IMPROVING YOUR COMMUNITY'S EMERGENCY RESPONSE

An Introduction to Disaster Planning

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HUMAN SCIENCES RESEARCH, INC.

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YOUR VISIBILITY AND YOUR JOB

A former Red Cross official compared his experiences in dealing with two floods, which occurred in the same area about a year apart. In the wake of the first disaster, he busily set up emergency care stations, put many volunteers to work, and generally responded effectively to the situation. But in the weeks following the event, he and the Red Cross were repeatedly criticized for making an inadequate response. Even the local reporters who had circulated through his emergency care stations asked "Where was the Red Cross?"

When the same threat loomed again, he prepared a similar response—with one exception. This time he carried a carton of Red Cross arm bands. "Whenever I set anyone to doing something, I told him to wear that arm band so people would know he was 'official.'"

Although his overall response to the second disaster was "if anything, not as good as the first time," he emerged from the second one as the hero instead of the goat. In public meetings and *post mortem* sessions, people wanted to hear his opinions on what should be done to ward off such a disaster. Reporters and the public asked how to cope with it more effectively. "From that time on, you would never catch me without a hundred or so arm bands in the trunk of my car."

Visibility pays off—at least the right kind of visibility. When disaster strikes, people will look first to see if you are doing something. If you are, they will look to see whether it works.

What you do "when the chips are down" is not simply a matter of being quick on your feet—that's how the *non*-professional responds to disaster. In a crisis, your effectiveness is often a result of what you have done through the rest of the year. This manual is a first look—an introduction—to preparedness planning as a full-time, professional job.

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CHAPTER ONE
DEVELOPING PROFESSIONAL LEADERSHIP

This manual is about human behavior as it relates to disaster—and particularly as it influences your response to a threatened or actual disaster. As we see it, Civil Defense and its associated agencies have a two-fold objective. One is to minimize the probability of disasters occurring in your area. The second is to minimize the danger to human life and the economic losses when disaster strikes. **An intelligent approach to these problems demands that you influence people's behavior before, during, and after the disaster occurs.**

Disaster Mitigation

Let's take a look at these objectives separately. **How can you minimize the probability of a disaster occurring?** For a number of years the National Weather Service has been working on ways to blunt the force of severe storms—the most costly national occurrences. Attempts have been made to seed hurricanes and to destroy their "eyes" before they move inland. These experiments, and others like them, look to the future—most of them will probably not mean anything to you and your community for some time. But there are other ways—already proven—by which you can disaster-proof your community. If you are successful in the "prevention" and planning parts of your job, you may spare your community many of the heartaches and losses which you would otherwise be dealing with in an emergency.

> A seasoned earthquake watcher was commenting on this part of your mission in the wake of the Christmas 1972 earthquake at Managua, Nicaragua. "If only the city fathers had adopted anti-earthquake building techniques, the destruction to buildings, roads, and bridges would not have been nearly as massive."

Perhaps you've made a similar statement after an emergency in your community. If only they had zoned the flood plain for low density use—if only they had made the area near the river into a park—lives could have been saved, and the property damage would have been a lot less. As an effective disaster worker you will find yourself devoting a good deal of time to disaster mitigation. You should be urging the adoption of sensible building codes and city zoning ordinances. You should be promoting public education programs urging people to disaster-proof their own homes. Whatever it is, you're the man who has to act as the community's disaster preparedness "alter ego." Make sure that emergency preparedness is considered in all local decisions.

The second part of your mission is to minimize human and property losses when disaster strikes your community. If you've carried out the disaster mitigation mission successfully, operations during an emergency should be a lot easier. Perhaps this illustrates an important feature of all emergency work. The more preparations you've made and the sooner you put your organizations to work, the better prepared you'll be to carry out the next emergency step. Don't get caught behind. Do a little extra—keep one step ahead of the destructive forces that periodically hit your community.

When an emergency threatens your community, it's too late to begin putting an organization together. By then your response will have to be automatic. If you try to improvise on the spot, you'll often find it impossible to carry out an effective emergency effort. Planning is the key to handling a disaster successfully. Planning means that the police and fire departments, Red Cross, hospitals and other emergency organizations have a coordinated disaster response mission and know how to carry it out.

What Is a Disaster?

When does an emergency become a disaster? What is the range of disaster effects which need to be considered? How do we draw boundaries around the subject of disaster preparedness?

We use the term disaster for a wide array of calamities—ranging from dips in the stock market to a dinner party that doesn't go over with the guests. Even when we restrict the term to more technical definitions, certain questions remain. Should such events as civil disturbances or labor walkouts by public employees be included?

In this manual, we're concerned with nuclear- and war-related emergencies as well as what might be called the "standard" set of natural disasters. This list would include such things as floods, hurricanes, tornados, earthquakes—the *natural disasters* which periodically occur in your community. We're also concerned with *wartime disasters*, especially nuclear attack which threatens many American communities with blast damage and radioactive fallout. Finally, we're concerned with an array of emergencies which do not fit neatly into these categories—events such as industrial accidents and other essentially *man-made disasters.*

As this general definition would suggest, this manual is not a cookbook on how to deal with ice storms, flash-floods or any other particular disaster that might strike your community. Instead, we'll be dealing with the common factors that affect the response to most emergencies.

Throughout the manual, we'll stress an all-hazards approach that emphasizes the common human and organizational problems inherent in nuclear, natural and man-made emergencies. Finally, we're concerned primarily with how you can take account of human behavior both during an emergency and in those "interim" periods when you seek to maintain a high level of disaster readiness. In sum, we are concerned with the human and the social aspects of preparedness.

Disaster Preparedness: A Year-Round Job

When people experience a disaster, they often narrow their perspective to things immediate and close-by—their personal safety, their families, their homes. Organizations often do the same thing. The police may concentrate on a set of police-type functions. Or disaster organizations may become so involved in immediate problems

that, a month later, no one can remember exactly what the crucial problems were at a given stage of the disaster. Hence, they cannot benefit from the experience when planning for recurring emergencies.

An effective disaster response demands an ongoing planning and operations process. **Your most important activity as an emergency planner and operator does not take place during a crisis. It takes place during normal periods—when there is no immediate threat to the safety of your community.** Although your visibility in the community may be limited between emergencies, your behind-the-scenes work then is often the determining factor in a successful emergency effort. Disaster preparedness is a continuous process that demands activity throughout the year. This disaster preparedness cycle might include the following phases.

DISASTER PREPAREDNESS CYCLE

Periods	Activities

"Normalcy"—between Disasters	1. Planning, Preventive Measures
	2. Building Inter-Governmental Cooperation
	    —Emergency Planning Sessions
	    —Emergency Simulations
	3. Disaster Mitigation
	4. Building Community Action Programs
	    —Industrial Preparedness
	    —The Media: Planning for Utilization
	5. Public Education and Public Relations

Threat Period	6. Set up the Emergency Operations Center 7. Activate your Organizations
Warning Period	8. Activate Private Organizations 9. Warn the General Public 10. Monitor Response to Warning 11. Upgrade Warning (or Downgrade Warning)
Trans-Impact Period	12. Monitor Disaster-Response Operations 13. After-Action Assessment 14. Planning Improvements 15. Feedback and Lessons Learned
"Normalcy"	

Viewing the disaster as a sequence of stages will suggest numerous points at which information can be assembled, communicated, and used to upgrade your continuing preparedness effort. For example, we often hear that federal agencies have "rebuilt the same structure six times," but we seldom hear of a civil defense director testifying before a local zoning commission or a land-use planning body about the disaster implications of specific actions. We often hear a civil defense director complaining about public indifference to preparedness, but only infrequently does the public or the city council receive a detailed and comprehensive statement of needs for additional resources during the immediate post-disaster phase. We repeatedly recognize, too late, that operations in a warning or emergency period are suffering because no groundwork was laid ine earlier stages.

This manual will stress the view that a disaster preparedness agency is not one that "peaks" occasionally—rather it is a continuously operating organization which has plenty to do all of the time. What it does in a given time period will depend on what it must be prepared to do the rest of the time. These full-time activities will emphasize such matters as civil defense interactions with governmental and planning bodies, private organizations, the media, and the general public—in sum, the list of organizations and individuals which civil defense should work with continuously to prepare a viable crisis response.

Although we've organized this manual on a time-line basis, the problems we point out and the suggestions we make in the "threat" and "warning" chapters will have to be implemented in the normal period—between emergencies. Don't rely on this book as the tornado approaches and expect it to tell you what to do. This book (like any other) can't bail you out during a crisis. The materials in this manual will prove helpful only if you've incorporated them into your disaster plan.

On your way and GOOD LUCK!

CHAPTER TWO
YOUR COMMUNITY AND DISASTER PLANNING

The responsibility for coping with natural disasters is yours. Don't expect large amounts of federal support when a crisis occurs. Civil Defense or other agencies can supply you with aids—like this manual. But most of the operations and most of the planning for your area have to be done at the local level—by your civil defense unit in concert with other nearby public and private groups. **Remember, disaster preparedness is primarily a local responsibility.** Federal and state governments can be counted on for major support only when the damage has been unusually widespread and severe. But even then, their activities are limited to augmenting your local disaster effort. And in a nuclear disaster, the trans- and post-disaster problems may be almost totally yours.

Local governments, like yours, have maintained control over disaster planning and operations for several reasons. For one thing, many disasters are of such a limited scope they can be handled at the local level without large inputs of federal aid.

> Keep in mind that the amount of destruction and the number of casualties will often be quite low in relation to the total resources of your community and its population. During the exceptionally large Alaskan earthquake of 1964, local facilities were not overwhelmed by the physical and personal damages. Even if a city of 40,000 finds itself with 5,000 homeless, there will be 35,000 people to aid them in the recovery period.[1]

Don't assume that when disaster strikes your community it will be overwhelming. In recent years, the total number of casualties from all disasters has not exceeded 200 persons annually. Of course, an emergency is going to strain your resources and personnel, but in most instances it will not overwhelm you. Key your planning to a manageable disaster. Don't accept the worst case as the only type of emergency that might occur in your community.

Too many directors have chosen an overwhelmingly large disaster as the focus for their planning efforts, and as a consequence, have failed to develop a workable emergency response. If you plan for manageable disasters, your response will probably be adequate.[2]

Advantage of Local Control

Very often it's difficult to determine when or where a disaster will strike. High disaster risk areas have been mapped, but even with these aids it is hard to determine which cities or townships will bear the brunt of the storm. Because a hurricane or tornado is unpredictable, it's vital that each local community—your community—be ready to act on its own.

It's impossible for federal and state civil defense to be on the spot throughout the hurricane or earthquake belt. Besides, your local disaster personnel have a distinct advantage over state and federal emergency organizations. The resources of your community are on hand as the disaster approaches, strikes and then subsides. Before state and regional units can be dispatched to the impact area, local persons and organizations will have already begun the process of warning, rescue and rehabilitation.

> Finally, in operating situations, only you have the first-hand information upon which to make appropriate and adequate decisions. Only you have the resources to implement the disaster recovery plan immediately. And remember, if you don't, no one else can or will do it for you.

Every Man a Disaster Worker

Adequate disaster coping requires you to sensitize your entire population to what is happening and what response is needed. The more knowledgeable people are about disasters, the better able they will be to take care of themselves, thus lessening the strain on scarce public resources. Getting people to act on their own initiative is a

difficult task, but one that will pay back enormous dividends. For example, the drain on your resources during an evacuation can be greatly reduced if people evacuate spontaneously, provided their movement is orderly and they go to the right places. And if the evacuees seek private rather than public shelter, your operations may also be less complicated. Whenever your public can be induced to act for themselves—in accordance with sound procedures—your emergency workers will be freer to manage problems that cannot be solved by individual effort.

> In community after community, disaster victims have consistently demonstrated an ability to take care of themselves. When about 10,000 people were made home-less by a tornado in Massachusetts, less than five percent sought aid from and were housed by public authorities. During the massive evacuation preceding Hurricane Carla, more than three-quarters of the evacuees found their own shelter; almost 60 percent went to the homes of relatives and friends.[3]

Hopefully, everyone would become a disaster worker not only in protecting his own family and property, but also in aiding others. You can play a role in this. **The more you can do to encourage functional individual effort during a crisis, the smaller the burden will be on your emergency workers.** In fact, a major goal should be to maximize citizen self-help. Only when people within the disaster areas have provided for themselves will they become available for service in organized or volunteer groups. The adequate preparation of each individual and family for the disaster lessens the drain on the resources of the organized disaster community. These prepared citizens then provide a larger pool of organized and volunteer labor for the recovery effort. This manual will highlight some of the problems of human motivation during a crisis and suggest ways to improve organizational and public responses in an emergency.

Togetherness—Organizations and the Public

The ideal disaster preparedness response would require everyone in the disaster area to behave in a manner consistent with the planned response. In other words, if the

response is one in which the public at large is staying off key roads, then the public is doing just that. If you want people in a certain part of your community to evacuate, then they are evacuating. If critical organizations, like the police department, should be assigning new functions to their personnel, then they are making these organizational changes.

In any emergency, you'll be working with two distinct groups whose activities will have to be coordinated in order to carry out your planned response successfully.

First, your emergency response organizations—public, private and volunteer groups who will engage in some emergency activity. Primarily, these are the groups represented at the Emergency Operations Center (EOC), including the Salvation Army, the Red Cross, or other prominent organizations with disaster-response capabilities.

Second, the general public—those people in your community who have been directly or indirectly affected by the disaster's impact.

Perhaps we can further illustrate the importance of coordinating the activities of the general public with your planned organizational response by citing an extreme example. In one case, everyone in your community would have knowledge of the situation, information about what to do, and the capabilities and resources necessary to take the proper measures. At the opposite extreme, the general public is totally ignorant and lacking in resources, and formal organizations must do everything required to minimize danger and losses.

In reality, of course, we are somewhere in between these extremes. At the same time that your organizations are undertaking a number of specialized tasks themselves, they'll be encouraging constructive public behavior through public information. You'll often find that the dissemination of knowledge and information is the most effective way to get much of the job done. At a minimum, effective information programs should prevent people from interfering with the work of your organizations. And hopefully, the public can be influenced to take most of the routine load from your organizations, leaving them free to perform the major and specialized tasks for which they are trained and equipped.

Public Attitudes toward Disaster Pre-Planning

Pre-disaster education and planning is a difficult task. Few people in your community like to think about distasteful future events. Most people tend to think of disaster as something that always happens to someone else. This "delusion" can be quite comforting to people who don't wish to face the possibility of being killed or injured. It can also result in their minimizing the importance of pre-disaster planning.[4]

The magnitude of the task before you can be illustrated by the efforts of the Miami Valley Civil Defense in Dayton, Ohio, to increase public disaster awareness. In July 1971, the Miami CD distributed a 16-page newspaper supplement, *Disaster Information,* to over 200,000 homes. Six months later, a telephone survey revealed that only one-quarter of those called could remember the booklet at all.

> Of those [one-fourth] who remembered receiving *Disaster Information,* the ability to recall vital information from it was limited. Only 28 percent could correctly identify the disaster warning signal and an even smaller number, 16 percent, could remember the location of shelters in their community.[5] As you can see, most people are not likely to think about disasters until it is too late to take corrective action. That's why they'll need immediate information as the crisis approaches.

Much of the reluctance of a community to seriously plan for disasters can be laid to past experience—primarily, the frequency and severity of natural disasters that have struck in the area. If your community has had intermittent hurricanes, tornados, or earthquakes, you're probably in a better preparedness position than your fellow officials who have difficulty recalling their last natural disaster. Experience is the best teacher. Each year, however, only a small portion of the population is struck by man-made or natural disasters. Over a lifetime many people never encounter a major disaster first hand. For these people, the need to think about and plan for future disasters has little basis in reality.

Even for those people in your community with disaster experience, planning for the future may be difficult. Their planning will be limited by the frequency and severity of past disasters. It will be hard for them to anticipate and plan for a new and novel disaster. Past experience, however, does provide a frame of reference. If they know that hurricanes are common occurrences, the impact of which can be limited by planned and corrective action, they're likely to do that planning.

In disaster-prone areas, people can be counted on to provide for themselves in most emergencies; they might secure their homes from wind damage, move their cars to higher ground, or evacuate their families and possessions from the danger zone without a great deal of encouragement from you. People living in a tornado belt are better prepared to react to that threat than are people who live outside the belt and have had little or no experience with tornados.

You probably don't have to be reminded that even in high-risk areas, civil defense still has a major job in arousing people to take protective action. **At times, past experience with disaster can limit the response of your community.** People normally expect that floods, tornados, or hurricanes will not be any worse than they were in the past. Listen to what some of the victims of Hurricane Audrey in Louisiana had to say:

> *"I told someone that it could never be worse than the 1918 storm."*
>
> *"In about 1920, we got salt water up to our knees. When we heard that the water would be five to nine feet above sea level, we figured that Cameron would get it, but not us."*[6]

If an area suffers only wind damage from hurricanes and has had no experience with flooding, it is unlikely the people will prepare for high water. In this respect, past experience with disasters can be a limiting factor. During floods people will look back to the "flood of '36" and use it as a yardstick to gauge the approaching storm. They may assume that because the rising waters stopped short of their homes before, it will do so again—only to find they underestimated the storm's force.

Don't forget, you can get caught in this trap with your planning. Just as new records are being set in sports, disasters frequently surpass earlier emergencies in severity. Don't use your previous worst experience as a guide to maximum destruction. The next emergency could be worse.

The Nuclear Case

Compared to the number of people who have experienced natural disasters, those who have encountered nuclear destruction are very few indeed. In nuclear disaster, neither your organizations nor the people in your community can fall back on past experience as a means to understanding and coping with the problems. And many people view nuclear war as a remote possibility. Even CD directors play down the importance of nuclear war in their preparedness plans. In a recent survey of local directors, 48 percent expressed a preference for an all-hazards approach. Forty percent focussed upon emergency planning for either natural or man-made disasters. Only nine percent singled out nuclear preparedness as their most important function.[7]

Local CD Preparedness Focus

Category	Percent
All-Hazard	48%
Natural and Man-Made	40%
Nuclear	9%
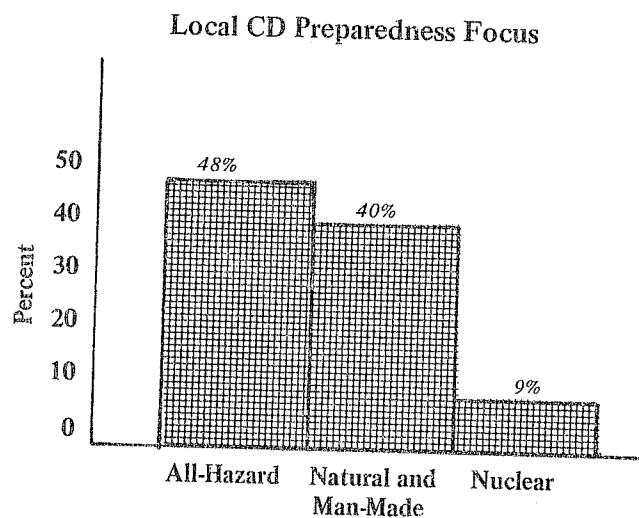
Many local CD directors tend to merge their nuclear mission into an all-hazards preparedness approach. In adopting this strategy, they're often able to overcome the reluctance of other public officials and the general populace to grapple with the realities of nuclear war. It seems that many Americans, by one means or another, dismiss the likelihood of a nuclear holocaust. Some agree that the air of unreality attached to nuclear war stems from the physical separation of the superpowers, or the idea that merely pushing a button could bring about massive death and destruction. Why accept this truth if it will only interfere with your ability to lead a normal, productive and enjoyable life?

If people do accept the idea of nuclear war, they're likely to dismiss the possibility of planning for a post-attack society by declaring, "There would be little to plan for." You've often heard people say, "If the blast doesn't get me, the radiation will." Attitudes like this all have the same result—little or no planning on the part of individuals to lessen the impact of a nuclear disaster upon themselves and their communities.

Public officials with whom you must cooperate may be more likely to engage in a working relationship with civil defense if you emphasize the all-hazards approach to emergency planning. A study conducted at the University of California's Institute for Civil Defense and Disaster Administration, for example, found that urban planners had "a greater interest in national disaster planning than nuclear disaster planning." When these planners were asked to enumerate what aspects of civil defense planning they considered to be most important, they selected flood control. Sixty-four percent of them engaged in flood control planning, whereas only 36 percent indicated that shelter/fallout protection was a part of their civil defense planning effort.[8]

With or without an all-hazards approach, however, preparedness for nuclear disaster is a major, legislatively mandated, mission of U.S. civil defense bodies. The fact that the public and local officials often have not devoted attention to the details of nuclear preparedness does not detract from the seriousness with which that mission must be addressed. If anything, the mission becomes more important as nuclear power plants are constructed around the country, and as an increasing number of foreign

nations acquire the technological capabilities to develop nuclear weapons. By accident or design, the concerns with which CD has most prominently been associated could become pressing realities. In that event, the state of public and official interest would change dramatically, as it did during the international crises around 1960. As the only agencies officially expected to study and plan for nuclear disaster, CD bodies would be expected to take the lead during a period of threatened or actual nuclear disaster. Their credibility would be diminished across the board if they were not ready.

In one very important sense, your nuclear preparedness mission becomes more critical precisely because it is not one to which people automatically respond favorably. An analogy may suggest why this is so. If a community has traditionally experienced certain types of disasters—say, floods or tornados—you may find the public and officials very responsive to planning for these threats. People have a great deal of information (and possibly misinformation) on which to base their appraisal of the possible disaster. But the same community may now face other grave threats. Urban development may have increased the problem of run-off following rainstorms. Flash floods may pose a new threat—one which requires a different response because new road and communication networks have been developed for the larger population. This new threat may actually require more of your effort to sensitize the public and mobilize organizations. At the same time, your work in the traditional problem areas would help you get an audience to which the new threats could be explained.

The nuclear threats, including those involving accidents, pose a similar situation. If disaster strikes in that form, you are responsible for having prepared for it.

The All-Hazards Approach

People and organizations who have experienced some form of disaster are normally better prepared the next time. But this isn't good enough in a society which continually grows more complex, in some senses more vulnerable, and generally more

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affluent and better able to afford the insurance represented by disaster preparedness planning. **All-hazards planning means, among other things, that experience with one form of disaster is utilized in planning for all forms of disaster.** All-hazards planning seeks to prepare organizations and the public to cope with multiple threats. It does this partly by creating the *organizational capacity* to cope with emergencies in general. Any one form of disaster, therefore, may be viewed as an opportunity to flex and exercise your community's mechanisms for coordinating the response to crisis.

CHAPTER THREE
THREAT

Speed of Onset

We've divided the pre-impact period into threat and warning. We've done this for several reasons even though the threat period may not occur in all disasters. In disasters with a long warning period, your response can be gradual and sequential—leading eventually to the preparation of the entire community. For example, when hurricanes are detected and charted several days before impact, you can engage in a good deal of pre-impact preparation. This is the threat period. It's your first inkling that your community may be in for some trouble. You're not sure when or where the disaster agent will strike, but there is a good chance your community will be in danger. You may not want to warn everyone just yet, but you can use this time to prepare the organized disaster community to meet the impending crisis.

When disasters like earthquakes, tornados and man-made explosions strike unexpectedly, the threat and even the warning period may be nonexistent or of short duration. In this case you would have to move immediately to the warning phase. Disasters with a short warning will require the most pre-planning on your part. In fact, a disaster with little warning requires an automatic, almost reflexive response on the part of the entire community.

Public Education

How can you achieve this reflexive response? It's pretty hard to do; but it can be done. Let's say that your community posts tornado warnings in the late spring of each year. This might be a good time to have a tornado simulation. People will be

thinking of the coming tornado season, and they'll be highly receptive to the help and information you can provide. In a sense, it's a matter of keeping people on their toes at critical times of the year. If flash floods occur in the spring, don't expect people to be interested in them during the fall or winter. **Remember, educate the public during those natural periods when emergencies are on their minds.**

The chart below is a good illustration of the seasonal nature of some natural disasters. Between 1953 and 1969 there were over 10,000 tornados in the U.S. Most of these occurred in the late spring and early summer. In fact, 69 percent occurred in the April-through-July period. By using this information, we know when people will be thinking about tornados and when they'll be most receptive to tornado information.

Tornado Incidence by Month, 1953-1969[1]
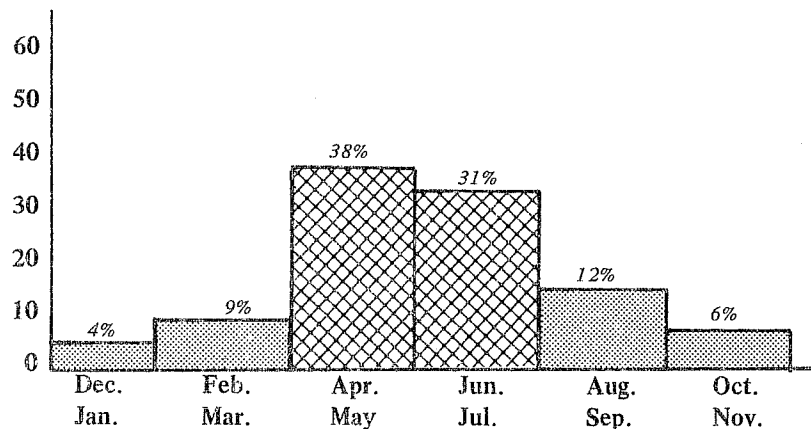
If you're in a tornado belt you'll want to begin your public education campaign in late March and early April as the tornado season approaches. Such a campaign will do two things. It will provide information to people when they will be thinking about tornados. In addition, the information will be fresh in their minds if a tornado does strike your area.

Just as people perk up to CD messages about tornados, they'll do the same thing during the hurricane or forest fire seasons. And beam your messages to a specific audience.

You may not need to blanket the whole town with flood information when only the areas close to the river will be threatened.

> According to a 1968 CD survey, only four percent of the population knew that CD was engaged in natural disaster planning and relief. What are you doing to change this image? How have you been making your organization more visible? Do you have a public education program? Public education might hold the key to the reflexive, automatic response needed in a short-fused emergency.[2]

Some public education programs fail because they don't recognize that disasters are area-specific. The map below is an illustration of the problem you're facing. Not all areas of the U.S. have the same problems. If you live in the mountain states where tornados seldom occur, don't focus your emergency simulation on tornados. If you live in Florida or Illinois, on the other hand, tornado information must be an important part of your disaster preparedness scheme.

A national map like that shown on page 22 may be too general for detailed local planning. What happens in your area may not be occurring 40 miles away. In fact, several different conditions may exist within a single county. The chart on page 23 can help to categorize the disasters that might hit your community. The chart has two dimensions:

1. Speed of Onset. The amount of time you'll have before impact. Will it be long or short?

2. Frequency. Based upon the number of times a particular disaster has struck your area in the past. Do they occur frequently or infrequently?

THREAT RATING FROM TORNADOS, 1953-1969[3]
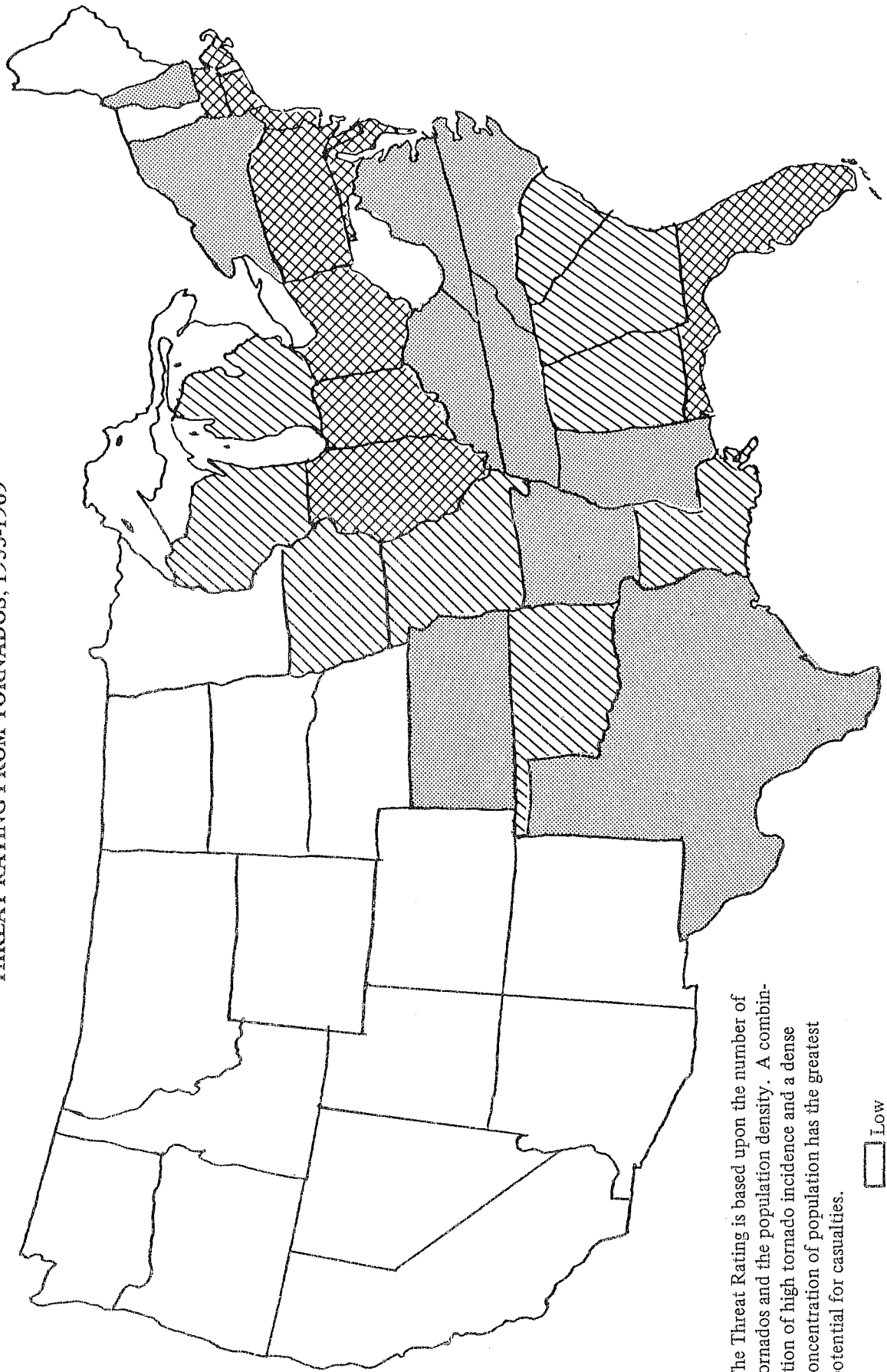
The Threat Rating is based upon the number of tornados and the population density. A combination of high tornado incidence and a dense concentration of population has the greatest potential for casualties.

Low

Moderate

Moderate-High

High

Frequency

	Frequent	Infrequent
	A Short-Frequent	**B** Short-Infrequent
	C Long-Frequent	**D** Long-Infrequent

Speed of Onset — Short- (row A/B), Long- (row C/D)

TYPES OF DISASTERS

Natural	Man-Made	Wartime
Earthquake	Structural Fire	Nuclear
Flood	Explosions	Bio-chemical
Hurricane	Industrial	
Tornado	Nuclear Accidents	

We've also listed a number of disasters. It's not an inclusive list. You might want to include others. You should be able to place the various crises in a category. For example, if floods are common in your area, you would probably place them in Box C. Earthquakes, on the other hand, if they are rare, may appear in Box B. Generally, Boxes A and C—the most frequent occurrences—should be the basis for your public education program and planning.

You'll get the best public response when you emphasize disasters familiar to your area. We're not suggesting that you ignore the less frequent and less familiar emergencies you've placed in categories B and D. We're suggesting, rather, that public education should be based upon the immediate needs of your community.

Remember, preparing for one type of emergency will help your people meet the less frequent occurrences. All emergencies have a lot in common. The type of

emergency you use as an example in your public awareness campaign is merely a vehicle to arouse interest and convey emergency operations procedures.

> If getting your agencies interested in nuclear disaster is difficult, don't become too discouraged. The evacuation procedures used in your flood emergency plan will have direct application in a nuclear emergency. Have you been focussing your public awareness campaign on the emergencies indigenous to your community?

False Alarms

You'll find several advantages to dividing the pre-impact period into a threat and warning phase. First, during the early part of the threat period, the disaster may not be likely enough to warrant the mobilization of the entire community. Let's put it this way. You've heard of "crying wolf." If you yell "fire" too many times and nothing happens, you're going to find yourself in a jam when a fire breaks out. This isn't a hypothetical problem. It can happen to anyone dealing with unscheduled events. Even the Weather Bureau, with all its sophisticated equipment, can't predict a hurricane's landfall with a high degree of certainty.

Mobilization

You can use the threat period to avoid some of these problems by undertaking a partial mobilization of CD organizations. Activate vital emergency elements in the community--police, fire, public utilities, and public works departments. Then, as the disaster approaches, your operating agencies will be ready to alert the rest of the community. If, on the other hand, the emergency fails to materialize or misses your area, the entire community will not have been needlessly aroused. You've preserved your credibility in the eyes of the public without sacrificing preparedness. Remember, it's much easier to tell a few organization people that the alert was a false alarm than all of

the people living in your community. On the other hand, if anybody asks "what if?" you can point to the readiness steps you did take.

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┌─────────────────────────────────────────┐
│     Advantages to an Organizational Alert │
│                                           │
│  1.  You can move to full mobilization of the │
│      public from a solid base.            │
│                                           │
│  2.  You can demobilize without having de- │
│      stroyed the public's confidence in CD. │
└─────────────────────────────────────────┘
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Let's take another look at what you'll be doing in the threat stage.

- You'll be assuming a posture from which emergency planning and action are possible. This means activating the EOC and creating an atmosphere where crucial figures in the disaster effort can work together. (More on the EOC below.)

- You'll be encouraging agencies to shift personnel and equipment from routine tasks to emergency operations.

- You'll be freeing disaster workers from their day-to-day obligations, making it possible for them to devote full time to the emergency effort.

Putting It Together—Community Level

One of the problems with natural and man-made disasters is their refusal to respect jurisdictional boundaries. They often cross townships, counties and even states. If you're going to deal successfully with the erratic course of emergencies, you'll have to cooperate with other nearby political units. You'll have to establish two types of relationships—a *horizontal* one that includes your community and other towns, cities, and counties in the area, and a *vertical* relationship that permits the merging of federal and state resources with your local effort. Maybe you've already worked out arrangements with nearby local jurisdictions. It's much easier to implement a comprehensive disaster plan if everyone in the area is familiar with the plan.

Hopefully, those active in the emergency will have written or at least helped revise the disaster plan. We can't overemphasize this point. Maybe the Jefferson County, Texas, planning experiences can throw some light on this problem. The mayors of Jefferson County participated in the formulation of their survival plan. Not only did they help write the plan, but they also indicated their approval by signing it. In the wake of one of the worst storms to hit the Gulf Coast, the mayors of Jefferson County credited their successful evacuation of the area to their advance approval of the plan.[4] **The planning process provided the opportunity for community leaders to get together and discuss mutual problems.** When the emergency came, mayors were not a group of strangers unfamiliar with each other's problems. They were ready to cooperate. They knew what had to be done and what to expect of each other.

> The Coastal Bend Regional Planning Commission has developed a regional disaster plan for a 13-county region around Corpus Christi, Texas. Three planning districts and 13 counties in northern Alabama are currently developing a comprehensive disaster plan and mutual aid pact with the help of DCPA personnel and funds.
>
> **Have you been using the planning process as a means to foster cooperation?** Have your municipal leaders been working together? If you get people to cooperate before a crisis, it will be a lot easier to meet the challenge of a major emergency.

The EOC—Getting the Big Return

You can solve some of the problems we've been talking about during the planning period. But not all of them. Planning can ease the transition from normalcy to emergency, but it can't solve all the interorganizational problems you're going to encounter.

Let's take a look at how public agencies operate. Although they're integrated into the community structure, public agencies operate independently. Your police, public works and fire departments often fail to understand that in an emergency they'll

have mutual interests and goals. When disaster strikes, emergency groups are forced into situations where coordination and increased interdependence are sorely needed, but for which they may be ill-prepared. The tendency is for the police to carry out their disaster operations with little concern about what the public works or fire departments—much less volunteers—are doing.

Your city's independent agencies often hesitate to assume responsibility for coordination of the disaster effort. Not only do they throw aside any responsibility for fostering cooperation, but they also resist the overall coordination of their physical resources and personnel. You'll find that reluctant cooperation, like this, can lead to a segmented response to the mounting crisis. One seasoned disaster observer summed it up this way:

> *The immediate problem in a disaster situation is neither*
> *uncontrolled behavior nor intense emotional reaction,*
> *but <u>deficiencies of coordination and organization</u> compli-*
> *cated by people acting upon individual and often con-*
> *flicting definitions of the situation.*[5]

The creation of an Emergency Operations Center, however, can go a long way toward fostering coordination. When the leaders of the various public agencies are operating at a central place, resources and manpower can be deployed more effectively. Use your EOC not only as a communications center, but also as a place where department heads can get an overall picture of the disaster and its problems. For organizations that are accustomed to working autonomously, having their leaders in the same place can provide a basis of cooperation and mutual dependence that is absent in daily municipal operations.

But merely having agency heads at the EOC is not enough. You'll have to encourage joint decision making and the sharing of information. Don't fool yourself. It's not going to be an easy task to break down institutional barriers. Perhaps one of the ways to implement a coordinated response is to encourage agencies to undertake specific duties.

Have you done this? Be sure each agency has an emergency mission throughout the crisis period. Once you've assigned the emergency tasks, make sure they are practiced during periodic civil defense simulations.

> During an emergency, your major problem will not be chaotic or emotional behavior. Your major task will be setting goals and orchestrating the various public agencies—molding them into an effective crisis management group.

Closely linked to the problem of bringing public agencies together is the reluctance of many officials to take command of the situation. No one—mayor, police chief, or others in authority—wants to assume control of the emergency activities. No one wants to make the crucial decisions. The infrequency of disasters helps to explain this reluctance. Unless your area has had prior emergency experience, your mayor and police chief will find the problems novel and perhaps insolvable. Don't postpone decisions, however, until their impact will be negligible. Don't make decisions by default. Not to act is a decision. Inactivity is a policy. The sooner you can take positive action by activating your emergency organizations, the better off your community will be. **What you do now—during the threat period—will heavily influence how well you can meet your community's needs as the crisis mounts.**

One final word on the EOC. **Don't assume that bringing people together in a command post will automatically insure that they will function effectively.** An overcrowded EOC, or one in which roles and functions have not been defined, can result in confusion instead of action. Agency heads, who have been accustomed to orderly office processes, will expect an organized approach to activities in the EOC. Your planning should take detailed account of who will be in the EOC and what they will be doing. How and when will they communicate with their own offices, or with one another? Your planning should reflect the communications needs of each individual, and schedule the times when interaction within the EOC will take place. You should also specify who will take part in what decisions—what groups will assemble, who will participate.

Let's take a look at how disaster related agencies operate under normal conditions. Most of the problems they encounter are routine. They can handle them with their available resources and personnel, thereby reducing the need for adaptive or innovative behavior. All this changes in an emergency. These agencies are going to encounter two major problems.

First, there's likely to be a shortage of manpower—if not a shortage, then a larger workload for each man. Usually a city has enough workers to meet routine needs. But in a crisis, the amount of work to be done is going to increase greatly. Every worker will have to put in longer hours. We don't mean to pose an insurmountable problem. Remember what we said before. Most emergencies are manageable at the local level. By skillfully using your personnel, you should have enough workers.

> Many city agencies work on a 24-hour, three-shift basis.
> When all of your people are mobilized for longer shifts,
> your manpower can go a lot farther. And it's not unrealistic
> to expect your policemen, firemen and hospital staff to work
> longer hours. In an emergency most people are willing to
> give an extra effort. In fact, you may have to force people
> to take breaks. Furthermore, regular disaster workers can
> be augmented by volunteers.

Second, you're going to find people doing jobs they're not normally expected to do. For example, policemen usually limit their activities to protecting property and preserving life. But during an emergency, their role will expand considerably. Traffic and crowd control, as well as protection of life and property, will demand attention. In addition, the police may have to warn people of the approaching crisis and then take primary responsibility for search and rescue missions. They might also find themselves cleaning up debris, ferrying the injured to hospitals, and taking refugees to public shelters. What frequently occurs is not an assignment of tasks based upon functional expertise, but *assignment based upon geographic location.* If you're working in an area you may

have to tend to any problem that crops up. It might mean rescuing people trapped in debris, helping to stop a water leak, or reporting area conditions back to the EOC. **You'll have to prepare municipal workers to play different roles.** In fact, the best disaster worker is the person who can stop doing his usual work and do the things that need to be done immediately.

> Have you sensitized your operational personnel to the fact that they might be the only emergency workers on the spot? When this happens, they'll be required to be "jacks-of-all-trades"—ready to help anyone in need. Are they ready to cooperate and work with personnel from other city departments?

Just as public agencies will have new tasks in disaster, some of their traditional functions will no longer be necessary or important. In an emergency, the water department won't have to continue hooking up new homes; the police can curtail criminal investigations and much of their daily bookkeeping activities; doctors can cancel their regular office hours and shift their activity to field hospitals. In an emergency, many day-to-day routines are no longer critical.

You can help to provide adequate work forces for emergency operations by encouraging public agencies to plan for personnel shifts from routine to emergency assignments. Ask yourself this: Does the police department have a plan to shift officers in the personnel and records division to the EOC or disaster assessment teams? Does each public employee have a vital assignment during a crisis? You can wait until a disaster occurs to think about shifting people, but it's a lot more efficient if people have an assignment before the crisis begins. In short, does every man have an emergency battle station?

Putting It Together—Your Personnel

We said earlier that a disaster places a lot of strain on your personnel. You'll be asking them to work long hours with little time off to care for their families. To maximize the number of people who can help, you may have to minimize the effects of these role conflicts.

What are role conflicts? Most of us are not autonomous. We have obligations to others. A county employee is also a father and a provider for his family. He has overlapping responsibilities. And he can't be a good disaster worker if he's worried about the safety of his family.

During emergencies, family members want to be together. Since you can't keep disaster workers with their families, it's imperative that they know their families are safe. During the threat, alert your people to the possible danger and instruct them to make sure their families and property are safe. If you can encourage workers to move their families outside the disaster's path, you may be increasing the effectiveness of your personnel. On the other hand, if the pull of family is neglected, your organization may find itself short of personnel. The effectiveness of your organizaton may depend upon how well you cope with these personnel problems.

Disaster and Politics

Just about every problem has political ramifications, and disaster is no exception. For example, some officials are afraid to activate emergency plans before the impact area is clearly defined. They're afraid the disaster may strike elsewhere, leaving them with a mobilized population but no emergency. Elected and appointed officials will be asking themselves what will happen if I do this or do that.

A myth has grown up that public officials will always suffer if they make the wrong decisions in a disaster. You've probably heard it, and many of your community's officials may have this idea in the back of their minds during an emergency. Like every myth, there's probably some truth in it. People are going to react to how you handle the emergency. But don't let it interfere with your actions. Don't hold back information from the public or postpone hard decisions. By and large, people have demonstrated that they are not going to turn you out of office for alerting them to potential danger.

A recent major flood in New Orleans, just prior to the
city elections, seemed to have no impact on the outcome
of the mayoralty race. The incumbent won, despite the
fact that his opponent attacked the city's preparedness
plan. Although two-thirds of the people in the flood areas
felt the city's hurricane protection was inadequate, less
than seven percent held the mayor responsible. Many
voters expressed indignation that others would be influ-
enced in their voting by the hurricane. Partisans on both
sides looked upon the hurricane as an "act of God"—
something that didn't belong in politics.[6]

Making the Right Decision

The problems of inadequate coordination and decision making by default can
be solved in the Emergency Operations Center. The EOC provides the physical environ-
ment in which officials can make decisions jointly. Remember, we said earlier that an
emergency requires the formulation of a new set of goals for the community. If these
goals can be arrived at jointly—not in isolation—there's a good chance your department
chiefs will implement them. You can take steps to make the EOC working environment
more supportive of the kind of behavior you want. For example, have you arranged the
EOC so that department heads have easy access to one another? And, have you worked
out a common set of goals to achieve in an emergency? Have you *rehearsed* the roles that
individuals will be playing?

Past experience has demonstrated that effective EOC's
have a physical area where department heads can meet
away from the general hubbub of the operations center.
It might be an isolated room or an area that provides
the quiet needed to make important decisions. The tur-
moil and overcrowding often found in EOC's could be
limited by doing this. Your disaster plan should also
specify who should and should not be on the floor of the
operations center. Have you designated anyone to take
charge of activities within the EOC?

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Besides being a focus for the overall coordination of the crisis, the **EOC should also be the point from which managers run their agencies.** Have you considered getting all department heads to move to the EOC in an emergency? There are several reasons why this may be helpful. It fosters cooperation and the formulation of goals. It allows for the rapid modification of plans which several departments are party to. And the EOC may be the only place that has the communication facilities to keep managers in contact with field operations. It should be the one place that has an adequate information flow. Here department heads can weigh messages from all agencies. They can get a better feel for what's going on in the field. Finally, they can better meet the changing need of the community when they have a total picture of both the developing events and their collective response.
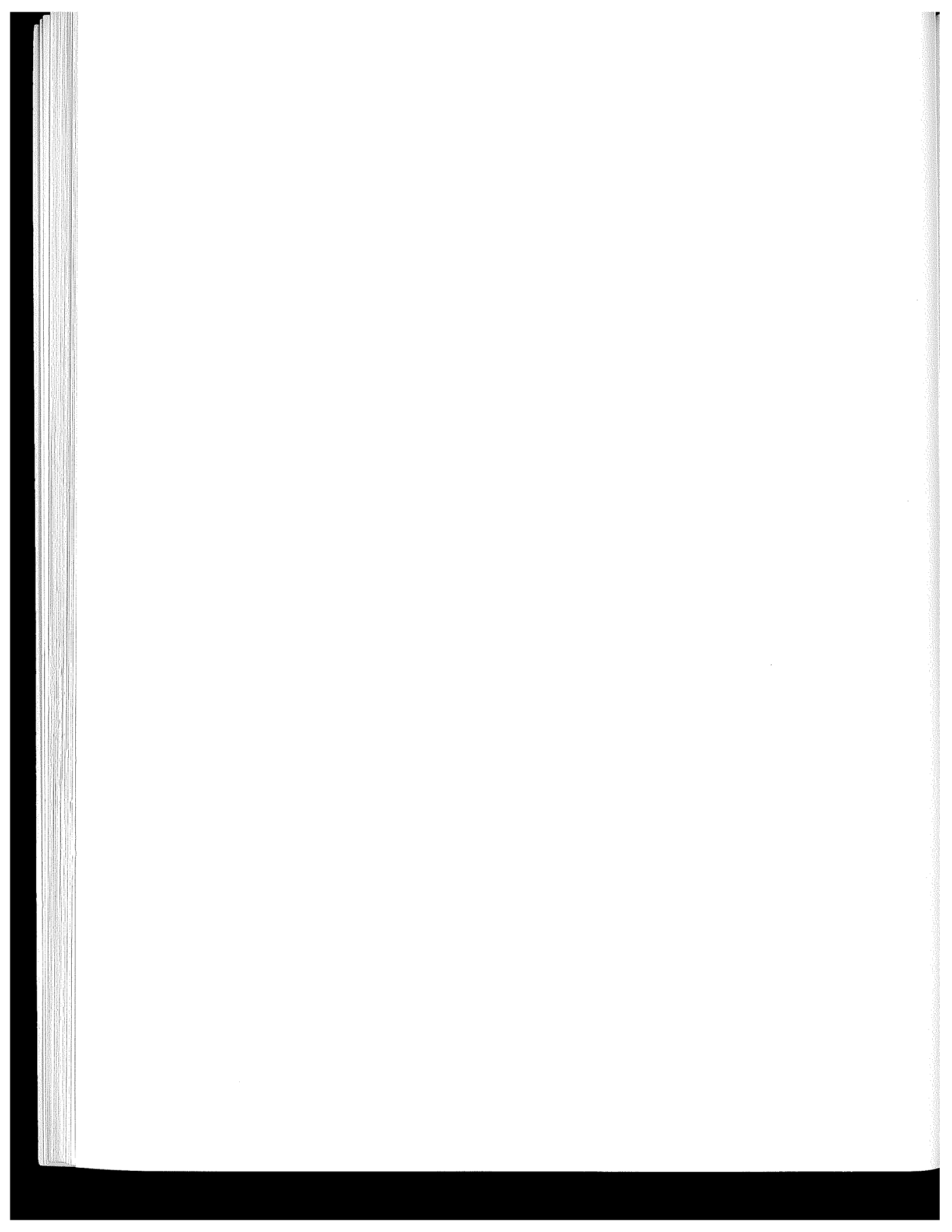
CHAPTER FOUR
WARNING

The disaster agent is now moving toward impact, with a high probability of striking your community. During the threat period, there was a reasonable chance the disaster might miss your area, or might not occur at all. During warning, on the other hand, you are facing a highly probable and immediate danger.

Perhaps the critical difference between threat and warning is the need to arouse the general public. You'll have to begin communicating with people. Some public communications have probably occurred before the warning period, and at least some segments of the public will be aware of an immediate threat. For example, people who have lived through a flood disaster will probably be sensitive to the Weather Bureau's reports of rising rivers. But, by and large, public communications have not previously been your major concern. From now on, however, public communications will be crucial both to the disaster-response effort and to your image as an effective and credible crisis manager.

Organizations First—The Public Second

During the threat period, you were primarily concerned with the organized disaster community—public agencies and possibly other organizations that must be prepared to play a major role if the crisis hits. There are several reasons for continuing to emphasize organizational activity even after you enter the period when public communications become critical.

(1) You'll want the public to take actions that are consistent with what your organizations are doing. For example, you'll want to reduce traffic on arteries required by emergency organizations. But you won't be able to do this unless you know

what your disaster organizations are doing and are communicating this effectively to the public.

(2) **Tell people what steps are being taken by your organizations.** Keep them informed. They'll give you a much better response if they know what you're doing.

> By keeping people informed about what you're doing, you won't get caught in the trap of not receiving credit for your preventive measures that work. If casualties or other losses have been reduced, you can point to the steps you took to produce that result. And your argument will be more credible because you described the measures when they were taken, not after the disaster was over. Remember, your credibility during and between disasters is critical to your planning role in the community and your effectiveness in dealing with other organizations.

(3) **Always tell people why your disaster-response agencies are doing something.** By doing this, people will not only have a better feel for how they can fit in with these organized efforts, but they will also take your warning messages more seriously. In the final analysis, they'll be more likely to do the things you're asking them to do.

(4) **Always be ready for unanticipated responses.** Public communications will often trigger responses you may not have prepared yourself for.

> Your public information may presuppose organized activity—if you tell people to evacuate an area, you may have to provide transportation for some people. **Or your public information may generate unexpected activity**— rumors, movement, a barrage of phone calls—which you organizations must be prepared to handle.

In other words, a communication is part of a chain of actions. It is important only for its effect on what people do next. They may listen for another message, move to a shelter, volunteer to help a rescue team, or hose down the roofs of their homes. Or they may call City Hall, drive down to see the damage, or buy extra groceries. If you

send out public communications against a well-thought-out background, you can take account of these possible effects and be prepared to deal with them.

This view of how public information is related to an organized disaster-response will be reflected in the remainder of this chapter. We will move from an emphasis on the "organization side" toward an emphasis on the "public side." Always keep in mind that an act of communicating to the public must be assessed in relation to actions taken by your disaster organizations.

First Things First—The EOC

During the threat you were primarily concerned with preparing public agencies to meet the emergency. The EOC was set up. Officials transferred their operations to the Center and public employees assumed emergency roles. You may have also expanded this preparation to include private hospitals, utilities and major employers in your area. In fact, all organizations which are expected to play vital roles in the warning and recovery effort should have been alerted during the threat period.

During the warning period, on the other hand, you'll be beaming your message at the general public. Hopefully, the organized groups will already be operating on an emergency basis. The operation we are describing is sequential and the first crucial step is setting up the EOC. This is critical both **to mobilize organizations and agencies,** on the one hand, and **to establish machinery for warning the public,** on the other. Only after the EOC is functioning should you begin the process of alerting and warning the public.
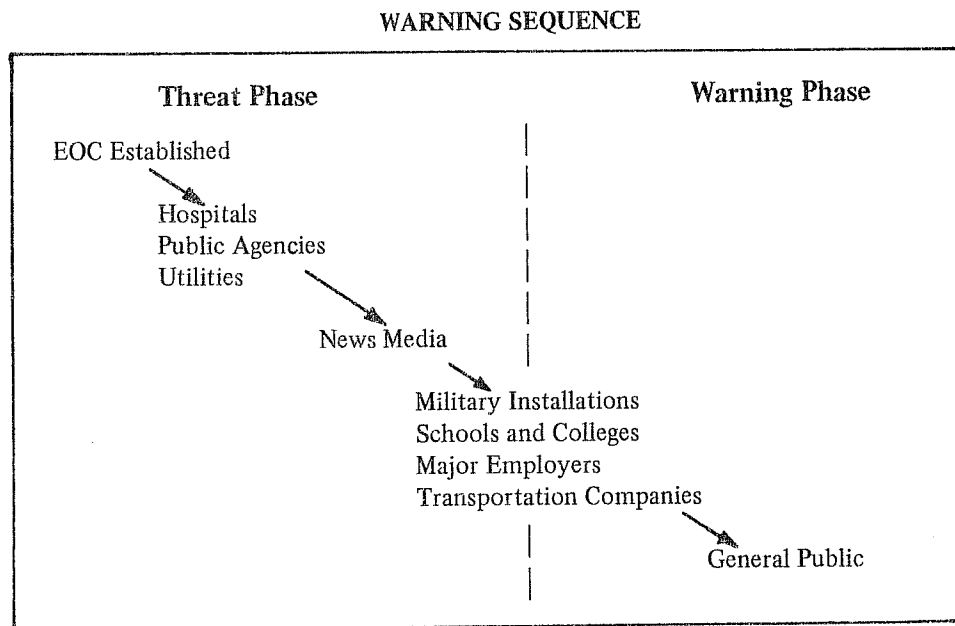
> In an emergency your success in meeting the mounting crisis is dependent upon what you've done in the preceding steps. The more pre-planning you've done, the more effective your implementation will be. And a greater degree of organizational mobilization will yield a higher payoff in managing the general public.

As we noted in the preceding chapter, the EOC is central to coordinated efforts. Without an operational EOC, it's going to be difficult to decide how to warn private groups and the general public. Even more critical—how can you advise people to take preventive action unless vital members of the emergency team have discussed the impending crisis? How can you tell the public what to do and how to do it until you've assembled the organized disaster community?

> Remember, the activities and the formal communications of disaster-response organizations will "communicate" to onlookers, the press, and the general public. You must make every effort to see that these communications are consistent with one another, and with your coordinated response to the emergency.

The Warning Sequence

Warning is much more than a signal or a whistle. It's a process that has logical steps. The chart below depicts the sequential warning process we've been talking about.

WARNING SEQUENCE

Threat Phase   Warning Phase

EOC Established

    Hospitals
    Public Agencies
    Utilities

        News Media

            Military Installations
            Schools and Colleges
            Major Employers
            Transportation Companies

                           General Public

The dividing line between the threat and the warning is broken to indicate flexibility in defining the two phases. The line merely indicates that during the threat period the emphasis is on organizations, while during the warning state emphasis is on the general public. Normally, the sooner you can move to a general warning, the better prepared your community will be.

Those organizations placed upon the line are groups that can aid you in warning the general public. They play a dual role.

1. **They are part of the warning process.** You might think of them as "semi" disaster preparedness organizations. You'll be asking them to warn other people and to disseminate information to the general public. They can act as a link between you and the rest of your community.

2. **They represent a part of the general public that's going to need guidance** about how to protect themselves, their property and their workers.

A number of studies indicate that the amount of time between warning and impact is critical in determining the amount of disruption. An instantaneous disaster or one with a short warning will produce a maximum of social and psychological disruption. If you give adequate warning you can minimize many of its traumatic effects.[1]

Industrial Civil Defense

What organizations do you want to incorporate into the disaster effort? What special skills and equipment will your community need during an emergency? Perhaps some private organizations within your community can supply these needs. A good example of your reliance on private agencies in disaster management is the news media. Without the media it would be difficult to warn and advise people about what to do in a crisis. The media—a "private" group—is often your major link with the public and should be considered a part of the organized emergency preparedness effort.

What can these organizations contribute to your preparedness? Some of them can supply you with special equipment or specially skilled personnel. However, the successful incorporation of these groups into the disaster effort can only be maximized if they've had prior contacts with civil defense.

> At the federal level, CD has established an ongoing relationship with the major industrial groups. How might these specific groups augment your emergency response? Have you been cultivating this relationship at the local level? Have you made contacts with many of these groups and discussed their possible inclusion in your preparedness plan? Have any personnel from these groups participated in your simulation exercises?

What You Can Do for Private Organizations

Private organizations, like individuals, have property to protect. If you wait until the last minute to warn them and the public, you're going to impair their ability to protect themselves from the impending disaster. Let's use your local transportation company as an example. Suppose the bus garages are in a flood prone area. If you wait until the last minute to warn the company, it may not have enough time to move its rolling stock out of the threatened area. This is doubly crucial if you had planned to use public transportation as a part of your community evacuation plan.

What happens when you delay your warning to vital or threatened groups? Very often their personnel hurry off to protect their own families, leaving the corporation's property more vulnerable to impact. Just as public employees respond favorably to an emergency when their families are secure, private employees act in the same way. Notifying employers early will permit them to adequately "disaster proof" their families.

What Private Organizations Can Do for CD

You can use private organizations to warn workers of impending disasters. During weekdays approximately 40 percent of your population will be at work. Contacting their employers may be the best way to warn them of a crisis.

> In order to implement an industrial civil defense program you'll have to contact the major employers in your area. Which ones are located in high-risk disaster areas? You may have more success in working with organizations in high-risk areas. Have you made an attempt to sensitize them to emergency problems? Have you incorporated them into your warning process?

Notifying employers and using them to disseminate disaster information has several advantages.

(1) They can be encouraged to supply equipment and skilled personnel to the community disaster effort.

(2) They can release their workers to tend to their home and family responsibilities.

(3) They can provide their employees with information on how to cope with the disaster personally.

Perhaps we should amplify this last point. A warning is more than a siren. It should provide people with information on what to do. While they are working, most people don't have access to radio or TV—the primary sources of emergency preparedness information. You might be able to use employers to fill this information gap. They could use their public address systems to air radio messages, or they could use these same PA systems to disseminate pre-recorded CD messages.

> Some corporations run periodic safety programs for their employees. They use the time to discuss not only on-the-job hazards, but also automobile and general home safety. Have you worked out any arrangements to help these companies add all-hazards disaster information to their programs?

Industrial civil defense is an important but often neglected area. It is often crucial that employees be notified of an emergency and released from their jobs. Remember, we said earlier that the home is usually the point from which the individual initiates preventive action. In order to do this the working family head should be on the scene as early as possible.

There's another equally important reason for implementing an industrial CD program. Approximately 25 percent of the population will be in school during weekdays. Before school children can be released—particularly those in the first eight grades—an adult should be in the home. Since both parents work in many families, you'll want to encourage the earliest possible release of your community's work force.

Warning Strategies

Different warning strategies have to be designed for different times of the day. Have you given any thought as to where your people are during different parts of the day? We're a pretty mobile society. Our population configuration changes considerably during a 24-hour period. The warning strategy that works during a weekday will be inappropriate during the evening or on weekends. By using the chart below, you can get an idea of how your population changes its location during the day. We've included a second element on the chart in the form of a media exposure rating. It's a rough estimate of the number of people that would be tuned in at different times to either radio or TV— their primary source of emergency information.

YOUR SHIFTING POPULATION

	Day		Evening		Night	
Work	40%	L	10%	L	5%	L
School	25%	L	- -		- -	
Home	25%	H	65%	H	90%	L
Other	10%	L	25%	L	5%	L

Media Exposure—Radio and TV

L = Low
H = High

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At what time do you think you could most easily warn your community? During a weekday, approximately 60 to 70 percent of your community will be at work or in school. While the housewife may be tuned in to the media, most people who are on the job or who are studying will be isolated from radio or TV, and they'll be relatively hard to reach with crisis information.

As late afternoon approaches and moves toward evening, an increasingly larger group of people will be in their homes. In the evening the mass media, particularly TV, becomes the most efficient and effective way to reach large segments of your population. Although the greatest percentage of your population would be at home during the late-night hours, they will not be easily alerted by the mass media. During the sleeping hours, the primary means of alert would be the CD siren and the door-to-door alert.

> During the 1972 flooding of the Susquehanna River, Mrs. Edith Davies was aroused from her bed and told that the rising waters would engulf her home shortly. She was advised to evacuate quickly and told it was too late to pack her belongings or move her furniture to a higher level. Her experience was not unique as many people were forced to evacuate on short warning and without adequate preventive action.

Don't let this happen in your community. All too often officials hold back warning until it's too late to do anything. Or they postpone warning until the night hours when people are hardest to reach and least prepared to protect themselves and their property. Alerts should be given when your people can be most easily reached—during the day or early evening. And never postpone an evening alert feeling that, if necessary, you can carry out an effective warning in the middle of the night. Remember, a door-to-door alert, the kind you'll need at night, is exceedingly slow and requires a large number of critically-needed disaster workers.

> And don't forget, the size of the audience that is "listening" to a warning depends upon previous public communications. You can increase the number of people who will be attuned to the media by telling them to listen for future messages and by suggesting what actions might be required from them during later periods.

Special Populations

Just as people are classified by what they do and how they spend their time, they can also be classified by the conditions under which they live. Past experience with disasters has shown that certain segments of the population will need more public aid during a disaster than will others. You can usually count on the working population to provide for itself during a crisis. The handicapped and the elderly, on the other hand, will be less able to cope with disaster-related problems. And poor people typically will have less of the wherewithal for coping with emergencies on an individual or family basis.

The poor and the elderly simply do not have the physical or monetary resources to cope with major emergencies. They're less likely to be connected with formal organizations that play an intermediary role in the warning process, and very often they're isolated from much of the communication process that transmits information for the rest of society.

> If evacuation is necessary, they may not have a car
> available to carry them out of the impact area. If the
> car is available they may not have a place to go and
> cannot afford to make arrangements in public accom-
> modations, as can the more affluent population. In
> general the poor, the handicapped, and the elderly are
> going to need more help, more information and more
> warning.

Have you divided your community into ecological and geographical areas, so that pockets of the dependent populations can be identified? Then, when a disaster strikes, special efforts can be made to care for these individuals. In general, it is the poor and elderly that inhabit the public shelters when evacuation is necessary. And it is the poor who must rely on public transportation in getting to those shelters.

Another group you might want to consider as a special population are school children. If your community is beset by a short-warning crisis, many school children may not be able to get to their homes or out of the area without public transportation. All schools have a fire escape plan, but many do not have emergency evacuation plans.

Have you mapped out the areas in your community that
have a high concentration of the poor and elderly living
in them? Have you made plans to supply those areas with
extra help in an emergency? Do you know where your
schools are located? Has any group been assigned respon-
sibility for the evacuation of school children? Do the
schools themselves have an emergency evacuation plan?

Maybe you can use the chart below to categorize the neighborhoods in your
community that will need special attention. This chart is similar to the disaster frequency
chart in the preceding "threat" chapter. This chart has two dimensions:

1. The **degree of risk** or susceptibility to disasters based
    upon past experience. Do certain neighborhoods
    have emergencies more frequently than others? Do
    they have a high- or low-risk factor?

2. The **degree of dependency** of the neighborhoods in
    your community. Which of your neighborhoods
    have a high or low proportion of the poor and elderly?
    Where are your schools located?

DEGREE OF DEPENDENCY

	High	Low
High-	A High-Risk High-Dependency	B High-Risk Low-Dependency
Low-	C Low-Risk High-Dependency	D Low-Risk Low-Dependency

Degree of Risk

You should be able to place the various neighborhoods in your community
into one of these boxes. The neighborhoods that fall into category A (High-Risk and
High-Dependency) are going to need the most help in an emergency. They're also your

neighborhoods that are most disaster prone. On the other hand, the communities in category D (Low-Risk and Low-Dependency) will need the least attention because emergencies there are infrequent and the residents are usually able to take care of themselves. In other words, we're asking you to set priorities in your disaster pre-planning operations. Plan to devote more of your attention to those communities that are likely to be hardest hit and need more attention (Box A) than to the affluent and low-risk neighborhoods in Box D. Of course, what we're saying here must be considered alongside the non-social factors. Terrain, elevation, and other physical conditions will probably be the first things you look at in risk mapping.

What about Boxes B and C? After you've mapped out a public education and disaster response for your high-risk/high-dependency areas (Box A) then you can begin to implement your programs in areas with fewer problems. You'll probably want to extend your planning almost immediately to the other high-risk areas in category B. If you can supply the people in these areas with a public education program and give them ample warning they should be reasonably able to fend for themselves in an emergency.

Category C is a low-risk area, but if a disaster strikes here you're likely to be confronted with a large number of human charges. People here are going to need the most assistance. Although they may know what to do in an emergency many will not have the resources to protect themselves and their families.

> Remember too, it's easier to prepare some people for an emergency than others. People living in A and B neighborhoods—the high-risk areas—will be used to thinking about disasters. Chances are they've had some past experience with emergencies to draw upon if their area is hit again. People living in low-risk areas (Boxes C and D), on the other hand, are more likely to view a disaster as something that always happens to someone else. They'll be the least prepared for an emergency and will probably need more help if a disaster strikes.

Minority Groups

Have you made efforts to include non-whites in your emergency planning process? Consideration should be given to minority groups within your population. You can more easily mobilize non-white minority group members in your community if some of them are part of the organized disaster effort.

If shelters, for example, house a large number of minority members, then shelter managers should be from these groups. Likewise, messages beamed to minority communities should be done partially by members of these same groups. If there is a Spanish-speaking community in the disaster area, it is imperative that warning information and preventive action messages be in Spanish. Those radio stations that cater to minority audiences should be used to reach their listeners with CD messages.

> How many minority group members are part of your
> civil defense effort? Are they decision makers or shelter
> managers? Have they played a role in the planning process?
> How do minority groups view your CD organization and
> are they responding favorably to it? Are your CD messages
> bilingual? Are you using radio stations that reach minority
> audiences to disseminate CD messages?

General Public

We all know that many Americans place a pretty low emphasis on disaster pre-planning. That's why the warning period is a most important time for the general public. If they're unprepared for emergencies, you can use the warning to provide them with the information and guidance they'll need to protect their families and their property. Are you prepared to give them this crisis information?

Unfortunately, many public officials fear over-reaction or panic on the part of their people. As a consequence, they try to "keep them in the dark" by withholding vital information. Don't get caught in this trap. During moments of crisis most people

act rationally. And if you give them the right information, they can improve their chances of minimizing the disaster's full impact.

During periods of stress we've found that many people behave conservatively. They cling to their family and hesitate to take innovative actions. The problem you're facing will not be over-reaction on the part of the public but rather inaction. In order to break this network of conservative, non-innovative behavior, you must complement the warning with information about the threat. You should be telling people how the disaster's adverse effects can be minimized or reversed.

A Warning Procedure

The warning procedure we're suggesting should prepare your community to cope with most emergencies. It provides for an *alert* or signal that trouble is on its way; *information* about the disaster agent; and *preventive action measures* that people can take. We've outlined it a little more fully below.[2]

(1) The Alert—It can be in the form of a siren or whistle that gives the public little information but does get their attention and indicates that something is amiss. Alert signals should lead people to automatically tune in the local radio and television stations for more information.

(2) Information—The alert must be followed immediately by information about the nature of the disaster agent. Much of the information would come via the mass media—radio and television. This information should convince people of the reality of the threat and lead them to take corrective action.

(3) Action—Finally, the media should carry a series of messages recommending preventive and protective actions which people can take in order to insure their well-being.

In other words, it's not enough to give just an alert. Many people are not sure what a CD siren means. A survey done for CD in Dayton, Ohio, indicated that only about

16 percent of the population were able to recognize a warning signal.[3] Where such uncertainty exists, the warning signal is often dismissed as a false alarm, a test, or an indicator of the time of day. Even if it is interpreted correctly as a warning, people are going to want and need more information.

Warning and the Media

People confirm the existence of a threat in a variety of ways. Some will consult people close at hand—a friend, a neighbor or another member of the family. Others might try to telephone someone else. This accounts for the jamming of phone lines during an emergency. If you can condition the public through your public relations campaigns to tune in the media, you can eliminate some of this phone congestion.

> Of course, this means that the media must be delivering
> frequent, timely, and accurate reports continuously. This
> requires close coordination between the sources of disaster
> information and representatives of the media.

Most people receive information about disaster conditions via the radio and TV. It might be a good idea to have sound trucks move through the neighborhoods that are going to bear the full force of the impact. The trucks, by their physical presence, would emphasize the seriousness of the problem. In addition, you could use them to advise people on where to get additional information—"turn on your local radio or TV station." By doing this, you can eliminate the time consuming and sometimes futile search for knowledge from friends and neighbors.

> Does your warning process provide people with an alert,
> information and preventive action measures that people can
> easily carry out? Have you worked out prior arrangements
> with the media so they'll carry your messages? Does your
> community know what to do when an alert is sounded?
> Ideally, people should turn to the media immediately upon
> receiving an alert. Have you been emphasizing this response
> in your public education campaigns?

The *local radio or TV station* is probably best suited to your community's needs because of its proximity and local listening area. Regional radio or TV stations may be distant and unable to cater to the myriad communities within their listening areas. Don't expect them to supply the detailed information needed in your community. In fact, you'll want to warn people to avoid tuning in regional media. Perhaps you can encourage the regional media to refer their listeners to local radio stations for more detailed area coverage.

When the individual has confirmed the existence of danger in his own mind, he becomes more susceptible to influence by CD preventive action messages. Design your messages so they're aimed at a specific audience and at a particular geographic area. During a tornado, messages designed for one area will not be suitable for an area ten miles away. Similarly, during a hurricane, areas expected to receive wind damage will not need the same messages as those areas expected to receive water damage. In directing your messages, you must be aware of the unique problems of each geographical area. It does little good to direct people to move to higher ground—as was done during Hurricane Audrey—when maximum elevation is only a few feet above the expected flood stage.

> This means that you'll have to know your area quite well, otherwise you can't supply the media with accurate information. Where are the public shelters? Can you direct people to them easily? **Do you have maps** (showing shelters and safe areas) **that can be used on TV?** What natural landmarks can you use on the radio to delineate danger areas?

If you want to get the proper response from the public, it's important that the messages you put out are *not contradictory*. During a major fire, the water department may advise people to refrain from using water, with the aim of keeping the pressure up. The fire department, on the other hand, may direct home owners to wet their roofs. Unless you target these messages to different and specific audiences, you'll be creating confusion and inappropriate public responses. We've found that contradictory messages erode the public's confidence in your disaster leadership. This can seriously impair the mobilization of your community. Don't force people to interpret information. Give them enough detail so they can act immediately and act positively.

Have you given any thought to how you can get accurate, non-conflicting messages to the public? One way to minimize confusing public information is to centralize news releases in the EOC. Do you have a group within the EOC responsible for releasing information to the media? An information group should be designated to speak for the disaster community, thus increasing the coordination of the emergency response. Are you using this procedure to eliminate conflicting information and rumors—enabling accurate reporting and the dissemination of accurate information?

> Remember, the media is the major link between you—
> the organized community—and the public. An intelligent
> and sensitive approach to the information process can
> mean the difference between the success and failure
> of your emergency response.

Feedback and Rumor Control

As soon as people are convinced of the credibility of a threat, they begin to seek information about the approaching danger. As we noted earlier, this frequently leads to a massive telephone jam. Some people try to reach disaster agencies like the Red Cross, Civil Defense, the police and the Salvation Army. Public officials usually decry the manner in which the public overloads the telephone system. You can make provisions to ease this load. Several things can be done to make the telephone system function as a disaster preparedness tool.

(1) Increase the number of personnel manning phones. Maybe you can take some of the personnel whose jobs are not critical in an emergency and switch them to telephone operations.

(2) Increase the number of lines available to CD headquarters and other disaster related agencies.

(3) Establish a routine pattern for calls and a procedure to classify calls.

Although many callers may not be in the impact area, you can still use the information gained from callers. It can provide grassroots input for the organized disaster community and enable you to meet local needs more adequately. If a large number of callers have similar problems, then a special message should be devised for mass media and newspaper dissemination. This might help to eliminate the large number of people calling with similar needs. Rumors can be detected and squelched in a like manner.

> Look upon callers as individuals who may be at or near the disaster scene. Often they can supply you with information about the disaster, your response, and the state of the public's perception of the crisis. Don't look upon callers only as seekers of information who tie up your telephones and personnel. *Properly monitored,* incoming calls can play a vital role in your intelligence system.

On the other hand, it is true that people nearest the scene may be preoccupied with the disaster and may be least likely, on the average, to telephone the EOC or other agencies. In monitoring calls, your procedures should allow you to determine quickly where the caller is with respect to the disaster scene. You can then categorize the call in terms of the information he needs or can give. Once certain types of requests begin to pile up, you can respond with public information releases through the media.

CHAPTER FIVE
TRANS- AND POST-IMPACT—THE HUMAN SIDE

So far we've been talking primarily about how your organization should be responding in an emergency. Now we would like to shift our focus to the people in your community—the potential disaster victims. We'll be answering questions about how people will react in an emergency. What kind of support will they need? What kind of help can they give you and your organizations? We'll be suggesting that if you know how people behave in a crisis, you can tailor your plans to better meet their needs.

People under Stress

Take a look at the following question. The way you answer it may influence the success of your approach to emergency operations.

> *(TRUE OR FALSE?)*
>
> IN A DISASTER, PEOPLE TEND TO
>
> (1) PANIC, (2) LOOT, (3) STAMPEDE, (4) RIOT.[1]

Some people would say they are all true. **Actually, they are all false. After studying countless disasters, researchers have found that people act quite well under stress.** Hopefully, you've been expecting a good emergency response from the general public. If you haven't, now is the time to begin upgrading your expectations of what people can do for themselves. You can count upon the residents of your community to aid in the restoration of their neighborhoods. You'll find that people will help themselves. If given the opportunity, they can also help your organized disaster effort. If you've spent a large part of your time planning for panic, looting, and rioting in the wake of a disaster, much of this effort is wasted. Most people are quite adaptive and

the amount of social disorganization accompanying disasters is usually quite small. Don't underestimate the capabilities of your populace. Misconceptions about how people behave under stress have led many public officials and some CD directors to downplay the ability of disaster victims to cope with emergencies. Don't get caught in this trap.

> Even in the most massive catastrophies, formal organi-
> zations aid only a fraction of the victims. During
> Hurricane Betsy in 1965, the Red Cross assisted only
> about 34,000 of the 179,000 people who suffered some
> loss. This was less than 20 percent of all the victims.[2]

Look upon people in the impact area not only as victims, but as *potential disaster workers* capable of self-help rescue and recovery. Remember, people will act rationally in a disaster and are, in fact, the first disaster workers on the scene.

Popular Images and the Reality

Let's take a look at some of the popular misconceptions people have about disaster victims. You've probably heard some of them yourself. The popular images of disaster behavior have often emphasized individual and mass chaos. It has been suggested that people become psychologically unbalanced, childlike and dependent upon others. They are often pictured as helpless and generally unable to care for themselves or others around them. Sometimes, it is said, stress leads to dependent behavior. At other times, victims are depicted as engaging in looting or other socially disruptive acts. Don't believe either extreme. Such images are not supported by the facts.

Russell Dynes of the Ohio State Disaster Research Center, after studying many natural disasters, has found that in most cases "the behavior of people is adaptive, aimed at protecting their families, others and themsleves. Psychological disturbances do not render the impacted population helpless." The victims act positively and engage in a good deal of mutual self-help.[3]

> If you expect a lot from your people they'll generally
> meet your expectations. What kind of crisis behavior
> have you based your planning on? Have you sensitized
> your organization to the idea that people function quite
> well in emergencies? Do your messages to the public
> emphasize self-help techniques?

Early Trans-Disaster Self-Help

What do people do in the trans-impact period? What do they do before your organized disaster workers arrive on the scene? For the victims, time does not stop with impact. If they've been given adequate warning, they'll probably continue the preventive actions they have already begun. They'll also expand their activities to cope with the destruction brought by the emergency. Thus, when a town has been flooded, survivors who have lost their homes and require shelter and food usually find people from nearby homes or communities providing these necessities spontaneously. In general, people experiencing the direct effects of disaster have tended to "pitch in" and help their neighbors.[4]

Immediately after impact, people will begin the process of rescue and recovery. You can expect them to search out missing relatives and friends, administer first aid, and remove the more seriously injured from the neighborhood. They're in a better position to do this than most other people, who probably know less about the neighborhood and its population. All too frequently, disaster workers don't take this fact into consideration. Disaster workers sometimes move into the impact area without attempting to cooperate with the local rescue effort already in process.

> Victims look forward to the arrival of disaster workers
> and can work effectively with your rescue efforts. In
> many instances, your organized disaster community could
> work more effectively if you were to ask the victims what
> you can do to help them rather than to tell them "we're
> here and this is what we want you to do."

We're not suggesting that the victims have all the answers, but they can be vitally important in locating problem areas and people for you. Maybe the problem can be summed up in this question. What plans have you made to use local people as volunteers and guides during recovery? Are your police and fire officers, for example, aware of the active, crucial role that the victims can play in the recovery effort? Perhaps the key word is *guide*—the victim as a guide to the organized disaster response—pinpointing the major human and physical destruction that needs immediate attention. Two final questions:

1. Are your personnel sensitive to the role that local people play in disasters? People help themselves and can give valuable information and aid to the organized disaster community.

2. Do you have a plan to use people in the impact area as volunteers? Many people whose families are safe and who have suffered little physical loss feel a need to help others and would gladly join your effort.

Problems in Human Behavior

Several erroneous concepts of human behavior have been particularly detrimental to civil defense, emergency planning, and the full utilization of the disaster victim's potential for self-help. Let's take a look at some of them.

Panic and Flight

The impression that people flee from a disaster area is widespread. Perhaps a distinction should be made between panic and flight. Panic takes place when people scramble from the impact area with little or no regard for others. You've probably heard the oft-cited example of people trying to escape from a burning theater and in the process trampling and smothering each other. Tragedies like this do take place, but they are the exception rather than the rule.

Under certain conditions, people will panic—especially
when a large group is packed into a small area from which
escape is difficult. Don't let this special case, however,
lead you to believe that people panic and behave irration-
ally during most emergencies.

Sometimes people confuse flight with panic. There are some similarities. In
both cases, people will attempt to remove themselves from the area of danger. This is a
perfectly natural and healthy response, especially when preventive action has been taken
and there is little you can do to minimize the force of impact. In the face of a tornado,
a flood, or an earthquake and given adequate warning, perhaps the best action you could
take would be to leave the area. **Flight is a controlled movement that is entirely rational.**
In flight, as a means of protection, people leave the impact area in an orderly manner,
usually in family units.

In most emergencies, there is little or no panic, and flight takes place only after
other preventive actions have failed. In fact, most people are reluctant to leave their homes.
Maybe you've encountered this reluctance. It's often based on the assumption that the
emergency won't get that bad. When urged to evacuate people will sometimes cite the fact
that they never had to move before. As one Galveston resident put it during Hurricane
Carla, "I've never had to leave my home before and I'll be damned if I'll do it now."

During times of stress people often cling to their families and homes—their most
cherished possessions. And if the family is together they're likely to stay put. It seems
as though the assembling of the family unit gives people a feeling of invincible safety. In
the final analysis, your problem is not likely to be panic or flight, but simply inaction, on
the part of your population.

Rather than plan for a mass exodus from a threatened area, you should be
prepared to encourage an evacuation, if necessary. During Hurricane Carla many people
had secured their homes and were prepared to ride out the storm. Only when CD gave
the word to evacuate did people begin to leave the area in substantial numbers. It was
a hard decision for CD officials to make. There had been a good deal of discussion as to

whether or not the public would follow that advice. Some civil defense personnel were reluctant to urge evacuation, fearing the public would not follow through. As it turned out, some people were waiting for CD to tell them what to do.

> *"When a public address car went down a dead-end street*
> *and turned around, cars were loading in driveways before*
> *it came back. People can't do that at 4:00 A.M. unless*
> *they're dressed and ready. A lot were waiting to go—just*
> *waiting for someone to tell them."*[5]

This anecdote says something about human behavior under stress. On the one hand, most people are not likely to abandon their homes unless they are urged to do so by some credible agency—like CD. The home is usually associated with safety; if possible, people would like to remain there. On the other hand, people are receptive to authoritative advice in emergencies and are willing to adapt their behavior. Although uncertain about what to do, the people were prepared to evacuate as soon as CD gave the word.

Social Disorganization

The idea has been popularized that under stress, people disregard their normal inclinations and become extremely antisocial, ignoring the needs of people around them and, in fact, infringing upon the rights of others. You've probably heard about people going berserk as soon as some emergency hits them—the stampeding crowd trying to escape from a burning building, people refusing to help their neighbors, the aged and sick being left behind as danger threatens. In most cases, this kind of behavior does not take place. If anything, your neighbors and strangers will become more helpful in a crisis than during normal times.

In an emergency, people tend to become altruistic. Possessions and shelter are shared, friends and strangers are aided—most people pull together in an attempt to restore calm and order.

> During one tornado, for example, 43 percent of the males
> in the impact area searched for the missing while 21 percent
> engaged in other rescue operations. And most of this

activity was aimed at non-relatives and strangers.[6] Reports like this are universal during a crisis. People help strangers as well as neighbors during emergencies. What plans have you made to take advantage of this altruism?

Looting

Most disaster organizations tend to plan for an inordinate amount of social disorganization, and do not take account of the altruistic behavior we've just described. Security forces are often dispatched in large numbers to affected communities to protect the damaged area from looting and other kinds of criminal activity. However, just as the disaster disrupts most normal functioning in the community, it often curtails the incidence of crime and other deviant behavior. The roving band of youthful looters is a rarity, and examples of individual deviance tend to decrease. Organized or planned looting is not common. As a matter of fact, the crime rate drops in an emergency. Of course, these statements do not apply to many civil disorders, where looting may be a form of protest, a function of increased opportunity, or both.

Nevertheless, rumors of looting and theft often abound. During Hurricane Agnes, ironically, one man complained to CD officials that looters were running wild in his neighborhood even though the streets were covered with several feet of water and people were blocked by police from entering the area. After Hurricane Audrey, numerous victims reported that they had heard from others about looting bands and missing household goods. Few, however, reported that they had been victims of stealth. In many of these cases, the actual culprit was the flooding water that carried the refrigerator into the back yard.

> During Hurricane Carla the county director said there were "no reports of looting or breaking." A local judge called the evacuated city of Port Arthur a "ghost town," while the mayor of Groves commented that there were "no cases of looting or robbery although 17,000 people evacuated Groves leaving 5,000 empty homes."[7]

You should not automatically assume that looting will be a critical problem, requiring substantial police or other manpower. You should think in terms of:

1. **Monitoring** disaster areas, especially evacuated areas, to detect actual (not rumored) criminal activity.

2. **Symbolic shows of force** by official police agencies, perhaps using volunteer manpower to augment official personnel and check for instances of looting.

3. **Communications and other measures** aimed at keeping onlookers and bystanders away from the scene, where they may confuse the issue of detecting and identifying actual criminals, or where their presence may trigger rumors of looting.

4. **Plans for quickly re-assigning manpower** from other tasks, should an area require increased personnel to discourage or apprehend looters.

A symbolic security force is especially important during an evacuation. If the evacuees know their property is protected, they'll be more easily persuaded to move. They'll also be more likely to stay out of the evacuation area until services have been restored to their homes, and the area is again safe for habitation.

Volunteers

A token security force in the impact area can adequately protect property and free others for the recovery effort. Here's a chance to use volunteers. You could dispatch a police officer to each check point accompanied by several residents of the area wearing CD arm bands. This would permit adequate use of police personnel, insure the security of the area, and provide volunteers with a role in the recovery effort.

Perhaps this last point needs some discussion. Have you ever had the feeling that you wanted to get involved with something but didn't know how to do it? During a disaster, a lot of people feel this way. They feel helpless in an emergency, but nevertheless want to do something.

If you've planned to use volunteers, you'll be accomplishing several things at the same time. You'll be getting some useful work done. You'll also be maintaining or improving the psychological health of the volunteers. People want to feel that in some ways they are helping the community to overcome the effects of the disaster. By incorporating them into the recovery effort, you'll be reducing their anxieties. One tornado volunteer summed it up this way:

> "I felt vaguely overprivileged, vaguely guilty about having a
> house that was untouched in the face of so much damage.
> I wanted to do something meaningful, as a release from the
> feelings that had been building up inside me about not doing
> anything worthwhile. I tried to find some way or place to
> be useful."[8]

Many people want to feel needed and helpful in a crisis. By using volunteers you can help meet this need. In addition, you can make better use of the organized disaster personnel. Each volunteer can extend the reach of the organized community. What if each disaster worker had two volunteers working with him? How many more actions could be initiated? How many more people could be aided? Finally, by using volunteers you can hasten the rescue and recovery effort. Remember, a disaster puts a squeeze on your already scarce resources. There will be more problems, not fewer, during a disaster—the more people you can mobilize to alleviate these problems, the sooner the restoration can be initiated and recovery achieved.

> One way to stimulate the use of volunteers would be to
> have each agency draw up a list of places where volunteers
> could be used. Have you been encouraging agencies to
> draw up specific plans for using volunteers? What organi-
> zations have operational volunteer plans? Where would
> volunteers be most helpful? Have you institutionalized
> the recruitment, assignment and use of volunteers during
> a crisis?

Perhaps the following examples can illustrate how volunteers could be useful to your effort. Let's assume that an area has been evacuated because of a flood, but that residents are returning to survey the damage and to carry out some household goods.

How can you filter out the residents from sightseers and curiosity seekers? Why not use a resident as a spotter? He knows his neighbors and can separate the curious from residents. You can think of other ways to use people who want to help in the recovery effort. When you've drawn up a list, give it to your operating agencies and let them go to work on it.

Drumming Up Recruits

Once you've drawn up a plan for using volunteers, you may find yourself with more potential jobs than you have volunteers. Don't become too discouraged. There are some groups in every community that are almost always available and make excellent volunteers. You'll be looking for people who have few family or property obligations in the community.

One place to look is the local college campus. Students living in dormitories will have few personal responsibilities in the area and can be mobilized very easily.

> Have you talked to a college official about using student volunteers? During recent West Coast forest fires, college students have played an important role in bringing those blazes under control.

College students are a highly visible group of volunteers. But other people can also be mobilized. During a flood in Nova Scotia the most active volunteers were members of a traveling theatrical company—outsiders who happened to be in the community. The actors didn't have any relatives or property to look after in the area. With the theater under several feet of water, they had nothing to do and volunteered on their own to help out their "adopted" community. When using "outsiders," of course, you should be careful to insure they are identified as disaster workers performing in officially sanctioned roles. Otherwise, their presence could arouse suspicions of "outside looters."

If you don't have a college campus nearby, you should be able to draw volunteers from the employees of companies that have been temporariy shut down by the

disaster. Not everyone who works for a disaster-closed company lives in the impact area. Why not broadcast a radio message requesting volunteers from the paper company until their plant is reopened? Messages like this would be even more effective if you had discussed them with employers and employees in your industrial CD programs.

> In Madison County, Nebraska, the local civil preparedness director has developed a systematic and efficient way to reach volunteers. You may want to adopt his system. He has a file listing each active CD volunteer, his occupation and specialized training and phone number on a separate index card. Another listing of these volunteers is organized by their occupation and special emergency skills. Madison County CD finds the index invaluable, not only for sending mail-outs to a particular group, but also as a handy telephone reference when they wish to call an individual or a whole group with special skills.

Convergence—One More Problem

The problem of filtering out residents, sightseers and curiosity seekers is part of a larger problem that accompanies all disasters. Most disaster researchers call it *convergence*. It is something like the massive traffic jam downtown, or the congestion around the state fair grounds following the auto races. People want to be where the action is.

In a crisis, traffic patterns within and around the impact area will be disrupted. Bridges may be out. Roads may be impassable because of water damage or the accumulation of rubble. Just when highways will be least operable, you'll be coping with an increased traffic flow.

First, people will be moving out of the area to seek aid and shelter. At the same time, you'll be trying to move personnel and equipment into the area. You might be trying to set up a field hospital, get fire engines into a burning neighborhood, or reconnect broken water mains. Then, as the surrounding area returns to normal, the evacuees will begin filtering back into the area, along with the sightseers.

The movement of people toward the emergency zone and the resulting congestion can create a safety problem for you. A lot of people want to see the impact area for themselves. They'll block roads and create hazardous driving conditions for your emergency vehicles and others who need access to the area. Not only will you want to limit access to disaster-struck areas, but you'll also want to control traffic patterns around those areas.

> Have you made plans to limit the convergence and con-
> gestion that interfere with rescue and recovery? Is your
> police department prepared to route traffic around
> emergency areas? Have you planned to use more per-
> sonnel to regulate traffic in these areas?

Public Morale

Disaster planners have often worried about the depression and despondency that affects many disaster vicitms. It's probably an outgrowth of the idea that people become psychologically dazed and physically inert in the wake of a major tragedy. On the contrary, however, individual and group morale does not plummet immediately in the emergency's aftermath. In fact, community morale is generally higher after a disaster than before.

> Have you made plans to take advantage of the increased
> willingness of people to pitch in? Give people a chance
> to return their neighborhoods to physical well-being
> again. By using people as volunteers, sources of infor-
> mation, and guides in directing the organized disaster
> response, you'll be helping morale.

Why does morale remain high? Immediately after a disaster, people are usually thankful for what they have left. If their home has been destroyed they are likely to comment that their family escaped injury. Or they might say that although they've had losses, their plight is not nearly as bad as that of others in the same area. "After all, the disaster could have been worse." Then too, the victims are not isolated. People around

them have also experienced loss and suffering. Their plight is not unique. In situations like this, you'll find people pitching in and working together.

Post-disaster optimism is not enduring, however. There will be a letdown. The length of time the community spirit lasts can be extended by the effectiveness and responsiveness of the local CD effort. Don't forget, actions speak louder than words. Public expressions of optimism by important public officials may quiet anxieties for a short time, but unless they are accompanied by real improvement, public confidence in your response will drop rapidly. People will be looking for help in restoring their communities. No, they don't want you to do the whole job. They're still capable of self-help. Rather than trying to do the job for them, you can perhaps be more effective by supplying them with the tools and know-how to restore their communities themselves.

Remember, we said earlier that the first disaster worker on the scene is the victim. Have you made plans for the incorporation of victims into the recovery effort? If he can be incorporated into the recovery effort, it will lessen your burden. Don't forget that this activity also has a therapeutic effect. The victims will gain a sense of accomplishment and pride as they make their neighborhood and homes liveable again.

The Letdown

Just after the disaster, you'll probably find people pitching in wholeheartedly to clean up the destruction and make their neighborhoods liveable again. But after a few weeks the symptoms of emotional distress often set in: suicide rates may jump by a third, hospital admissions for emotional disturbances increase, and the number of accidents may skyrocket. Just as quickly as people acted to mitigate the disaster's impact, many of them now find themselves suffering with emotional problems.

> Six months after Hurricane Agnes brought the century's
> worst flooding to Wilkes-Barre, Pennsylvania, in 1972, one
> public official stated that admissions at the local mental
> hospital had jumped 60 percent, the area's suicide rate
> increased by 50 percent, and the use of hard drugs shot up
> 162 percent. Neighbors found themselves at odds with one
> another while domestic conflicts increased substantially.

In the past, disaster plans have neglected the problem of mass emotional stress in the post-impact period. Disaster and relief organizations have catered mostly to the physical needs of the community. Seldom has there been any attempt to deal with the community's emotional needs on a mass basis. The general feeling was that once the electricity was turned on and people were in their homes again, the community had been returned to normal—both physically and mentally.

But, while things may look the same in the restored communities, the mental recovery is likely to take much longer. Mental health workers and researchers in a variety of areas have found serious mental health problems six months to a year after a disaster's impact. Unless you've made some provisions for meeting these needs, they're likely to go untreated.

> After Hurricane Audrey, Dr. Gilbert and Ann Kliman of the Center for Preventive Psychiatry set up a community mental health program. The Klimans found strong evidence of emotional disturbances induced by the flood. By getting people to recognize their emotional problems and express their feelings, many cases of potential disturbances were averted.[9]

You may not be able to call in an outside psychiatric center to minister to your community's mental health needs. Chances are pretty good, however, that your community may already have the necessary personnel and facilities. Do you have a community mental health center in your area—or a college with a psychology department? If not, the local medical community can probably supply you with support. Just as you've called upon hospitals and doctors to cure those physically injured by the emergency, use them to set up your attack on post-impact mental health problems. Once you've established a program, it can be run largely by supervised paraprofessionals using some proven therapy techniques.

Let's take a look at what some other communities have done to lower the incidence of post-impact emotional disturbances. Some areas have trained paraprofessionals to handle the bulk of the problem. Frequently, psychiatric first aid can be

effective if you can simply supply a sympathetic listener. By getting people to release their emotional buildup and talk about their problems, severe emotional distress can often be averted. If this fails, those with severe problems can be referred to professional mental health workers.

You might also set up a 24-hour-a-day emergency telephone line that residents could call when they felt the need. Let people know that it exists. Newspaper and radio campaigns informing people of the availability of this service might be an effective way to stimulate its use and reduce emotional problems.

Have you made any special plans to take care of the children in your community? In a crisis, children are sometimes neglected. Parents may have other more important problems, and may overlook the needs of the child for security in a time of turmoil. In caring for the emotional needs of children, don't foreget that the public school can play an important role. Have you brought the school and the mental health community together to launch a post-impact mental health program?

> After the flood in Corning, New York, the city was again hit by heavy rains. Some school teachers, noting their students' apprehension, made it a point to talk out their fears that the rains might spark another flood. They found an immediate improvement in the childrens' behavior. But those teachers who chose to ignore the threat posed by the new rains reported that their students had become more irritable and disruptive than they could ever remember.[10]

You should be doing everything you can to restore your community's mental health. By establishing a stable emotional climate, your relief organizations will be able to function more effectively to save lives, relieve suffering and insure a rapid recovery from the disaster. If your personnel keep the following four guides in mind, they will be able to work more smoothly with disaster-stricken people.

1. Accept every person's right to have his own feelings. If someone is emotionally upset, find out *how he feels* and don't attempt to tell him *how he should feel*. Don't overwhelm him with pity. Show him that you are

concerned with seeing the disaster as he sees it—and with understanding the things he is worried about, such as the welfare of his family.

2. Accept the disturbed person's limitations as real. Don't tell him such things as "it's all in your head," "snap out of it," or "pull yourself together." Don't be resentful of someone else's emotional handicaps, even though you may feel he could be working as effectively as you are.

3. In talking with people, try to discover things they're capable of doing. Try to get them involved with simple jobs such as handling messages or cleaning up the area where your relief team is working. Work and activity are good therapy. Above all, make the disturbed survivor feel a part of your group or team.

4. Recognize your own emotional limitations and appraise your own emotional level. The fact that you've prepared for disaster operations will help you handle your feelings when disaster strikes. If you have taken steps to protect your family, you'll be able to work more effectively.

CHAPTER SIX

COMMUNICATIONS--REACHING THE PUBLIC

One of the most serious deficiencies of many disaster plans is their neglect of communications. Modern gadgetry and technology serve to link voices. But all too often, public officials have failed to recognize that a two-way radio or a microphone does not insure effective communications or a coordinated disaster response. The same thing can be said about some EOC's. Officials from fire, public health and sanitation departments have sometimes sat across the table from one another but operated as if the others didn't exist.

> If you're going to run a successful disaster operation, you'll have to encourage true communication. You'll have to get people to interact verbally. Get people to share information; get them to talk things over; and get them to set common goals. Only when you've achieved these objectives can you be assured of an integrated and responsive emergency effort.

In this section we'll be looking at the various ways in which effective communications can enhance your ability to cope with unscheduled events. The discussion will focus on three areas:

(1) Communication between you and the general public;

(2) Communication between agency heads in the EOC;

(3) Communication with the media.

You and the Public

You've probably given this area more thought than the others. And you should have, because people are pretty hard to reach—especially when there is no emergency in sight. In our earlier chapters we've outlined some ways to reach the people in your community.

> Do you remember what we suggested? Base your
> public education programs on the needs of your com-
> munity. In the tornado belts prepare for tornados.
> And beam your message to the most vulnerable spots
> in your community—the flood plains or the fault line.
> Activate your campaign just before the tornado or
> hurricane season when people will be thinking about
> those natural disasters. And take account of the special
> audiences who may be harder to reach or have fewer
> resources with which to respond.

During warning and trans-impact, you'll be concerned with providing people with information. But more importantly, **you'll want to know how they are responding to this information.** Are they following your advice or are they ignoring it? If you sit back and assume that people are behaving as you told them, the results could be catastrophic. The city fathers in Eagle Pass, Texas, and Miami, Oklahoma, found this out.

> During a 1954 flood in Eagle Pass, the city's engineers
> painted a line on building fronts to indicate the expected
> water level from the flooding river. It was not only
> ignored but made fun of by the residents. A similar re-
> action occurred in Miami, Oklahoma. Officials drew up
> pre-impact maps showing expected water levels. Unfor-
> tunately, they were completely ignored.[1]

Don't take this to mean that people will always behave this way. There are numerous documented cases where these techniques have worked. Maybe you've used them successfully in your area. We're merely trying to emphasize that people will not always follow your lead. You'll have to look back over your shoulder to make sure things are unfolding as you've planned. Those emergency officials who "look back" and assess the public's response are generally the most successful operators.

There's another important reason for monitoring the public in a crisis. Communication is a two-way street. In order to run a successful emergency effort, you'll want to know a great deal about the problems people are having in the disaster area. By listening carefully to people out in the field—the victims—you can tailor your response to their needs.

Unfortunately, disaster workers sometimes turn off the people. An example will suggest how this can happen. Local CD directors, like yourself, are sometimes resentful of state and federal aid. The general complaint is that state officials want to "move in and take over the show without giving us a chance." Sometimes disaster victims feel the same way about your civil defense effort.

It's a lot easier to deal with a situation if you can ignore the citizens' complaints. Let's take a look at a typical comment we've heard in the field.

> *"Why do they keep calling down here? We're doing all we can. They keep tying up our phone lines. We have other things to do besides answer the phone."*

Don't let this happen to your organization. This kind of approach is not effective in solving problems. Exploit your telephone links with the public to find out what their concerns are. You may even want to carry this pulse-feeling a step further by placing reporters in the emergency area.

> What arrangements have you made to get feedback from
> the community? How will you know if your operations
> are effective? How will you know people are responding
> to your directives? Have you designated and trained
> several people to perform this function?

In the EOC—Talking It Over

The response to a serious emergency usually entails a reorganization in various agencies. Unless you've planned for this reorganization, it's likely to turn into a chaotic situation. If you wait until the pre-impact period to think about exchanging messages

and ideas between agencies, you're going to be in trouble. The time to think about the problems of integrating your organizations is now—in the pre-planning stage.

Some communities have attempted to solve this problem by creating an EOC. Usually the earlier you can set up the EOC, the better you'll be able to control emergency operations and meet the changing needs of your community. To make the EOC succesful, there are a couple of other things you ought to keep in mind. First, assign the responsibility for activating the EOC to a specific, named individual. Then, establish a procedure for activating it. The tendency for officials "not to act" in a crisis is too strong to let the opening of the EOC depend upon chance. **Who's responsible for activating your EOC? What kind of guidelines have you established to make its activation automatic under certain conditions?**

The next thing you'll have to decide is what groups you want to have represented at the EOC. Some communities make the mistake of including only the representatives of certain public agencies. Don't make this decision without considering what groups may be needed in an emergency. There are several non-public groups that you'll probably be calling upon to play a major role in the emergency effort.

> Have you thought about including representatives from the
> public utilities in the EOC? In most emergencies, gas, water,
> and electric services are disrupted. You'll want to have some
> influence over when and where utility breakdowns are re-
> paired and vital community services are restored.

A lot of communities have forgotten to include hospital and medical personnel in their crisis planning operations. It is important for hospitals to know something about the type of injuries and the number of injured. With this information they can prepare their facilities and call up the right kind of medical personnel.

Many planning groups fail to specify whom they want to be present in the EOC. They may ask for a representative from each department, but they don't always get the right people. You'll want representatives who can act. The agency representatives should have enough authority to make important decisions. Ideally, the public agencies

should have their operating heads there, along with some support personnel. If there is a good communications link between the department head at the EOC and his agency headquarters, he should not have any problems in running his agency from the operations center. Of course, it's a good idea if he practices the procedure during your simulations.

We said earlier that the mere assembling of decision makers at the EOC will usually facilitate cooperation and communication. But you'll have to do more than bring people together physically. You'll want them to interact and make joint decisions. You might begin the move toward integration by mapping out the changing functions of a community in crisis.

> What new things will have to be done in the threat, warning, impact, rescue and recovery periods. What functions can be curtailed or scaled down? What new problems will you have to deal with? Essentially, we're asking you to set some goals to be accomplished in a disaster. Draw up priorities so that each agency has some guidelines to follow.

In the "threat" chapter we emphasized the need for officials in each area to write their own disaster plan. By doing this everyone knows what he's expected to do. We can't emphasize this too strongly in regard to the EOC. Get your officials together. Have them hammer out a set of priorities and goals to work toward in a crisis. And have them operationalize these goals by assigning specific functions to each agency.

Only when the various agencies have an understanding of their new roles, created by an emergency, can you begin the process of building an effective disaster response. You can liken the structure of your community to a puzzle. All the pieces fit together during normal times. But during a crisis this changes. Impact will scramble the pieces of your puzzle. It will also add a few pieces and you'll have to fit them back into a new pattern. The successful disaster team is able to reorganize the pieces to fit the changing conditions brought about by the emergency.

In every emergency, new functions are created for which no one has any responsibility. Maybe the following examples will give you an idea of the problem's

magnitude. Usually no agency or group is assigned specific responsibility and equipment to carry out search and rescue missions. Another area that has been neglected is the collection of information at the disaster scene. Unless the impact area is too large, you should have a command post on the scene. Some communities use mobile police or fire vans in the field to link the EOC directly with the field operations. In both cases, you are responding to a crisis-produced condition that demanded a new action on the part of your organization.

> It's important that you carefully think through an emergency sequence and develop a set of problems. The more specific you can be in defining these problems and your response, the better prepared you'll be. **Don't overgeneralize. Be specific.**

Encouraging agencies to plan internally for emergency contingencies is indispensable. Unfortunately, community organizations frequently do their planning in isolation from one another. The police go one way, the fire and water departments go other ways. The chart below may help you to organize the disaster response of your agencies. You'll have to expand it considerably to cover all possible situations. If each agency head knows what has to be done and who's responsible for doing it, your emergency response should be a lot smoother.

Time Phase	Problems	Responsibility	Action
Threat			
Warning			
Impact			
Rescue			
Recovery			

> Who's responsible for search and rescue in your community? What arrangements have you made to find out what's going on in the field? You should have designated groups to handle these problems in the pre-planning stage. Maybe you can

use assignments like these to get the various agencies to work together. Police and fire might cooperate to set up rescue squads. The mobile communications unit in the field might include representatives of several public agencies, reporting their findings to the EOC.

If you want the EOC to function as a coordinating unit, you'll have to get people working together prior to an emergency. The sooner you can establish a cooperative working arrangement, the better prepared you'll be to control emergency operations.

You and the Media

Your communications with the public have to be carried by the local radio and TV stations as well as the newspapers. The chart below might help you visualize your communications problem.

INFORMATION FLOW CHART
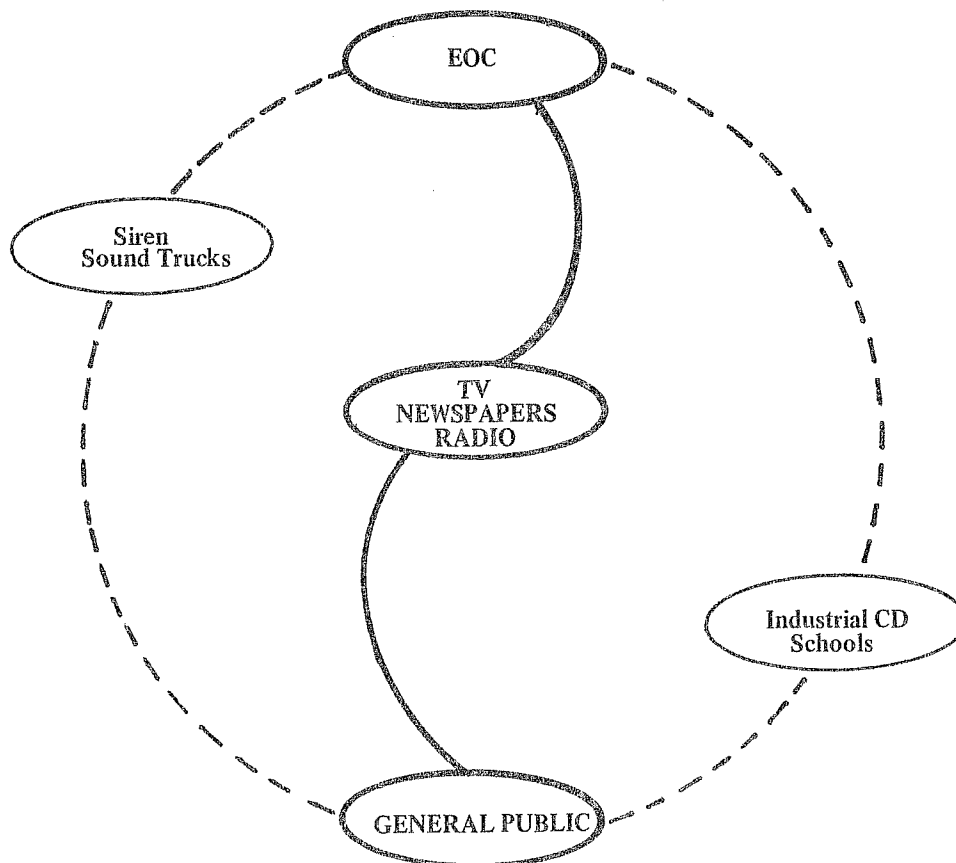
Most of your contact with the public flows through the center of the circle. Your direct means of contact—sirens, door-to-door alerts, sound trucks, etc.—either consume too much time or convey only a small amount of information. If you have an industrial CD program and a communications hook-up with the schools, you'll be able to reach some people through these channels. But, on the whole, you'll be dependent upon the media—primarily your local radio and TV stations—to get your messages to the public.

Very often, planners fail to consider the ramifications of this relationship. In a sense, you're at the mercy of the media. The stations will carry your messages. They've done a good job of this in the past. But they'll also be carrying other reports over which you have no control. And some of the ways in which the media handle the problem can prove detrimental to the success of your efforts.

> Consider this hypothetical situation. During a hurricane, an Alexandria, Louisiana, radio station dutifully carries the National Weather Service reports for the Alexandria area. If people listen to this information, they are well informed. But the station also carries the wire service weather reports for coastal areas of Louisiana and portions of Mississippi. These reports confuse many listeners and sometimes sound like they conflict with the NWS reports for Alexandria. If CD establishes a working relationship with the media, however, the wire service reports which are inappropriate for Alexandria could be screened out. Or the two sets of reports could be more clearly differentiated by the station's newsmen. **Have you sensitized your local stations to such problems? What kind of relationship do you have with station managers and the press?**

Don't blame the media for your failures to communicate adequately with the public. Get your own house in order first. Many communities have not given any careful thought about how to get their message across more effectively to the public—even fewer communities have done any planning. What have you been doing? Have you made an attempt to incorporate media representatives into your emergency information system?

Remember, their ideas are valuable and they themselves may be essential to the success of your emergency operations.

The first thing you'll have to do is get in touch with the local media managers. You'll find that, like most people, they've had only limited contact with disasters. Lay your problem before them. Discuss the important role they play in emergencies. Earlier, we pointed out that messages to the public have both planned and unplanned consequences. Very often, stations broadcast disaster-related news without giving any thought to how this might affect the public response to your emergency efforts. By giving media personnel a glimpse of the important role they play in relation to your operations, you should be able to elicit a more sympathetic response to your emergency problems. Perhaps what you need is an approach to the media that is similar to your industrial civil defense program.

Keeping on Top of Operations

Unless you've set up a routine way to gather, evaluate and disseminate information, managing an emergency can turn into a nightmare. We've found that public officials are generally confronted with two major problems. They either have:

> (1) Too much information from too many divergent
> sources; or

> (2) Too little information to operate effectively.

When either of these situations exists, emergency personnel end up working in the dark. Let's take a look at both conditions in a little more detail. When an EOC receives a lot of data from many divergent sources, decision makers may find it very difficult to assimilate the information and deduce the proper response. In many operating situations, for example, we've found each city agency making a separate report, with each using a different method and form for reporting. The information gets to the EOC, but seldom are there enough staff on hand to evaluate the separate pieces of information and pass it on to the responsible officials in a usable format.

You can minimize the information flood by having enough staff on hand to properly analyze it. But this involves time delays and requires a still larger staff working inside the EOC. This response is often like putting your thumb in the dike. Too little too late. You need a systematic damage assessment procedure, designed in advance, which allows separate categories of information to be combined quickly and used by responsible officials. You can then compile a unified picture of conditions in the field and implement a timely and coordinated response.

Just as too much undigested information can cripple your emergency response, too little will have the same effect. Unless the EOC is firmly established as the control point and ultimate communications center, the functioning agencies will usually not get around to forwarding the vital information you need.

> We've seen case after case where the electric company or
> the water works has failed to pass its damage assessment
> and repair estimates on to the EOC. In situations like this,
> how can you make rational decisions? How can you co-
> ordinate the recovery effort if you don't have a complete
> and accurate picture of the disaster scene? Only when the
> EOC is recognized as the command point, can you expect
> to get the information you need.

Disaster assessment and evaluation is one of those functions that is created by the emergency. The fact that no agency has responsibility for it in the pre-impact period means that it's often neglected during an emergency. Unless you set up a systematic way to collect information before the emergency, you might wind up working in an information vacuum.

> The more planning you do, the better you'll be able to
> cope. The sooner you warn people and provide them with
> prevention information, the better their response will be.
> The sooner you routinize a damage assessment procedure,
> the more accurate information you'll have about conditions
> and operations in the field.

In this section, we'll be outlining a damage assessment procedure that can help you eliminate some of the problems we've been talking about. A number of communities

have set up effective multi-member assessment teams comprising representatives from each major city agency and public utility. One mayor described his assessment team this way:

> *"When we move to the warning phase, the disaster assess-*
> *ment team piles into a police car and moves into the*
> *expected impact area. The car has a two-way radio so*
> *that critical problems can be relayed ot the EOC at once.*
> *Each member of the team is responsible for a different*
> *problem. The man from the water company watches for*
> *ruptured mains while the fireman is ready to alert the fire*
> *department. By doing this, we get a pretty good idea of*
> *what's going on out there."*
>
> Can you see how something like this might be helpful in your community?

For different anticipated disasters, and different communities, the make-up of a damage-assessment team will differ. The team should usually have a representative from a number of groups at the EOC. You'll have to decide the make-up yourself. Police, fire and medical personnel are logical choices, as well as men from the gas, electric and water companies. Designate the team members in the disaster plan and make sure they know the roles they're expected to play. If they've worked together in a simulation, they should be even more effective in an emergency.

In order to get the information back to the EOC in a usable form, the members of the team should be preparing two reports. One will be of a general nature for the EOC. By examining these general forms, the EOC officials should be able to set goals and priorities for disaster response. You might want to use a form like the one below, or you could design your own.

DAMAGE ASSESSMENT GUIDE

Block No. _____ Area _____

Type of Area: Industrial—Commercial—Residential

	Light	Damage Moderate			Heavy
	0% -- 100%				
Gas	1	2	3	4	5
Electricity	1	2	3	4	5
Water	1	2	3	4	5
Roads	1	2	3	4	5
Bridges	1	2	3	4	5
Fire Hazards	1	2	3	4	5
Health Hazards	1	2	3	4	5
Buildings	1	2	3	4	5
Homeless	1	2	3	4	5
Missing	1	2	3	4	5
Dead	1	2	3	4	5

Comments:_____

_____

_____

As the survey team goes through an area, they would check a number in each category to indicate the amount of damage and disruption. When the data are communicated to the EOC, officials can quickly get a feel for the type and extent of damage in each neighborhood. You might want to transfer this information to large area maps. You could have a map for each category. By doing this, you could tell very easily which areas were without water or had suffered heavy damage.

> If a neighborhood only needs one service—a bridge, electricity, debris removed—to make it habitable, perhaps it should be corrected first. But you aren't going to know this unless you can pinpoint the problem. You can't implement your goals and make rational decisions without detailed, organized information.

The second form filled out by the members of the team would be sent to the various operating agencies. It would contain the detailed information they would need

in order to act. That is why it's vital to have personnel from the major agencies on the assessment teams. Only they have the expertise to evaluate the situation and estimate the amount of damage. In addition, they'll also be able to determine the amount of time, number of men, and types of equipment needed to repair the damage.

> The information sent to the EOC can be used to describe the larger picture and to decide which neighborhoods to rehabilitate first. Once the EOC has made a decision, the operating agencies can dispatch crews to the field. They won't be blindly sending men and equipment into various neighborhoods. By using the specific assessment sheets for their agency, they'll have a good idea of what to expect.

The Media and Disaster Assessment

By collecting and organizing information the way we've suggested, you'll also be able to supply the media with information. And you will be in a better position to verify or discredit sensational journalism and rumors. The assessment teams may even provide a basis for the incorporation of the media into the organized disaster community. You might want to include someone from the media on the survey teams. It would provide the media with access to the impact area in a controlled setting and make it more sensitive and responsive to the problems of recovery. You could also look upon the team as a socializing experience in which the members become sensitive to the problems of other agencies. The same would be true of the media's representatives—they'll begin to look at the disaster from the viewpoint of the disaster worker and not solely as an outside observer.

An Ongoing Process

Damage assessment is not a one-shot operation. It should be done periodically. It should provide daily information for decision making and news briefings. Perhaps the damage assessment crews can be scaled down after a few days, or even eliminated as

neighborhoods are returned to normal. But some form of damage assessment should continue as long as the EOC is still operating.

We mentioned earlier that shortly after a crisis people are usually in pretty good spirits. They're willing to pitch in and get the job done. Sometimes, you can capitalize on this. But if you're not careful, the public mood could easily change. People will be looking for action from you. You'll want to come across as an agency that gets things done. The table below may help you do this. You can use it in the EOC to measure the progress of your operations, and you can use it to keep the public informed about the rehabilitation of their community.

DISASTER-RESPONSE PROGRESS REPORT

Neighborhood	Percent of Community with Electric Service			
	Day No. 1	Day No. 2	Day No. 3	Day No. 4
Vienna	60	70	85	100
Brookline	100	100	100	100
Homewood	40	45	50	60

You could prepare a chart like this for each damage category. At a glance, EOC members as well as the media would know the status of your recovery effort.

If the local paper focusses on the sensational—for example, the number of homes destroyed in a neighborhood—these charts might be used to indicate the progress being made. The charts are like barometers. They'll permit you to emphasize the positive aspects of the disaster—the number of areas that have sewage, electricity, and water, and how this changes daily. They can also be used by you to locate deficiencies in your own organization and to make proper adjustments.

CHAPTER SEVEN
POST-DISASTER—AGENDA FOR THE FUTURE

When does the post-disaster period begin? When all the dust settles and things are back to normal again? That might be a little too late to meet your needs. We would like to suggest that the post-disaster period begins almost immediately after impact, and certainly before the EOC is closed down. You may ask: Why so soon? After all, you're not likely to have another emergency for some time. That's precisely the point. Don't let valuable time slide by. Begin planning for the next crisis in your community as soon as possible. The recent experience has prepared people to accept the importance of preparedness planning. And for disaster workers, the response to one crisis is a source of "lessons learned." Take advantage of those lessons while the memories of them are still fresh.

The End or the Beginning

Have you set up a post-impact evaluation process? If you haven't you had better get started. You will first have to develop a method for closing down the EOC. While you have everyone together—with the past emergency on their minds—this would be an ideal time to evaluate the successes and failures of your operations. Once this group has disbanded, it may be some time before you can get them together again for an after-action discussion. And by then, the interest in disaster preparedness may have diminished.

> Do you have a procedure for closing down the EOC?
> Does it provide time for a discussion of the events,
> problems and solutions of the past few days. While
> everything is fresh in the minds of your disaster
> managers, you'll want to get their opinions on what

was successful and what needs to be added to your community's response. One more thing: make sure you set a firm date for the next community disaster planning session.

Whether you close your EOC with a verbal discussion or a more detailed written report, try to get the participants to interact with one another and consider the special needs and problems created by the emergency. Use the give and take to further mold the diverse agencies into a well-organized disaster-response mechanism. After people have worked together for several days, they're bound to get a feel for the problems of other agencies. Your after-action reports should develop and strengthen this understanding. And, unless the participants have antagonized each other throughout the emergency, the reports should make future coordination and planning much easier.

This might be a good time to throw out some of those ideas about disaster operations that were rejected at your last planning session. Maybe more agency managers will see the need for establishing a field communications unit or a systematic damage assessment procedure. Don't miss this opportunity to lay the basis for a more comprehensive plan. You might ask the question: **Can you see why?**—why the poor and elderly need special aid; or why decision making should be centralized in the EOC? Don't miss this opportunity to strengthen your disaster preparedness program.

After-Action Reports

On the basis of these reports you should be developing programs and plans to eliminate the deficiencies in your most recent disaster recovery effort. Use the experience gained in the last emergency to strengthen your next response. You've been observing the response. What agencies need more information? Which ones performed best? Where were the weak links in the response and how can these be strengthened? Let's break this process down into several parts.

(1) **Evaluation**—Examine how your organizations functioned, and evaluate their responses. Some of this information can be gotten from the after-action reports accompanying the shut-down of the EOC. Using this information as a base for discussion, you might want to meet with each agency head before the next planning session. Use this meeting as an opportunity to gain input to strengthen your programs, and use it to discuss any new programs you've been thinking about.

(2) **Development**—Develop new materials and programs to assist your emergency agencies in carrying out their missions. If the evaluation process has been successful, you'll know what each agency needs in order to improve its response. For example, the police department may not have handled traffic congestion in and around the impact area very well. Preparation of guidance materials, or provision of added resources, might help them avoid the problem during the next emergency.

(3) **Planning**—Incorporate your new programs into the planning process as soon as possible. Make them operational immediately. If you've carefully prepared your emergency plan, incorporating new ideas into the plan should not be difficult. We think that if you approach disaster planning systematically and professionally, these attributes will rub off on the disaster managers you've been working with. Don't forget—assemble your emergency community as soon as possible after the last disaster. Present them with the new programs and plans and get to work operationalizing these new materials.

Just about everything man does is based upon past experience. We're eclectic, borrowing from others and from our own varied experiences. Much earlier in this manual we made the point that emergency preparedness is a local responsibility. If you don't do the planning in your community, no one else will. If you, the responsible local official, don't initiate this evaluation, development and planning process, your next disaster response won't be any better than your last crisis experience. Use the past to build for the future.

Disaster Mitigation

What makes a disaster? What are the ingredients? The only thing that turns a natural phenomenon like an earthquake or a typhoon into a catastrophe is people. If people don't live and build structures in areas that are periodically plagued by natural disturbances, there are fewer disasters. Natural disasters are peculiarly human occurrences. Each year, for example, floods are responsible for a large portion of the disaster damage in the U.S. It might be a good idea to remember, therefore, that floods become a problem for man only when he competes with the river for the use of the flood plain.

> The 1959 earthquake at Hebgen Lake, Montana, was as large as the 1971 Los Angeles quake, but few people live in southwestern Montana. The damage at Hebgen Lake, confined primarily to timber and roads, amounted to eleven million dollars. The Los Angeles quake, on the other hand, struck a highly urbanized and developed area. The damage amounted to over $550 million—fifty times as much as the Hebgen Lake earthquake.[1]

The Costs of Neglect

With all the attention that federal, state, and local agencies have given to disaster planning, one would expect that the amount of damage from natural forces would be on the decline. Unfortunately, just the opposite is taking place. In spite of disaster planning, EOC's, field communication units, and many other disaster preparedness techniques, the damage estimates each year have increased by leaps and bounds.

> The destruction has increased mainly because people have been developing and using land in ways that increase the likelihood of a disaster. Homes are built on the San Andreas Fault in California, flood plains are cluttered with high-rise apartments, and buildings are constructed in hurricane land-fall areas without materials and techniques that could minimize wind damage.

As the chart below indicates, the damage from hurricanes alone has increased from $500 million in 1940-44 to $2.4 billion in 1965-69. And there is no end in sight. Much the same has been taking place with earthquake, flood and tornado damage; the costs are skyrocketing.

HURRICANE DAMAGE IN MILLIONS OF DOLLARS
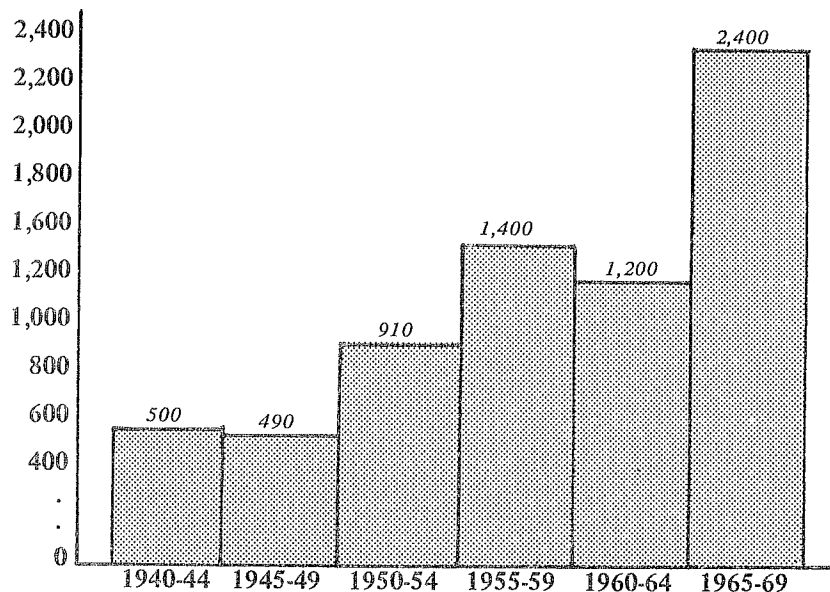
This chart measures only the amount of physical damage. If you add in the social and economic costs of disrupted regular activities, impaired productive capacities, and ruined transportation facilities, the costs become truly astronomical.[2]

Disaster Mitigation—Reversing the Trend

While disaster planning is critical in holding down personal and physical losses, it is clearly not the complete answer to limiting destruction. If we continue to rely solely on disaster plans and operations, we can only expect increasing losses as the population

grows larger. No matter how good your disaster plan is, and no matter how successfully you carry it out, the damages will still be substantial.

> We can only hope to avert or lessen the catastrophic effects
> of natural disasters by regulating how land is used and by
> regulating the materials used in designing and building
> physical structures.[3]

We'll be referring to land-use planning and building codes as disaster mitigation techniques. Like most emergency planning, disaster mitigation planning has to take place at the local level, largely because the regulation of land-use and construction materials has resided with the locality. There are no federal laws governing these topics, and most states have delegated these powers with few restrictions to local jurisdictions. A situation like this leaves you the opportunity to fit disaster mitigation techniques to the special needs of your community.

The creation of a disaster mitigation project for your community involves at least a three part process that includes (1) *risk mapping,* (2) *land-use planning,* and (3) *building codes.* Let's take a look at these individually.

(1) **Risk Mapping.** Risk mapping involves a physical survey of your community to determine the types of potential hazards that exist and the potential severity of disaster. Earthquake risk mapping, for example, identifies faults and other geological structures. A flood plain risk map, on the other hand, would identify areas likely to be covered with water given certain flood levels.

> Risk mapping is not something you'll have to do by yourself.
> Federal agencies can help. For example, the Corps of Engineers
> and Soil Conservation Service will prepare a flood plan report
> for your community. Included would be maps and diagrams
> showing how existing land uses affect flood losses. They'll
> also discuss how zoning ordinances, building codes, evacua-
> tion plans and other types of local action might be used to
> reduce flood losses.[4]

Other federal agencies are also involved in risk mapping. The National Oceanic and Atmospheric Administration and the U.S. Geological Survey have been identifying

earthquakes, tsunami, landslides and volcano hazards in the Pacific states and Hawaii. In addition, NOAA is currently engaged in a project to risk map the Atlantic and Gulf Coasts from Maine to Texas. As these materials are completed, they'll be made available to regional and state CD offices.

> Have you talked with any of these agencies about preparing risk maps for your area? You might be able to use this material in appearing before zoning boards, county commissions, and city councils when new development proposals for hazardous areas are being considered. Or you could use these materials to influence comprehensive land-use planning in your community. The Director of Emergency Information at DCPA can supply you with information about risk mapping in your community.

(2) **Land Use Planning.** The information generated by the risk maps can be used to formulate future land-use policies as well as redevelopment projects in your community. For example, areas of high risk should be left completely undeveloped. Medium risk areas might be zoned for low density use. New residential and business neighborhoods should be located in low risk areas. And don't forget to encourage the location of emergency service facilities in safe areas.

> Too frequently, communities develop potentially hazardous areas without considering the consequences. When was the last time your local zoning board considered natural disasters in rezoning land for high density housing? When was the last time you appeared before the zoning board to point out the relationship between development and the rising destruction related to natural phenomena?

Risk areas can be set aside for the kinds of use that will not be endangered by natural disasters. Flood plains and earthquake faults might be used for agricultural purposes or industrial-commercial activities like parking, airport landing strips, and storage yards for mobile equipment. These same areas might also be good places for parks and recreational facilities. Disaster-awareness does not rule out all development. It merely encourages the development of projects in the hazardous areas that are consistent and compatible with the potential dangers.

Your interest in land use planning should not be confined to newly developing areas. For years we have been developing land without any regard to natural catastrophies. The rising costs of destruction bear witness to this. Before an area is redeveloped, or before an area is reconstructed after a catastrophe, you should be supplying the community with information about its risk potential. It may appear obvious to you that the utility of reconstructing and rehabilitating structures in disaster-struck areas is foolhardy. Unfortunately, others are not as foresighted. Then too, the urge to rebuild quickly is usually quite strong, and alternative sites may not be considered because of the delays or red tape or costs involved. At a minimum, you should be prepared to publicize and support alternatives to the redevelopment of hazardous areas.

> After the 1972 earthquake that destroyed the city of
> Managua, government officials were adamant that the
> capital should be rebuilt at the same location—in spite of
> the fact that the area was highly earthquake susceptible.
> Things like this happen at home. Perhaps you've heard
> the Corps of Engineer official in your area complain about
> rebuilding the same home several times.

The post-impact period is a good time to discuss the role of land use planning and redevelopment in your community. Perhaps you need to suggest that some residential and business districts should not be rebuilt because of future danger. If you don't urge caution in rebuilding these areas, you'll be rescuing the same people in the same areas for years to come.

(3) **Building Codes.** Building codes, like zoning ordinances, are controlled largely at the local level. You've probably heard a good deal about the role that earthquake building techniques have played to minimize the potential for structural damage. Although you may not be in an earthquake zone, your community can benefit from other disaster-relevant regulations governing construction and materials.

> High-rise buildings are becoming a feature of more and
> more communities. If they're not built with fire resistant
> materials and sprinkler systems, they can become death
> traps for large numbers of people. Perhaps your fire

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department ladders can't reach much above the third or fourth floors. Have you encouraged the incorporation of fire preventive materials and equipment into the new high rises in your community? It's much easier to treat a potential danger before it becomes an active problem.

Some communities have already begun to adapt their building codes to the natural phenomena indigenous to their area. Dade County and other Florida jurisdictions, where hurricane land-falls are frequent, have included extensive wind-load requirements in their building ordinances. These requirements can protect structures from the effects of hurricanes. What have you been doing to protect your community's new structures from fire, earthquake, hurricane, flood, and tornado damage?

Flood Insurance

The Federal Insurance Administration offers a flood insurance program to communities that are willing to engage in planning to reduce hazards. The program is the only available natural disaster insurance program open to home owners and business-men who are unable to obtain flood and mudslide insurance from private insurance companies.

The flood insurance program is not open to everyone. Only homeowners and businessmen living in communities that have met the flood insurance program require-ments can take advantage of the protrection.

Is your community participating in the flood insurance program? As of May 1973, only 2,000 communities out of 5,000 to 6,000 potentially eligible had taken advantage of this opportunity to protect their residents against flood property losses. In which group do you fall? Have you been urging your mayor, city council or county board to initiate the application process? The flood insurance director will not come to you—you have to take the initiative. For information, write to the Federal Insurance Agency, Department of Housing and Urban Development.

In order to become eligible for flood insurance, your community will have to address the three disaster mitigation techniques we've just discussed—risk mapping, land use planning, and building codes. These measures must control the use of land in flood-prone areas and require the adoption of zoning regulations and building codes designed to minimize flood damage. Only when your application has been approved will citizens be able to insure their homes and businesses against flood damage.

It's Your Choice

Unless you're willing to take the initiative in encouraging the adoption of appropriate risk mapping, land use ordinances, and building codes in your community, future disasters will only get worse. A study done by the Corps of Engineers graphically illustrates this point. Take a look at the disaster mitigation and flood damage diagram below.

DISASTER MITIGATION AND FLOOD DAMAGE[5]
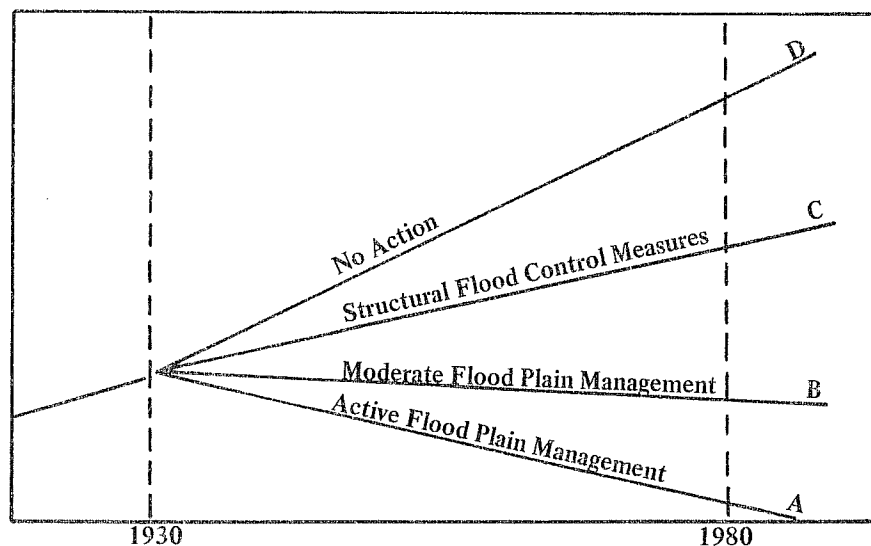
If no further flood control engineering projects are undertaken and encroachment on flood plains continues at current rates, the costs from flood damage will grow dramatically (Line D) by 1980. The construction of dams, levees, and other flood control projects will

diminish the amount of increase (Line C).   However, the costs to the nation and individuals from flooding will continue to ruse in the future. Line C indicates our current position. In spite of substantial flood abatement programs, damages have continued their upward rise.

Only when engineering projects are coupled with adequate flood plain management techniques, like zoning and building codes, will the amount of damage level off and decline. With moderate development and enforcement of these codes you can expect a slight drop in damage (Line B). However, if you pursue an active and vigorous campaign, there will be substantial decline in damages (Line A).

As long as communities permit people to erect structures on flood plains and fault lines without regard to construction materials and techniques, the destructive forces of nature are going to extract a heavy price from the nation and your community. **It's your choice.** What kind of a disaster mitigation plan are you building in your community? The A, B, C, or D approach? The professional planner can do much to acquaint his community with the alternatives—and with the costs of inaction.

CHAPTER EIGHT

THE NUCLEAR CASE

"The Bomb" is probably the first thing most Americans would think of if they were asked why we have a federal civil defense agency. For some 20 years and more, the Congress has authorized a civil defense program to study and prepare for the possibility of a nuclear attack on the United States. In the 1950's, we talked about "massive retaliation" and the Strategic Air Command's instant-readiness posture. The 1960's saw dramatic TV documentaries and live coverage of the Cuban and Berlin crises. Many of our country's most prominent officials have openly discussed the times when we were "on the brink," and civil defense would sometimes become a household word following some "confrontation" between the superpowers.

Today, most people are far removed from that state of excitement which led thousands to construct their own fallout shelters in the early 1960's. But even today, most people overestimate by several times the amount of money this country spends each year on protection against the effects of nuclear warheads. In fact, public opinion polls have demonstrated that CD has been more consistently and overwhelmingly supported by the public—and over a longer period of time—than virtually any other governmental program.

Thinking about the Unthinkable

Why, then, has "nuclear" civil defense never "caught on" with a wide cross-section of the American people? The answer is probably a matter of psychology:

> On the one hand, we have told people—rightly—that a
> nuclear attack would be almost unimaginably horrible,
> touching every person and family and perhaps changing
> the nature of life in America forever after.

On the other hand, we have told people—again rightly—
that the probability of a massive nuclear attack is exceed-
ingly low at any given moment.

We have told people how horrible it would be, and then told them how unlikely
it is to happen. Quite naturally, most people have "tuned in" to the low probability of
occurrence and "tuned out" our messages about a nuclear threat.[1] For the most part,
people don't like to think about unpleasant futures. Why keep something on your mind
if it makes day-to-day living uncomfortable?

This attitude, and other reasons, helps account for the very low priority which
nuclear preparedness is given by some local CD directors and other disaster-readiness
personnel. The CD director may feel that his local visibility and image require him to
emphasize natural disasters rather than the nuclear case.

There are other reasons why local civil defense personnel may avoid the nuclear
possibility. A massive nuclear attack on this nation would be enormously more destructive
than a natural disaster. How do you plan for such a massive level of destruction? In the
face of disaster on such a grand scale, the job of preparedness planning is bigger, more
complicated, and requires more knowledge.

Finally, the damage caused by a nuclear attack would include relatively un-
familiar impacts on people and organizations. What are some of these impacts?

First, there is radioactive fallout. Even a seemingly "unhit"
area may harbor lethal radioactivity. To most who contem-
plate such a disaster, fallout remains a mysterious and
unpredictable danger.

Second, there is the probability that, despite precautions
and preparations, millions of people would die and other
millions would be injured. Such a disaster is not even
within the realm of speculation for most public officials
and citizens.

Third, a nationwide nuclear attack would **disrupt whole
systems** of interlocking organizations. For example, our
population uses goods or products which are "partially made"
in thousands of different factories, in hundreds of cities,

connected by complex communications and transportation lines. Several hundred organizations may routinely interact to produce a product or deliver a service. This enormously complex network would be hit at many points by a nuclear attack, and to recover would require reorganizing and re-coordinating the surviving pieces all over the country.

Fourth, a nuclear attack could throw each city, county, state, or small area back on its own resources. There might not be an area "outside the damaged area" from which support or help would come. We usually deal with "point" disasters, and we tend to organize relief and recovery around the periphery of the damaged area. In a massive nuclear attack, many points would experience physical damage; most points could experience fallout hazards; all points would experience "psychological" damage. And all of these effects influence our ability to organize people and resources after a disaster.

This brief review has suggested why nuclear war involves "thinking about the unthinkable." It also helps explain why so many officials and citizens have chosen not to think about it at all. If it's that horrible, if it's that complicated, and if it's not likely to happen soon, then I'll spend my thoughts on the things I can influence.

Some Similarities in Preparedness for Nuclear and Natural Disasters

For many years students of civil defense have devoted much of their energy to studying the especially bad case—nuclear disaster. They have learned a great deal about this form of disaster—enough, in fact, to develop very complex responses to it. While developing these nuclear civil defense systems, DCPA has also produced a substantial body of knowledge about the similar requirements for preparedness which exist for all kinds of disasters. In a number of cases, in fact, scientists have attempted to infer post-nuclear-attack behavior patterns by observing or studying how people behave in other disasters. So, even as we grant that nuclear disaster is not likely to occur, let us also consider these propositions:

If your community ever does feel the physical or blast effects of a thermonuclear weapon, your natural disaster preparedness organizations will have to organize and direct the community's response.

If your community is ever affected by fallout, your natural disaster preparedness organizations must communicate to the public about the danger—and organize emergency activity in the presence of fallout.

If your community is ever required to evacuate its population in anticipation of a nuclear attack, your natural disaster preparedness organizations will be the only agencies with sufficient local knowledge to do the job.

If your community is ever required to "host" large numbers of evacuees, your natural disaster preparedness organizations must also handle that operation.

In sum, if a nuclear attack occurs, its effects must be dealt with by the same officials and organizations who normally cope with lesser disasters. By and large, **there is no one else to do the job.** And the better organized you are for natural disaster, the better prepared your community will be to handle a massive nuclear attack.

What are the essential elements of nuclear preparedness? Not surprisingly, they resemble the elements we have been talking about for natural disasters.

In the face of nuclear disaster, your logical focus is the EOC. This is the central point where:

(a) you receive outside communications about the scope of the disaster;

(b) you send out information about the status of your community;

(c) you coordinate the work of disaster-ready organizations;

(d) you mobilize other resources in the community;

(e) you transmit communications to the public, and
receive damage assessment information from all parts
of your community.

Around the EOC you may picture an expanding network of organizations:

(a) official readiness organizations like police, fire,
rescue, health, Red Cross, etc.;

(b) public service delivery organizations like public
utilities or the school system;

(c) other organizations—construction companies, a
major employer, volunteer groups, etc.

From the EOC you will be attempting to regulate citizen behavior via communications to the public. What areas are safe, where should casualties be taken, where are volunteers needed, where should people stay in shelters, how should overcrowded shelters organize their people and resources? All these questions would have to be dealt with and solved within the EOC.

Some of the concerns are different for nuclear disaster; the magnitude of damage may be much greater; and the behavior of people must be more carefully regulated due to fallout hazards and other factors. But you are still focussing on organization first, the public second. Communications are still critical and still should emanate from the EOC. And your community-wide resources are essentially the same—you simply need them more, and probably can use them less because of fallout hazards and survivors' greater psychological problems and fears.

What Would It Be Like?

Most people, if they were asked to think about a nuclear war, would probably picture a "surprise attack"—Pearl Harbor on a wide screen. This image is a natural result of public discussions of international crises when we were "on the brink." It is implicit

in any discussion of the Moscow-Washington Hot Line, or any public debate about "whose finger is on the Button." And at least once a year, when the Armed Services budgets are debated in Congress, the news media report on the size and 30-minute delivery times of missiles in silos around the world. Indeed, a nuclear apocolypse could come "overnight."

Millions of readers and motion picture viewers have been treated to stories like Nevil Shutes' *On the Beach,* in which a handful of survivors await that last drifting cloud of radioactivity; they know their certain fate will be a few days of nausea, then death. More sinister are the "late show" descriptions of the "fail-safe" electronic warfare systems. Human weakness, pride, simplicity, or duplicity have typically been pictured as beating any system designed to forestall a conflict or win it. In all or most of these popular treatments, nuclear attack comes with little warning. Nor would it help if there were a warning period. In the motion picture, *Dr. Strangelove,* ignorance of the basest sort is enough to set off the earth-rending "Doomsday Machine"—it would have made little sense to warn the public or stock the shelters.

Obviously, this popular image of sudden nuclear doom offers little encouragement to anyone who is asked to prepare for nuclear disaster. Therefore, it is worth a page or two here to try to put a nuclear disaster into some perspective. The event would, in any case, be terrible enough to horrify any sane man, and it will not make nuclear war any more probable to point out:

> . . . that a nuclear war would not necessarily last until
> hundreds of weapons had been launched against
> American cities;

> . . . that scores of millions of Americans could survive
> even the largest attacks that are depicted in war games;

> . . . that a modicum of common-sense preparation—
> even last-minute preparation—could increase survival
> rates by several times;

... that a nuclear attack probably would not come "out of the blue"—there probably would be a crisis period of days and perhaps weeks or months;

... that even an unlikely surprise attack would leave many communities with time to prepare for blast, heat, and especially fallout from nuclear warheads.

"Stages" of a Nuclear Disaster

What follows is an extremely simplified list of the phases through which a nuclear disaster might unfold. You can get a much more authoritative and detailed account in DCPA briefings, manuals, and research reports. And those other discussions will also present qualifications and exceptions to the list that follows: But this list will suggest a framework and background for the job you might be called on to do.

1st Phase—**Threat**. International crisis. Superpowers face-to-face. Possibility of tactical nuclear weapons being used abroad or at sea. News media dramatize possibilities of larger war. Growing public concern with CD, reflected in telephone calls asking for information, instruction. In some cases only, official pronouncements might specify attack probability a few days before attack. **Spontaneous evacuation** from large cities or perceived target areas may occur in some stages, possibly involving five to ten percent of population.

2nd Phase—**Crisis Relocation**. Officials may encourage or order evacuation of high-risk targets, probably in response to similar actions in other countries. This evacuation period could last several weeks or longer.

3rd Phase—**Warning Period**. News media and sirens warn of enemy weapons approaching. Local CD and public hear of detonations in other American communities. Localities are warned to expect further detonations. Localities are advised of existing or expected fallout dangers. Technically, of course, "warning" in CD parlance refers to the specific signal of attack.

4th Phase—**Transattack and Shelter Period.** Blast and
fire effects in target areas. Fallout in most communities.
Heavy casualties and pressing needs for fire fighting (in
some areas) and medical services. Pervasive fear of fallout
effects—and lack of specialized equipment—hampers
operations. Most survivors in CD or improvised shelters,
especially home basements or public buildings.

5th Phase—**Postattack Period.** From a week to about a
month. Many survivors still living in shelters or basements.
Evacuation of untenable areas. Heavy casualties continue
from radiation. Initial efforts to organize delivery of water,
food, medical services. Initial restoration of utilities net-
works. Initial efforts to restore vital communication,
transportation, production, and distribution networks.
Heavy emphasis on data collection for national damage
assessment.

6th Phase—**Early Recovery Period.** Emphasis on restoring
production and allocation of housing, food, utilities and
other services. Planning for long-run economic recovery.
Large-scale population movements to communities with
housing, food and water supply, utilities.

7th Phase—**Recovery Period.** A number of years (duration
depends on attack effects and recovery goals), probably
with aim of restoring essential social mechanisms and
economy (probably to a level defined in relation to per
capita GNP, pre-attack).

Where Do You Stand Now?

You can appraise certain nuclear attack probabilities with a considerable
reliability. The following questions will suggest how.

1. **In what ways is your community "at risk" if an
    attack occurs?** Have you consulted DCPA offices
    and publications to determine what a "nuclear risk
    map" looks like for your part of the country?
    Would direct effects (blast and fire) probably be
    present in your community? How far away would

such effects be likely to occur—a city or military installation fifty miles away? A hundred miles? With or without direct effects, how exposed is your community to radioactive fallout? In light of surrounding targets and prevailing winds, what levels of fallout radiation might you receive?

2. **What is the state of your nuclear attack preparedness effort?** Has a fallout shelter survey been conducted? When? Are the data still reliable? Are they readily available if you need them? Are materials readily available which could be used to tell the media and the public what to do? Have you thought about your community's "natural" advantages and disadvantages— for example, do most homes have basements? Or would basements be flooded in some sections of town?

3. **Planning for crisis period activity.** If an international crisis occurred, what would you do in the period before disaster struck? Do you have available "off-the-shelf" plans designed for implementation in a crisis period? Who would you call on for help during a crisis period— what people, what agencies, what official bodies? How would you organize your time, and your staff's time, to handle a rush of telephone inquiries? Could the media be used to tell people how to increase the "fallout protection factor" of their basements? What stations would carry such messages?

4. **Evacuation.** In a crisis period, would you know whether people were spontaneously moving into or out of your community? How could you most efficiently find out? If federal or state authorities encouraged or ordered evacuation of high-risk areas, would you probably be moving people out or hosting newcomers? If moving out, what kinds of assistance would you give—public transport vehicles, school buses? If hosting newcomers, where could you put them? What motels, public buildings, schools, other facilities are available? And what would be the special requirements for public services, health care, feeding, drinking water, sanitation, aids for handicapped populations? What agencies and individuals would you involve in hosting people in group quarters? If group

quarters were insufficient, what is the capacity of
private dwellings—could families "double up"?
What special constraints would apply to such an
effort? If an attack occurred, where would the
hosted populations find fallout shelter?

Even this brief listing should suggest that **the questions you must ask about
nuclear attack are often large-scale versions of questions raised by many natural disasters.**

What the Planner Needs to Know

On the basis of many years of research, DCPA is now preparing an *Attack
Environment Manual* that should enhance your understanding of nuclear war and better
enable you to integrate nuclear and natural disaster planning into your all-hazards approach.
The succinct, clearly written, and heavily illustrated chapters of the *DCPA Attack Environ-
ment Manual* describe, authoritatively, each of the major topics which you should address
in preparing your community to withstand the effects of a nuclear attack. The separate
chapters of the *Manual* discuss "What the Planner Needs to Know about":

(Chapter I)	Nuclear Emergency Operations
(Chapter II)	Blast and Shock
(Chapter III)	Fire Ignition and Spread
(Chapter IV)	Electromagnetic Pulse
(Chapter V)	Initial Nuclear Radiation
(Chapter VI)	Fallout
(Chapter VII)	Shelter Environment
(Chapter VIII)	Post-Shelter Environment
(Chapter IX)	Emergency Operations Planning.

You should have multiple copies of the *Manual* for your staff's use and for
potential readers in other agencies and the general public. You will also find that the
Manual is readily adaptable to formal presentations to large audiences. Each subject is
presented in one page of text, with a supporting illustration or diagram on the page facing
the text.

What follows is a brief condensation of Chapter I: **What the Planner Needs
to Know about Emergency Operations Planning.**

The first few pages of the chapter describe Civil Defense organization and the sources of our information and knowledge about the effects of nuclear attack. The following pages describe, in succession:

- The capabilities and weapon delivery systems of a potential enemy

- Weapons sizes

- Weapons accuracy

- Reliability of missiles

- The direct effects of thermonuclear weapons at various distances from "ground zero"

- Illustrations of direct weapons effects—casualties produced in the population of an American city

- Fallout effects of a single weapon, and the effects on survivors of different exposures to radiation

- The percentage of the American population living within 10, 20, 40, 100, and 200 miles of the nearest detonation, given a major attack on this country's military and industrial targets.

The *Manual* then describes the situations in which you may find yourself after an attack, the functions you should attempt to carry out, and some of the constraints that the postattack environment will place on operations.

Contingency Situations after Nuclear Attack

Nuclear weapons produce two kinds of effects:

1. **Impact (blast and fire)**, usually measured in terms of over-pressures of one pound per square inch (1 psi) or more.

2. **Radioactive fallout**, measured in terms of the dose rate which an exposed individual would absorb in one hour (Roentgens per hour, or R/hr.)

Immediately following an attack, your community (or separate areas within it) would face one of the four conditions in the matrix below.

	Negligible Fallout	Fallout (over 0.5 R/hr.)
Negligible Blast or Fire	FREE	RADIOACTIVE
Blast (over 1 psi) and/or Fire	IMPACT ONLY	IMPACT AND RADIOACTIVE

Emergency Operating Functions

During an emergency period, Civil Defense would be concerned with at least fifteeen "emergency" functions. (When the normal ways of coping with these problems no longer work, they become "emergency" functions.) The functions are listed below.

1. **Sheltering** people against impact effects and fallout, including maintenance of a viable environment in shelters.

2. **Warning** and informing people so that a prudent man will act to bring himself into the protective CD system.

3. **Moving** people—locating them where they can be protected, and returning them when displacement is no longer necessary.

4. **Rescuing** people from hazardous situations.

5. **Maintaining health** and minimizing spread of disease.

6. **Fire Fighting** to minimize personal injury and property damage.

7. **Maintaining law and order** to protect people and property and to support emergency operations.

8. **Protecting livestock** to minimize long-term effects on food supply.

9. **Emergency shutdown** to put equipment in best posture to sustain attack effects and minimize damage to unattended property.

10. **Medical care** to minimize casualties, and care for persons displaced because of threat of attack or attack effects.

11. **Feeding** persons displaced by threat of attack, or those whose normal supply channels are closed.

12. **Housing** for those displaced by movement or attack effects.

13. **Restoring facilities** and removing debris to provide facilities vital to survival of the population.

14. **Decontaminating** to maximize access to areas, equipment, etc., and to minimize radiation damage.

15. **Welfare services**—aid and counsel for persons displaced by threat of attack or attack effects.

The *Manual* also briefly categorizes those conditions under which the above functions might be necessary, and the constraints on their performance which result from fallout and other hazards.

Controllable and Uncontrollable Fires

The extent of the fire problem in impact areas has not been precisely defined— it remains uncertain whether the "wind" from the blast will itself reduce the fire hazard. The *Manual* describes the importance of catching ignitions early, before widespread fires develop, and suggests self-help fire-fighting techniques by which "every man becomes a fireman" immediately after a detonation. But fallout radiation may quickly make

fire-fighting impractical. Your organizational and communications networks must allow you to detect and bound "uncontrollable fire" areas and evacuate survivors and fire-fighting equipment from those areas.

Two Basic Fallout Situations

Your operations after an attack will be affected dramatically by the amount of fallout radiation to which disaster workers would be exposed. Quoting the *Attack Environment Manual*:

> Dose rates of a few Roentgens per hour . . . would place only minor restrictions on outside operations. At higher dose rates, less and less time could be devoted to emergency operations without subjecting personnel to doses that could prove disabling. At 50 R/hr., about three hours of exposure would result in some radiation sickness.

In a high radiation area above 50 R/hr., "only desperate needs, such as protecting the population against fire, would justify emergency operations."

Below 50 R/hr.	Above 50 R/hr.
confine emergency operations to essential tasks—rescue, resupply of shelters, restoration of essential utilities—rotate work crews to minimize exposure.	"pin down" in best fallout shelter—emergency operations only to meet desperate needs—wait for "radioactive decay" to produce less hazardous environment.

Nine Basic Operating Situations

The four contingencies previously defined (page 106 above) can now be expanded to take account of different levels of fallout and fire.

BASIC OPERATING SITUATIONS

	Negligible Fallout	Moderate Fallout	Severe Fallout
Negligible Damage or Fire	Negrad Negfire	Lorad Negfire	Hirad Negfire
Damage or Controllable Fire	Negrad Lofire	Lorad Lofire	Hirad Lofire
Uncontrollable Fire	Negrad Hifire	Lorad Hifire	Hirad Hifire

DCPA has prepared initial contingency planning approaches for each Basic Operating Situation (BOS). You should be prepared to gather information sufficient to define the BOS for each part of your community. You should then operate in terms of the most critical BOS found in your community.

Effects of a Large Attack on the United States

DCPA has programmed the impact of numerous possible attacks in terms of the Basic Operating Situations it would produce. For example, one 4,700-MT attack (equivalent to 4,700 million tons of TNT), aimed at military and industrial targets, had the following effects—described in terms of the **percentage of the national population who would be encompassed in each BOS described in the preceding diagram.**

1.	Negrad-Negfire	8%
2.	Lorad-Negfire	16%
3.	Hirad-Negfire	46%
4.	Negrad-Lofire	very small
5.	Lorad-Lofire	1%
6.	Hirad-Lofire	8%
7.	Negrad-Hifire	negligible
8.	Lorad-Hirfire	4%
9.	Hirad-Hifire	17%

For this particular attack, it was calculated that 17 percent of the nation's population would be killed immediately by blast effects. **Survivorship among the remaining 83 percent would be heavily dependent on providing fallout protection and insuring that people acted intelligently and functionally in a crisis.** To a lesser extent, survivorship would also depend on intelligent handling of the fire problem.

Mutual Aid

For many very large attacks, approximately 70 percent of the population would be free of direct effects (blast and fire). But if we define a "nearby burst" as one that would break windows (0.1 to 0.2 psi), then most of these 70 percent would be nearby. As fallout subsides, the majority of survivors would be in a position to help badly damaged areas.

DCPA's Local Emergency Action Checklist refers to *four operating plans* which you should consult to prepare for a mutual aid role in your community.

Plan B covers **Back-up** support to distant burst areas

Plan C covers **Close** support to nearby areas

Plan D covers **Damage** control in direct effects areas

Plan E covers **Evacuation** of shelters at risk from uncontrollable fire.

Which plan would you implement under various conditions?

Free of Direct Effects	Distant Bursts	Back-up Support
	Nearby Bursts	Close Support
Direct Effects	Controllable Fire	Damage Control
	Uncontrollable Fire	Evacuation of area

Your General Approach to Operations

The *Manual* outlines the following assumptions and concepts as basic guides. They may also help you review the material in this chapter.

BASIC ASSUMPTIONS

1. A period of crisis will most likely precede a nuclear conflict.

2. All zones are subject to fallout threat; many zones are subject to blast and fire threat as well.

3. Local agencies of government form the backbone cadre for emergency operating services; all services require expanded operating capability.

4. Emergency operations will include mutual aid but will not be dependent on it; military assistance, if available, will complement rather than substitute for local civilian action.

Mission

Protect life and property, maintain or restore essential services and facilities, and control surviving local resources.

1. Survival is dependent on prompt and continued use of best shelter against blast and fallout by the population. Preservation of the sheltered population is the fundamental goal of emergency operations.

2. Emergency operations will be directed toward the control of or protection against the main continuing threats to life and property—i.e., fire and fallout. The nine Basic Operating Situations (BOS) form the framework for contingent operations against these threats.

3. Time is of the essence in emergency operations. Measures tardily undertaken will probably be ineffective. Rapid assessment of BOS and automatic response by planned actions is essential.

4. Zones suffering major damage will attempt to control the situation with surviving resources. When resources are insufficient, the area must be abandoned or help must come from less affected zones. Because fire spreads, mutual aid can be essential to the local mission.

5. If more than one Basic Operating Situation exists within the zone, the contingency plan appropriate to the most severe situation (highest-numbered BOS) will be used.

For Further Information

The following DCPA publications should be of immediate use as you address the nuclear preparedness job.

DCPA Attack Environment Manual

Federal Civil Preparedness Guide

You should then be ready to benefit from numerous DCPA-supported educational programs, ranging from Staff College instruction to On-Site Assistance and local simulation exercises.

CHAPTER NINE
HOW DOES YOUR COMMUNITY RATE?

This manual was written to introduce you to some basic disaster planning concepts. Now that you have read it, we are going to give you the opportunity to evaluate your community's planning effort in light of those concepts.

You may already be doing many of the things we've suggested in the manual. You may have given considerable thought to others. By working through the following list of questions, you should be able to evaluate your community's preparedness for a possible disaster. If you score well, keep up the good work . . . if not, the evaluation will help identify those areas of planning which need special attention.

Directions

Go through the following pages and place a check next to the question if your community has planned or operationalized the process. Otherwise, leave it blank. The number at the end of each question indicates a chapter reference so you can conveniently refer to the appropriate section of the manual for additional information.

When you have gone through all the questions, go back and count the number of checks. Award three points for each check, total the points and find out how your community rates from the scale at the end of the questions.

PLANNING

1. Have you emphasized an all-hazards approach in your planning? (I and II) _____

2. Is your emergency planning geared to a reasonably sized and manageable emergency? (II) _____

3. Has your disaster plan been prepared and approved by all the disaster agencies in the community? (III) _____

4. Have you been using the planning process to foster cooperation? (III) _____

5. Does your community have a disaster mitigation program? (VII) _____

6. Have you been using emergency simulations as a training technique? (VII) _____

7. When is your next planning session? Are you preparing an agenda to upgrade your plan in accordance with this manual? (VII) _____

OPERATIONS

1. Does your community have risk maps? (III) _____

2. Have you developed a partial mobilization plan to alert only disaster related agencies? (II) _____

3. Does your community have an industrial CD program? (IV) _____

4. Have you made plans to assist interorganizational cooperation? (III) _____

5. Does your community have a systematic damage assessment procedure? (VI) _____

6. Are there plans to limit the way convergence and congestion interfere with rescue and recovery? (V) _____

7. Is anyone designated to evaluate the effectiveness of your field operations? (VI) _____

EMERGENCY OPERATIONS CENTER

1. Do you have a procedure for automatically activating the EOC? (III and VI)

2. Have you contacted the people you want at the EOC? (III and VI)

3. Have you encouraged agency managers to relocate to the EOC in an emergency? (III)

4. Will your EOC foster cooperation among the various city agencies? (III)

COMMUNICATIONS

1. Have you focussed your public education planning on emergencies indigenous to your community? (III)

2. Have you prepared a warning sequence that starts with organizations and moves to the public? (IV)

3. Does your warning procedure provide alert, information, and action messages? (IV)

4. Have minority group members played an active role in your disaster planning? (IV)

5. Have you made special provisions for school children? (IV)

6. Have you established a procedure to gather feedback and control rumors? (IV)

7. Have you established a working relationship with the media? (VI and IV)

8. Have you made the media a part of the organized disaster community? (VI)

HUMAN BEHAVIOR

1. Is the organized disaster community sensitized to the idea that people function quite well in emergencies? (V) _____

2. Will your messages to the public urge self-help and individual initiative? (II) _____

3. Is the organized disaster community aware that panic and looting occur only infrequently? (V) _____

4. Are there plans to maintain post-impact community morale? (V) _____

5. Is the community prepared to set up a post-impact mental health program? (V) _____

6. Are your men prepared to take on new jobs and have new responsibilities? Does each man have an emergency role? (IV) _____

7. Have you made plans to insure an adequate manpower supply by eliminating role conflicts and reorganizing schedules? (III) _____

8. Have you pinpointed sources of volunteers in your community and worked out a procedure to activate them? (V) _____

DISASTER MITIGATION

1. Have you incorporated disaster mitigation into your public education program? (VII) _____

2. Will you be thinking about ways to improve your organization's effectiveness in the post-disaster period? (VII) _____

3. Have you asked the Corps of Engineers and Soil Conservation Service for help in preparing a comprehensive disaster mitigation program? (VII) _____

4. Have you been preparing disaster impact statements for your local zoning board? (VII) _____

5. Does your community's building code reflect the natural phenomena indigenous to your area? (VII) _____

6. Is your community participating in the Federal Flood Insurance Program? (VII) _____

WHAT'S THE SCORE

POINTS	COMMUNITY CATEGORY	COMMENTS
87-120	DISASTER PROOF	TREMENDOUS JOB—You should be ready for most emergencies. Keep up the good work.
63-84	PREPARED	GOOD WORK—With some more work your community will be well prepared for the next disaster.
42-60	LOW RISK	YOU'RE ON YOUR WAY—But there is a lot more to be done.
18-39	RISKY	REBUILDING—You've got a lot of work to do.
0-15	DISASTER PRONE	HELP—You had better start your planning right now.

How does your community rate? Are you Disaster Proof or do you have a lot of work ahead of you? Remember: A little planning now will save time and lives tomorrow. You owe it to your community to be as prepared as possible for any disaster.

YOU MAY WANT TO KEEP THIS MANUAL HANDY AND RE-EVALUATE YOUR COMMUNITY IN SIX MONTHS TO SEE HOW YOU ARE PROGRESSING.
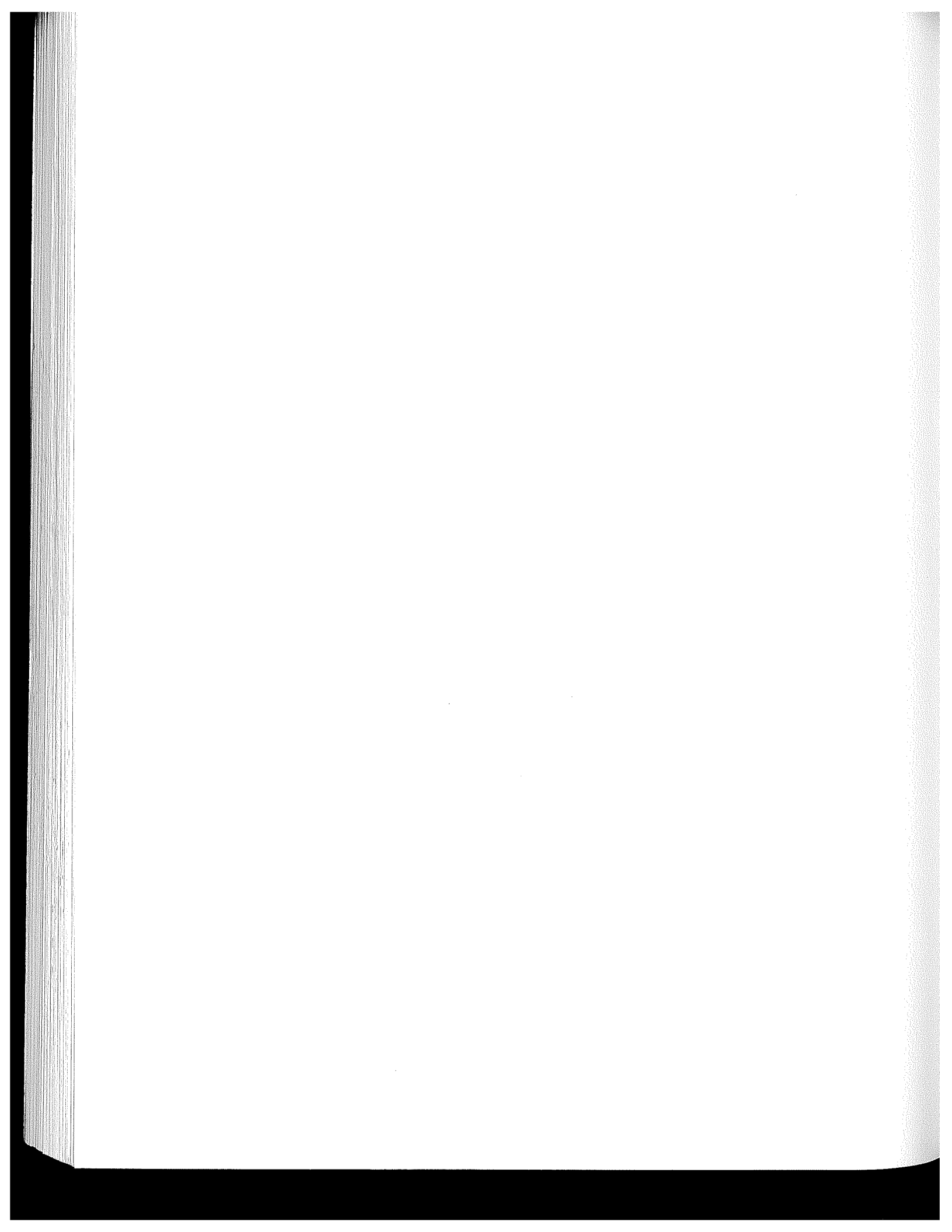
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13. ABSTRACT

Improving Your Emergency Response describes local comprehensive preparedness planning in non-technical language. The document is based on research findings and reported experience involving human behavior and organization in disaster. The presentation is geared to the non-professional reader, and seeks to initiate him into a process of full-time, year-round planning to combat the multiple hazards which may threaten his community.

Improving Your Emergency Response is a "prototype" manual. Its synthesis of research findings and recorded experience with disaster is presented in a format which should be readily adaptable to the purposes of DCPA planning, educational, training, and other programs. The present document is written at an introductory level. Its contents should be appropriate for local personnel who have not yet become involved in CD efforts to develop professional competence in preparedness planning. These potential audiences include, for example:

1. Local directors and other CD personnel who have not received Staff College training or otherwise become involved in programs to upgrade their competence.

2. Entering CD personnel.

3. (With some modification) Local officials and planners whose support of CD is needed and who require a better understanding of preparedness and CD activities.

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14. KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
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Behavioral Factors						
Psychological Factors						
Social Factors						
Organizational Factors						
Disaster Mitigation						
Disaster Insurance						
Civil Defense						

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51804

SUMMARY

IMPROVING YOUR COMMUNITY'S EMERGENCY RESPONSE

— An Introduction to Disaster Planning —

by

William G. Gay and William W. Chenault

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Improving Your Community's Emergency Response describes local comprehensive preparedness planning in non-technical language. The document is based on research findings and reported experience involving human behavior and organization in disaster. The presentation is geared to the non-professional reader, and seeks to initiate him into a process of full-time, year-round planning to combat the multiple hazards which may threaten his community.

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3. (With some modification) Local officials and planners whose support of CD is needed and who require a better understanding of preparedness and CD activities.

In sum, the materials presented in the prototype manual should prove useful in reaching various audiences who have not been especially responsive to other types of communications. The manual is designed to introduce these readers to local all-hazards planning as a continuing process. Once initiated into a process of preparedness planning, the hard-to-reach audiences would be prepared to take greater advantage of DCPA programs which relate to planning and the professional development of CD personnel.

Background

The constructive application of knowledge has proved to be a major problem faced by agencies that seek to support effective operational programs at the local level. On the one hand, research and development contribute knowledge of techniques and "lessons learned" which the local program implementer should know about—no one would argue that each community should wait to learn its own lessons from its own, perhaps harsh, experiences. However, **the utilization of research and knowledge is itself a complex process,** requiring the coordination of research, planning, training, and operational elements to bring about a systematic communication of technical information between those who develop applicable knowledge and those who put it to work.

Many federal and state administrators have been frustrated by the fact that we know so much more than we can apply at the local level. Many agencies have responded by developing elaborate information systems to disseminate technical knowledge and research findings. Many have also sought to widen the scope of their research efforts, usually approximating the Defense Department's cycle of research, development, testing, and evaluation—an approach which assesses research and development products in applied settings. And many, finding only a limited application of available knowledge, have undertaken major training programs aimed at the local program implementer. The Defense Civil Preparedness Agency is pursuing all of these approaches and the inauguration of DCPA's On-Site Assistance effort underscores the importance which is attached to the transmission of policy and content guidance to local CD personnel.

Researchers clearly have a responsibility to assist in the development of applicable knowledge. Research includes the generation of basic knowledge, the identification and study of conceptual problems, and the development of additional technical information in response to policy and programmatic needs. But research is also, necessarily, concerned with such problems as:

- Assessing the implications of research findings for operational situations.

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- Adapting technical information to operational conditions and circumstances.

- Communicating relevant information to user audiences, including its translation into appropriate guidance materials and educational or training efforts.

These and related research functions, carried out in coordination with other DCPA programs, embody the researcher's commitment to increasing the utility or applicability of research products.

Research Tasks

This prototype manual has been developed by the DCPA Research Directorate to provide technical information **in a usable form** to DCPA operating programs and CD personnel at the regional, state, and local levels. The project to develop the manual was designed in response to requests from DCPA operating programs. The objective has been to examine existing knowledge of the social and psychological aspects of disaster-response, and to assess the implications of that body of knowledge for CD operating programs. Specifically, the three project tasks involved:

- Evaluation of the state of knowledge with the objective of "identifying the areas of content needed by Civil Defense operating staff in providing guidance to organizations and people during periods of stress."

- Examination of CD programs for the purpose of "identifying the need for improved leadership techniques and strategies useful in improving operational readiness."

- Using the information developed above, to "develop a prototype manual providing guidance about likely social and psychological response to disaster and suggesting applications of the knowledge to Civil Defense operating programs."

The Manual

Improving Your Community's Emergency Response—the end product of these tasks—presents technical information in the form of suggested operational guidance. Materials presented in this form should be readily adaptable to the purposes of diverse CD programs and the audiences which those programs seek to reach. In sum, the prototype manual represents an innovative effort to increase the utilization of research and knowledge by selecting and presenting technical information in a format suitable to audiences who would eventually use the research product.

Improving Your Community's Emergency Response introduces the reader to the behavioral and organizational aspects of effective multiple-hazards preparedness planning at the local level. An underlying theme of the prototype manual is that preparedness planning is a systematic, continuing process—the professional leader and the effective organization will be engaging in appropriate activities at all times of the year. Thus, disaster-response managers are reminded that their most important actions may be taken **between** crises.

> A disaster preparedness agency is not one that "peaks" occasionally—
> rather, it is a continuously operated organization that has plenty to
> do all of the time.

The chronological presentation of chapters on the Threat, Warning, Trans-Impact, and Post-Disaster periods serves to reinforce the idea that preparedness planning and operations represent a **sequence of activities** contributing to a damage-avoiding or damage-limiting result. The theme also recurs in topical chapters on "Developing Professional Leaderhsip," "Your Community and Disaster Planning," "Communications," and "The Nuclear Case." Specific problem areas addressed in the material include disaster mitigation, special populations, public education, strategies for warning the public, media relationships, and industrial CD. The final chapter's "self-test" includes over forty questions clustered under the headings of planning, operations, the EOC,

communications, human behavior, and disaster mitigation. The test also constitutes a convenient checklist, page-referenced to materials in the manual.

The presentation is geared to an introductory level and a non-professional audience. The text makes frequent use of anecdotes that portray actual operating situations. For example, in suggesting that most emergencies can be handled with local resources, the manual notes:

> When about 10,000 people were made homeless by a tornado in Massachusetts, less than five percent sought aid from and were housed by public authorities. During the massive evacuation preceding Hurricane Carla, more than three-quarters of the evacuees found their own shelter; almost 60 percent went to the homes of relatives and friends.

Commands and questions are employed to focus the reader on applications in his own situation. Thus, when the local director reads about how to utilize relationships with the media, he is asked:

> What kind of a relationship do you have with station managers and the press? [. . .] Have you made an attempt to incorporate media representatives into your emergency information system: Remember, their ideas are valuable and they're essential to the success of your emergency operations.

Through its use of such techniques and its reliance on "familiar" and anecdotal material, the prototype manual should serve to communicate essential preparedness planning concepts and technical information to audiences who have often proven hard to reach. Given this initiation, such audiences should be prepared to take full advantage of more advanced instructional efforts.