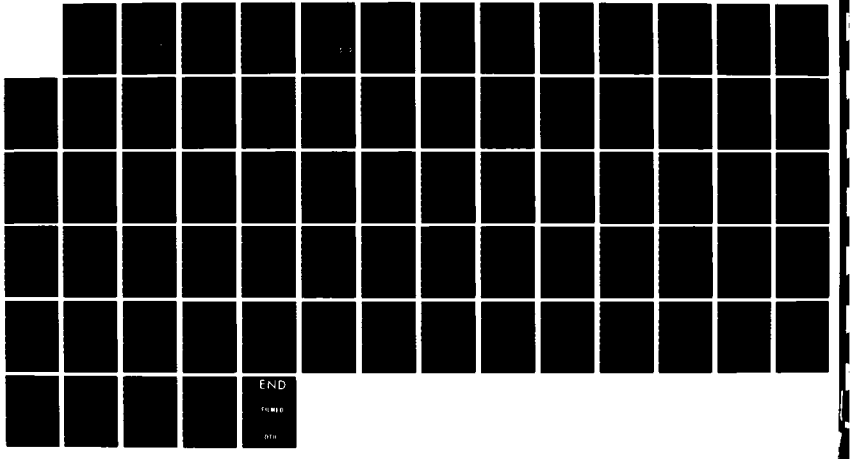
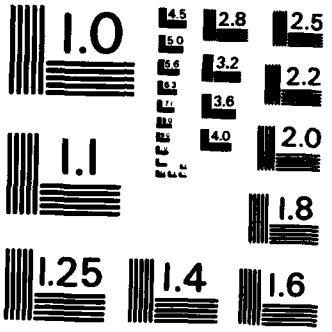
AD-A168 890 THE FUNCTIONING OF THE LOCAL EMERGENCY SERVICES OFFICES 1/1
IN DISASTERS(U) OHIO STATE UNIV RESEARCH FOUNDATION
COLUMBUS E L QUARANTELLI OCT 85 EMW-K-0881

UNCLASSIFIED F/G 5/1 NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS - 1963 - A

(10)

AD-A160 890

RF Project 763270/714847
Final Report

THE FUNCTIONING OF THE LOCAL EMERGENCY SERVICES OFFICES IN DISASTERS

E. L. Quarantelli
The Disaster Research Center

Final Report for

FEDERAL EMERGENCY MANAGEMENT AGENCY
Washington, D.C. 20472

For the Period
September 1, 1983 - December 31, 1984

Contract No. EMW-K-0881
Work Unit No. 2651F

October 1985

OSU
The Ohio State University Research Foundation
1314 Kinnear Road
Columbus, Ohio 43212

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE	READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO. AD-A160 890	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) THE FUNCTIONING OF THE LOCAL EMERGENCY SERVICES OFFICES IN DISASTERS	5. TYPE OF REPORT & PERIOD COVERED Final 9/1/83 - 12/31/84
	6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) E. L. Quarantelli	8. CONTRACT OR GRANT NUMBER(s) EMW-K-0881
9. PERFORMING ORGANIZATION NAME AND ADDRESS Disaster Research Center Ohio State University Columbus, Ohio 43210	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 2651F
11. CONTROLLING OFFICE NAME AND ADDRESS Federal Emergency Management Agency Washington, DC 20472	12. REPORT DATE October 1985
	13. NUMBER OF PAGES 60
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)	15. SECURITY CLASS. (of this report)
	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

Will be published as Disaster Research Center Final Report # 32

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Disasters
Emergency Management
Disaster Planning and Preparedness
Emergency Periods of Disasters
Local Emergency Management Offices(LEMAs)
Organizational Changes in LEMAs
Emergency Periods of Disasters
Methodology of Disaster Research

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This report presents the initial summary observations on the first of a projected two year study of the role and functioning of the local disaster emergency management agency in community disasters. The current study was partly viewed as an examination of what changes, if any, have occurred in local emergency management agencies (LEMAs) since the Disaster Research Center (DRC) systematically studied such groups about 15 years ago. Current data was drawn from field studies of how sixteen LEMAs acted in

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

emergency (almost all disaster-like) situations. When compared with what was observed in the earlier study the present-day research found that: (1) there is still considerable variation in the overall structure and functioning of LEMAs in American communities; (2) the organizational changes which have occurred are most noticeable in preparedness and planning activities; and, (3) there has been relatively little change in the response patterns of LEMAs in actual threats or disasters--most of the same issues and problems appear at the present time as existed in the past. The continuity in variety of LEMAs seems partly accounted for by the "localism" of American institutions. The clearly obvious changes in the planning and preparedness stance of LEMAs perhaps stimulated by national efforts in that direction, have nonetheless not produced corresponding qualitative improvements. The frequent failure of the preparedness to translate into better response can also be attributed to a variety of historical, experiential, contingent, situational, structural and other factors which create a problem plagued disaster setting for LEMAs. Some implications of these observations and impressions are noted, and recommendations are made as to a series of questions which ought to be specifically addressed in any future work on LEMAs.

THE FUNCTIONING OF THE LOCAL EMERGENCY SERVICES OFFICES IN DISASTERS

Final Report

for

The Federal Emergency Management Agency
Washington, D.C. 20472

Cooperative Agreement EMW-K-0881
FEMA Work Unit 2651F

by

E. L. Quarantelli
Disaster Research Center

October 1985

TABLE OF CONTENT

INTRODUCTION..... 1

BACKGROUND..... 3

SIMILARITIES AND DIFFERENCES..... 8

STRUCTURE AND FUNCTIONING OF LEMAs..... 9

PLANNING AND PREPAREDNESS OF LEMAs.....18

RESPONSE PATTERNS OF LEAMs.....22

ACCOUNTING FOR THE OBSERVATIONS AND SOME IMPLICATIONS.....27

A. The Variety of LEMAs.....29

B. The Changes in the Disaster Preparedness of LEMAs.....36

C. The Problems in the Emergency Responses of LEMAs.....44

APPENDIX..... 56

REFERENCES..... 57

INTRODUCTION

In this report we present our initial summary observations on the first of a two year study done under the Cooperative Agreement EMW-K-0881 with the Federal Emergency Management Agency (FEMA), of the role and functioning of the local disaster emergency agency in community disasters. In the pages which follow, we first indicate the background of the current study, noting that it is partly viewed as an examination of what changes, if any, have occurred in local emergency offices since the Disaster Research Center (DRC) systematically studied such organizations about 15 years ago (see the reports by Anderson, 1969, on Local Civil Defense in Natural Disaster: From Office to Organization, and, Dynes and Quarantelli, 1977, The Role of Local Civil Defense in Disaster Planning.) Some of the key findings of this earlier work are partially summarized. The similarities and differences between the local disaster agencies in the two time periods are then briefly noted. After this comparative description and analysis, we suggest some tentative explanations of our findings at this stage of the research.

It is necessary to make a comment on the terminology we will employ. Throughout this report, we will use the term "local emergency management agency" when talking of the current study. However, as DRC also found in its studies of more than a decade ago, several other kinds of names continue to be used at the local city-county level--civil defense office, disaster services, emergency services, etc. Nonetheless, while the use of different names reflects some aspect of organizational and community reality and is therefore not totally insignificant, for ease of exposition in this report, we will consistently use only the label, local emergency management agency

(LEMA), with reference to present day groups. Therefore, more should not be read into the designation than an editorial device, for as will be indicated later, one of our findings is that many such agencies do very little actual managing of community emergencies.

The observations reported are drawn primarily from two sets of field data. The first set comes from the field studies conducted during the duration of the cooperative agreement (September, 1983 through December, 1984). In that time period we undertook intensive research on six LEMAs operating in the emergency phase of actual disasters; we also did a mostly pre-impact survey of all such organizations in a middle sized metropolitan area which near the end of our field work underwent a moderate size emergency. (See Appendix One for a listing.

To enlarge our data base, we reanalyzed some of the field material we obtained in the preceeding study that set the stage for the current work, namely our research on "Emergent Behavior at the Emergency Time Periods of Disasters." While that work had a somewhat different focus than our current concern, we did have to look in detail at the operations of the local emergency management agencies in the situations studied. Therefore, it was possible for us to combine some of the data from the preceding study (done in September, 1982 through August, 1983) with this one. This allowed us to add another eight agencies to our sample (see Appendix One for a listing; all of that study is summarized in Quarantelli, 1984). In addition, we included data from a separate chemical disaster threat study we did for FEMA in Taft, Louisiana in 1982 (see Quarantelli, Phillips and Hutchinson, 1983). Some information was also obtained about LEMAs in several dozen other communities, where DRC carried out telephone surveys among affected emergency organizations,

to see if the situation warranted a DRC field study. (See Appendix One for a listing).

The term "sample" in a strictly statistical sense is somewhat of a misnomer since the groups we studied were not randomly chosen in any way. However, all the LEMAs we studied were in communities in which emergencies and disasters of varying scope occurred during the period of our study. As such, their behavior or lack of it was part of real situations, not hypothetical ones. What we report is how sixteen local agencies did act in emergency (almost all disaster-like) situations. If there is any systematic bias in our field work it is in our exclusion of local agencies with only part-time personnel (for example, DRC after looking into the situation, decided not to undertake field studies in the tornadoes in late March 1984 in North and South Carolina because there was only one LEMA--manned on a part-time basis--in the eight towns and villages that the Center evaluated as field research possibilities). As such, the least prepared and least capable-of-responding LEMAs are almost certainly not part of our sample. So while some caution ought to be exercised in drawing sweeping generalizations about all LEMAs in the United States from our study, there is no reason to think that our observations are not generally valid for the great majority of typical LEMAs (thought of as a group with some full time members).

BACKGROUND

In 1974 the Disaster Research Center (DRC), under a contract with the Defense Civil Preparedness Agency (DCPA), conducted an in-depth field study in twelve American communities in an effort to ascertain the conditions or factors associated with variations in the tasks, saliency and legitimacy of local civil defense organizations around the United States (Dynes and

Quarantelli, 1977). All of the cities were at risk, according to geophysical or meteorological scientific data, to at least two major natural disaster threats and half had undergone a major disaster in the last decade. Data were obtained from over 300 community and emergency organization officials by way of a disaster probability rating scale, two open-ended interview guides, and a general documentary/archival checklist.

The following were the major findings we reported about local civil defense offices in the late 1960s and early 1970s (the term civil defense was most current at the time of that earlier study and thus the one we will use to report these earlier findings). While overall disaster planning by civil defense tended to be differentiated, segmented, isolated, cyclical and spasmodic, planning had broadened in the decade to include a wider range of disaster agents, a lesser focus on nuclear attack, more concern with local community viability and increasing involvement of a greater number of organizations in community disaster plans. In almost all communities there were multiple layers of planning with little consensus on disaster tasks, on organizational responsibility and on the scope of disaster planning, as well as confusion concerning the role of civil defense in such planning. Local civil defense directors not only differed in following a professional or a political career path, but also manifested a variety of behavioral styles in carrying out their roles.

The interests, structures and functions of local civil defense agencies tended to be viewed ambiguously by the general public, community influentials and organizational officials. Civil defense groups had also evolved in two different ways -- some following a traditional path with an emphasis on nuclear hazards and others concerned with a number of different hazards. High saliency seemed to be related to extensive horizontal

relationships, broad scope of tasks and multiple hazard concerns.

A number of factors undercut the legitimacy of civil defense groups. These included changes in organizational purpose, perceived need for services, decline in resources, poor performance and changing saliency of the military model.[1] Local offices which had legitimacy tended to be in localities where there were persistent threats, where civil defense was within the local governmental structure, where extensive relationships were maintained with other organizations, and where the output or product of the civil defense unit was seen as useful to other community groups.

Conditions which were most likely to be productive of successful local civil defense involvement in disaster planning were where the local office developed experience in handling a variety of community emergencies, where municipal government provided a structure which accepted and legitimized the civil defense function, where the local civil defense director had the ability to generate significant pre-disaster relationships among those organizations which did become involved in emergency activities, and where emergency-relevant resources, such as EOCs, were provided and where the knowledge of their availability was widespread throughout the community.

While the study just summarized focused primarily on planning and preparedness activities, another DRC study of a few years earlier dealt with the actual activities of local civil defense offices in natural community disasters. The findings of that earlier study were not inconsistent with the later observations which we have just summarized. As was stated in the final report on the work:

> civil defense offices tend to be hampered by undue uncertainty with regard to many of their important organizational dimensions such as their authority relations, task domains, internal structures, and public support...these sources of uncertainty generate operational difficulties for civil defense offices during disasters (Anderson, 1969:1).

However, there was an additional source of difficulties and problems besides the carry-over of pre-impact aspects into the trans or impact time period; this had to do with the fact that

> in most disasters of wide scope and intensity, local civil defense assumes operational responsibility for certain disaster tasks. In order to cope with these increased responsibilities, it generally moves from office to organization (Anderson, 1969:5).

In effect:

> the social unit shifts from the status of an office in its pre-emergency existance to an organization in its emergency operations (Anderson, 1969:4).

It was however, noted that there were other emergency situations, where "civil defense remains an office when the local director acts primarily as 'chief of staff' for the mayor and other muncipial authorities" (Anderson, 1969:5). In terms of the standard typology used by DRC, the local civil defense sometimes was an expanding organization, sometimes it remained an existing office during a community disaster.

This earlier study also noted that local civil defense offices had difficulties in mobilizing for disaster activities because usually they did not have the resources to monitor their environment around the clock for emergency situations. However, they mobilized better in emergencies involving progressive disaster agents then they did for instantaneous disaster agents, and in both cases best when the involved area had a disaster subculture (that is, a social climate which anticipated and led to individual and organizational preparation for the recurrency of experienced disasters).[2]

We also observed in this study of nearly two decades ago that in major disasters, civil defense organizations expanded their structures at the height of the emergency to include regular and emergency volunteers, and personnel from other government departments and agencies. One almost

inevitable consequence was serious problems of internal control and authority. The expanded personnel of the organization were typically used for operational tasks (e.g. search and rescue). However, "while civil defense organizations become involved in disaster field activities, the bulk of their activity is of a supportive and administrative nature" (Anderson, 1969:36). That is "civil defense organizations...provide the public with feedback as to what disaster-activated groups and organizations are doing for its welfare...and...they procure needed resources for the general public as well as the emergency-involved social units" (Anderson, 1969:42). Although "coordination of response" was frequently stated to be a desired task, most activities actually undertaken primarily involved information gathering and dissemination and locating and obtaining of resources, usually material. Finally, this study reported that:

> civil defense organizations often experience some difficulty in terms of their authority and jurisdiction during disasters

because

> their disaster authority is often unclear or is not acknowledged as legitimate by other disaster-activated social units (Anderson, 1969:52)

In the last several pages we have sketched the picture of the local emergency group that we drew from our research of over a decade ago. How valid is that picture today? In the ensuing years there have been a number of initiatives and new policy directives from the federal level, along with the provision of inducements and training opportunities, aimed at modifying and reorienting emergency planning and operational response at the local community level. The current FEMA emphasis on an integrated emergency management system is but the last of a series of efforts from the top down to bring about changes in the entity at the local governmental

level most responsible for preparing for and responding to threats of and actual community disasters.

In addition, in the research we have just summarized, we had found that there were some internal dynamics operating at the community level making for certain trends and tendencies in local civil defense activities. We had noted and projected that some of these changes were likely to continue or even accelerate in the future.

Given the planned efforts at change and the unintended trends, some alterations in the picture of local emergency groups we obtained more than a decade ago might reasonably be anticipated in a study at the present time. Or stated in another way, how different are the LEMAs that DRC recently studied from the civil defense offices of 15-20 years ago? Keeping in mind that even in a loose sense we did not do a longitudinal study but have at best a cross-sectional snapshot at two different points in time, we indicate the somewhat complex answer in the next section of the report.

SIMILARITIES AND DIFFERENCES

Were there changes? Along some lines, it would be very easy to take sentences and paragraphs out of the two earlier DRC reports, and to indicate that those statements are equally and totally valid at the present time as they were in the past (e.g., the lack of legitimacy of very many civil defense offices is paralleled by a similar lack of legitimacy of many current LEMAs). On the other hand, it is also not difficult to illustrate considerable change (e.g., very few of the civil defense offices we studied earlier had EOCs; almost all the LEMAs in our more recent research had some facility they called an EOC). Further-

more, if there have been changes, have the changes been significant ones? Are they, for example, making a difference in responses to community disasters? Here too there is no flat yes or no (e.g.,EOCs may very well be available, but if the LEMA has little legitimacy in the community, its EOC may simply not be used by and sometimes is even unknown to other emergency organizations).

Given the indicated kind of complexity, we will organize the rest of our remarks in this section of the report around the following major themes:

1. There is still considerable variation in the overall structure and functioning of LEMAs in American communities, but there also continue to be common elements.

2. The changes that have occurred are most noticeable in the planning and preparedness area, although the quality of what exists is not always of the highest order.

3. There has been relatively little change in the response patterns of LEMAs in actual threats or disasters; most of the same issues and problems appear at the present time that existed in the past.

STRUCTURE AND FUNCTIONING OF LEMAs

There still is considerable variability in the overall structure and functioning of LEMAs. At an anecdotal level it would be possible to give examples at many points along a continuum. We will just provide illustrations of some of the extremes we encountered in our research.

During the course of the study, DRC at one time attempted to contact by telephone one LEMA in a community in a northern state which was first threatened and then impacted by severe flooding. Indirectly learning that the LEMA had several full time staff members and an EOC and other resources, we attempted to phone the agency. Numerous calls in the mornings, afternoons, and evenings, over a several day period, elicited no answer.

When the mayor of the city was contacted by phone, he not only indicated he had taken direct charge of the emergency operations (this was confirmed later by other sources), but that he did not know what if anything at all the local LEMA staff was doing, that he was not at all concerned or interested in them or their activities, and that he was not going to use the LEMA's EOC since he had set up one of his own in city hall. None of the other sources contacted in the area reported any LEMA activity although most indicated a vague awareness of its existence.

In contrast, in a southern city with a flood disaster, the LEMA was not only the first to alert the community to the threat, but played a key role for the full duration of the local governmental response to the emergency. In an almost textbook case fashion of what LEMAs are sometime depicted as "ought to be and do", this agency was not only clearly viewed as viable and legitimate, but its advice and recommendations were heeded by other public officials, and its resources and facilities were used in what was, as a result of much of its prior planning, a rather efficient and effective response to the flood. The professionalism of the LEMA's operations was noted by practically every other organization during the course of the DRC field study of this disaster.

Similar extremes can be found in internal structure and external relations as well as in the functioning just illustrated. Some LEMAs have only a nominal division of labor; others have clear cut separation of roles and responsibilities among their staff members. While complexity of structure is partly a function of size, the latter itself is often an indicator of how well the LEMA has been able to develop itself internally and how well it is accepted externally by other public organizations in the community. Some LEMAs are in almost total organizational isolation;

their physical facility is sometimes located away from other key city/county groups, and in one case we studied, the telephone number was not even listed with that of the other city agencies. On the other hand, some LEMAs are at the center of their cities' organizational structure; these agencies are often physically located right next to the mayor's or city manager's office, and their telephone number is singled out for prominent display in the phone book listing alongside that of only a very few other groups such as the fire and police departments.

In some communities the LEMAs have a place in emergency planning and response that is understood by them and other groups and their position is clear in terms of a community division of labor. In other localities there is almost complete overlap between the nominal and actual task and domain responsibilities of other emergency organizations and LEMAs, so that the latter have no distinctive or clearcut place among the public agencies (the major exception being that LEMAs are almost the only public groups at the local level who might assume a responsibility for wartime emergencies--a point we shall return to later in this report).

The above represent some of the extremes which can be found in the overall structure and functioning of LEMAs. The implication is that there is considerable heterogeneity. How LEMAs are internally structured, what domains and responsibilities they claim in community preparedness, how they relate to and are viewed by other emergency-relevant organizations, what resources they have and mobilize in dangerous threats and impacts in their localities, and what and how they carry out tasks, can and do vary substantially.

However, apart from specifics of preparedness planning and response we will discuss later, there are certain relatively common elements many

of which have persisted from the past. We will note these as well as some changes which have occurred.

For example, LEMAs are overwhelmingly rather small groups. They continue to be, as DRC said in its earlier reports, offices rather than organizations. Specialists are rare in LEMAs because the few staff members--in principle at least--have to be knowledgeable and informed about many things (in a separate study for the National Science Foundation, DRC found many LEMAs very reluctant to get involved in preparing for chemical emergencies because to do so was perceived as requiring them to become informed about very complex and technical matters regarding chemical hazards (see Quarantelli, 1981b). There are almost no hierarchical levels, except in the very largest of LEMAs, making for easier internal communication and clearer and greater accountability.

In principle, many LEMAs claim, as their direct domains and responsibilities, the full range of non-conflictive dangerous threats and impacts in their communities (thus unlike in the DRC earlier studies, almost none of the LEMAs studied evidenced much preparedness interest in conflict type emergencies such as civil disturbances, riots, or terrorist attacks). However, in actual fact, planning for and sometimes even response to certain emergencies are typically left to other kinds of organizations: fires to such traditional organizations as fire departments; diffuse and often even acute chemical hazards to chemical and transportation companies; particular kinds of health problems such as mass food poisoning to the medical sectors; etc. At the local level, comprehensive disaster planning in practice tends to exclude certain kinds of community emergencies.

In addition, as is generally known and was true of the past also, LEMAs are following one of two different paths with respect to planning for wartime (essentially nuclear war) emergencies. In a number of localities, responsibility for nuclear war planning --and this is the language typically used rather than nuclear civil protection planning-- is only superficially and nominally accepted (we were told this was sometime done only to continue to meet requirements for matching federal funds); in a few communities there is overt and outright refusal to undertake any nuclear war civil protection planning, an almost unheard of position in our earlier studies. Only some of the LEMAs we studied took seriously and assigned high priority to wartime possibilities; only a handful of them had given any real attention to crisis relocation issues. It is the rare LEMA which has a primarily civil defense or wartime orientation, but there appear to be such groups from what we learned in phone calls exploring whether DRC should undertake field studies in certain localities. Finally, although our studies of fifteen years ago found that even at that time, there were some local civil defense offices which were not undertaking any serious wartime planning, the proportion of LEMAs with only a natural/technological disaster orientation in practice (as over against nominal appearances) seems to have risen markedly.

One of the areas where we appear to find the greatest difference between the earlier findings of DRC and our more recent study is with regard to the resources which LEMAs have available. We found that the typical LEMA currently has a fair amount of material and nonmaterial resources, whether that availability be evaluated in relative (as compared with the past) or in absolute terms. In only one of the situations recently studied by DRC did

the LEMA fail to have an EOC (as a minimum this usually consists of a designated room with multiple telephones and other communication equipment, maps and display charts, desks, etc). Often it is possible to activate a community warning system from the EOC, usually by sirens. In practically all cases, LEMAs have some kind of disaster plan, which was not generally true more than a decade ago. However, as we shall discuss later under preparedness planning, this kind of quantitative presence should in no way be taken as indicative of the quality of what is involved. The plans focus largely on the emergency response period of disasters. There is relatively less planning for the preparedness phase of disasters, but almost no LEMA pays attention to disaster mitigation issues or recovery problems. In the situations we looked at, in only about half the cases had there been in the last several years anything that even remotely could be called an exercise, simulation or testing of the plan. In some instances the plan had never been used in training or actual disasters, but any use of any kind is a change compared with the past. In the majority of cases, plans were not updated regularly; a few had remained unaltered for years.

On the other hand, a substantial number of LEMAs did seem to know either within or outside the community whom they could contact during an emergency for additional equipment or other resources. A relatively recent change also is the frequent development of informal networking links which help in locating experts, specialized equipment, large quantities of stored supplies, etc. Horizontal contacts are far more prevalent than vertical ones (for example, although there are notable exceptions, many LEMAs have little meaningful interaction with and knowledge about state level emergency agencies). However, interestingly, LEMAs seem to have fewer contacts with voluntary organizations in their communities than did the civil defense offices of the past; perhaps this is because the latter groups tended to plan for the use of volunteers in local emergencies more than do the former groups.

There are widely differing patterns of relationships in different communities between LEMAs and the local mass media and the public utilities.

At an impressionistic level, the staff members of present day LEMAs seem better educated, more motivated and interested, and generally exhibit a more professional attitude than did the local civil defense personnel of the past. There are far fewer former military personnel on the staffs using the positions as post-military retirement jobs. A number of the younger LEMA staff members in particular view the work as a career, something to which they are going to be doing the rest of their lives. Also, as in the past, the directors of the agencies manifest a wide variety of behavioral styles in carrying out their role. Although use of work-related research results, training opportunities, educational material, etc. is very uneven and far from universal, it nonetheless is far more prevalent among agency personnel than in the past.

However, despite the existence of the indicated resources and more professional personnel, LEMAs continue to be uncertainly viewed by the general public and community officials. Other emergency organizations and important public officials in many of the communities we studied often only had the vaguest of images about their LEMA's structure and functioning. There usually was an awareness of the existence of the agency, but even this awareness drops substantially below the highest echelon officials. Many officials could not say what their LEMA did, other than in the words of one mayor interviewed by DRC who said of his county/city agency which actually had a natural disaster emphasis, that "they have something to do with civil defense, I think". When pressed non-knowledgeable community officials typically attribute responsibility for wartime emergencies to LEMAs. This is perhaps a carryover from their civil defense orientation of the past, or perhaps a spillover from

the growing public controversy over crisis relocation planning for nuclear attack. Specific knowledge, factually correct or not, about what LEMAs do is in very short supply in many localities around the United States.

Saliency also tends to be equally low. Although more than rare exceptions can be found, many officials in the public and private sectors do not think of their LEMAs when they think of non-wartime community emergency planning, responsibilities, tasks or domains. DRC has been in localities where public and/or private sector organizations instituting some kind of disaster planning totally ignored or perhaps were not even aware of the local agency. It is also clear that it is not always a group which comes to mind when a chief executive of a community starts to initiate a disaster response. In one case studied by DRC, the mayor, in a somewhat ad hoc manner, activated many city agencies, set up an EOC at police headquarters, and essentially put the city on an emergency basis. But the county-city LEMA was never notified or informed about anything, its EOC was not used, and it had to obtain most of its information about what was going on by watching local television programs. From what could be ascertained, it was not that the mayor consciously ignored the LEMA: it apparently never occurred to him, his assistants, and other high city and emergency organization officials that the LEMA and its resources were available for immediate use. In general, when non-LEMA officials involved in emergency planning and response are asked to name in an open-ended question who has the responsibility for different kinds of disaster tasks, the LEMA name is not volunteered very often.

Paralleling the lack of saliency for most LEMAs is a lack of legitimacy, a pervasive problem which DRC noted existed for local civil defense offices in the late 1960s and early 1970s. Legitimacy of course is not legality; LEMAs all have the latter, they generally lack the former. Legitimacy implies acceptance by the general public and community organizations that a specific

group is a valid institutional form for carrying out a particular course of action. When issues of jurisdiction, power, and authority are raised in the course of interactions and relationships among groups, these issues are usually resolved on the basis of the legitimacy of particular organizations. LEMAs generally have little legitimacy and are certainly not going to acquire it during the height of an emergency. Our study found that there is fair agreement from within LEMAs, and on the part of other community groups, that LEMAs have little legitimacy.

Disasters are high impact but very low probability events. This fact tends not to make for legitimacy for an organization. Apart from the fact, two recent happenings have further contributed to the undermining of the legitimacy of present day LEMAs. They are the dispute over planning for nuclear war, and the greater competition for municipal funds at a time of shrinking finances. In fact, some agency directors are so concerned that strong community disagreement over the nuclear war issue will additionally erode whatever legitimacy their LEMAs have. As a result they are backing even further away from undertaking crisis relocation planning or anything that could be interpreted as supportive of such planning.

However, the general lack of knowledge most communities have about their LEMAs, the low saliency of LEMAs, and the weak legitimacy of most LEMAs, have not totally paralyzed their involvement in disaster planning and response. LEMAs do exist and act despite all the indicated and implied difficulties and problems, and as far as we can judge are more viable as a whole than the local civil defense offices of a decade ago. As such, this change requires some explanation. We will discuss that matter after some more specific discussions about the disaster pre-

paredness planning of LEMAs and their response patterns in threats or actual disasters.

PLANNING AND PREPAREDNESS OF LEMAs

Despite their usual name as management agencies, the typical LEMA is far more of a planning preparedness office than it is a management group. This is so in at least two senses. First, even LEMAs in disaster prone localities have relatively few occasions where they could potentially manage anything other than themselves. The typical LEMA is almost all the time in a state of waiting for something to happen. Even the most active of LEMAs spends only a very small fraction of its time in managing activities in a training exercise, a threat, or an actual disaster.

Second, such changes as have occurred in civil defense offices as they became LEMAs in the last decade or so. have primarily been with respect to preparedness measures. There has been less change in the response pattern at times of disasters, at least in most respects, as we shall discuss in the next section of this report. While case descriptions of the operations of LEMAs and civil defense offices in disasters written in the two time periods are quite similar, it is easy to note differences in parallel accounts of the planning activities of the two groups. Both quantitatively and qualitatively there have been changes in the last decades. The typical LEMA undertakes more planning than the local civil defense office of the past, and at least in relative terms, the planning can probably be said to be better in the sense of being more systematic and realistic. However, as we shall shortly note, this is only relative: for the quality of the planning, while better than in the past and better than response patterns, still leaves much to be desired.

Although a few LEMAs have an almost completely nuclear war orientation, the vast majority attempt to plan for a great number of different natural and technological disaster agents. However, there is considerable variation in the latter pattern. Some LEMAs prepare generally for any kind of disaster; they pay only secondary attention to specific planning for a particular type of disaster such as an earthquake or a chemical spill. They engage, in other words, in generic disaster planning. Still other LEMAs undertake specific planning for a range of specific disaster agents. They sometimes are so specific as to the disaster agent, such as a tornado or an explosion, that they do not seem to recognize common elements in disaster preparedness for all kinds of emergencies. In still other cases, the planning has changed piecemeal through the years so that the current planning is a residue of different historical times and goals. The result is sometimes a bewildering mixture of generic and agent specific planning, of natural and technological disaster and of wartime planning, and planning of different processes and structures relevant to disasters.

However, as partly noted earlier, many LEMAs do engage in planning for nuclear power plant accidents, something almost totally ignored before. In fact, there has been an uneven and erratic tendency toward planning for a wide variety of potential technological disasters, and some LEMAs have done systematic hazard risk assessments of their communities. Both kinds of planning were very rare a decade or so ago.

Most LEMAs actually engage less in planning than in the production of disaster plans. As we have discussed elsewhere (Quarantelli, 1981$_a$) the tendency to emphasize an end product, by way of a written plan, works against good disaster planning, but this is nonetheless the prevailing activity. The disaster plans produced tend to be detailed, bulky in volume, and are sometimes surprisingly inaccessible. On the other hand,

a minority although growing numbers of LEMAs do seem to be moving in the direction of thinking of disaster planning as a process. Some LEMAs are very active in holding or being represented at emergency relevant meetings, at forging ties or links with other disaster-relevant organizations, at taking the initiative to obtain mass media exposure and otherwise undertake preparedness measures apart from writing formal plans.

Some LEMAs do a good job in integrating their disaster planning with that of other organizations in the community and the planning of nearby communities. However, most do not. There are almost always gaps or inconsistencies between the LEMA planning and the disaster planning of elements of the private sector in the community. This shows up often in the public and private sector planning for acute chemical emergencies, and usually in the LEMA and the hospital-medical sector planning for large mass casualty situations. In some metropolitan areas, the LEMA planning at the city/county level is not integrated or meshed with the planning of other LEMAs in smaller jurisdictions within the larger LEMA area, and of LEMAs in peripheral or suburban communities. The planning for airport disasters, involving as it often does multiple and overlapping jurisdictions as well as different governmental layers, frequently leaves unclear which of the LEMAs involved would do what. In some localities, there are three different clusters of overall but unintegrated community planning. There is a cluster of organizations around the LEMA which is usually at the county level; another around a city agency, usually the police department; and still another around the medical health institutions.

On the other hand, in some communities the LEMA planning especially for evacuation around nuclear plants has led to better overall integrated disaster planning by all of the involved organizations in the affected area.

Also, while experience of disaster per se does not necessarily and in fact seldom leads to improved disaster planning in a community (this being a consistent finding in other DRC studies), those LEMAs in localities heavily prone to natural disasters, on the average, have better and more integrated preparedness planning than those not in such areas. The reason of course is that the former communities tend to have a disaster subculture and that encourages overall emergency preparedness planning (Wenger, 1978).

As indicated in the last few pages, the quality of preparedness planning is not always of the highest order if evaluated against absolute or ideal standards. However, there is little doubt that by almost any criteria which could be used, LEMAs are better prepared for non-wartime community emergencies than the civil defense offices of the past. As to wartime situations, LEMAs as a whole are probably less well directly prepared, since in many communities LEMA attention to nuclear war preparedness planning is ignored, downplayed, or even given very low priority. . Indirectly, of course, to the extent that there are common elements between natural disasters, technological disasters, and nuclear war situations then they should be relatively better prepared for wartime emergencies, because LEMAs are better prepared than in the past for peacetime emergencies.

The latter remain hypothetical possibilities, but the threat or impact of natural and technological emergencies and disasters are realities for many American communities. Therefore, we may ask, does the better preparedness planning of LEMAs make a difference in their response patterns? Presumably the planning is intended to bring about more efficient and effective responses in community emergencies and disasters. The relationship is almost always assumed, but is it actually the case? We now turn to a brief discussion of the response patterns of LEMAs.

RESPONSE PATTERNS OF LEMAs

LEMAs vary considerably in what they do in actual disasters, and situation contingencies affect all response patterns. Nonetheless, there are certain consistent elements which stand out. For one, even in a major disaster, the typical LEMA manages little of anything, if by managing is meant either coordination or control of emergency activities (We shall return to what "managing" might mean at the end of this section of the report.) LEMAs engage primarily in supportive or facilitating activities, particularly providing or obtaining information, and to some extent also supplies or equipment. Finally, although seemingly less so than some of the civil defense offices in the past, LEMAs sometime play a role in certain operational tasks.

Preparedness planning often refers to the "coordinating" responsibility of LEMAs; and when asked, many LEMA staff members also say that "coordination" will be one of their major tasks in disaster operations. However, when reporting their activities in actual disasters, a claim of coordination is less often made. If asserted, it is frequently in the context of saying that the LEMA "helped" in providing coordination, or "assisted" the mayor in coordinating the disaster response, or that LEMA had a role or part in the overall coordinated response at the time of the emergency. Seldom do other emergency agencies in a disaster, however, attribute a "coordination" function to their LEMAs. DRC field studies also found that it was rare for LEMAs to order or to command anything. Sometimes LEMAs did provide advice or made recommendations or offered suggestions but their guidance at best is only selectively and inconsistently followed in disaster situations.

Part of the confusion and lack of agreement about the coordination role of LEMAs has to do with the lack of consensus about the term. "Coordination" as we have written elsewhere (Quarantelli, 1977) seems to mean many different

things to those planning for or responding to a disaster. When officials said to DRC that a LEMA had a major role in "coordinating" the emergency response, the claim was often based on the agency's being involved in the information processing and communication flow in the response pattern.

That LEMAs do obtain, pass on, or provide information in disasters is an easily made observation. In many cases, it is in fact the major activity of the LEMA. In the earlier DRC study of local civil defense offices it was reported that "much of the management function of civil defense organizations during disasters situations has to do with emergency information" (Anderson, 1969:36). This appears to be as true today of LEMAs as it was in the past of the local civil defense units.

LEMAs often do play a major role in the warning process. This may be related to the fact noted earlier that the great majority of LEMAs have an EOC from where the warning system of the community (almost always sirens for the public) can be activated. Not all LEMAs have independent authority to set off sirens to warn of a natural disaster threat, and we have seen cases where their intention to do so was overruled by some high level community official such as a city manager or police chief. Nonetheless, LEMAs often are the first groups to alert other community emergency organizations and the general public that there is a threat to the community (although they seldom are the first organizations in the locality to become aware of the threat). At an impressionistic level, LEMAs seem to take this initiative somewhat more than did the civil defense offices of the past but it is far from a new role for the agency involved.

Furthermore, LEMAs continue as in the past to be more central in the warning for a relatively sudden natural disaster emergency than for a more slowly developing one (such as in riverine floods). In the latter cases,

the LEMA's role in warning often tends to be preeempted by a new emergent group which takes over the monitoring process. However, this is much less likely to occur in localities with disaster subcultures such as in hurricane prone areas.

In our earlier study DRC had reported that:

> Usually after a disaster agent has actually struck an area, the collection and dissemination of emergency information is one of the major tasks of civil defense organizations throughout the entire emergency period. During this period, civil defense headquarters may become a collection point for disaster-relevant data. This is particularly true when the civil defense headquarters becomes the headquarters and nerve center for the majority of the disaster-activated groups and organizations. When this happens, considerable information can be funneled from operational units in the field to their representatives at the disaster headquarters, thus becoming available to civil defense officials. Some groups and organizations in disaster subcultural areas routinely establish such information collection points at civil defense headquarters whenever disaster threatens. (Anderson, 1969: 37-38)

This paragraph, by substituting the word LEMA for civil defense organization, could be left standing as a generally accurate statement for the present time.

This kind of facilitating activity is also undertaken, although not as extensively, with respect to obtaining supplies and equipment. As said earlier, many present day LEMAs have developed good horizontal informal networks in their communities and thus are in a position to locate or indicate where needed items might be found. An exception to this concerns medical supplies, about which the local health institutions are usually far more knowledgeable. On the whole, however, the average LEMA does often play a supportive role in the emergency response by handling much of the communication flow about needed resources.

A particularly complicated matter is the handling of information for the mass media agencies. Almost all LEMAs plan for this matter and disaster

plans often specify that the LEMA will handle it directly or that an information center for the press will be set up in the EOC, etc. The reality in actual disasters is usually far from what was originally planned or intended. For various reasons, the information center is often not set up, is improperly manned, is superseded by other information sources, or is ignored by the press especially if some community officials start to interact directly with journalists. In its studies, DRC found only a few cases where the mass media-LEMA interaction was as planned or visualized in pre-impact thinking, with the difficulities being the same as faced by the civil defense offices in the past.

Actually, the information or communication activity of LEMAs as a whole is plagued, as was that of the civil defense offices, with a number of problems, some of which we will mention. LEMAs can not always obtain information about what is needed from other organizations. The initial feedback they get from the field about casualties, property damages, and matters that need quick attention are frequently delayed and often far from accurate. It is rare for the communication flow to and from the EOC to be easy and smooth (and this has little to do with equipment failure or shortage). Many inquiries from the public can not be answered. Incomplete and unreliable information is sometimes passed on to citizens, officials, organizations, and the community as a whole.

All groups can be sources of problems so our observations do <u>not</u> necessarily imply that all these and other difficulties which could be mentioned are primarily the fault of LEMAs. Some undoubtedly are, but our major point here is a different one. LEMAs usually play a central role in the information flow during emergency responses, but this flow, now as in the past, continues to be a very problematical area. Case studies focused on this matter, written

at the present time, do not read that much differently from similar case studies written 15 or 20 years ago. Exceptions, of course, can be found, and LEMAs do appear to do a better job of locating or obtaining needed resources than was done in the past. However, as a whole the supportive or facilitating roles of LEMAs in the information and communication flow during emergencies are still problem plagued.

Thus, overall we did not find the convergence or linkage between preparedness planning and emergency response which might have been anticipated. As a whole, the current day LEMAs have better quality personnel and have a much better preparedness stance than the civil defense offices we studied some years ago. However, this difference does not seem to have translated generally into a much better response pattern at times of disasters. This evaluative comparison, given the nature of our data, is necessarily based on relatively gross impressions. But when the cases of a decade or so ago and those of the current study are put side by side, the behavioral similarities in response patterns loom far larger than the differences. To state this descriptively, of course, is not to advance a possible explanation, a matter which we shall now attempt to address.

However, before turning to that explanation we should note there are some other field studies by other researchers which have independently reported observations that are consistent with ours. Thus, Caplow and his colleagues in their study of the readiness of 15 local communities for integrated emergency management planning state that there is:

> so much local and regional diversity that it is exceedingly difficult to obtain a panoramic view of the emergency management system as it operates at the grassroots (Caplow, Bahr and Chadwick, 1984:20)

Drabek while focusing on the directors of LEMAs, rather than the organization itself as we did, stresses the extreme diversity and lack of standardization

in the groups his interviees directed (1984:86). The national survey by the International City Management Association, although it made no attempt as we did to compare the current situation with any past data, reported that most present day city and county:

> jurisdictions have an alerting and warning system, a central communication system, a mobile command post, and linkages with voluntary CB and radio organizations ... and that 82 percent of the city and 93 percent of the county respondents said they had a formal emergency management plan (cited in Caplow, Bahr, and Chadwick, 1984:72 from the survey by Hoetmer and Herrera, 1983)

These and other observations are similar to what we noted in previous pages as to the diversity of LEMAs and their relatively good preparedness stance.

No one else, other than DRC, has undertaken series of systematic field studies of LEMAs in disasters. Nonetheless, some specific case studies have been recently reported in the literature on general organizational responses to major community emergencies. In some cases the emergency responses examined had also been studied by DRC (e.g. in the Coalinga earthquake) but a few had not been (e.g. in the Mt. St. Helens volcanic eruption). These case studies are filled with reports of the problems and difficulties that LEMAs and other community emergency organizations had in responding to the disasters. The same kind of problems in information and communication flow we discussed earlier in the disaster responses of the LEMAs are described again and again in these other usually more general reports (see e.g., Sorensen, 1981; Drabek et. al, 1982; Perry and Green, 1983; Scholl and Stratta, 1984; Saarinen and Sells, 1985).

ACCOUNTING FOR THE OBSERVATIONS AND SOME IMPLICATIONS

Cutting across the details of our observations, as said earlier, are three major themes. When present day LEMAs are compared with the civil defense

offices of 15 years ago, they show continuties along two lines and a difference in one line. In terms of continuity, LEMAs still continue to show considerable variability in structure and functioning. Their response patterns at times of disasters still manifest the same kinds of problems as were observed in earlier studies (and LEMAs still continue to do little managing). On the other hand, there is one rather noticeable difference and it is that the disaster preparedness status of LEMAs is much better than it once was.

We shall try to suggest some of what might be involved in these matters. It should be noted that the DRC studies of 15 years ago and the first phases of the current study focused primarily on ascertaining the characteristics of LEMAs and their preparedness stance and response in disasters. The 4C model traditionally used by DRC has separate research foci on the characteristics, the conditions, the careers, and the consequences of the social unit or process being studied (see, e.g., Quarantelli, 1981b). But both earlier and most recent DRC studies on LEMAs give primary attention to the depiction of characteristics and only give secondary attention to the analysis of conditions. Nonetheless, enough has been observed to allow us to suggest some possible explanatory principles that might be examined more systematically in future studies. We shall also note a few puzzling and unresolved aspects about the tentative explanations we offer. Interspersed in these discussions will be some possible implications for policy and planning in the general senses of the terms.

We shall discuss these matters in the following order. First, we shall discuss our observations about the variety of LEMAs, particularly noting that they appear to be more heterogeneous than other emergency relevant organizations. Next, we will look at the disaster preparedness stance of LEMAs. We shall note that while relative to the past a much better

situation exists, in absolute terms the preparations for community crises are uneven and not that good. We will conclude with a consideration of why the emergency time responses of LEMAs are, as they were in the past, problem plagued and discuss several possiblities of why this is the case and why the better preparedness stances of LEMAs do not translate as a whole into better response patterns.

A. The Varieties of LEMAs

The continuing considerable variation we see in LEMA structures and functions is probably primarily accounted for by the fact that in American society the first line of responsibility for public protection against emergencies rests at the local community level. This position is supported by law, policy, tradition and expectation, and is almost insured by a relatively decentralized governmental structure compared with what exists in many other nation states. To the extent that as Drabek (1985) phrases it "localism" is operative, the local emergency agency will reflect local conditions and there will be an absence of standardization and relative heterogeneity in what exits.

If this is a correct appraisal of the situation, several important implications follow. For one, there is an implication as to the possibility of bringing about certain major organizational changes in LEMAs. It would seem that not all organizational change is equally promotable since basic societal changes would be needed to bring about certain structural changes in LEMAs. The decentralized nature of the governmental structure and an emphasis on local responsibility are fundamental features of American society. Proposed or promoted changes which are at variance directly or indirectly with such features have almost no chance of occurring. Fundamental societal cnanges would have

to take place before a high degree of standardization and homogenization of LEMAs could occur.

Apart from the difficulty of altering the situation, the lack of standardization of LEMAs is not necessarily bad or dysfunctional. It is not obvious at the local level that the heterogeneous nature of LEMAs is a negative matter. It may very well be, but there is little evidence, and a case could be made for the opposite. LEMAs that are not congruent with their social setting could hardly be effective in disaster planning or response. Even if standardization could be imposed in some way, the end result would be an artifical social entity. As another researcher has also said:

> structural standardization should not be equated with quality. Regional, state, local community differences preclude a singular design. Effectiveness in performance, legitimacy, and public acceptance are the desired outcomes, not structural standardization (Drabek 1985a:8)

On the other hand, it is probable that the wide variety of LEMAs does make it more difficult, among other things, to communicate with them, to develop policies and procedures which will apply to the range of them, to develop informational and educational programs all can use, etc. However, what may be more convenient at one level of the social structure is not necessarily functional at another level. Thus, while diversity is not necessarily or always bad at the local community level, it may make appropriate training, planning, coordination and response at higher governmental levels more complex and difficult.

LEMAs are not only diverse but they appear to be among the most heterogeneous of all emergency oriented or related community organizations. Neither our earlier or current study had a research goal of systematically comparing the homogeneity and heterogenetiy of community emergency groups. But DRC studies

done for other purposes allow us to suggest that LEMAs as a whole are more heterogeneous in structure and function than police and fire departments, Red Cross chapters and Salvation Army units, and electronic mass media stations and the public utilities (see, Kennedy, 1969; Warheit, 1970; Adams, 1970; Ross, 1970; Kueneman and Wright, 1975; Brouillette, 1970).

Perhaps a clue to what is involved in the diversity of LEMAs is provided by DRC studies of the structure and functioning of hospitals in disaster planning and response (see Quarantelli, 1983). While we can not say hospitals as a whole are more diverse than LEMAs, they do manifest generally more heterogeneity than the other community oriented or related organizations we listed above. The variation in hospitals is partly related to the different missions and goals they can have and the people they want to service. For example, Tierney (1985) in a recent analysis noted some of the important consequences in emergency medical preparedness and response in disasters. This was a result of existence of high-quality and elite hospitals with teaching and research functions alongside what she calls lower-status hospitals which have less control in selecting patients and which are seen as providing different services for a different set of users. As we tried to indicate earlier there are rather different conceptions of the missions and goals of LEMAs, and even regarding what emergency services ought to be their responsibility (e.g. the DRC study of acute chemical disasters found that the typical LEMA was reluctant to get involved in planning for chemical emergencies, seeing that as more of a responsibility for the transporters and chemical producers and users, see Quarantelli, 1981b).

The statement that LEMAs are more heterogeneous than other emergency organizations is a descriptive generalization. However, to assert that there is a relationship between structural/functional characteristics and consensus

or agreement on organizational goals and missions is primarily advancing a hypothesis for future testing. There obviously can be other explanations than the socio-cultural one we have just ventured. For example, Caplow and his colleagues (1985) attribute great importance to disaster experience in influencing disaster preparedness. However, earlier DRC studies which specifically focused on the collective stress history of organizations found it to be a significant variable in creating organizational change in the case of civil disturbances and riots, but seldom in the instance of natural and technological disasters (see, e.g. Adams, Stallings and Vargo, 1970; Weller, 1973). In Drabek's current research, although primarily focusing on relatively successful LEMA directors rather than LEMA organizations as such, argues that the personal qualities of directors are an important differentiating factor. Thus, at the present time there seems to be considerable agreement about the diversity of LEMAs and their personnel, but only the start of an understanding of the factors involved.

Apart from explaining the phenomena, there is also the important question in what way this variation in LEMAs matters for planning and other activities. One possible problem is suggested by the paraphrased remarks of many LEMA officials in interviews, namely that much of the FEMA training and educational material that they get exposed to in one way or another is "not relevant or useable in my agency." The great range of LEMAs make it difficult for such material to be equally applicable in all LEMAs (although as we shall note later, even unuseable educational or training material can have an indirect effect). In more general terms, state and federal agencies would find it easier to interact with relatively homogeneous LEMAs than the heterogeneous range that actually exists. The situation is compounded by the fact that the higher level organizations have little

direct control although they can and do exercise indirect influences on the lower level entities, the LEMAs. Perhaps clues to improving the nature of the interactions and attaining greater homogeneity might be obtained from a systematic examination of the American National Red Cross where the national level and regional offices also have only a few limited direct controls over the local chapters. While chapters do vary somewhat, there is relative homogeneity in their structure and functioning for disaster planning and response. A long time ago DRC characterized local civil defense offices, Red Cross chapters, and Salvation Army units as quite similar types of "expanding" organizations in community disasters, but that work and its implication for emergency planning has never been followed through by anyone. (See Dynes, 1968)

Apart from the effects of the heterogenity of LEMAs for vertical organizational relationships there also may be certain consequences for horizontal relationships. That is, it seems a viable hypothesis to suggest that certain types of structural/functional arrangements of LEMAs might make it easier for LEMAs to interact with other local community emergency organizations. There is, for example,some impressionistic data from our study that LEMAs that take public initiatives and/or are publicly salient (e.g. in undertaking hazard analyses or in taking the lead in disaster exercises), tend to be viewed as more legitimate by the other local agencies involved in disaster planning than those LEMAs who do not do so. At best we would venture this only as a tentative hypothesis,especially since it is at variance with the low-profile and reactive stance sometimes advocated by some LEMA staff personnel. As one such official we interviewed said "you don't get far in this community by making waves or being too far out

front. You've got to wait for things to develop and then by walking softly you might get something done." Whether to assume a reactive or proactive organizational style certainly is an important practical issue for LEMAs, but to suggest more than the hypothesis that the latter style may be more effective would go beyond our present data knowledge.

At this stage, it no longer seems necessary to document further the diversity per se of LEMAs. However, there are at least three related matters which need substantial examination.

1. Is it possible to typologize the diverse LEMAs?

DRC did venture a fourfold typology of civil defense offices in its 1977 study by cross classifying the office's scope of and extensiveness of disaster planning (Dynes and Quarantelli: 24). However, that typology only partly addressed the issue and in some respects is historically outdated. There could be some value in attempting to categorize LEMAs along two different axes -- one in terms of structural differentiation, the other in terms of functional activities (e.g. on what kind of relationships LEMAs have to the mayor or city manager's office, and whether they take an agent specific or generic approach to disaster planning -- these being two dimensions on which there is much diversity). Less important than the specifics which should be derived from systematic studies, is the general principle that it is time to go beyond the now obvious observation that LEMAs are heterogeneous.

Emergent citizen groups concerned with disasters are even more diverse than LEMAs, but careful examination found that most could be typologized as either being internally, membership, past disaster and consensus oriented

groups, or externally, community, future disaster and conflict oriented groups. To the extent a particular group was one or the other type, DRC could significantly predict the conditions which led to its emergence, the other characteristics it manifested, and the effects it could have on overall community disaster planning (see Quarantelli, 1985a). A successful effort to typologize LEMAs might have a similar payoff.

2. What are the consequences for disaster planning and emergency management of the different characteristics of LEMAs?

Questions could continue to be asked about the general consequences of the diversity of LEMAs. We have alluded to a few possibilities and advanced the notion that diversity is not necessarily dysfunctional. This kind of macro level approach could be continued, and it could by hypothesized from indications in our current data on LEMAs, for instance, that diversity is more stressful for vertical rather than horizontal interorganizational relationships. However, a far more specific and micro level approach might be considerably more fruitful and useful than continuing the general and macro level approach. Thus, for example, we might want to ask if LEMAs that have a generic orientation to disasters have less functional problems in an emergency response than those that have an agent specific orientation. Or we might hypothesize that LEMAs which undertake public educational campaigns in their communities will not only have greater saliency, but also more legitimacy than those who do not do so. Here again the specifics mentioned are less important that the general need to systematically trace out the multieffects for disaster preparedness and response of the existence of different specific structural and functional characteristics of LEMAs. If a typology of LEMAs could be developed in answer to the first question posed above, the study

and analysis in this second question could be raised from specific structural and functional characteristics to that of the internal and external consequences of the different types of LEMAs.

3. Finally, the most crucial question of all is what is responsible for the diversity of LEMAs?

Although we advanced some possible explanations, this is a very difficult matter to study since we are talking about an instance of stability or no change -- the present day LEMAs appear as diverse as the local civil defense offices of 15 years ago. Perhaps the effort ought not to be to try to account for diversity as such, but to attempt to explain diversity along one line rather than another (e.g., what are the conditions which make for civil defense oriented LEMAs, or what results in LEMAs being independent autonomous agencies or only subunits within larger governmental organizations, such as public safety or police departments?) An attempt to get answers is necessary, for without some tentative answers to this question, relatively little progress can be made on the two previous questions.

B. The changes in the disaster preparedness of LEMAs.

If we take enough of a time perspective we would expect LEMAs like all organizations to eventually show some signs of change. So to say that LEMAs have changed in some respects is not an exceptional statement, except that the changes we are reporting have been significant ones and from an organizational life perspective have occurred over a relatively short period of time of about a decade. So we are not looking at minute changes which are simply the result of very slow organizational evolution. In a few cases, DRC has actually undertaken consecutive field studies in the same

community over periods of time ranging from a few years to over 10 years apart, and in some of these instances there have been remarkably positive transformations in the local civil defense offices which became LEMAs. (We should note that this is not always a one way street -- in a recent field study we found that a civil defense office, which once had an outstanding disaster preparedness stance and which performed well in several major disasters, had become a minor and unimportant subunit within a public safety organization which in the past had been subordinate to it.) Overall, while there were exceptions, the great majority of LEMAs we have studied in the last few years are clearly better prepared for disasters than the local civil defense offices of a decade ago.

The observed changes in the disaster preparations of LEMAs would seem at one level to be fairly easily explained. Thus, it could be argued that FEMA and its predecessor organizations in the last decade had mounted a major effort to bring about better disaster planning at the local level. There has been guidance, advice, training and pressure from the federal level to upgrade and improve LEMAs, and what we see could be termed a success story. Now particularly as viewed from the perspective of LEMAs, the effort spearheaded at the national level has not always been clear and consistent, and appropriate inducements and material supports have not always been provided, but most personnel working in local emergency organizations certainly have in varying degrees been aware of the federal thrust. As a very simple illustration, it is the very rare LEMA that does not abound in literature distributed by or passed on from FEMA and other emergency relevant federal agencies. Thus, it would appear a case could be made that federal effort at upgrading LEMAs has been a success.

However, what has just been said is neither as general nor as obvious as might seem at first glance. Objectives of federal agencies have not always been reached nor have goals always been fully realized. Certainly there has been no across-the-board success whether this be judged in terms of numbers of LEMAs changed or of programs and policies implemented. For example, the attempt at the national level (via OCD, FEMA, etc.) to convince all local emergency offices that they should have a strong civil defense or nuclear war preparedness orientation has in 40 years attained minimal success. In fact, our impressions from past studies is that a civil defense orientation is presently paid even less lip service much less given actual support by LEMAs than it has been at any time in the past. But apart from what in certain instances is open resistance to civil defense by some LEMAs, which could be attributed to larger social forces present in America today, the more general point is that the top down effort to bring about change is best characterized as only attaining some of the intended goals. As is well known, the effort to implement an integrated management system at the local level has not been totally and enthusiastically embraced, and the DRC studies of chemical disasters found many LEMAs reluctant to get involved in preparations for those kinds of emergencies (Quarantelli, 1981b). Thus, if we interpret the changes in disaster preparedness in LEMAs as the result of a top down effort, the outcome has to be classified as only a partial and selective success.

Furthermore, a case can be made that there have been other facilitating or generating factors that could be hypothesized as partly responsible for the improvement over the past in preparedness planning by present day LEMAs. While the range in quality now as in the past is tremendous, LEMA

staff members are on the average younger and better educated, and seem more career and professionally oriented than the personnel of civil defense offices. In several of the LEMAs we studied, the organization was markedly transformed as new personnel, which had entered via civil service examinations, had recently taken over from old appointees who had obtained their jobs as a result of political patronage. While it would be very incorrect to characterize all older personnel as of poorer quality, the newer LEMA staff members on the average are clearly more open to and interested in organizational change, and this probably has been a factor in the recent increasingly better disaster preparedness of LEMAs.

Still other factors could be seen as contributing to the organizational change. It could be argued that there is greater expectation by American citizens that they are entitled to protection from all kinds of hazards, and will hold accountable those officials who do not provide that protection. The recent DRC study of emergent citizen groups did find that the LEMAs were among the very first governmental organizations to which the groups turned when they were, for example, attempting to prevent the establishment of or to get rid of hazardous waste sites in their localities (Quarantelli, 1985a). In some although not all cases the LEMAs did attempt to help the citizen groups and by doing so got informed and involved and prepared for a hazardous kind of situation which they otherwise might not have considered.

Our discussion has illustrated that a case can be made that observed changes in LEMAs could be attributed to the federal effort from the top down, to the high quality internal make up or compositions of LEMAs themselves, or to pressure from the grassroots, for example, from groups of concerned citizens.

This does not exactly leave a very clear picture of the relative importance of the factors at play, and under what conditions each becomes operative. However, there is an implication here that there are a number of factors present which would seem to facilitate improvements in disaster preparedness. In this context, it seems safe to say that there is a more receptive setting for relevant organizational change than was the case in the past. There is a general trend to build upon and there is expectation from a variety of quarters that such planning is a major responsibility for LEMAs.

However, apart from the selective success we have alluded to, it is also necessary to note that our evaluation of change has been in relative terms. That is, we can say that LEMAs have generally changed because we have compared them with the civil defense offices of the past. As already noted, for example, DRC has found practically no LEMAs in its recent field studies which did not have an EOC, a disaster plan, and responsibility of some kind in the natural disaster warning process for the community. All these features certainly were rare in the civil defense offices of 10-15 years ago (while the offices almost always had responsibility for sounding sirens for wartime attack, it was rare for the sirens to be used for warnings of other kinds of dangers -- in fact, in some localities it was prohibited to use the sirens for other than wartime purposes).

But existence of something is one thing, its quality is another. We have already noted that the quality of the disaster preparedness of LEMAs, when judged in more absolute terms, is at best markedly uneven and as a whole not of the highest grade. Most written disaster plans we have obtained from LEMAs, for instance, had not been updated since they were originally written. A number of the EOCs that DRC field teams have actually

entered would clearly not physically lend themselves to an efficient operation in a major disaster. Exercise or testing of the disaster planning still continues to be a rare happening in the typical LEMA. Given these and other illustrations which could be given, it seems appropriate to say that as a whole the disaster preparedness of LEMAs is often of a quite surface nature, although exceptions can be found and far more often than was the case with respect to high quality local civil defense offices in the past.

Caplow and his colleagues in their recent study of 15 communities allude to some of the earlier DRC literature. What they write appears to confirm our more recent observations.

> Although this list of difficulties in coordination of disaster tasks, organizational responsibility, and formal disaster planning is a decade old, our own field observations in the present study suggest that many of these problems have not been resolved. Indeed, some of these issues are inherent in the American style of emergency planning. They cannot be dealt with once and for all and then put aside (1985:61)

Also, as we shall discuss in the next section of this report, the problems in absolute terms that exist in the disaster preparedness of LEMAs may partly account for why the historically relatively better preparedness stance does not seem to translate into better emergency time responses.

At this stage, it would seem necessary going beyond the observation that relative changes have occurred in LEMAs. That now can be taken as given, and an effort should be made to systematically examine two related questions.

1. In what specific areas have changes in disaster preparedness occurred and not occurred?

We have generally noted the selective nature of the changes which have occurred in disaster preparedness. For example, it is our impression

that while almost all LEMAs have established EOCs, only a minority of them have undertaken risk analyses of hazards in their communities, and extremely few LEMAs have moved to working seriously on wartime crisis relocation planning. A mapping out of which changes in disaster preparedness have been instituted would require a national survey (at least a representative sample of LEMAs). But unless something of that nature is done, no systematic picture will be available, and we will continue to have to depend on gross impressions about the kinds of organizational changes which have occurred and the pace at which they occurred. The recent survey of the International City Management Association at best only captures a cross-sectional picture, and gives no indication of the dynamics of change (see Hoetmer, 1983). From some data from our own field studies we would also hypothesize that there may be regional, urban-rural, and community differences, with respect to recognition of technological hazards, which will affect the amount and the nature of changes in the disaster preparedness of LEMAs. While in one sense what is proposed is looking at the past, a major purpose would be to obtain information which will allow projections into the future (e.g., when will all LEMAs have community disaster plans?) and to see what dimensions or areas of disaster planning are lagging (e.g., as we have suggested elsewhere planning by LEMAs for transportation accidents involving dangerous chemicals is very rare, see Quarantelli, 1981b).

2. What is the quality of the changes which have occurred?

As we have mentioned, a number of changes instituted by LEMAs in disaster preparedness have been of relatively poor quality. However, our evaluations, aside from making assumptions about what constitutes good quality independent of actual implementation in a disaster, often depended on gross

impressions (e.g., that an EOC because of its physical location might be flooded during a major flood disaster). It ought to be possible to go beyond such gross evaluations about the quality of the changes in the disaster preparedness which have occurred. Among other things, some changes are certainly more important than others (e.g. we would hypothesize on the basis of some of our field impressions, that some changes that improve the interorganizational relationships of LEMAs are generally more important than the acquisitions of certain kinds of material resources, since the former can often compensate for the absence of the latter, but not vice versa). While the development of a quantitative index of change can only be a long run objective, an effort could be made to develop some general rating scales.

Another possibility, which looks to the future more than the past, is to establish which kinds of LEMAs are more likely to accept or introduce the various high tech innovations which are starting to appear, such as computers, different software programs, and electronic display boards which can be used for disaster planning purposes. Also, as a recent FEMA sponsored teleconference on preparing for hazardous materials showed, only some LEMAs chose to participate; which kinds of LEMAs are more likely to take a part in such conferences? Additionally, there is an assumption that obtaining computers or participating in nation wide teleconferences would contribute to better quality disaster preparedness. This is probably true but possible negative effects of such moves should not be ignored (e.g. dependence on computers for information on where certain resources can be found may lead to failure to develop personal ties with knowledgeable individuals in other

organizations who might be better sources of information in major disasters where the use of certain technology may be difficult or impossible -- a situation which DRC has noted in several chemical disasters it studied, (see Quarantelli, 1981b). Our overall point is that we need to project existing trends in technological innovations and to assess which LEMAs are likely to make such changes, why this would be the case, and what might be the pluses and minuses of the use of the newer technologies for disaster planning.

C. The Problems in the Emergency Responses of LEMAs.

We have noted that generally the emergency responses of LEMAs in disasters is problem plagued. We have made the same kinds of observations in recent and current non-FEMA supported studies which did not have LEMAs as their primary focus of attention (e.g. in studies we did on chemical disasters, delivery of emergency medical services in large mass casualty situations, and the operation of mass media organizations in community crises). Other researchers have also reported the same kinds of problems whether they were making overall general assessments or focusing on a particular dimension or focus (e.g. Drabek and his colleagues in their 1982 report on search and rescue operations in which LEMAs were involved, write about numerous difficulties in communications between involved agencies, disruptive ambiguities about locus of authority and responsibility, conflictive interactions with mass media representatives, delays in locating appropriate resources, etc.). The currently reported problems are not new; they frequently appeared in the responses to disasters by civil defense offices in the past. There are overall exceptions, and certainly there is not an equivalent level of problems in all emergency responses, but the general picture is

that LEMAs as a whole do not perform too well in most disasters.

This poor performance is primarily in what we have called the information and communication flow in the emergency response by LEMAs rather than in management as such. In fact, we have indicated that we see little managing, but that assertion is obviously dependent on what is meant by managing. Thus, if by managing is meant coordination and if by coordination is meant being heavily involved in information flow, then many although far from all LEMAs can be said to be managing disasters. However, if managing means heavy involvement in making decisions, setting policies, establishing priorities, issuing orders, or otherwise directing the flow of the emergency response, then the average LEMA does little managing of emergency responses. For example, LEMAs are frequently participants in evacuations in that they are involved in the information flow about the need and possibility, but they are rarely the key actors in the decision of if and when to evacuate, at least in the disasters studied by DRC. Also, we have noted a similar pattern with respect to warning.

Why the poor performances, especially in the light of our other conclusion that the disaster preparedness of LEMAs is generally much better than it was in the past? A number of explanations might be suggested. One is simply the fact that planning is one thing and implementation is another. Several of the writers in the recent special issue of the Public Administration Review discuss the implementation of emergency management and one concludes "there is evidence of shortcomings in implementation" (Clary, 1985:24). More strongly, Kasperson and Pijawka write that "implementation is a crucial and problem-prone stage of hazard management" (1985:11). Certainly a case can be made that implementation of planning for a variety of reasons is never easy and particular under the stress conditions of an emergency time

period (see Dynes, 1983).

Another factor in poor emergency responses by LEMAs might be that while disaster planning has been undertaken by most current LEMAs, it often has not been very good planning, a point we discussed earlier when we looked at the absolute quality of what was involved rather than the relative improvement over what had existed in the past. If this is the case, even the best of implementation can not improve upon poor planning. We think this is what is partly involved in the generally poor emergency responses of LEMAs. More specifically, our field data suggests three basic ways in which there is poor disaster planning with consequent problems for emergency responses. First, there continues to be a failure to recognize that both good planning and response requires a system or overall perspective. Second, there frequently is a marked underestimation of the need to plan for flexibility and improvisation in the emergency response. Third, there are inherent limits to planning which are not always recognized. We discuss all three points in more detail now.

In its earliest field studies of organizational operations in disasters, DRC found that many organizations in both planning for and responding to emergencies had a rather narrow or tunnel vision. They looked at the situation primarily from their own perspective. To some extent this is necessary; but it leads to overlooking that an effective emergency response requires the integration of the convergence of many organizations. The larger the disaster, the more organizations are likely to be involved, and the greater the need for overall coordination. Our impression is that many LEMAs' planning does not take well into account the great number of groups which are likely to be involved in the mass organizational

assault which many communities experience at times of disasters. A recent study of just search and rescue activity alone found that those who "manage emergency response in disasters are surprised by the number and diversity of the groups who arrive to help" (Caplow, Bahr and Chadwick, 1984:35 in summarizing the research by Drabek and his co-workers, 1981). A preimpact planning failure to take this mass convergence into account almost insures that the overall or system perspective which is needed to reduce response problems will not be present.

Caplow and his colleagues do a good job of summarizing how the integrated emergency management system in the 15 communities they studied could be handicapped because what they call the control sector, in which LEMAs are key units, tended to:

> scant other sectors of the community, particularly the voluntary sector, with its enormous resources of experience, volunteer manpower, and good will; and the industrial-commercial sector, with its enormous resources of specialized equipment, trained manpower and technological knowledge... Several adverse consequences follow from this neglect: (a) the often elaborate emergency planning of organizations in the voluntary sector and of companies in the commercial/industrial sector is not coordinated with the overall community planning for which the EMD is responsible; (b) the extensive resources of these two sectors are not made available to the community as a whole and might go unused in an actual emergency; (c) drills and simulations conducted to exercise the overall plan do not, as they easily could, exercise the plans of these other sectors; (e) conflicts of purpose and procedure often arise among uncoordinated emergency plans, and impair the response to actual emergencies when they occur. (1985:210)

However, we should note that while the DRC studies of LEMAs also have consistently shown that a huge gap or void exists between what the above authors call the public sector and the industrial-commercial sector (which

was extremely well documented also in our chemical disaster study, see Quarantelli, 1981b). We have usually found a much closer relationship in both planning and response between the public sector and the voluntary sector (especially between LEMAs and local Red Cross chapters, and in larger cities, the Salvation Army). Nonetheless, there would appear to be general research agreement that the disaster preparedness of LEMAs often do not take well into account the number and kinds of organizational responders who will appear at the time of the emergency response, Problems result for all groups involved.

Another reason for the lack of good linkage between current disaster planning and the emergency response of LEMAs may be the failure to take into account the "emergent" quality or nature of much of the response. In the final report to FEMA on the work completed just prior to this study on emergent behavior at the emergency time periods of disasters, we wrote that:

> Emergent phenomena, that is, new social arrangements and activities are a pervasive feature of organized responses to disasters, although the manifestation may range from minor behaviors to major groups. As such, disaster planners and operational personnel should take the appearance of the phenomena for granted and incorporate the probability of its presence into their thinking and action (Quarantelli, 1984:25)

Unfortunately far from taking the position suggested in the last sentence, most LEMAs tend to look upon emergent behaviors and groups as something "bad" and to be prevented by planning. As was written about local officials in the just cited report:

> There is a tendency for them to think that because they have not planned for or are not controlling some phenomena in a disaster situation, that it

> can not be good. This is seldom the case. In many situations, whether it is emergence on the part of individuals or organizations, the new behavior or groups may represent the most effective and efficient way of coping with problems. This is not to say that emergence always represents the best solution, but emergence does represent an effort to solve problems. In this connection, planners and responders should consider under what circumstances and for what purposes they might actually want to facilitate certain kinds of emergences. (Quarantelli, 1984:26)

In our experience, while some LEMAs recognize the possibility of emergence in emergency responses, they tend to see that as a problem rather than opportunity. Yet if improvisation is usually present in organizational responses to emergencies perhaps disaster preparedness planning should build in and allow for improvisation or emergence. It does not seem useful to plan, to conduct exercises or otherwise carry out preparedness measures as if there were only certain standardized ways to do such matters, if there is prior acceptance of the probability and usefulness of emergence in the disaster response. If there is going to be emergence in response to disasters, a degree of emergence should be incorporated into disaster preparedness itself. Put in other words, if LEMAs are going to have to improvise in some of their responses, they should also plan and practice improvisation in preparedness activities.

The ideas expressed are consistent with some organizational researchers completely outside of the disaster area who have recently been talking about such notions as "loose coupling" and the need to find more effective models for intra- and inter-organizational relations than presented by traditional bureaucratic models (see, e.g. Weick, 1976). An underlying theme appears to be that the more effective organizations are those groups which encourage improvisation and multiple alternative ways for dealing

with the demands placed upon them. We have implied that our data hint at taking a similar view with respect to LEMAs; they should undertake disaster planning which will facilitate the most effective emergent behaviors for dealing with emergency time demands. If that were successfully achieved, there would be a closer link between disaster preparedness and emergency responses.

However, it is possible that the absence of a close link between planning and response also may be because too much is expected from planning. In a recent monograph written for FEMA, it is said that:

> In almost any society a major community disaster will precipitate a mass convergence of nonlocal organizations upon the disaster site. The numbers involved, the different levels of the social structure which they represent, the heterogeneous mix of public and private organizations involved, and so forth, virtually assure the impossibility of achieving any overall coordination during the emergency period. As shall be noted later, good disaster planning may effectively reduce the convergence of such organizations and thus allow a relative degree of overall coordination. But such coordination remains relative at best and is frequently never achieved--either by prior planning or by the use of ad hoc efforts--during the emergency period. (Quarantelli, 1985:18).

If nothing else, the impact and situational contingencies in disasters are such as to preclude complete planning. As we have written in the same monograph quoted above,"disaster planning is no panacea or ultimate solution for everything which occurs in a disaster" (1985:19). Disaster planning involves strategies for dealing with turbulent social environments and aims at reducing the unknowns in such situations, but the unknowns can not be completely made known. This is applicable at both the individual and organizational level. After their analyses of a considerable amount of literature on personal responses to collective stress, Rogers and Nehnevajsa

state:

> Emergency management personnel should be careful not to overplan. People do not always require, nor do they want such detailed response plans...The key is flexible guidance that facilitates the public's response to hazard (1984:185-187).

To the extent that too much is expected of planning, it is probable there will be a tendency to overplan, with consequent problems therefore in implementing the planning.

In light of what we have found and speculated about, we think that further understanding of the problem-plagued responses of LEMAs might best be attained through also asking two additional questions.

1. What is the frequency and the nature of the problems LEMAs have?

DRC and other researchers have illustrated the range of problems that plague LEMAs. However, we have said nothing about the frequency of involvement of LEMAs in disaster situations, or the involvements of LEMAs with new kinds of hazards. We suspect both to be increasing. We would hypothesize that LEMAs are tending to get involved in planning and emergency response situations in which they might not have taken many actions in the past. On the planning side, there is heavy involvement of some LEMAs with emergency preparedness relevant to nuclear plants in their locality, and we observed in the field in our study of emergent citizen groups that some LEMAs are becoming concerned about toxic waste sites. On the response side, according to the disaster histories DRC usually obtains from the organizations it studies, some LEMAs are responding to chemical hazard types of emergencies which may have been slighted before.

To the extent that there is any greater involvement of LEMAs, to that extent of course, it is also possible more can go wrong and become problematical.

Actually we do not know if this is an operative factor at the LEMA level, although records show a huge recent increase in the involvement of state emergency management agencies in hazardous chemicals and related emergencies. Thus, a systematic study of the degree LEMAs get more frequently involved in disaster planning and responses than they once did would seem in order. (Although that perhaps ought to be preceeded by a national survey of the actual threats LEMAs plan for and the actual emergency responses LEMAs make. We are not aware of any systematic and comprehensive nationwide data on the nature of the disasters LEMAs prepare for and respond to or the frequencies of such activities -- in fact, the exact number of LEMAs in existence is probably also not exactly known.)

2. How can disaster planning of LEMAs be translated into better response patterns in disasters?

At one level, a number of answers have already been suggested. There should be better planning. That planning should take an overall or system perspective. The planning should allow if not facilitate emergence and improvisation. The limits of planning should be recognized. More of the same could be said, but the thrust of the answer we seek here instead focuses on the "translation" process. Knowledge that is produced by researchers is usually not immediately nor easily applicable by research users. In fact, some of the LEMA staff members we interviewed in our studies even complained about the poor quality of the "translations" that had been made of research studies in FEMA produced documents or to which they had been exposed in training courses. Leaving aside the issue of the validity of the objections, the fact of the matter is that most operational personnel apparently see little connection between their everyday and emergency

activities and most of the research findings in the disaster area.

An answer to the posed question might be sought along several lines. There are LEMA staff members who do say they have learned directly or indirectly from research studies. Who are these persons and what accounts for their seeming atypical experiences? There is a suggestion in our field data that such "learners" are typically linked into informal networks of other emergency personnel elsewhere. The sociology of diffusion literature agrues that there are early adopters of innovations, and that they serve as role models for others in their networks. Perhaps some of this is involved in the case of the "learners" among LEMA personnel. Therefore, an examination of how information diffuses through the LEMA national community and network might be worthwhile.

In the late 1960s and early 1970s DRC undertook a series of studies of how police and fire departments learned about and instituted new policies, programs, plans, etc. for organizations dealing with civil disturbances and riots. In the case of police departments, but markedly less so in the instance of fire departments, much was learned and quickly borrowed from other departments elsewhere. The diffusion of knowledge of both a practical and theoretical nature was both intensive and extensive (see particularly Wasman, 1972; Kreps, 1973; Weller, 1973). The overall social context of the riot situations in American society and the current context of disaster situations is far from identical. But a reexamination of the old data on information diffusion about planning for and responding to civil disturbances might not only offer clues for the present, but perhaps a research model for anyone interested in a new study of how LEMAs learn

about and incorporate the experience and knowledge of others about disaster planning and response. This would be looking less at the diffusion of research findings, but more at the diffusion of disaster planning and response experiences.

In the previous pages we have noted some of the conclusions, findings, passing observations, and speculations that DRC has drawn from its studies of LEMAs. There are implications for policy and planning purposes. But it should be clear that the practical applications which can be derived rest on data that range, from empirically solid to completely inferential with most, however, tending more towards the latter rather than the former end of the range. On some matters we lack even simple inventory information. On the other hand, we are not at ground zero in our understanding of LEMAs. Certain trends are now fairly evident. Certain points have been reasonably established.

A threefold strategy for the future is also implied. Along some but increasingly fewer lines there is a need to continue some pioneering research on LEMAs as was done in the recent past. More studies however would be more fruitful if they pursued the implicit research agenda set forth in the last pages of this report. In the main, what is suggested is more specifically and systematically oriented research, although rather different kinds of data would have to be obtained for the different questions posed and a very wide range of methodologies would have to be used. The third approach is essentially one of better and more quickly applying what we know and suspect we know and making it understandable for research users. In short, there should continue to be some exploratory research, far more

systematic verificational studies, and an accelerted effort at knowledge translation and diffusion about the disaster planning and emergency responses of LEMAs. We will not be certain what organizational changes should be strongly recommended until we know the results of systematic studies, but these can not be developed well without the guidance of preliminary research.

FOOTNOTES

1. The military model is discussed by Dynes (1983). According to him, it involves a "command and control" approach to emergency management and an assumption that civilian disasters can be handled in the same way as certain kinds of emergencies in a military context.

2. The concept of disaster subculture is discussed in Wenger (1978). He notes that his field research found that repeated disaster experience was not in itself enough to generate a disaster subculture.

APPENDIX ONE

Field Studies in Current Research

Atlantic City, New Jersey flood
Chattanooga, Tennessee flood
Columbus,Ohio metropolitan area preparedness and blizzards
Middletown, Connecticut flood
Montgomery, Alabama tornado
Salt Lake City, Utah flooding
Tulsa, Oklahoma, flash flood

Field Studies in Earlier Research

Coalinga, California earthquake
Farmington, Utah mudslides
Ft. Wayne, Indiana flooding
Houston, Texas tornadoes/flooding
Jackson, Mississippi floods
New Orleans, Louisana flood
Salt Lake City, Utah flooding
Washoe Valley, Nevada landslide

Situations in Which Data Were Obtained by Telephone

Arizona flood
California coastal erosion
Colorado floods
Colorado toxic chemical accident
Idaho earthquake
Louisiana flooding
Missouri floods
New Hampshire floods
New Jersey floods
New York explosion
North Carolina tornadoes
South Carolina tornadoes
Texas hurricane and flooding

Special Field Study

Taft, Louisiana chemical tank explosion

REFERENCES

Adams, D. 1970 "The Red Cross: Organizational sources of operational problems" American Behavioral Scientist 13: 392-403.

Adams, D., R. Stallings and S. Vargo 1970 Natural Disaster and Organizational Change: A Comparative Analysis of Three Cities. Working Paper 30. Columbus, Ohio: Disaster Research Center, Ohio State University.

Anderson, W. 1969 Local Civil Defense in Natural Disaster: From Office to Organization. Columbus, Ohio: Disaster Research Center, Ohio State University.

Brouillette, J. 1970 "The department of public Works: Adaptation to disaster" American behavioral scientist 13: 369-379.

Caplow, T., H. Bahr and B. Chadwick 1984 Analysis of the Readiness of Local Communities for Integrated Emergency Planning Charlottesville, Va.: United Research Services Inc.

Clary, B. "The evolution and structure of natural hazard policies" Public Administration Review 45: 20-28.

Drabek, T. 1985a *The emergency manager for the year 2000.* A paper presented at Emergency 85, Washington, D.C. May 21, 1985.

Drabek, T. 1985b "Managing the emergency response" Public Administration Review 45: 85-92.

Drabek, T. et al. 1982 Managing Multiorganizational Emergency Response. Boulder, Colorado: Institute of Behavioral Sciences, University of Colorado.

Dynes, R. 1968 The Functioning of Expanding Organizations in Community Disasters Report 2. Columbus, Ohio: Disaster Research Center, Ohio State University.

Dynes, R. 1983 "Problems in emergency planning" Energy 8:653-660.

Dynes, R. and E. Quarantelli 1977 The Role of Local Civil Defense in Disaster Planning. Columbus, Ohio: Disaster Research Center, Ohio State University.

Hoetmer, G.
1983 Emergency Management. Washington, D.C.: International City Management Association.

Hoetmer, G. and C. Herrera
1983 Assessing Local Government Emergency Management Needs and Priorities. Washington, D.C.: International City Management Association.

Kasperson, R. and K. Pijawka
1985 "Societal response to hazards and major hazard events: Comparing natural and technological hazards" Public Administration Review 45:7-19.

Kennedy, W.
1969 The Police Department in Disaster Operations. Report 6 Columbus, Ohio: Disaster Research Center, Ohio State University.

Kreps, G.
1973 Decision Making Under Conditions of Uncertainty: Civil Disturbance and Organizational Charge in Urban Police and Fire Departments. Report 13 Columbus, Ohio: Disaster Research Center, Ohio State University.

Kuseneman, R. and J. Wright
1976 "New policies of broadcast stations for civil disturbances and disasters" Journalism Quarterly 53:670-677.

Perry, R. and M. Greene
1983 Citizen Response to Volcanic Eruptions: The Case of Mt St. Helens. New York, Irvington.

Quarantelli, E.
1977 "Social aspects of disasters and their relevance to pre-disaster planning" Disasters 1:98-107.

Quarantelli, E.
1981a "Disaster planning: small and large -- past, present and future" in Proceedings: American Red Cross EFO Division Conference. Alexandria, Virginia: Eastern Field Office, American Red Cross.

Quarantelli, E.
1981b Sociobehavioral Responses to Chemical Hazards: Preparations For and Responses to Acute Chemical Emergencies at the Local Community Level. Final Report #28. Newark, Delaware: Disaster Research Center, University of Delaware.

Quarantelli, E.
1983 Delivery of Emergency Medical Services in Disasters: Assumptions and Realities, Newark, Delaware: Disaster Research Center, University of Delaware.

Quarantelli, E.
1984 Emergent Behavior at the Emergency Time Periods of Disasters. Final Report #31. Newark, Delaware: Disaster Research Center, University of Delaware.

Quarantelli, E.
1985a Emergent Citizen Groups in Disaster Preparedness and Recovery Activities. Final Report 33. Newark, Delaware: Disaster Research Center, University of Delaware.

Quarantelli, E.
1985b Organizational Behavior in Disasters and Implications for Disaster Planning. Report 18. Newark, Delaware: Disaster Research Center, University of Delaware.

Quarantelli, E.,B. Phillips, and D. Hutchinson
1983 Evacuation Behavior: Case Study of the Taft, Louisiana Chemical Tank Explosion Incident. Miscellaneous Report 34. Newark, Delaware: Disaster Research Center, University of Delaware.

Rogers, G. and J. Nehnevajsa
1984 Behavior and Attitudes Under Crisis Conditions: Selected Issues and Findings. Pittsburgh: University Center for Social and Urban Research, University of Pittsburgh.

Ross, J.
1970 "The Salvation Army: Emergency operations" American Behavioral Scientist 13:404-414.

Saarinen, T. and J. Sell
1985 Warnings and Response to Mount St. Helens Eruption. Albany, New York: State University of New York Press.

Scholl, R. & J. Stratta (eds.)
1984 Coalinga, California, Earthquake of May 2, 1983: Reconnaiscance Report. Berkeley, Cal.: Earthquake Engineering Research Institute.

Sorensen, J.
1981 Emergency Response to Mt. St. Helens Eruption. Working Paper #43 Boulder, Colorado; Institute of Behavioral Science, University of Colorado.

Tierney, K.
1985 "Emergency medical preparedness and responses in disasters: The need for interorganizational coordination" Public Administration Review 45:77-84.

Warheit, G.
1970 "Fire departments: Operations during major community emergencies" American Behavioral Scientist 13:362-368.

Waxman, J.
1972 Changes in Response Patterns of Fire Departments in Civil Disturbances. Report 12 Columbus Ohio: Disaster Research Center, Ohio State University.

Weick, K.
1976 "Educational organizations as loosely coupled systems" Administrative Science Quarterly 21:1-19.

Weller, J.
1973 Organizational Innovation in Anticipation of Crisis. Report 14. Columbus, Ohio: Disaster Research Center, Ohio State University.

Wenger, D.
1978 "Community response to disaster: Functional and structural alterations" in E.L. Quarantelli (ed.) Disaster: Theory and Research. Beverly Hills, Cal.: Sage.

June 8, 1982

DISTRIBUTION REQUIREMENTS

(Unclassified/Unlimited Reports)

Defense Technical Information Center
Cameron Station
Alexandria, VA 22314 — 12 copies

Federal Emergency Management Agency
ATTN: Assistant Associate Director
Office of Research
National Preparedness Programs Directorate
Washington DC 20472 — 3 copies

Federal Emergency Management Agency
ATTN: (Cognizant Project Officer)
Washington, DC 20472 — 40 copies

Canadian Defence Research Staff
ATTN: J. Ray Brown
2450 Massachusetts Avenue NW
Washington, DC 20008 — 4 copies

Disaster Research Center
University of Delaware
Newark, DE 19716 — 25 copies

- -

All others below are to be distributed one (1) copy

Oak Ridge National Laboratory
ATTN: Librarian
P.O. Box X
Oak Ridge, Tennessee 38730

William Anderson
National Science Foundation
1800 G Street NW
Washington, DC 20550

Earl J. Baker
Dept. of Geography
Florida State University
Tallahassee, FL 32306

Robert Bolin
Dept. of Sociology
Box 3BV
New Mexico State University
Las Cruces, NM 88003

Patricia A. Bolton
Battelle Human Affairs Research Centers
4000 NE 41st St.
Seattle, WA 98105

Bela Banathy
Far West Laboratory for Educational
Research & Development
1855 Folsom St
San Francisco, CA 94103

John Christiansen
Dept of Sociology
834 SWKT
Brigham Young University
Provo, UT 84602

William W. Chenault
HSRI
7710 Old Springhouse Rd
McLean, VA 22102

Lorand Szalay
Institute of Comparative
Social & Cultural Studies
4330 East-West Highway, Suite 900
Bethesda, MD 20814

Conrad V. Chester
Emergency Planning Group
Energy Division
Oak Ridge National Laboratory
PO Box X
Oak Ridge, Tn 37830

Michael Lindell
Coordinator, Emergency Management
Studies Program
Human Affairs Research Centers
Battelle
4000 NE 41st St.
PO Box C-5395
Seattle, WA 98105

John Billheimer
SYSTAN Inc.
PO Box U
343 Second St
Los Altos, CA 94022

Chuck Wilton
Scientific Services Inc.
517 East Bayshore
Redwood City, CA 94603

Edward L. Hill
Director, Operations Analysis
Division
Research Triangle Institute
Research Triangle Park, NC 27709

Robert J. Baskin
Yankelovich, Skelly & White Inc
969 High Ridge Rd
Stamford, CN 06905

Clark C. Abt
President, Abt Associates Inc.
55 Wheeler St
Cambridge, MA 02138

Walmer E. Strope
Center for Planning & Research
5600 Columbia Pike, Suite 101
Bailey's Crossroads, VA 22041

SRI International
333 Ravenswood Avenue
Menlo Park, CA 94025

Sy O. Smith
President, National Capitol
Systems, Inc.
1900 L St NW Suite 305
Washington, DC 20036

Charles Wittenberg, President
Wehrman Consultants Associated
303 Parkplace, Suite 121
PO Box 2487
Kirkland, WA 98052

Gary L. Briese
Executive Director
International Association of
Fire Chiefs
1329 18th St NW
Washington, DC 20036

Richard Casanova
Director, Tucson-Pima County Dept
of Emergency Services
150 W. Congress
Tucson, AZ 85701

James Petroni
California Specialized Training
Institute
PO Box G
San Luis Obispo, CA 93406

Stephen Merson
National Study Center for
Trauma & EMS Systems
22 South Greene St.
Baltimore, MD 21201

Tom Forrest
Dept. of Sociology
University of North Carolina
Charlotte, NC 28223

Charles E. Fritz
MITRE Metrek Division
1820 Dolley Madison Blvd
McLean , VA 22102

David J. Brower
Center for Urban & Regional Studies
University of North Carolina
Hickerson House 067A
Chapel Hill, NC 27514

Vincent T. Covello
National Science Foundation
1800 G ST NW
Washingoton, DC 20550

Thomas Drabek
Dept. of Sociology
University of Denver
Denver, CO 80208

Homer J. Givin
IBM
555 Bailey Avenue
San Jose, CA 95150

Jack D. Kartez
Environmental Research Center
Troy Hall 305
Washington State University
Pullman WA 99164

Gary Kreps
Dept of Socioology
College of William & Mary
Morton Hall #223
Williamsburg, VA 23185

Henry W. Lambright
Syracuse University
Syracuse Research Corporation
Merrill Lane
Syracuse, NY 13210

Mary Lystad
National Institute of Mental Health
5600 Fishers Lane
Room 6C-12
Rockville, MD 20816

Peter J. May
Dept. of Political Science DP-30
University of Washington
Seattle, WA 98195

Dennis Mileti
Dept. of Sociology
Colorado State University
Fort Collins, CO 80523

James Morentz
Research Alternatives
705 New Mark Esplanade
Rockville, MD 20850

David Morton
Natural Hazards Information Center
University of Colorado
Campus Box 482
Boulder, CO 80309

Alvin Muschkatel
Center for Public Affairs
Arizona State University
Tempe, AZ 85287

Jiri Nehnevajsa
Dept. of Sociology
University of Pittsburgh
2122 Forbes Quadrangle
Pittsburgh, PA 15260

Joanne M. Nigg
Office of Hazard Studies
Arizona State University
Tempe, AZ 85287

Claire Rubin
Program of Policy Studies in Science & Technology
Gelman Bldg #714
George Washington University
Washington, DC 20052

Thomas F. Saarinen
Dept. of Geography
University of Arizona
Tucson, AZ 85721

Rahul Sood
Dept. of Communicative Studies
California State University
6000 J St.
Sacramento, CA 95819

John Sorensen
Oak Ridge National Laboratory
Post Office Box X
Oak Ridge, TN 37830

Kathleen Tierney
Institute of Safety & Systems Management ISSM 108
University of Southern California
Los Angeles, CA 90089

William A. Wallace
School of Management
Rensselaer Polytechnic Institute
Troy, NY 12181

Lillian Wilkins
School of Journalism
University of Colorado
Campus Box 287
Boulder, CO 80309

Robert K. Yin
COSMOS Corp
1730 J St BW
Suite 1302
Washington, DC 20006

Richard Andrews
California Office of Emergency Services
State Office Bldg
107 South Broadway Room 19
Los Angeles, CA 90012

James T. Boswell
Emergency Administration & Planning
North Texas State University
Denton, TX 76203

Janet Bradford
California Specialized Training Institute
PO Box 8104
San Luis Obispo, CA 93403

Louise Comfort
Graduate School of Public &
International Affairs
3E31 Forbes Quadrangle
University of Pittsburg
Pittsburgh, PA 15260

Edward S Fratto
Massachusetts Civil Defense Agency
Office of Emergency Preparedness
400 Worcester Rd
Framingham, MA 01701

David Gillespie
School of Social Work
Box 1196
Washington University
St. Louis, MO 63130

Marjorie Greene
Bay Area Regional Earthquake Preparedness
Project
101 8th St Suite 152
Oakland, CA 94607

Jeanne Kasperson
Center for Technology, Environment and
Development
Clark University
Worcester, MA 01610

Myra T. Lee
Multnomah County Office of Emergency
Management
12240 Northeast Glisan St.
Portland, OR 97230

Lois Clark McCoy
National Association for Search & Rescue
5201 Q Ruffin Rd.
San Diego CA 92123

Ronald Perry
School of Public Affairs
Arizona State University
Tempe, AZ 85287

William Petak
Institute of Safety & Management ISSM 108
University of Southern California
Los Angeles, CA 90089

J.K. Rao
Dept of Civil Engineering
California State University
Long Beach, CA 90804

Willaim E. Riebsame
Natural Hazards Research & Information Ctr
IBS # 6 Campus Box 6
University of Colorado
Boulder, CO 80309

David Neal
Oak Ridge National Laboratory
Post Office Box X
Oak Ridge, TN 37830

Lacy Suiter
Tennessee Emergency Management Agency
3041 Sidco Drive
Nashville, TN 37204

O. Allen Israelsen
Executive Secretary
Committee oN Earthquake Engineering
National Academy of Sciences
2101 Constitution Avenue NW
Washington, DC 20418

Frederick Bates
Dept. of Sociology
University of Georgia
Athens, GA 30602

Rocco Caporale
Dept. of Sociology
St. John's University
Jamaica, New York 11439

Claude de Ville de Goyet
Pan American Health Org
525 23rd St NW
Washingtoo, DC 20037

Charles Faupel
Dept. of Sociology
Auburn University
Alabama 36849

Jane Gray
Dept. of Sociology
Ohio State University
Columbus, Ohio 43210

Eugene Russell
Dept. of Civil Engineering
Kansas State University
Manhattan, S 66506

David Miller
College of Arts & Sciences
Western Illinois University
Macomb, IL 61455

Ralph Turner
Dept. of Sociology
University of California
Los Angels, CA 90024

Robert Leik
Dept. of Sociology
University of Minnesota
Minneapolis, Minn 55455

Reginald Brown
CSIC
Georgetown University
1800 K St. Suite 400
Washington, DC 20006

Theodore Caplow
United Research Services
PO Box 20
Charlottesville VA 22902

Ian Burton
Institute for Environmental Studies
University of Toronto
M5S 1A4 Canada

Joseph Scanlon
Carlton University
School of Journalism
Ottawa Ontario
K1S 5B6 Canada

Home Office
Scientific Advisory Branch
Horseferry House
Dean Ryle St
London SW1P 2AW England

Servico National de Proteccao Civil
Rua Bela Vista a Lapa 57
1200 Lisbon, Portugal

Head of Sivilforsvaret
Sandakerveien 12
Posboks 8136
Oslo dep Oslo 1 Norway

Directeur Organisatie
Bescherming Bevoling
Ministry of Interior
Schedeldoekshaven 200
Postbsu 20011
2500 The Hague, The Netherlands

Ministry of Social Services
11 Spartis St
Athens, Greece

Civil Emergency Planning Directorate
North Atlantic Treaty Organization
1100 NATO Belgium

Secretaire d'Administration
Minestere de l'Interieur
Direction Generale de la Protection Civile
Rue de Louvain 1
1000 Brussels, Belgium

Director
Civilforsvarsstyrelsen
Stockholmsgade 27
2100 Copenhagen O Denmark

Direction de la Securite Civile
Ministere de l'Interieur
18 Rue Ernest Cognac
92 Levallois (Paris) France

Bundesministerium des Innern
Graurheindorfer Strasse 198
5300 Bonn 1 West Germany

Jefe, Seccion de Estudiosy y
Planification
c/Evaristo San Miguel 8
Madrid 8 Spain

Carlo Pelanda
ISIG
via Malta 2
34170 Gorizia Italy

Director General
Natural Disasters Organization
PO Box E33 Queen Victoria Terr
Canberra ACT 2601, Australia

The Librarian
The Civil Defence College
The Hawkhills
Easingwold York YO6 3EG England

John Oliver
Centre for Disaster Studies
James Cook University of N. Queensland
Townsville, QLD Australia 4811

Orjan Hultaker
Disaster Study Group
Uppsala University
Box 513
Uppsala, Sweden

The Librarian
Centre de Recherches sur
L'Epidemiologie Des Desastres
EPIC. U.C.L. 30.34
Clos Chapelle-aux-Champs 30
B-1200 Bruxelles, Belgium

E.C. Penning-Rowsell
Middlesex Polytechnic Flood Hazard
Research Centre
Queensway Enfield Middlesex EN3 4SF
Great Britain

Dr. Giusepp Zamberletti
Camera dei Deputati
00100 Rome, Italy

Gilbert Lafond
Emergency Planning Canada
Gillin Bldg
141 Laurier Avenue West
Ottawa Ontario K1A 0W6 Canada

Robert Reitherman
Scientific Service Inc
517 East Bayshore
Redwood City, CA 94063

Jon Kusler
PO Box 528
Chester, VT 05143

Lynne Filderman
402 Clayborn Avenue #3
Takoma Park, MD 20912

Philip Berke
College of Architecture
Texas A & M University
College Station, TX 77843

Clark Norton
Congressional Research Service
Library of Congress
Washington, DC 20540

Rick Lavalla
Dept. of Emergency Services
State of Washington
304 North Foote
Olympia, WA 98502

THE FUNCTIONING OF THE LOCAL EMERGENCY SERVICES OFFICES IN DISASTERS
Unclassified
The Ohio State University Research Foundation
October, 1985, 60 pages
Cooperative Agreement EMW-K-0881, Work Unit NO. 2651 F

Compared with the past there is still considerable variation in the structure and functioning of local emergency management agencies (LEMAs). There has been considerable improvement in their preparedness and planning stance, but the emergency responses of LEMAs continue to problem plagued. Factors accounting for these observations are presented. Recommendations for future work on LEMAs are advanced.

THE FUNCTIONING OF THE LOCAL EMERGENCY SERVICES OFFICES IN DISASTERS
Unclassified
The Ohio State University Research Foundation
October, 1985, 60 pages
Cooperative Agreement EMW-K-0881, Work Unit No. 2651 F

Compared with the past there is still considerable variation in the structure and functioning of local emergency management agencies (LEMAs). There has been considerable improvement in their preparedness and planning stance, but the emergency responses of LEMAs continue to problem plagued. Factors accounting for these observations are presented. Recommendations for future work on LEMAs are advanced.

THE FUNCTIONING OF THE LOCAL EMERGENCY SERVICES OFFICES IN DISASTERS
Unclassified
The Ohio State University
October, 1985, 60 pages
Cooperative Agreement EMW-K-0881, Work Unit NO. 2651 F

Compared with the past there is still considerable variation in the structure and functioning of local emergency management agencies (LEMAs). There has been considerable improvement in their preparedness and planning stance, but the emergency responses of LEMAs continue to problem plagued. Factors accounting for these observations are presented. Recommendations for future work on LEMAs are advanced.

THE FUNCTIONING OF THE LOCAL EMERGENCY SERVICES OFFICES IN DISASTERS
Unclassified
The Ohio State University
October, 1985, 60 pages
Cooperative Agreement EMW-K-0881, Work Unit No. 2651 F

Compared with the past there is still considerable variation in the structure and functioning of local emergency management agencies (LEMAs). There has been considerable improvement in their preparedness and planning stance, but the emergency responses of LEMAs continue to problem plagued. Factors accounting for these observations are presented. Recommendations for future work on LEMAs are advanced.

END

FILMED

12-85

DTIC