASSIGNMENT	COMM	REMARKS
123 ^d Transportation Co. National Guard	Armory, 137 Main	40 2½ ton trucks 8 5 ton tractors 16 semi-trailers		328-1617	
School Bus Yard	939 Oak St.	53 25 passenger buses		323-4888	
Mountain Charter Bus	144 S. 17th St.	4 50 passenger buses		764-5310	
Bud's Taxi	87 Main	8 taxis		764-1818	
U.S. Postal Service	457 Willow	24-½ ton, 6-1 ton trucks		323-9999	
Burke Airport Shuttle	Burke Airport	17 9 passenger vans		328-6410	
Red Cross	40 Main St.	1 disaster bus 3 station wagons		54-8812	
<u>Aviation</u>					
Civil Air Patrol	Greenville Airport	Numerous private aircraft		323-3088	VHF 127.5
Sheriff's Air Squadron	Greenville Airport	12 private aircraft		323-3055	VHF 125.8
Coast Guard	Burke Airport	3 H-61 helicopters		328-6410	
223 ^d MedEvac (MAST)	Fort William	25 UH-1 helicopters		261-MAST	

TAB E
COMMUNICATIONS REFERENCE INFORMATION

Priority Code

Standard 10 Code

Radio Amateur Q Code

Radio Amateur CW Code

Transmitting Numbers

Phonetic Alphabet

Time Conversion Chart

MESSAGE PRIORITY CODE

Priority 1- Lives endangered- immediate response required

Priority 2- Lives endangered- fast response required

Priority 3- Timely operational response required

Priority 4- Routine Data and logistics messages



Associated Public-Safety Communications Officers, Inc.



OFFICIAL TEN SIGNAL LIST

Revised 6/1/74

Ninth Edition June 1, 1974

- | | | |
|-----------------------------|---------------------------------------|---|
| 10-1 — Signal Weak | 10-15 — Message Delivered | 10-28 — Ownership Information |
| 10-2 — Signal Good | 10-16 — Reply to Message | 10-29 — Records Check |
| 10-3 — Stop Transmitting | 10-17 — Enroute | 10-30 — Danger/Caution |
| 10-4 — Affirmative (OK) | 10-18 — Urgent | 10-31 — Pick Up |
| 10-5 — Relay (To) | 10-19 — (In) Contact | 10-32 — _____ Units Needed
(Specify/Number/Type) |
| 10-6 — Busy | 10-20 — Location | 10-33 — Help Me Quick |
| 10-7 — Out of Service | 10-21 — Call (_____) by Phone | 10-34 — Time |
| 10-8 — In Service | 10-22 — Disregard | 10-35 — Reserved — |
| 10-9 — Say Again | 10-23 — Arrived at Scene | 10-36 — Reserved — |
| 10-10 — Negative | 10-24 — Assignment Completed | 10-37 — Reserved — |
| 10-11 — _____ On Duty | 10-25 — Report to (Meet) | 10-38 — Reserved — |
| 10-12 — Stand By (Stop) | 10-26 — Estimated Arrival Time | 10-39 — Reserved — |
| 10-13 — Existing Conditions | 10-27 — License/Permit
Information | |
| 10-14 — Message/Information | | |

REVISED

REVISED

*The numbering, sequence, words or word phrasing of the above signals may not be altered, nor may the reserved signals be otherwise implemented except by APCO. Any user may employ signal numbers upward beginning with 10-40 as may best suit his own needs.

RADIO AMATEUR Q CODE*

- QRG** Will you tell me my exact frequency (or that of . . .)? Your exact frequency (or that of . . .) is . . . kHz.
QRH Does my frequency vary? Your frequency varies.
QRI How is the tone of my transmission? The tone of your transmission is . . . (1 Good, 2 Variable, 3 Bad)
QRK What is the intelligibility of my signals (or those of . . .)? The intelligibility of your signals (or those of . . .) is . . . (1 Bad, 2 Poor, 3 Fair, 4 Good, 5 Excellent)
QRL Are you busy? I am busy (or I am busy with . . .) Please do not interfere
QRM Is my transmission being interfered with? Your transmission is being interfered with . . . (1 Nil, 2 Slightly, 3 Moderately, 4 Severely, 5 Extremely.)
QRN Are you troubled by static? I am troubled by static . . . (1 5 as under QRM).
QRO Shall I increase power? Increase power
QRP Shall I decrease power? Decrease power
QRQ Shall I send faster? Send faster (. . . wpm)
QRS Shall I send more slowly? Send more slowly (. . . wpm).
QRT Shall I stop sending? Stop sending
QRU Have you anything for me? I have nothing for you
QRV Are you ready? I am ready
QRW Shall I inform . . . that you are calling him on . . . kHz? Please inform . . . that I am calling on . . . kHz
QRX When will you call me again? I will call you again at . . . hours (on . . . kHz).
QRY What is my turn? Your turn is number . . .
QRZ Who is calling me? You are being called by . . . (on . . . kHz).
OSA What is the strength of my signals (or those of . . .)? The strength of your signals (or those of . . .) is . . . (1 Scarcely perceptible, 2 Weak, 3 Fairly good; 4 Good, 5 Very good).
OSB Are my signals fading? Your signals are fading
OSD Are my signals mutilated? Your signals are mutilated
OSG Shall I send . . . messages at a time? Send . . . messages at a time.
OSK Can you hear me between your signals and if so can I break in on your transmission? I can hear you between my signals, break in on my transmission.
OSL Can you acknowledge receipt? I am acknowledging receipt.
OSM Shall I repeat the last message which I sent you, or some previous message? Repeat the last message which you sent me (or message(s) number(s) . . .).
- OSN** Did you hear me (or . . .) on . . . kHz? I did hear you (or . . .) on . . . kHz.
OSO Can you communicate with . . . direct or by relay? I can communicate with . . . direct (or by relay through . . .).
OSP Will you relay to . . .? I will relay to . . .
OSU Shall I send or reply on this frequency (or on . . . kHz)? Send or reply on this frequency (or on . . . kHz)?
OSV Shall I send a series of Vs on this frequency (or . . . kHz)? Send a series of Vs on this frequency (or . . . kHz).
OSW Will you send on this frequency (or on . . . kHz)? I am going to send on this frequency (or on . . . kHz).
OSX Will you listen to . . . on . . . kHz? I am listening to . . . on . . . kHz
OSY Shall I change to transmission on another frequency? Change to transmission on another frequency (or on . . . kHz).
OSZ Shall I send each word or group more than once? Send each word or group twice (or . . . times)
QTA Shall I cancel message number . . .? Cancel message number . . .
QTB Do you agree with my counting of words? I do not agree with your counting of words? I will repeat the first letter or digit of each word or group
QTC How many messages have you to send? I have . . . messages for you (or for . . .).
QTH What is your location? My location is . . .
QTR What is the correct time? The time is . . .

The RST System

READABILITY

- 1- Unreadable.
- 2- Barely readable, occasional words distinguishable.
- 3- Readable with considerable difficulty.
- 4- Readable with practically no difficulty.
- 5- Perfectly readable.

SIGNAL STRENGTH

- 1- Faint signals barely perceptible.
- 2- Very weak signals.
- 3- Weak signals.
- 4- Fair signals.
- 5- Fairly good signals.
- 6- Good signals.
- 7- Moderately strong signals.
- 8- Strong signals.
- 9- Extremely strong signals

*Reprinted with permission of the American Radio Relay League.

RADIO AMATEUR CONTINUOUS WAVE (CW) CODE*

AA	All after	GN	Good night	SASE	Self-addressed, stamped envelope
AB	All before	GND	Ground	SED	Said
ABT	Abort	GUD	Good	SIG	Signature; signal
ADR	Address	HI	The telegraphic laugh; high	SINE	Operator's personal initials or nickname
AGN	Again	HR	Here, hear	SKEC	Schedule
ANT	Antenna	HV	Have	SRI	Sorry
BCI	Broadcast interference	HW	How	SSB	Single sideband
BCL	Broadcast listener	LID	A poor operator	SVC	Service; prefix to service message
BK	Break, break me; break in	MA, MILS	Milliamperes	T	Zero
BN	All between, been	MSG	Message; prefix to radiogram	TFC	Traffic
BUG	Semi-automatic key	N	No	TMW	Tomorrow
B4	Before	NCS	Net control station	TNX-TKS	Thanks
C	Yes	ND	Nothing doing	TT	That
CFM	Confirm; I confirm	NIL	Nothing, I have nothing for you	TU	Thank you
Cr	Check	NM	No more	TVI	Television interference
CL	I am closing my station, call	NR	Number	TX	Transmitter
CLL + LG	Called, calling	NW	Now; I resume transmission	TXT	Text
CQ	Calling any station	OB	Old boy	UR-URS	Your; you're; yours
CUD	Could	OC	Old chap	VFO	Variable-frequency oscillator
CUL	See you later	OM	Old man	VY	Very
CUM	Come	OP-OPR	Operator	WA	Word after
CW	Continuous wave (i.e., radiotelegraph)	OT	Old timer; old top	WB	Word before
DLD DLVD	Delivered	PBL	Preamble	WD-WDS	Word; words
DR	Dear	PSE	Please	WKD-WKG	Worked, working
DX	Distance, foreign countries	PWR	Power	WL	Well; will
ES	And, &	PX	Press	WUD	Would
FB	Fine business, excellent	R	Received as transmitted; are	WX	Weather
FM	Frequency modulation	RCD	Received	XCVR	Transceiver
GA	Go ahead (or resume sending)	RCVR (RX)	Receiver	XMTR (TX)	Transmitter
GB	Good-by	REF	Refer to, referring to; reference	XTAL	Crystal
GBA	Give better address	RFI	Radio frequency interference	XYL (YF)	Wife
GE	Good evening	RIG	Station equipment	YL	Young lady
GG	Going	RPT	Repeat, I repeat	73	Best regards
GM	Good morning	RTTY	Radioteletype	88	Love and kisses
		RX	Receiver		

*Reprinted with permission of the American Radio Relay League.

TRANSMITTING NUMBERS

Numbers should first be spoken individually, then the entire number read as a whole. The number 1,234 should be transmitted "one, two three four; one thousand two hundred thirty four."

Numbers should be pronounced as follows:

1-	Wun	6-	Siks
2-	Too	7-	Sev-ven
3-	Th-r-ee	8-	Ate
4-	Fo-wer	9-	Nie-yen
5-	Fie-yev	10-	Wun zee-row

PHONETIC ALPHABET

A-	Alfa	N-	November
B-	Bravo	O-	Oscar
C-	Charlie	P-	Papa
D-	Delta	Q-	Quebec
E-	Echo	R-	Romeo
F-	Foxtrot	S-	Sierra
G-	Golf	T-	Tango
H-	Hotel	U-	Uniform
I-	India	V-	Victor
J-	Juliett	W-	Whiskey
K-	Kilo	X-	X-ray
L-	Lima	Y-	Yankee
M-	Mike	Z-	Zulu

TIME CONVERSION CHART

<u>GMT</u> <u>"ZULL"</u>	<u>EDT/</u> <u>AST</u>	<u>CDT/</u> <u>EST</u>	<u>MDT/</u> <u>CST</u>	<u>PDT/</u> <u>MST</u>	<u>PST</u>	<u>HST</u>
0100A*	2100P	2000P	1900P	1800P	1700P	1600P
0200	2200	2100	2000	1900	1800	1700
0300	2300	2200	2100	2000	1900	1800
0400	2400	2300	2200	2100	2000	1900
0500	0100A	2400	2300	2200	2100	2000
0600	0200	0100A	2400	2300	2200	2100
0700	0300	0200	0100A	2400	2300	2200
0800	0400	0300	0200	0100A	2400	2300
0900	0500	0400	0300	0200	0100A	2400
1000	0600	0500	0400	0300	0200	0100A
1100	0700	0600	0500	0400	0300	0200
1200	0800	0700	0600	0500	0400	0300
1300P	0900	0800	0700	0600	0500	0400
1400	1000	0900	0800	0700	0600	0500
1500	1100	1000	0900	0800	0700	0600
1600	1200	1100	1000	0900	0800	0700
1700	1300P	1200	1100	1000	0900	0800
1800	1400	1300P	1200	1100	1000	0900
1900	1500	1400	1300P	1200	1100	1000
2000	1600	1500	1400	1300P	1200	1100
2100	1700	1600	1500	1400	1300P	1200
2200	1800	1700	1600	1500	1400	1300P
2300	1900	1800	1700	1600	1500	1400
2400	2000	1900	1800	1700	1600	1500

* A (AM) and P (PM) are included for ease in reference only.
They need not be used in the 24-hour system.