

University of Delaware  
Disaster Research Center

WORKING PAPER  
#7

ORGANIZATIONAL FUNCTIONING IN  
DISASTER: A PRELIMINARY REPORT

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## Introduction

In August, 1963, a Disaster Research Center (DRC) was established at Ohio State University. As one of its major research activities the Center initiated for the Office of Civil Defense a study focused on organizational functioning in community disasters.<sup>1</sup> An attempt was to be made to arrive at an empirically grounded understanding of the involvement, operations and problems of emergency organizations in major natural catastrophes and other extreme stress situations. The research was to be conducted chiefly through the dispatching of field teams to disaster sites, the teams to gather their data primarily through systematic observations and interviews. Field studies of domestic disasters were to be used to make "in-depth," i. e., intensive studies of particular organizations. Foreign disasters were to provide comparative data and to serve as opportunities to examine alternate organizational and community procedures for coping with major emergencies. Within a five year period, the Center was not only to conduct such studies, but to produce a series of publications "with special emphasis on recommendations concerning the effective emergency operations of organizations and other matters pertinent to civil defense planners."<sup>2</sup>

This Status Report very briefly summarizes the work undertaken in the first three years of the study, discusses the kinds of research and analyses currently being undertaken, and lists the publications scheduled to be produced by the end of the five year period (i. e., July 31, 1968). The focus is almost exclusively on the

1

The study is under Contract OCD PS 64-46.

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From page one of the original contract proposal, "Studies of Organizational Functioning in Disaster," Department of Sociology and Anthropology, The Ohio State University, July, 1963.

field aspects of the study. Related tasks, such as the establishment of a disaster data repository, a summarization and synthesis of the disaster literature, the carrying out of laboratory simulations of organizational stress as a supplement to an AFOSR study, and the exploration of the possibilities of field experiments, have been discussed in the annual general summary reports<sup>3</sup> and are not further detailed in this report.

### Past Work

Field studies of domestic disasters or community emergencies have proceeded as planned with only minor procedural modifications.<sup>4</sup> DRC teams have been to 30 domestic disasters (See Appendix 1), returning once or more to the disaster site in 16 of these instances. Approximately 1,500 interviews, almost all tape recorded, have been obtained plus hundreds of hours of recordings of police, fire, radio-TV, and hospital tapes as well as scores of documents (e. g., action reports, disaster period logs, post-disaster critiques, pre-and post-disaster emergency plans, internal organizational memos, etc.). Thirteen in-depth studies of specific organizations have been conducted<sup>5</sup> as well as several extensive organizational warning

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The First General Summary Report was sent to OCD in March of 1964, the Second Summary Report in January of 1965, and the Third General Summary Report in January of 1966.

<sup>4</sup>A brief description of field procedures is set forth in DRC Paper 1966-5, "Administrative, Methodological and Theoretical Problems of Disaster Research."

<sup>5</sup>Organizations that have been studied in-depth include two state CD groups, two city departments of public works and one each --city CD, police department, hospital, fire department, radio station, Red Cross chapter, Salvation Army unit, electric company, and Forest Fire Service Group.

In-depth studies involve interviewing a sample or all of the personnel in the organization through the use of a standardized interview schedule. For example, 82 officers in the Topeka Police Department out of a total work force of approximately 125 men were interviewed. The interview schedule systematically covers pre-disaster and post-disaster behavior along certain specific dimensions such as tasks, lines of authority, communication, and decision-making. The schedule typically takes two to four hours to administer. See Appendix 7 for a copy of the schedule.

studies.<sup>6</sup> In two instances, a longitudinal examination has been made of organizational changes in a year's period after a disaster.<sup>7</sup>

Only seven foreign disasters have been studied (See Appendix 2), none since May of 1965. Administrative decisions, contrary to the professional judgment of the DRC staff and outside its control or influence as well as that of the University, have precluded the study of massive catastrophes subsequent to that time (e.g., earthquakes in Turkey and Peru; typhoons in Japan; floods in Brazil; cyclones in East Pakistan, etc.). This has severely limited the comparative data obtained and has seriously crippled an examination of major alternate ways communities and societies have developed to cope with large scale national emergencies. The DRC analyses and reports, current and future, will thus necessarily fall short of achieving the objectives set forth in the original research design.

Brief summaries of specific field operations, initial impressions obtained through observations at disaster sites, and introductory discussions of theoretical models and concepts being used in the research have been previously presented in 10 Research Notes, 6 Working Papers and 12 General Papers (See Appendix 3, 4 and 5 for lists of titles).<sup>8</sup> More systematic analyses, mostly of a case study

6

Studies of organizational involvement in the warning process have been conducted in northern Indiana, Minneapolis, Crescent City, and Topeka. See Research Notes 4 and 11 cited in Appendix 3 and Working Papers 4 and 7 cited in Appendix 4.

7

The disasters studied in this way have been the Indianapolis Coliseum Explosion and the Alaskan Earthquake.

8

There have also been 25 Research Memorandums that because of their content have been restricted to inter-office circulation (DRC and OCD Research) and are not available for limited public circulation.

nature, have been prepared in connection with the DRC Monograph Series in Disaster Research which however also draws material from other than the CCD sponsored field research. Eight draft manuscripts are in process, with the first monograph on the Indianapolis Coliseum explosion scheduled for publication within the next two months. (See Appendix 6.)

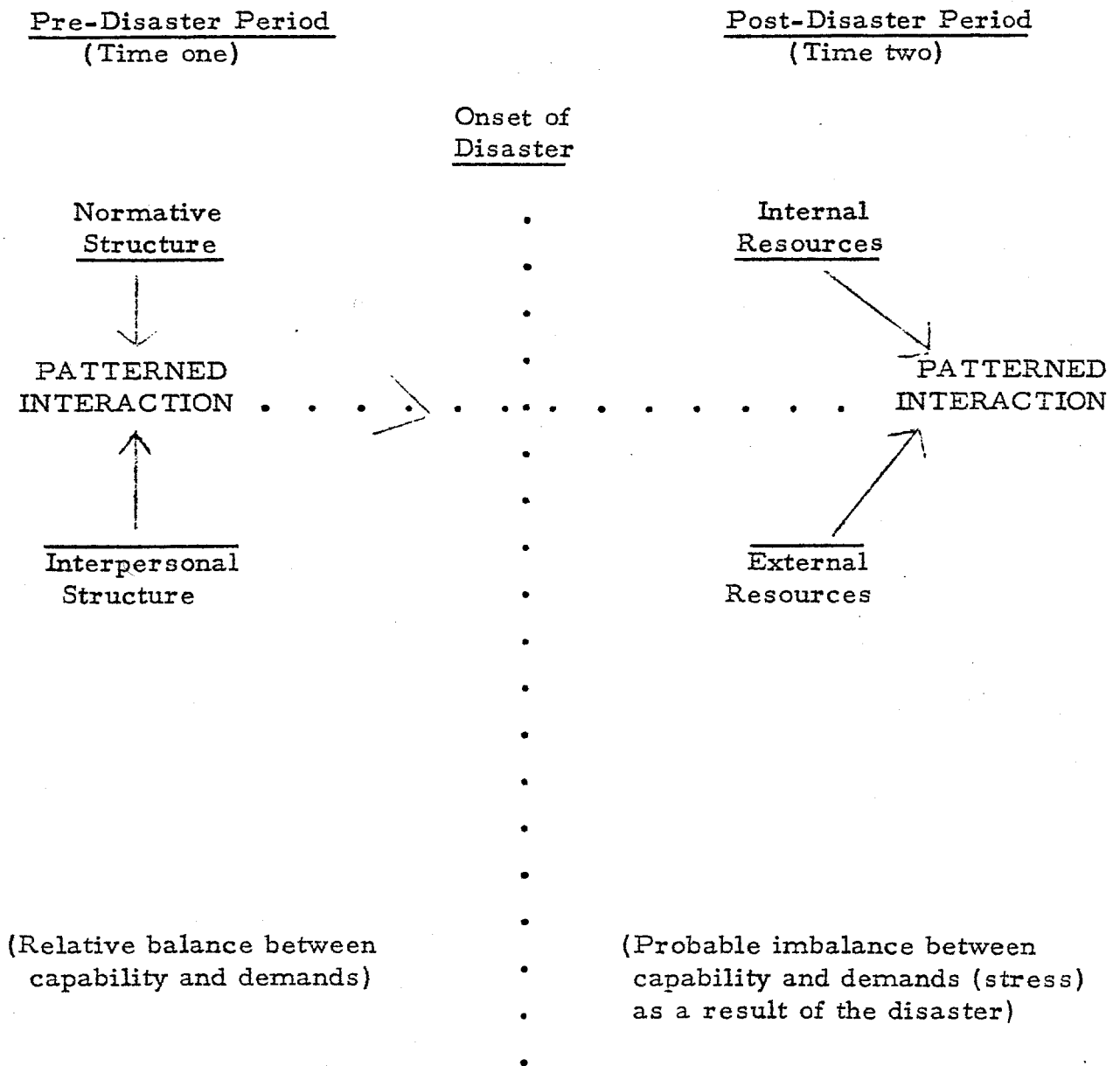
### Current Work

The Center is currently involved in the analysis of the aforementioned data gathered in the last three years. In the course of the past field trips and ensuing analyses, certain modifications were made in the original theoretical ideas that guided the research. We shall first discuss the initial theoretical formulations and then indicate the changes that have been introduced. We will conclude with a summary of the basic notions currently being utilized.

The original research design called for the study of those social collectivities or entities usually identified as formal organizations. The only differentiation made was between those organizations that did or did not have manifest emergency responsibilities, a distinction frequently made in the disaster planning literature. Thus, major focus was on those complex groups such as police departments, hospitals, and government agencies that routinely get involved in activities during an emergency. In the field, DRC staff members were to study those organizations that underwent the greatest stress while participating in the community response to the catastrophe.

Figure 1 presents in schematic form the elements we used in our original analyses to explain the response of an organization during a community emergency. What is meant by each term is discussed and illustrated below.

Figure 1. Outline of Elements Used in Initial Analyses.



As sociologists often point out, much of the patterning which occurs in human interaction flows from a framework of social norms (i. e., expectations or anticipations regarding the course of action to be followed). The patterned social interaction of an organization, as in any social system, is produced in large measure by an underlying normative grid or structure, both of an official and unofficial nature. The normative structure, of course, refers to the stable cluster of norms which make up specific positions and roles. For example, there are a large number of expectations combined in different ways for persons playing the various roles for firemen in a fire department.

Patterning in interaction is also a reflection of what is called the interpersonal structure. Members of an organization respond to each other not only as position incumbents but also as specific individuals. Thus, there are complex webs of hostilities and friendships that permeate any complex group and affect what it does as an overall entity.

In addition to the normative and interpersonal structures, there are other organizationally relevant factors involved in organizational response in a disaster situation. These can be termed internal and external resources. Classified as internal resources are: (1) equipment and materials, (2) information and records, and (3) personnel. Similarly, the same types of resources may be available to the organization externally. Illustrating this, in the Alaskan earthquake the state CD organization legally responsible for coordinating the efforts of at least a dozen other organizations was housed in a building with inadequate space, especially for a staff swollen by volunteers to many times its previous size. Clearly these internal physical resources limited the organization's capacity. But just as obviously



its capacity was affected by external resources. The telephone system for the entire city of Anchorage was rendered inoperative but several nearby organizations had mobile radio units which could be immediately utilized and partial communication was quickly restored with those organizations whose efforts were to be coordinated. In this instance, both the internal and external resources were relevant to the organization's capability to function.

Two other concepts are useful -- organizational capability and organizational demands. In the pre-disaster state, the mode for most organizations is that the general capability of the organization and the demands on the organization are approximately in balance. What happens when a disaster strikes a community is that the demands on certain organizations change. As an illustration, it can be noted that during the rioting in Watts, the Los Angeles Fire Department was at one point faced with at least 200 separate fires scattered over a fairly extensive area. In addition, it is not unusual for the capability of some organizations to decline sharply in a disaster situation; members of the organization may be killed or injured, material resources including communications equipment and records may be destroyed or malfunction. For example, in one situation just as a tornado started to hit down in a metropolitan area, the radar equipment of the local Weather Bureau failed.

An organization is under stress when there is a sudden shift in the demands on and/or the capability of the organization; the greater the disparity between the two, the higher the level of stress. The complexity of this relationship can be illustrated by looking at a maximum stress situation. This would be characterized by:

A. Change in the demands made on the organization

1. A very sharp increase in demands made on the organization.

As a result of the flooding following Hurricane Betsy, the local Red Cross in New Orleans was faced with housing more than 60,000 refugees.

2. The increase in demands is unanticipated.

In the Anchorage, Alaska earthquake, there was neither warning nor a previous event of a similar nature. The unexpectedness of demands is perhaps best illustrated by the fact that no organization, with the exception of the public utilities, had any plans for dealing with peacetime disasters.

3. An increase in demands which includes those requiring immediate organizational action.

In Crescent City, California, the fire department, while assisting the police in security and rescue activities, was suddenly faced, immediately after a fourth seismic wave hit, with a number of small fires over a 29 block area as well as a major fire at an oil and gasoline facility.

4. An increase in demands which includes those which must be given high priority.

Due to the high value placed on life within American culture, the police at the Indianapolis Coliseum explosion initially focused much of their effort on facilitating the transport of about 500 injured to hospitals instead of controlling traffic and securing the area.

5. An increase in demands which includes those of a type not usually made on the organization but which are temporarily accepted as legitimate.

In floods in Montana, a city engineering department was called upon to direct rescue and evacuation operations and to help in traffic control and security in addition to its normal engineering functions.

B. Change in the capabilities of the organization.

1. An absence or loss of personnel, especially key personnel.

In the Niigata earthquake in Japan, some organizations had as many as half of their personnel absent for extended periods of time because their families had been affected by the earthquake itself or by resulting fires and floods.

2. An absence, loss or breakdown of equipment, materials or buildings.

In one disaster, rising waters engulfed scores of trucks and moveable equipment of the local telephone company.

3. An absence or loss of information or records.

Vital records which could have been of invaluable aid in identifying the thousands of dead were buried under tons of debris at the Vaiont Dam disaster in Italy.

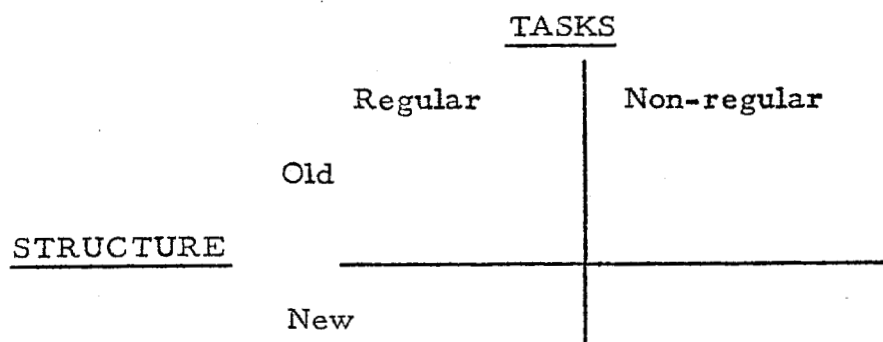
Viewed in this way, a condition of stress in an organization may be produced by a change in capability, by a change in demands or some combination of both. Likewise, it follows that the greater the degree of organizational stress, the greater the change in the patterned interaction from the pre-disaster to the immediate post-disaster period (in Figure 1, these are designated as Time one and Time two). If it be granted that the best predictor of future behavior is knowledge of past behavior, it then follows that the response of organizations in the immediate post-disaster period is predictable on the basis of variations in their pre-disaster patterned interaction.

Roughly speaking, these were the general ideas that guided the earliest field work and initial analyses. However, while they proved useful and fruitful, the ongoing research suggested refinements and elaborations. The original guiding framework was not inadequate but incomplete. Particularly needed was a more

complex concept of organization. The one presently being used at DRC will now be discussed.

The field work clearly showed that organizations differed in more fundamental ways than in whether they did or did not have emergency functions. We currently view organized behavior in disasters as being one of four different types. This typology is derived from a cross classification of two important variables --- one, the nature of the disaster tasks undertaken by the groups, and two, the post-disaster structure of these groups. This is depicted in Figure 2.

Figure 2. Key Variables in Organized Behavior in Disasters.



After a disaster, different kinds of tasks are carried out by different kinds of groups. At one extreme, there are established organizations which tend to carry out tasks which they regularly undertake prior to the emergency situation; at the other extreme, there are emergent groups carrying out disaster generated tasks.

In any emergency, groups carry out tasks, but these tasks may be old, routine, assigned, everyday ones. Or instead of regular, the tasks may be new, novel, assumed or unusual ones for the groups involved. If a police department controls traffic, a fire department fights fires, a radio station transmits news or a hospital treats the injured, anyone recognizes them as regular or traditional tasks for such

groups. On the other hand, the non-regular or newly created nature of tasks can be seen in situations where a National Guard battalion is charged with the responsibility of providing water for a community, an American Legion post begins to shelter evacuees or nuns from a parochial school, sort and distribute donated clothing from a relief center. Thus, it is possible to divide organizations and groups into those having regular or non-regular, traditional or disaster generated tasks.

It is also possible to distinguish between groups with an old or established structure and those with a new or emergent structure. The former kind of group is one in which the members stand in definite kinds of pre-disaster social relationships to one another, especially in their work activities. Such groups may be highly bureaucratic in form as in a fire department, or they may be considerably less formal in nature as in a VFW Post. However, this is not the important distinction. More crucial is the existence of the group as an entity prior to the disaster event. In such groups during a disaster, the members are in somewhat the same work relationships as they were prior to the emergency. Thus, the members of a city public health department or a citizen's band radio club which would be activated in a disaster normally have had work relationships prior to the community stress situation. These social ties, then, are maintained as the group engages in traditional or non-regular tasks during the emergency. In this way, there is a carry over of the pre-disaster social bonds into the work activity generated by the disaster.

On the other hand, a new group structure may develop or come into being during the emergency. Such groups may mushroom from a small pre-disaster

core or they may involve the crystallization of some totally new entity. The crucial feature is that they have no actual pre-emergency existence, at least in the form that they take during the emergency. An example would be a local Red Cross chapter whose handful of full time paid personnel provide the nucleus for large blocs of volunteers who undertake most of the group's work. Another example of an even more clearly defined emergent group would be the search and rescue teams that typically spring forth in the immediate post-disaster emergency period. The new social entities may be partly planned or they may be totally spontaneous but the actual group comes into being only during the emergency period.

The particular types of organized behavior that appear in the immediate post-disaster period are depicted in Figure 3.

Figure 3. Types of Organized Behavior in Disasters.

		<u>TASKS</u>	
		Regular	Non-regular
<u>STRUCTURE</u>	Old	Type I (Established)	Type III (Extending)
	New	Type II (Expanding)	Type IV (Emergent)

Type I is an established group carrying out regular tasks. This is exemplified by the official members of a city police force directing traffic around the impact zone after a tornado has struck a community.

Type II is an expanding group with regular tasks. These are more often the result of community or organizational planning. The group exists on "paper,"

not as an ongoing organization prior to the disaster event, and would be illustrated by Red Cross volunteers running a shelter after a hurricane.

Type III is an extending group which undertakes non-regular tasks. This is illustrated by a construction company which utilized its men and equipment to dig through the debris and assist during the rescue operations.

Type IV is an emergent group which becomes engaged in non-regular tasks. An example is an ad hoc group made up of the city engineer, county CD director, a local representative of the state highway department and a colonel from the Corps of Engineers who coordinate the overall community response during a flood.

There is a definite pattern to the sequential involvement of the organized activity in community stress situations. This is particularly related to community expectations. To some extent what are later discussed as situational variables and ecological features also play a part. The sequence of involvement appears to be as follows:

Type I groups are initially involved in any community emergency. There is a public expectation that they will become involved and therefore they are notified. There are also organizational expectations of becoming involved, either on the basis of previous activity or by the existence of definitions of the scope of emergency concerns of the organization. Because of their existing structure, these organizations can mobilize quickly and efficiently. They have mechanisms for assessing the demands which will be made on the organization. If the demands can be handled by these organizations, the activating event tends to be treated as a localized community emergency.

Type II groups become involved next. They can be viewed as standby organizations with latent disaster tasks. They are in a state of readiness and both the community and their own expectations move them towards mobilization and involvement. However, these groups generally have only a small, central, permanent cadre of workers during non-emergency periods. Also, while these groups have certain traditional tasks, their normal time activities are not directly related to existing or current community emergencies. It is clearly expected, however, that these groups will become active in a different way during a disaster. In one sense, they can be seen as the nucleus with standby functions to be activated for anticipated needs in large scale disasters. When the disaster occurs, the pre-emergency groups provide a name and a core of permanent workers for the new structures of expanding groups. These groups tend to be mobilized in the event of anything but a most localized emergency, but their mobilization is slower and usually more difficult than for Type I organizations.

Type III groups are probably the most numerous of all groups involved in major disasters. Often they do not stand out as clearly as other groups because their members frequently work in conjunction with or intermixed with Type I and Type II groups. Thus, a citizen's band radio club may help man or provide the operators and equipment for a local CD communications network or a church group may staff and operate a shelter under nominal Red Cross supervision. The participants, however, act primarily on the basis of their pre-disaster group affiliations. In fact, they become involved because of their own group's formal or informal participation. In other words, their participation in the community emergency response is the result of their pre-disaster group membership.



Some Type III organizations become involved at somewhat the same time as do Type II groups. In general, however, these organizations do become involved later than Type II groups since the community expectations for their involvement is not institutionalized. These groups are ready to help and they become involved when tasks arise that other organizations, either established or expanding, do not accept as a part of their regular activity. This, in part, tends to depend on the amount of time it takes to make an assessment as to whether tasks exist which cannot be handled by the other two types of organizations, and into which Type III groups can extend their activities.

Type IV groups are by far the most difficult to conceptualize since they have no pre-disaster existence and when the emergency is over they tend to dissolve. They are usually small and ephemeral groups which bear no name. Often they develop no clear cut boundaries; yet they do emerge in large scale disasters and play an important role in the overall collective response.

Type IV groups tend to become involved last. In part this is true because their emergence is dependent upon the involvement of the other three types of groups. While Type I groups might be able to cope with a localized emergency situation, increasing scope of the disaster event tends to assure the involvement of Type II and III organizations. With the involvement of all three types of organizations, there develops a lack of coordination among the major groups. There also may be no overall control of the various activities going on. Additionally, there may be a lack of information during the inventory period. These all tend to be new tasks which have not been anticipated and therefore cannot become the basis of an expanding Type II group nor are they tasks which are felt to fall

within the previous experience of extending organizations (Type III) within the community. In other words, there are new tasks and to deal with them, new groups emerge.

Figure 4 indicates schematically the typical sequence of organizational involvement.

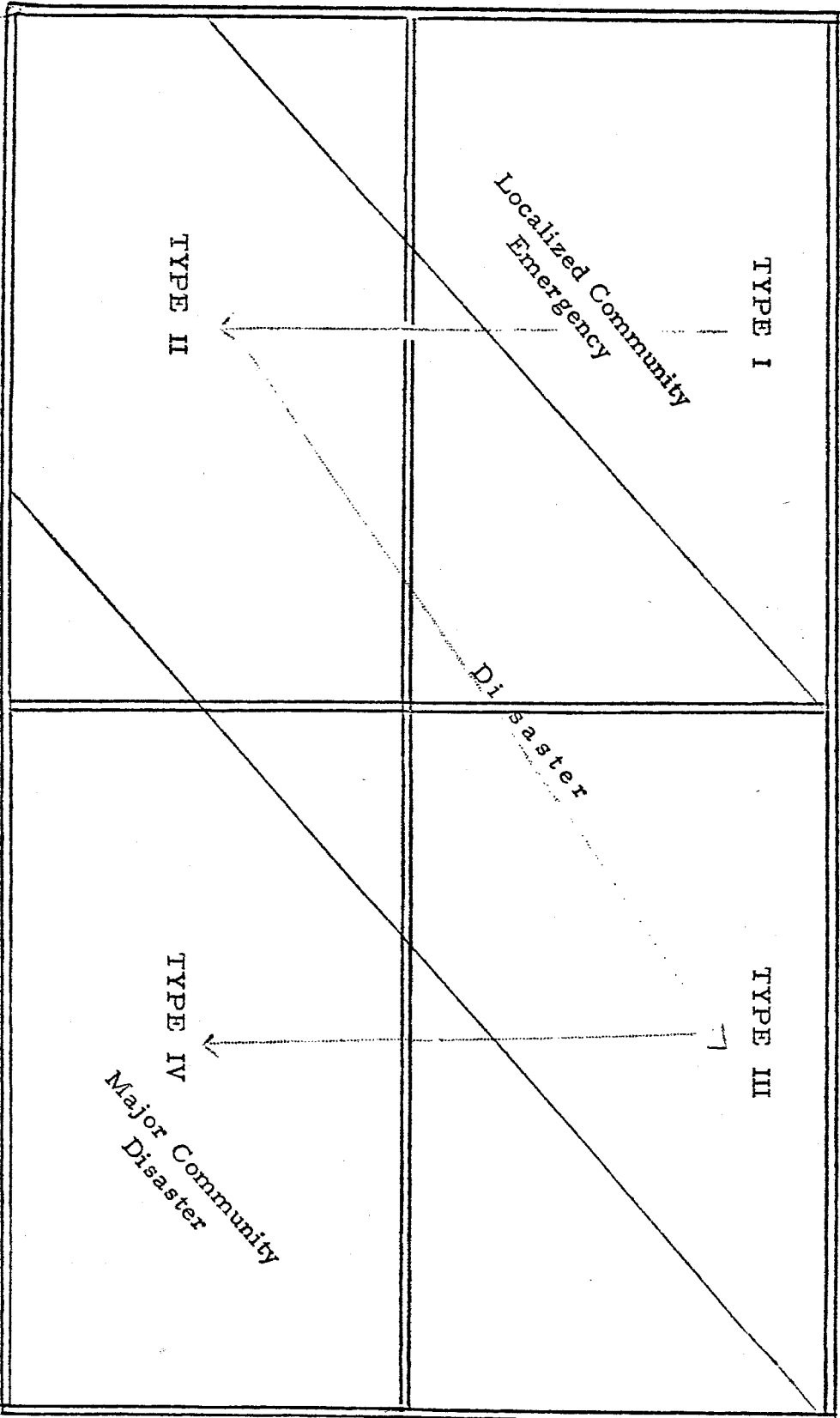
The DRC analyses of these types of organizations have suggested a number of preliminary findings regarding their structure, operations and problems in large scale emergencies. Some of these will now be discussed.

Type I groups typically are those designated in sociology as complex organizations with a bureaucratic structure. Para-military formal groups such as police and fire departments best exemplify these kinds of organizations. However, public utility companies, general hospitals, and many city government departments are, in varying degrees, organizations of this type. In pre-disaster situations, these groups have a fairly clear-cut line of authority, specific tasks, designated channels of communication, and explicit decision making roles.

Of particular interest is that these organizations attempt to adhere to regular activities as much as possible even during a major community emergency. Along some lines there is relatively little change in the behavior of these organizations. Typical, for instance, is the effort in a disaster to confine themselves to traditional tasks. The telephone company tries to concern itself with only phone service and very closely related activities. If a police or fire department is forced at the height of the emergency to engage in some search and rescue, there is an effort to revert back as quickly as possible to the regular work of maintaining security or fighting fires. Whether intended or not, such restriction

Figure 4

Typical Sequence of Organizational Involvement



of activity has the consequence of helping to prevent disaster demands on Type I groups from outstripping organizational capabilities.

Typical too is the fact that these groups try to depend almost exclusively on their own full time personnel. A few such organizations may at the height of an emergency supplement their work force with some volunteers, but they are released as quickly as possible. Or, if volunteers continue to be used, they are shifted to the control of non-Type I groups. For example, in one disaster studied by DRC, the fire department after initially and literally accumulating a large floor full of volunteers, sent them home or to other groups such as CD. Sometimes, as in the instance of electric gas companies, rather than incorporating local volunteers, personnel are borrowed from similar organizations outside the community. Such actions would seem to be a function of the required technical skill needed to operate in these kinds of organizations. The flying in to local hospitals of physicians and nurses from distant localities would appear to be another illustration of this point. Whatever the reason, Type I organizations, attempting to restrict themselves to traditional tasks even in an emergency, tend to use only their own personnel or almost identical personnel from similar groups elsewhere.

The statement that Type I groups seem to change relatively little during a disaster perhaps needs to be qualified by saying that there appears to be little change in that the permanent (or interchangeable) personnel continue to undertake the regular tasks of the organization. Nevertheless, in an emergency there often are in these groups varying kinds of internal structural rearrangements. Decision making, for example, tends to occur at lower levels in the hierarchy than is

normally the case. However, whatever the internal changes and conditions responsible for them, they seem to allow the organizations which we are talking about here, to function approximately in the same way in both the pre-disaster and emergency periods. It is certainly the experience of DRC that Type I organizations do not often undergo great stress. The demands of a disaster seem in most cases as well met as every day demands; not always, but extremely often. The exceptions appear to be in those instances where the Type I organization attempts to assume non-traditional tasks and in that sense accepts new rather than just traditional demands on the group.

Type II groups are largely although not exclusively those known in sociology as voluntary associations. Some examples of these would be typical Red Cross chapters, Salvation Army units, some sheriffs' departments, many local and state CD agencies, and a few church welfare auxiliaries. These are groups that generally have a small, central, permanent core or cadre of workers during non-emergency periods. Furthermore, these groups have certain traditional tasks, but during routine times the daily tasks are not directly related to community emergencies. For example, local Salvation Army units in their day-to-day activities frequently house and feed the indigent, conduct religious services, man centers for rehabilitation of alcoholics, provide assistance to unmarried mothers, and so forth.

However, as said earlier, Type II groups have a latent emergency function. That is quite apart from their manifest activities in day-to-day community life, it is clearly expected that these groups will become active in a different, general way in disaster operations. In one sense, they can be seen as community rallying points with stand-by functions, ready to be activated to deal with anticipated needs

in large scale emergencies. Thus, when a disaster occurs, these pre-emergency groups provide the name and the permanent workers for the core of new expanded groups.

In the transformation two basic changes occur.

1. The new group is considerably larger than the old core. A great number of persons, not working members of the group in normal times, join in the activities of the permanent staff or cadre. Many joiners may be volunteers as in the case of the expansion of local Red Cross chapters during a disaster. This, however, is not always the case, as can be seen in the instance of some CD cores who incorporate by plan other governmental personnel at the time of an emergency. Very often the regular, permanent staff becomes but a small fraction of the total number of workers operating under the group title during the disaster. The bulk of the work is actually carried on by the new members. In one disaster systematically studied by DRC, the ratio of informal volunteers to full and part time professional Red Cross workers was at least 10 to 1, at times perhaps 20 to 1.

2. The other major change is that the latent emergency function of the association is activated with a consequent undertaking of traditional although not every day tasks. In some cases, major every day activities are temporarily laid aside. Thus, local CD agencies during a natural disaster cease concerning themselves with the enumeration or stockpiling of fallout shelters. Red Cross chapters suspend their training classes in first aid, water safety, and home nursing. In the case of other groups, traditional emergency tasks will be given as much attention as traditional routine activities. For example, a Volunteers of America mission will continue to run its home for the aged but may participate

extensively in disaster relief work because it has done so in the past in that community. A sheriff's department with mobilized auxiliaries may continue to patrol for traffic violators in a rural county, but also assume as might be legally required, the formal control of the overall emergency response.

Type II groups typically have many problems in a disaster. They are often among the organized groups which the DRC has found undergo the greatest stress. There are undoubtedly many reasons for this, but three factors seem to be particularly involved.

First, these groups unlike Type I groups change both their overall structure and function at the time of a disaster. Although the name remains the same, it is an expanded group that has partly "new" personnel carrying out traditional but normally latent tasks. Changes in social arrangements are not easy under the best of circumstances, but these groups have to make the transition under very difficult conditions.

In the course of transformation from routine-oriented groups to emergency-functioning groups, Type II groups may undergo intensive and extensive changes in both internal structure and external relations. This can be observed when many state and some local CD units incorporate either state or city governmental workers into their disaster activities. In these cases for example, permanent core personnel occupying pre-disaster positions of moderate supervision over a limited few are often elevated, during the emergency, to near the top of the governmental hierarchy and with legal authority over many. This change in status can be the occasion for difficulties if incorporated persons or groups are unwilling to accept the fact that they have come under different authority positions during

the emergency. This is merely one illustration of the kind of problems that can arise as a result of the structural changes Type II groups undergo.

Furthermore, the carrying out of the emergency functions of Type II groups often necessitates the use of personnel who for various reasons are relatively ineffective. For example, all Type II groups tend to suffer from the fact that most of their temporary members in the expanded groups typically lack skill in performing their newly assumed work roles. This is not surprising. Volunteers or draftees, teenager or housewife, they generally lack knowledge and prior training for the disaster-related work they attempt to do. To be sure, some Type II groups such as the Red Cross make major efforts to train at least their official volunteers. Even such training, however, generally cannot give all the expanded group members the experience of working together. That is, Type II groups have an almost inevitable problem in that their members (which include both permanent core and temporary workers) have had no common experience in actually carrying out regular emergency functions.

Second, the boundaries of Type II groups are generally very vague during emergency periods. In fact, persons may be operating in the name of CD or the Red Cross for instance, and actually carrying out latent emergency tasks of such groups without the knowledge of or at least control by the permanent core. In one disaster studied by DRC, the local CD discovered several smaller groups were taking supplies out of warehouses and stockpiles and doing it in the name of CD. This is an extreme case of lack of awareness and control by Type II groups of activities carried out in their name. However, it is not rare for the professional workers in a local Red Cross chapter, for example, to have little knowledge



about what the mass of both official and unofficial volunteers who associate themselves with the Red Cross in a major disaster are doing for the chapter, and in its name.

On the other hand, there sometimes is a tendency for the core of Type II groups to try to extend the boundaries of their groups, to identify as part of their organization anyone whose work relates to their latent emergency functions. Thus, in one disaster studied by DRC, a local CD director attempted to label all governmental emergency activity as being performed by CD. Yet many of the officials involved clearly were acting solely in terms of their formal positions in established groups and not as nominal members of CD. Almost all working groups, of course, try to obtain credit for their activities in a disaster. But Type II groups are particularly vulnerable to attempts to maximize a claim. The consequence is a tendency to identify as activity of the group, emergency tasks being really carried out by other groups, representatives of other groups, or just individuals operating on their own.

Third, the latent but expected emergency functions for Type II groups are usually quite vague and general. At times, even a formal directive may be no more specific than a charge "to coordinate disaster activities" or "to help disaster victims." The lack of specificity appears to have two consequences.

Unlike Type I organizations who retrench to regular routine tasks as soon as possible, Type II groups seem vulnerable to going beyond even their usual latent emergency tasks. Thus, the Salvation Army in one disaster DRC studied engaged in a massive feeding program, a rather unusual activity for that particular group. Furthermore, the vagueness of emergency tasks may lead several expanding groups

to attempt them almost simultaneously. In another disaster studied by DRC, the Red Cross, the local CD, and the Salvation Army were all involved in putting together a list of missing persons. In both instances cited here the tasks attempted were important and to be anticipated at times of community disasters. This suggests that perhaps there might be some advantages to the vagueness and generality of latent emergency functions of Type II groups. Perhaps this is a way that communities have evolved to ensure major disaster problems will be met, even though stress is generated for particular groups.

Type III organizations are made up of those groups that extend their activities into new but not expected functions for them during the emergency period. Two different sub-types can be delineated: A) the contractual groups and B) the voluntary group. The contractual groups have a pre-disaster structure and activity. The usual tasks of the group are disrupted by the disaster or their achievement seems inappropriate in terms of the emergency. Many businesses would seem to fit this type. For example, a department store might loan their drivers and trucks to assist in the overall disaster effort. The store might suspend business and/or delivery. Or a contractor may use his men and machines, diverting them from construction elsewhere. Even though it might be physically possible for these groups to continue their normal activities, the efforts of these organizations become diverted into disaster activity. The personnel in these organizations are still employees of the organization and act in its name. The work relationships among employees as well as the decision making process and authority within the organization remains similar to their pre-disaster activity. Mobilization of this sub-type in many cases follows the usual pattern of the organization's routine

demands. For example, if a disaster occurs at night, the employees coming in to work in the morning as usual, find themselves being assigned to new tasks, instead of the regular ones. In other instances, the employees may be on the job at the time of the disaster and then gradually shift their activities toward non-regular tasks.

The second sub-type, the voluntary group, is illustrated by what are often called community service groups. Within most communities there are a number of clubs which have recreational, esthetic, religious, educational and philanthropic purposes. Not all of these become involved in disasters but a number of them do, particularly those which have certain every day humanitarian concerns or those which have as an integral part of their existence a dedication to community service. The emphasis in this sub-type is on the participation in disaster activity by these organizations as a unit. Sometimes members of these groups also serve as individual volunteers. For example, Boy Scouts often can be found acting as messengers at disaster headquarters. In these cases, they may or may not be acting as a member of a particular Boy Scout troop. The focus here, however, is on the participation in disaster activity as a unit which existed prior to the event and not on such groups as a source of individual volunteers. One way to conceptualize these groups is as "group" volunteers, their participation and their activity during the disaster is the result of their pre-disaster group membership.

Type III groups particularly seem to present problems for the other groups with which they often work. Part of what is involved seems to be that while Type III groups often work in conjunction with Type II and I groups, they do not really come under the effective control of the latter. Type III members frequently

remain primarily oriented to their own group affiliation. The potentials for disagreements and conflicts in this is obvious.

Type IV groups tend to emerge in two different kinds of disaster situations. In both of these situations, however, they fill a "gap" which is not being filled by the other types of organizations. The first kind of situation is where people are isolated from established emergency groups which normally become involved in the disaster. When such groups are not available this "gap" tends to be filled by an emergent organization. These situations seemingly occur in disaster events which can create conditions for isolation. For example, a flood might isolate a sub-section of a town or a snow storm may strand people in a particular area. The concentration of people in a relatively confined area combined with a lack of knowledge can lead to the emergence of a totally new group, or little "survival community."

There is another situation which seems to generate other Type IV groups. They emerge in circumstances where there is a lack of information about the scope of the disaster and where there is a lack of coordination and control among the various groups which become involved. Given these conditions, three distinguishable groups frequently emerge.

The first kind generally depends on the continuity of activity of some rescue groups. These can be called "damage assessment" groups. Certain collections of individuals tend to develop elements of group structure and to provide the locus for the collection of information concerning the extent of the damage. As a result of their activity during the early phases of the emergency period, such groups gather much information and their efforts become an integral part of the

assessment process for the community. The second kind might be termed the "operations groups." These groups are usually found near communications outlets. Their function seemingly is to control the emergency activity. They get messages from the environment and they try to provide resources to cope with problems as they arise. The third kind of emergent group deals less with operations but more with policy matters. They are characterized by attempts to coordinate the activities within the community, resolve disputes, discover gaps and place authority for certain responsibilities. This kind of organized behavior can be designated as "coordinating groups."

An understanding of the emergence of such groups requires an understanding of part of the sequential involvement of individuals and organizations in large scale emergencies. Much of the initial rescue is undertaken by individuals who first seek out specific people and then turn to more general rescue work. Most of these individuals are already in the impact area and are soon joined by others. Some of these rescue groups develop a degree of permanence. The members come together as a result of their individual activities, and while they may and sometimes do have personal links before the disaster, they have not previously operated together as a functioning work group. While their immediate activity may be searching for victims or providing aid for the injured, they actually provide an information input which is essential before the overall community emergency responses can be fully generated. Prior information about the casualties, property losses and continuing threats is necessary for coordination and control of a collective effort to cope with the emergency. In other words, from the community level, such efforts actually provide an information feedback on how badly

the community has been damaged by the disaster. This task of damage assessment is generated by the disaster and no established groups within the community see such a task as their responsibility.

The other kinds of emergent groups are a by-product of increased organizational involvement. Type I organizations enter first. Among them there is some pre-disaster understanding as to the scope of their activities and the necessity of coordinating their activities with one another. They also have various ways of assessing the situation that confronts them. If a disaster is of limited scope, such groups can make their own assessment of the situation, initiate action in terms of their responsibilities and maintain coordinated relationships with other Type I groups.

Type II groups enter the picture next. They have a more limited capacity to assess information. They also have a more general obligation to the community to "help" so that they may become engaged in a variety of activities which were not anticipated by existing groups. While pre-disaster arrangements may have been made to coordinate the activities of Type I and II organizations, this generally tends to be a "paper," not an operative arrangement. Also, these Type II organizations are "different" groups than they were prior to the disaster. With the influx of volunteers filling new positions in the organization, even carefully rehearsed pre-disaster arrangements are perhaps unknown to many members of Type II groups.

Type III groups have an even more limited capacity to assess the situation. In addition, they have not been a part of the pre-disaster pattern of coordination since their participation is neither anticipated nor generally expected. But as

they become involved, their efforts have to be coordinated with Type I and II organizations.

Given this sequence of involvement and the cumulative nature of the problems which ensue, major crises of community control and coordination are often created during the early hours of the emergency. In these circumstances, an operations office (group) often develops. Such groups are sometimes anticipated and planned as Type II groups but usually that is not the case. Often a small group of individuals form an operation center near to communications lines which are a foci of information and requests for aid. This tends to emerge somewhat gradually. Requests may be made to organizations which are outside the scope of their activity. Information may be provided which is relevant to other organizations. Given these conditions, representatives of Type I and II groups often have to work together. The core members of operations groups frequently come from certain key municipal agencies -- police, fire, CD, etc. This kind of group is primarily concerned with minute-to-minute operations and not with the overall problems of the disaster.

Another kind of group emerges to deal with the overall problems of coordination. In a typical pattern, during the early hours of the emergency period, a meeting occurs which involves representatives of the major groups which have become involved in disaster related activities. This meeting seems to be generated by a community need to coordinate and become informed about the diverse activities which have come into being as a result of the emergency. One by-product of such a meeting is the emergence of a very informal group. The participants develop some sort of understanding about the relationship which is to

exist among the various groups. This often includes an informal consensus on matters of authority and on a system of priorities of action which need to be followed. Such a group may meet periodically or members may continue to consult with each other informally during the emergency period. They act very much in the fashion of an ad hoc committee designed to settle procedural problems as they arise.

In the emergency period, organizational officials attempt to seek out information which is essential for the operation of their own particular group. In addition, the pre-disaster arrangements for coordinating Type I and perhaps Type II groups tends to be threatened. Gaps in knowledge plus the necessity for information as well as gaps in activities and overlapping activities, create the conditions whereby some organizational official suggests the necessity to find out what every organization is doing and what needs to be done. Representatives of each of the organizations which seem to be involved are asked to attend such a meeting. "Asked" is perhaps too strong a word here. A time is set for the meeting and the word is spread through the community. Any interested person is welcomed since no one is certain that another may not be doing significant tasks. The emergent damage assessment groups may be represented at the meeting even though their tasks may be finished and they may have dissolved. Their nominal leader may be asked to attend since he possesses crucial information. He may, however, go away from the meeting with additional responsibility. Representatives from the operations groups may also attend but primarily in the capacity of reporting on their activities. Other members of their organizations, particularly the administrative head, generally play the more significant



role in the coordination. Usually every organization sends some representative and they are joined by "unattached" individuals and top officials from extra-community agencies -- both state and national.

In certain communities, the need for such coordination has been recognized prior to the event, and these functions become formalized in an "existing" organization. This formalization occurs most readily in communities with considerable disaster experience.<sup>9</sup> Such coordinating groups also may develop in a disaster event which gives fairly advanced warnings.

Besides reconceptualizing the concept of organization, current DRC analyses have elaborated the four major input factors as well as adding other elements to those indicated in Figure 1.

Stated very briefly, the elaboration consists of the following. A step in the development of a predictive model requires the establishment of categories or types of the four major input variables (i. e., internal resources, external resources, normative structure and interpersonal structure).

For instance, organizations with a normative structure comparable to a military or police unit are distinguishable from other types of normative structures such as those in largely voluntary associations. An interpersonal structure which entails many close friendships will have different consequences for the

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The crucial factor is not experiences of disasters per se. This is suggested by DRC studies of organizational responses in such disaster prone societies as Greece and Mexico. Apparently what is frequently necessary for the pre-disaster existence of a coordinating group is a disaster subculture. For a discussion of the concept of disaster subculture as it has been elaborated by DRC see Research Note #6.

post-disaster period than one in which interpersonal hostility is the mode. The coordination that developed among many organizations in Anchorage, Alaska, for example, was deeply rooted in the web of pre-disaster friendships that criss-crossed and laced many of these organizations prior to the earthquake. Organizations with internal resources that include alternate power and communications equipment are clearly of a different type than those without such facilities. For instance, public utilities and mass communication agencies almost always have standby mechanisms for dealing with interruptions of their services; schools and religious organizations seldom do. Similarly, variations in the kind and amount of external resources require the development of sets of appropriate categories if prediction is to be attempted. For example, community groups in areas with military bases have access to assistance in both a qualitatively and quantitatively different way than organizations not so located.<sup>10</sup>

The other elements added to those given in Figure 1 are indicated in Figure 5. As can be seen, these primarily have to do with factors outside of any given organization as such, but which nevertheless have an important bearing on organized responses in periods of great community stress. Each will be briefly discussed.

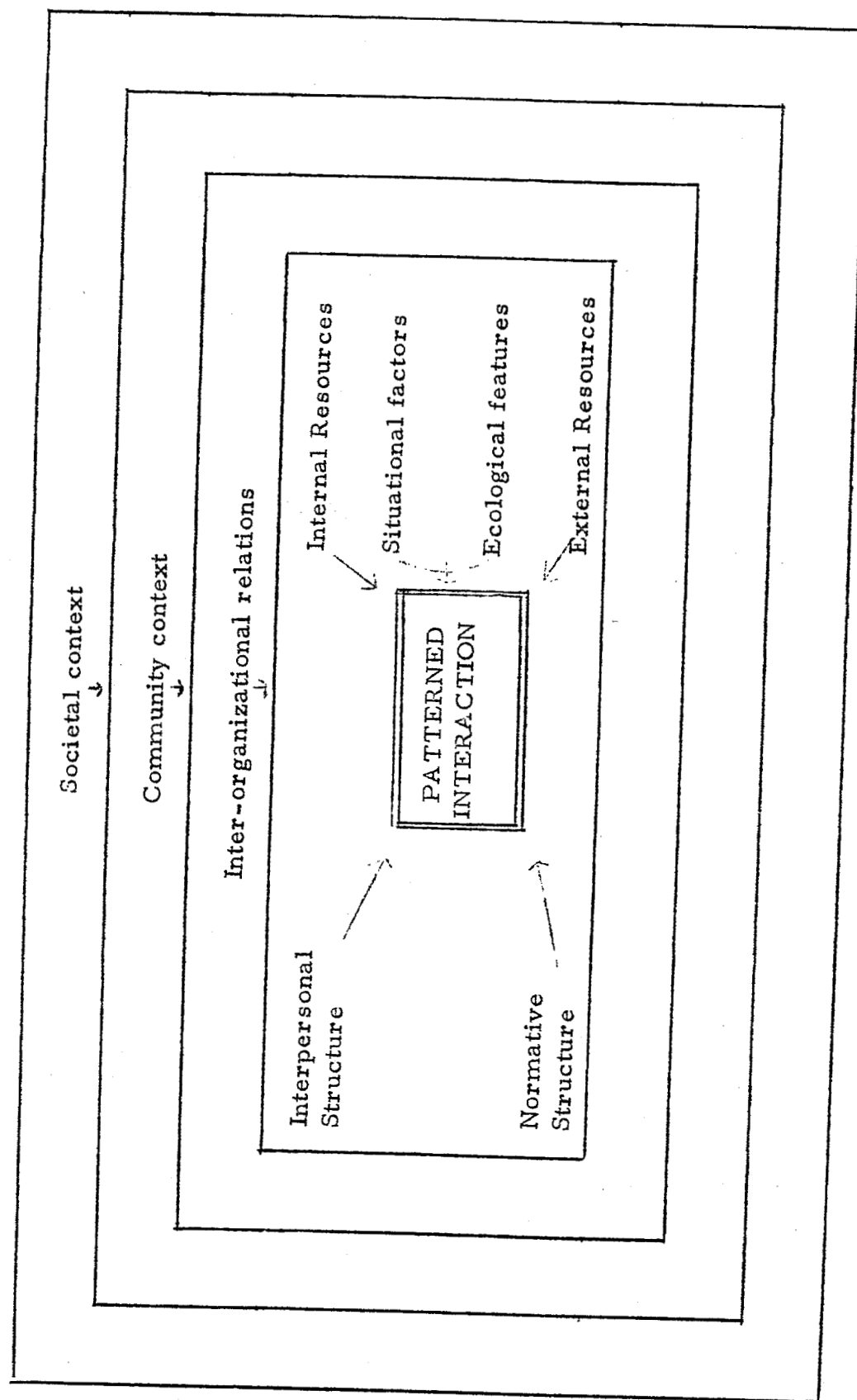
It has been necessary to introduce the concept of situational factors. This has reference to events occurring or existing just prior to a disaster which alter

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The whole matter of civilian-military relationships in disasters is worthy of a totally separate study in itself. Observations made by DRC in this country and in disasters in Italy, Greece, Chile, Japan and El Salvador suggest a variety of possible patterns with varying consequences for local community recovery from large scale emergencies. A more systematic examination of the matter might be undertaken in future DRC work.

Figure 5. Outline of Elements Being Used in Current Analyses



the consequent internal and/or external resources of an organization, but which are not a part of any patterned periodic change in such resources. When the Alaskan Earthquake occurred, for instance, the National Guard happened to be in encampment in the Anchorage area. This provided a significant resource for the Anchorage police which would not normally have been available. On the other hand, in another disaster studied by DRC, a new hospital had not yet had time to develop a disaster plan when a tornado struck the city. For a variety of reasons, the majority of injured victims were brought to the hospital which, lacking a plan, had some difficulty quickly mobilizing as many internal and external resources as otherwise might have been the case.

Such situational factors cannot be treated as isolated, idiosyncratic events, because seen in that way, these factors would have no extrapolating or predictive power. Instead, analysis is proceeding in the direction of developing general types or categories of such events. It will be possible then, to use situational variables along with the other general input variables to predict the organizational response in the post-disaster period.

In addition, the ecological features of the disaster seem to have to be taken into account in any explanatory scheme about organizational response.<sup>11</sup> The time of onset, for example, is frequently a crucial factor. In the first place, it is often related to the level and kinds of demands made on an organization.

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Ecology is here used to refer to the space-time dimensions of disaster events. The DRC staff has analytically developed the different characteristics associated with each dimension, as well as a typology of disasters based on ecological factors, but because of space limitations these will not be discussed here.

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Following the earthquake in Niigata, Japan, there were relatively few fires. The quake occurred just after the lunch hour when most of the cooking stoves were out and consequently the demands on the fire department were far less than they might otherwise have been. Similarly, the time of onset is relevant for the capability level of the organization. Some organizations operate on a three shift basis, while others operate for only an eight hour period, five days a week. In Indianapolis, the explosion at the Coliseum occurred just as the hospitals were changing shifts and were thus at maximum personnel capability. On the other hand, a series of tornadoes struck northern Indiana on the afternoon of Palm Sunday which meant that radio and TV stations were minimally manned, and thus had a major affect on the extent and nature of the warnings that were passed on and issued by these groups.

Further, the extent and locale of the disaster are significant characteristics for both organizational capability and demands. In both the Alaskan and Japanese earthquakes, governmental headquarters buildings were near the major areas of destruction but were not severely damaged, so that the capability of each organization was somewhat enhanced by its locale despite a temporary loss of power and communication. On the other hand, the Santa Barbara forest fire and the central-southern Colorado floods were so diffused in space that many demands were intensified for all the organizations trying to cope with the disastrous event as a whole. Thus, the ecological factors may be important in a variety of ways.

Furthermore, an examination of the "best time to have a disaster" in American communities, shows that this will vary depending on what might be desired in

the way of disaster response on the part of individuals or groups. From the viewpoint of warning, the "best time" would perhaps be in the early evening hours on a weekday when people are routinely tuned in to the mass communication outlets for news. From the viewpoint of having time for preventive action, a disaster would be "best" if it first started to occur in other than a residential area and on a pleasant summer Sunday morning. On the other hand, from the viewpoint of organizational mobilization, perhaps 7, 3, or 11 o'clock on any workday would be "best" since it would "catch" most Type I groups with double shifts present and thus provide a large pool of highly trained personnel. The intent here is primarily to illustrate that the timing of the disaster event is a significant factor in organizational response; obviously many other factors also play a part in both group and community reactions to a large scale emergency.

Of course, no two disasters have the same ecological features. Nevertheless, it would appear that some of the relevant time-space characteristics can be categorized and, therefore, used systematically in predicting organizational response. Current DRC analyses assume this as a definite possibility.

Organizational response is also highly dependent on the nature of the inter-organizational relationships in the disaster stricken community. Organizations do not operate in a social vacuum. In varying degrees they have ties and links of various kinds with other groups that restrict and/or assist their own activities. Both the pre- and post-disaster set of relationships can be important. For example, in many American communities there are very close ties between local agencies and military organizations in or near the area. Thus, after the Topeka tornado several municipal groups were able to meet some of the disaster created

demands that came to their attention in the emergency period because of the help in personnel provided by Air Force units in a neighboring air base. The pre-disaster inter-organizational ties were a source for external resources.

On the other hand, in several flood and tornado disasters studied by DRC, warnings of impending danger were not passed on to the public or other organizations by county and state agencies well aware of the threat. The organizations involved had weak links or ties with other community groups and did not consider themselves as having a responsibility of this nature. Warnings simply failed to be issued outside of the particular groups even though the information was at hand. The inter-organizational ties that existed, sometimes between the same kinds of groups such as the police, were more nominal than real.

Post-disaster relationships can also be highly influential in organizational responses and a factor in inter-organizational problems. During routine times, organizations tend to acquire varying degrees of status in a community, some being more highly ranked than others. In or after a disaster, however, the status relationships may be disturbed. For example, a relatively low ranked status group such as CD will often in a community emergency, by law or by functions being carried out, come to control or order other organizations that normally have relatively higher status. Such status reversal often creates strain and at times open conflict as high status groups attempt to maintain or regain their position even though the post-disaster situation does not permit them their former rank. The difficulties of CD groups in coordinating emergency responses in some disasters studied by DRC clearly stemmed from this situation.

These are illustrations of the kinds of inter-organizational relationships that



DRC is examining in order to arrive at an understanding that will permit some kind of prediction about organizational responses in large scale emergencies. Clearly some kinds of inter-organizational patterns facilitate, others hinder the alerting, mobilization and general operations of groups in community disasters. The objective, of course, is to specify which kind will produce what consequences.

However, even more important in affecting organizational response is the community context. A community can be viewed as a social system which acts in a collective fashion to solve certain problems. In a locality, a division of labor develops to cope with the day-to-day problems. These repetitive social relationships become the organization of the community.

In a large scale disaster certain traditional processes of the community are neglected or assigned low priority. Certain latent emergency tasks emerge and become consciously sought. Energy and activity which in pre-disaster time would have been directed toward traditional processes are displaced onto these other emergent ones. These latent emergency tasks have had little conscious attention previously in community activities. Few community organizations have seen them to be an integral part of their day-to-day activities. The group division of labor and the usual types of agency interdependence do not operate as effectively in the new situation. Given these conditions, new patterns of priority - a new consensus - tends to be developed to incorporate these unfamiliar tasks.

Some communities have a rich array of organizations serving a variety of functions necessary in a disaster. Other areas are characterized by organizational "poverty." A large number of organizations increases the possibilities that the range of tasks created by a disaster will be handled and that new demands on

existing organizations will be minimized. For example, the highest priority in an emergency is undoubtedly always placed on preserving life. Existence of a community group which handles emergency medical cases prevents time and effort being expended to create a temporary organization to serve this highest priority function, or the time and effort necessary to "borrow" such an organization from another community.

If existing groups are unable to handle all of the tasks created, this necessitates the assumption of such tasks by extra-community organizations. However, the introduction of such "strangers" into the community is costly in terms of increased problems of coordinating the organizational assault. The outside groups enter the picture with no previously understood relationship to other organizations, and their personnel generally have few personal ties with community members which might assist in adapting to the emergent coordination of organizations within the community. In practically every large scale disaster studied by DRC, the necessary entry of extra-community organizations to cope with the new disaster generated tasks, has created problems for all the groups involved.

Finally, the societal context in which organizations respond to a large scale emergency, clearly is an important factor. The differences vividly stand out when group reactions to disasters are examined in a cross-cultural context. The DRC data on this are unfortunately limited for reasons indicated earlier. However, it is clear, for example, that much disaster planning in any given society is blind to possible alternative group and organizational arrangements for coping with large scale, particularly nation-wide emergencies. Accustomed only to operating with habitual and traditional patterns, disaster planners find it difficult

to conceive of different ways of doing things. Lacking comparative data, they tend to think only of the usual questions and answers. Yet a community disaster is a new situation requiring at least partly new means for coping with new priorities and problems.

In the U. S. in most instances, local governmental units are expected to act as coordinator of disaster related activities almost irrespective of the scope of the disaster. However, local public organizations differ markedly in the adequacy with which they handle pre-disaster activities; there is even greater variation among them in their ability to shift to new and differently ordered community priorities. In a number of disasters studied by DRC, the organizations supposedly responsible have simply not been able to cope with the demands upon them alone, apart from also demonstrating little skill in coordinating inter-organizational responses. The value placed on local autonomy is bought at a very heavy cost during times of emergencies given the way local organizations are presently prepared and oriented for large scale crises. On the other hand, DRC studies, for example, of the operations of volunteer fire departments during a tornado in Iowa, do suggest that local autonomy need not necessarily be sacrificed if other institutional patterns are altered for emergency operations. At any rate, it is clear that the overall societal context cannot be ignored if predictions are to be made regarding organizational functioning in extreme stress situations.

While what has been discussed in the previous pages constitutes the current conceptual apparatus and theoretical framework guiding the ongoing research and analyses of DRC, there is no illusion that this is a final explanatory scheme. The present formulation does a better job than the original ideas which were used. However, further work is needed, the nature of which will now be briefly discussed.

### Future Work

Future work will involve: (1) continuing and extending the field studies; (2) elaborating and operationalizing the theoretical framework; and (3) writing a series of reports incorporating the past and current research of DRC.

There will be some changes in field procedures and emphases. An effort will be made to increase substantially the in-depth studies, possibly doubling the present number. In-depth studies will be made of organizations not yet so studied, e.g., some utilities and local government agencies. Sheer descriptive data on Type III and Type IV groups are scanty and will be obtained. Considerably more attention will be given to inter-organizational relations, and in general to the overall community context of specific organizational responses in extreme emergencies. Another longitudinal study may be attempted if the opportunity presents itself. An attempt will be made, depending on elaborations in the theoretical model, to move in the direction of specific hypothesis testing, and eventual quantification of some of the data.

Apart from the need to derive testable hypotheses, the theoretical model requires further work for other purposes. The typology of organizations needs to be further elaborated, especially in the direction of sub-types. The different input categories of the model have to be further clarified. Considerable analysis is yet needed on specifying the conditions influencing inter-organizational relationships. A conceptual clarification and typology of "volunteers" especially those participating in Type II groups is clearly required. A deeper understanding of the nature of the relationship between societal and community contexts and kinds of organizational responses is a matter that would be helped by additional work.

However, apart from continuation and extension of ongoing field work and analyses, DRC intends to produce a series of reports incorporating its past and current research. The title and scheduled completion date of each projected report is listed in Appendix 8. The writing of many of the reports, of course, is to a considerable degree dependent on obtaining the additional field data alluded to in the paragraph above.

There will be one overall report (#1) incorporating both a synthesis of the past disaster literature<sup>12</sup> and a general discussion about the theoretical model being used in the DRC research. This report entitled, Organizational Activities in Community Disasters, will present the basic concepts and key dimensions being used to analyze organized responses in large scale emergencies. Among the topics to be discussed are typical activities of organizations normally activated during a disaster, the implication for organizational responses of different kinds of disasters, the influence of the community context on disaster activity, problems of mobilization and recruitment for different types of disaster involved groups, community demands on organized behavior in emergencies, the problems of inter-organizational coordination in major catastrophes, and the similarity and differences of organizational functioning in natural disasters compared with that which

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The DRC staff has abstracted the literature on more than 200 disasters in over 250 different sources. A three volume annotated bibliography and abstract has been produced. Its size would seem to preclude publication at the present time, but it is available for research purposes.

might be anticipated in the event of a nuclear environment.<sup>13</sup> The report as a whole will also develop the notion that there are different types of organizational efforts (what earlier in this paper were called Type I, II, III, and IV groups) and that their activities are directly related to the functions generated by disasters for a community.

Following directly from this report will be four others. Three of them (#2, 3 and 4) will be general discussions of existing, expanding and extending - emergent types of organizations. In other words, separate reports are being prepared on Types I, II and III-IV groups in general. The other report (#13) will specifically consider community functions during large scale emergencies.

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Doubts are sometimes expressed about the possibility of this kind of extrapolation. That is, the question is raised if findings from peacetime studies can or cannot be extrapolated to a wartime, especially nuclear situation. The implication frequently seems to be that the answer has to be either a flat yes or no. Furthermore, the question is often answered in an either/or fashion on the basis of ideological convictions and philosophical position rather than on the basis of logic and empirical fact. Yet many persons participating in such dialogues have had no professional training or engaged in scientific research on social phenomena. They frequently exhibit the layman's simplistic view of social behavior and show little awareness of how meaningful questions might be posed and valid answers obtained regarding such phenomena. Interestingly enough, although for radically different reasons, both extreme advocates as well as opponents of civil defense frequently come up with the same negative view on the possibility of extrapolation from a peace to a wartime situation.

The flat question generally asked, of course, is not a meaningful one. Any two social situations will differ in some respects from one another; none are ever identical. On the other hand, no social situation is ever totally unlike another; there are always some common elements or they could not be viewed as instances of social behavior. The issue is one of difference of degree, not of kind. A more meaningful question to ask then is what aspects might be extrapolated and what aspects might not be extrapolated.

For example, if CD organizations presently existing in different communities around the U.S. cannot cope with limited natural disasters, they clearly could not handle a greater stress situation. No amount of speculation with hypothetical

Directly following out of the reports on general types of organizations will be a series of reports on specific types of organizations - primarily police departments, fire departments, public utilities, public works departments, hospitals, Salvation Army and Red Cross units, and Civil Defense groups. Each of these reports (#5 to 12) will include the following: a description of the typical organization of that kind, their disaster related tasks, how they generally adapt to emergency community demands, the usual result of this on their structure and functioning, subsequent consequences on inter-organizational relationships, and the implications of all of this for the organization's operations in a possible nuclear environment.

Directly following out of the report on community functions during large scale emergencies will be a series of other reports focused on functional activities as

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models, nor pseudo-quantification of fictitious resources, nor make believe scenarios, with or without computers, can avoid that very simple point. The same is true, obviously, of any other particular organization that would become involved in a widespread community emergency. These and other aspects are discussed in each of the reports.

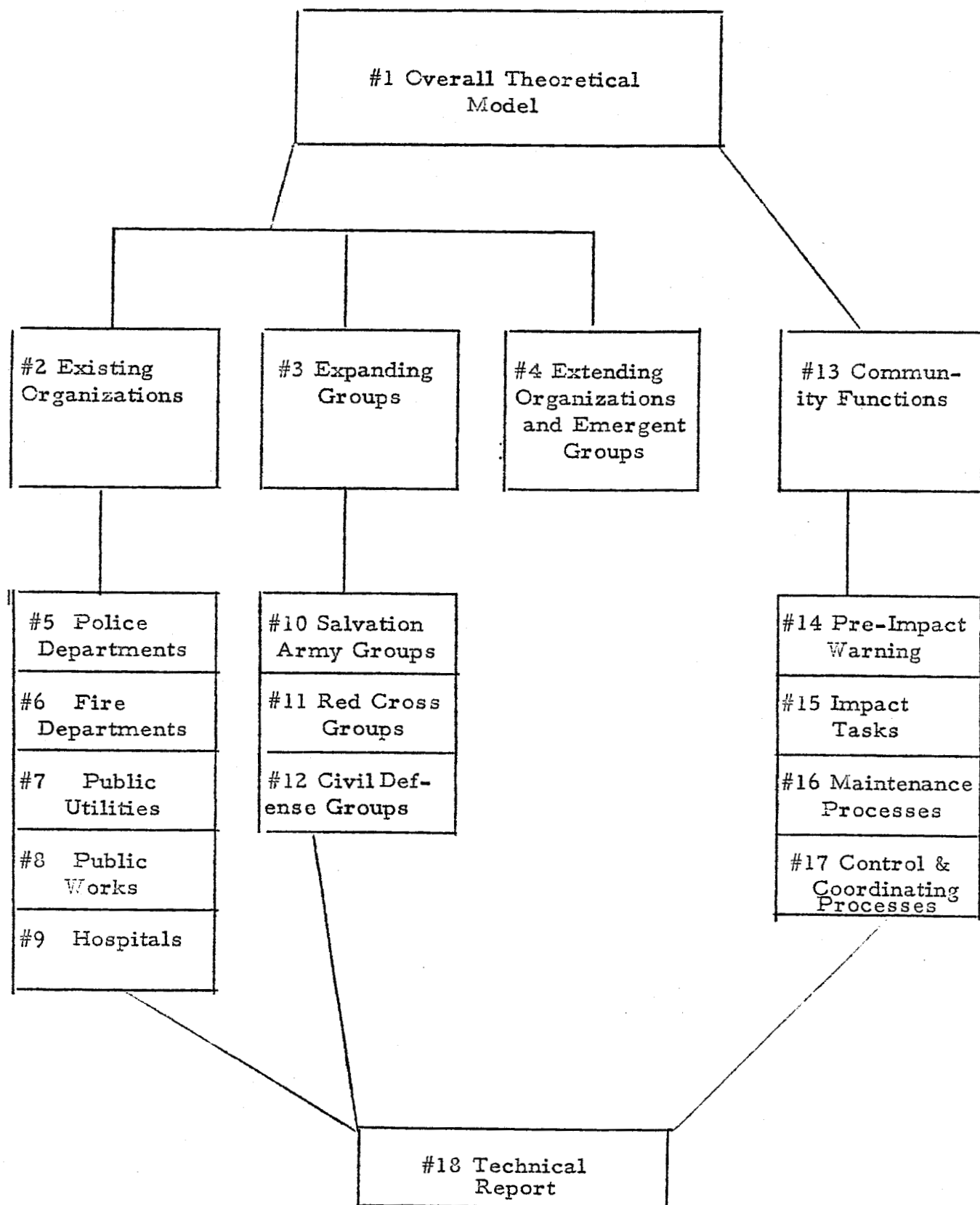
Finally, it should be noted that the history of much past and even current planning and thinking about both small and large scale emergencies, does not suggest placing too much confidence in most projections of persons directly concerned with possible stress situations. The DRC studies clearly show that even experienced organizational personnel often do not correctly forecast most natural disaster problems -- they, for example, generally anticipate what are actually insignificant problems and badly underestimate the capacity of the social structure to undergo stress. However conscientiously motivated such persons are, they are often too close to their own particular problems and too concerned with limited aspects of the situation, to be able to have a balanced and overall picture of the total situation. The pre World War II predictions about probable psychological and social responses to large scale air raids are of course also classical cases of badly inaccurate speculations, assuming as they did a qualitatively different situation in war as compared with peacetime. Interest, concern or even limited experience are no substitute for objective descriptions and analyses.

such. These reports (#14 to 17) will discuss phenomena that cut across organizational activities as such. For example, the initial report of this kind will be on The Pre-Impact Warning Process in Community Disasters.

The last report (#18) will be the final technical report for the whole study. It will endeavor to pull together all of the work done under the contract. It also will contain in summary form the recommendations of DRC for civil defense planners regarding emergency operations.

In schematic outline, the following indicates the relationships of the contemplated 18 reports.





## APPENDIX I

### List of Domestic Disasters Studied by the DRC

#### 1963

Sept. 16	Hurricane Cindy, Texas
Oct. 31	Coliseum Explosion, Indianapolis, Indiana
Nov. 13	San Antonio AEC Explosion, Texas
Nov. 23	Fitchville Fire, Ohio
Dec. 14	Los Angeles Dam Break, California

#### 1964

Jan. 12	Attleboro Explosion, Massachusetts
March 9	Cincinnati Flood, Ohio
March 27	Alaska Earthquake
March 27	Crescent City Seismic Wave, California
June 9	Montana Flood
August 27	Hurricane Cleo, Miami, Florida
Sept. 10	Hurricane Dora, Jacksonville, Florida
Sept. 22	Santa Barbara Forest Fire, California
Oct. 3	Hurricane Hilda, New Orleans, Louisiana

#### 1965

Feb. 4	Pacific Seismic Wave Threat, California
April 9	Mankato, Minnesota Flood
April 11	Northern Indiana Tornadoes
April 16	St. Paul Minnesota Flood
May 6	Minneapolis, Minnesota Tornadoes

June 16	Colorado Floods
August 11	Los Angeles, California Watts Fires
Sept. 7	Hurricane Betsy, Miami, Florida
Sept. 10	Hurricane Betsy-Flood, New Orleans, Louisiana
Nov. 8	Cincinnati Plane Crash
Nov. 9	New York City Blackout

1966

March 3	Jackson, Mississippi Tornado
April 4	Tampa, Florida Tornado
April 5	North Dakota - Minnesota Floods
June 8	Topeka, Kansas Tornado
July 21	Cleveland, Ohio (Hough Fires)

## APPENDIX 2

### List of Foreign Disasters Studied by the DRC

#### 1963

Oct. 9            Vaiont Dam Overflow, Italy

#### 1964

June 16           Niigata Earthquake, Japan

Sept. 25           Rio Grande Flood Threat, Laredo-Nuevo Laredo, Mexico

#### 1965

March 1           Montreal Apartment House Explosion, Canada

March 28           Earthquake in Chile

April 5            Earthquake in Greece

May 3              Earthquake in El Salvador

## APPENDIX 3

### Research Notes

- #1 Organizational Response To An Explosion at Medina AEC Base, San Antonio, Texas, November 13, 1963. (January 2, 1964) 8 pages.
- #2 Some Organizational and Community Activities After An Explosion At The Thompson Chemical Company, Attleboro, Massachusetts. (April 14, 1964) 18 pages.
- #4 Aesop 1964. Contingencies Affecting The Issuing of Public Disaster Warnings At Crescent City, California. (May 21, 1964) 8 pages.
- #5 The Baldwin Hills, California Dam Disaster. (August 14, 1964) 19 pages.
- #6 Some Observations On A Disaster Subculture: The Organizational Response Of Cincinnati, Ohio, To The 1964 Flood. (June 30, 1965) 24 pages.
- #7 Authority, Jurisdiction and Technical Competence. Interorganizational Relationships At Great Falls, Montana, During the Flood of June 8-10, 1964. (September 25, 1964) 22 pages.
- #8 A Description of Organizational Activities In The Fitchville, Ohio Nursing Home Fire. (August 3, 1964) 17 pages.
- #9 Some Research Questions and Planning Implications Raised By Observations Made At A Flood Threat in Laredo, Texas, and Nuevo Laredo, Mexico, September 25, 1964. (January 15, 1965) 15 pages.
- #11 Crescent City Revisited: A Comparison of Public Warning Procedures Used in 1964 and 1965 Emergencies. (March 15, 1965) 14 pages.
- #12 The 1965 Montreal, Canada Apartment House Explosion: Some Notes and Comparisons With The Indianapolis, Indiana Coliseum Explosion. (July 15, 1965) 22 pages.

## APPENDIX 4

### Working Papers

- #1 A Preliminary Report On The Vaiont Dam Disaster. (November 4, 1963) 38 pages.
- #2 Some Preliminary Observations On The Responses of Community Organizations Involved in the Emergency Period of the Alaskan Earthquake. (May 28, 1964) 29 pages.
- #3 Some Preliminary Observations On Organizational Responses In the Emergency Period After The Niigata, Japan, Earthquake of June 16, 1964. (December 1, 1964) 48 pages.
- #4 A Tornado Warning System: Its Functioning On Palm Sunday In Indiana. (January 27, 1966) 38 pages.
- #7 The Minneapolis Tornadoes, May 6, 1965. Notes on the Warning Process. (September 15, 1965) 27 pages.
- #9 Some Preliminary Observations On A Hospital Response To The Jackson, Mississippi Tornado of March 3, 1966. (June 10, 1966) 35 pages.

## APPENDIX 5

### General Papers

- (1964-1) Organizations Under Stress: Towards A Theoretical Explanation of Variation in Response. 14 pages.
- (1964-2) Mass Behavior and Governmental Breakdown In Major Disasters: Viewpoint of a Researcher. 15 pages.
- (1964-3) Contingencies Which Affect Medical Care In Disasters: An Informal Report. 10 pages.
- (1964-4) A Theory of Organizational Stress. 16 pages.
- (1965-2) Organizational Responses and Problems in Disasters. 12 pages.
- (1965-3) Realism in Laboratory Simulation: Myth or Method? 13 pages.
- (1966-1) Organizational Simulation: A Study in Method. 22 pages.
- (1966-2a) Laboratory Simulation of a Police Communication System Under Stress: Preliminary Findings. 23 pages.
- (1966-3) Organization Under Stress. 29 pages.
- (1966-4) Blame in Disaster: Another Look, Another Viewpoint. 17 pages.
- (1966-5) Administrative, Methodological and Theoretical Problems of Disaster Research. 19 pages.
- (1966-6) Functional Priorities in Community Disasters. 18 pages.

## APPENDIX 6

### List of Monographs Scheduled for Publication in the DRC Monograph Series

1. Drabek - Disaster in Aisle 13: A Case Study of the Coliseum Explosion
2. Rosow - Conflict of Authority in Natural Disasters
3. Dynes - Organizational Reactions to Disaster
4. Drabek - Laboratory Simulation of a Police Communication System Under Stress
5. Yutzy - Community Response to Disaster: The Example of Anchorage, Alaska
6. Adams - The Alaskan State CD: Plans and Problems in the Earthquake
7. Anderson - Organizational Change in Disaster
8. Adams - The Anchorage Public Works Department: A Case Study of Operations After the 1964 Earthquake