ANDERSON, William Averette, 1937-
DISASTER AND ORGANIZATIONAL CHANGE: A STUDY
OF SOME OF THE LONG-TERM CONSEQUENCES OF
THE MARCH 27, 1964, ALASKA EARTHQUAKE.

The Ohio State University, Ph.D., 1966
Sociology, general

University Microfilms, Inc., Ann Arbor, Michigan
DISASTER AND ORGANIZATIONAL CHANGE:
A STUDY OF SOME OF THE LONG-TERM CONSEQUENCES
OF THE MARCH 27, 1964, ALASKA EARTHQUAKE

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By
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* * * * *

The Ohio State University
1966

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ACKNOWLEDGMENTS

Financial support for this research was obtained from the Office of Civil Defense, Office of the Secretary of the Army, under Contract No. OCD-PS-64-46, Subtask 2651A.

In completing this study, I am indebted to a number of persons. First of all, I would like to express my gratitude to the Co-Directors of the Disaster Research Center, Professors J. Eugene Haas, Enrico Quarantelli, and Russell Dynes, without whose cooperation this study would not have been possible. They provided me with the required resources, and allowed me the flexibility in which to work that few research assistants are ever able to enjoy. Dr. Haas served as my adviser on the dissertation and throughout my graduate career at the Ohio State University. Dr. Dynes and Dr. Quarantelli served on my dissertation reading committee and spent considerable time offering me valuable suggestions and insights.

I would also like to express my sincere appreciation to Elaine Hobart who spent hours reading the manuscript and who offered a number of valuable suggestions. In this regard she went beyond what should be expected of a colleague. John Brouillette, another fellow research assistant, also came to my aid in a number of ways.

I am also indebted to those persons who were on one or more of the data gathering field trips to Anchorage. In
addition to the Co-Directors, this includes Dr. James Hundley now of Michigan State University and Dr. Daniel Yutzy of the State University of New York at Buffalo. I am especially grateful to Dr. Yutzy who gave me considerable assistance during the course of the research and also during the actual writing of the dissertation.

Credit is due to Gerald McDonald and Patricia Rogers for preparing the organizational charts. And an expression of my appreciation is also due to Patricia Hellison who typed the final manuscript and Anne Roberts who assisted in this effort.

Finally, I am deeply indebted to the numerous organizational officials in Anchorage who cooperated with us during the research. The possibility of receiving more cooperation in a research effort than was received in Anchorage is, indeed, difficult for me to imagine.
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CHAPTER I
INTRODUCTION

The Scope of the Study

The research problem

On March 27, 1964, a major earthquake struck several communities in southcentral Alaska. This study focuses upon a selected number of organizations in Anchorage, the largest community that was affected by the disaster.

In this study, we examined the long-term changes or adaptations experienced by community organizations in Anchorage, Alaska following the earthquake. More specifically, the research was oriented toward acquiring data which would provide answers to the following questions: (1) What were the related long-term organizational changes that occurred following the earthquake? In other words, a description of the long-term consequences of the disaster for certain selected organizations was sought. (2) What was the nature of such modifications? For example, had they been anticipated prior to the disaster? (3) How can we best account for the observed changes? And finally, (4) How can the absence of change in some organizations be explained?
Significance of the research

Sociologists generally agree that the study of social change ought to be one of the primary concerns of the field. It is also generally conceded by those in the discipline that this is one of the least developed and understood areas.¹ This state of affairs is as true of the study of organizational change as it is regarding the study of social change in general.² In this study, we have sought to provide needed information regarding social change by considering the relationship between community disaster and organizational change.

In an article entitled "Toward a Theory of Disaster," Moore makes the following observation: "Disasters render ineffective customary behavior patterns, often nullify previous efforts, and block or drastically change the course of events."³ To the degree that this holds true for affected


³Harry Moore, "Toward a Theory of Disaster," American Sociological Review, IX, No. 6 (December, 1956), 733.
social systems, including organizations, they can be expected to undergo rapid and sometimes radical modifications as their structures adapt to the stressful situations. In times of community disaster, formally established community organizations, such as police and fire departments, Red Cross, Salvation Army, and hospitals, are usually called upon to alter social arrangements which are geared toward more stable circumstances and to assume arrangements which will enable them to respond to disaster engendered demands. Thus, during such periods these organizations may undergo modifications with regard to such patterns as lines of authority, decision making, and communication. It is also true that in addition to undergoing a number of relatively temporary adaptations following disaster, organizations sometimes experience relatively durable or long-lasting types of changes after such events.

A slowly growing body of empirical data has been accumulated on the immediate and usually temporary adjustments of communities, organizations, and individuals to stressful or disaster conditions. In these studies, the assumption has been that under conditions of catastrophe individual and group adaptation is required and that the form such adjustments will take are, at least in part, patterned; thus, through systematic

observation regularities can be identified and generalizations from one disaster situation to another can be made. Also, sociologists who have conducted research in this area would argue that their findings have implication for the important issues and questions in the discipline, i.e., for testing hypotheses and theories or for providing the data from which hypotheses and theories on human behavior can be derived. The vast proportion of this disaster research has dealt with a very restricted time period, the immediate emergency period.

In 1920 Samuel Prince, in his doctoral dissertation entitled *Catastrophe and Social Change*, wrote the following:

> There are many virgin fields in Sociology. This is one of the attractions the subject has for the scientific mind. But of all such fields none is more interesting than the factor of catastrophe in social change.  

This observation by Prince is as true today as when it was written. In his study, he focused upon the long-term consequences of a massive explosion for the city of Halifax. The study was the first systematic treatment of disaster by a sociologist. It is unfortunate that the more recent disaster studies have not taken the lead suggested by Prince and considered relatively long-term change. Of course, as noted above, recent disaster research does treat social change to the degree that it focuses upon the manner in which social structures are modified to meet various problems following a

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community disaster. Further, it is not our intention to imply that the initial emergency response by communities is not an important sociological problem. However, with a few exceptions, disaster researchers have not considered in an equally systematic fashion the long-term social change produced by disaster, and we feel that this is a research problem with at least as much importance and implication. Others have commented on the lack of information concerning this aspect of the human response to catastrophe:

We do not know much about the long-term changes that may be wrought by disaster, because almost no research has undertaken to follow a stricken community over any great number of years. In theory, it appears unlikely that a social system struck by a major disaster could return to a state precisely like that before the catastrophe...  

Our study is in response to the need for further knowledge regarding long-term social and organizational change in general and the relationship between social change and disaster in particular. We have focused upon one level of social change -- that which occurs within an organizational context. Organizations, therefore, are our primary units of analysis.

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Inception of the study

The Disaster Research Center (DRC) began a study in Anchorage, Alaska the day following the March 27, 1962, earthquake. That study was undertaken to determine the response made by community organizations in the emergency period following the earthquake. The present study, which focuses upon long-term organizational change following the earthquake, grew out of the initial study on organizational response during the emergency period.

The present study, then, is more than an isolated research effort aimed at determining long-term patterns of organizational adaptation. It is, rather, a logical continuation and elaboration of the initial research problem. Those of us who participated in the earlier research effort and learned what adjustments were made by involved organizations during the period of greatest stress and disruption asked ourselves the question, what kinds of disaster related changes will such organizations experience several months or even a year from now? Thus, this follow-up study can be perceived as a phase of the earlier one, and represents the tendency on the part of those who are involved in research endeavors to raise questions and then to direct their efforts at acquiring valid answers.

We will now turn to an examination of some of the salient findings of previous disaster research which have implications for the present study.
The Study of Disaster Induced Change

As previously noted, the number of disaster studies which consider long-range change is exceedingly small when compared with the number of studies which deal with the problem of human response and adaptation during the immediate emergency period. There have been some studies, however, which take this problem into account. In some instances, the researchers were only tangentially interested in long-term adjustments, and in still others this interest developed after much of the data had been gathered for consideration of another, only slightly related, problem. Also, it should be noted that although a few of these studies report some data from organizations, only one — Drabek's study of the Indiana Coliseum explosion — specifically addresses itself to this level of analysis. Our study focuses specifically upon the relationship between disaster and organizational change in contrast to all but one of these other studies, which consider this relationship somewhat incidentally along with other types of social change. Nevertheless, even with these limitations, such studies have some relevance for our research problem.

The few studies which have dealt with long-term social change present findings which indicate that long-term change often does occur in a community or society which experiences a
a major disaster. For example, Prince in his study notes changes in community health organizations in Halifax following the explosion and also changes in community recreation, education, and relations among various voluntary organizations.

J. E. Ellemers reports that the Holland flood disaster was followed by many long-term changes, and he says: "The establishment of new institutions such as social welfare, community centers and a beginning of community-organization constituted... elements of change introduced by the restoration."  

Bates et al., in their longitudinal study of the social and psychological consequences of Hurricane Audrey, identify several changes which occurred in Cameron Parish, Louisiana. For example, there were changes in public services, in key community offices, and in the creation of new public positions and new organizations. One of the most noticeable changes

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7 The fact that change often occurs in communities or societies which have undergone a catastrophe has led one sociologist to state the following proposition: "Our prime contention is that disasters are a key variable in altering the social structures of industrial - urban societies." Gideon Sjoberg, "Disasters and Social Change," Man and Society in Disaster, p. 356.

8 Prince, op cit., pp. 118-140


which occurred after the hurricane was in the organization of Civil Defense.

At the time of Audrey the parish had no effective civil defense organization. A director had been appointed, but attempts to arouse local interest in building an organization had not been successful.\(^{11}\)

A few months after the storm, when interest was high, a group of prominent citizens got together and organized Civil Defense. An elaborate organizational plan was created and money was appropriated for its operation.\(^{12}\) "In addition to working out an organizational structure and securing the personnel to implement it, a natural disaster plan was worked out."\(^{13}\)

Weisman conducted a study of a flood which struck Norwalk, Connecticut. Among the changes he observed in the aftermath of the disaster was the organization of new agencies and commissions in the community in addition to a greater awareness on the part of officials of various kinds of community problems.\(^{14}\)

Sometimes there are also technological adjustments which accompany disaster. For example, Ellemers notes that after the Holland flood a number of technological projects were undertaken by the government.\(^{15}\) Drabek, reporting on a study of the

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\(^{11}\) Bates, et al., op. cit., p. 137.

\(^{12}\) Ibid., pp. 137-138.

\(^{13}\) Ibid., p. 139.

\(^{14}\) Seymour S. Weisman, Case Study of a Flood Stricken City (New York: Colby Printers, 1958).

\(^{15}\) Ellemers, op. cit., p. 56.
Indiana State Fairgrounds Coliseum explosion, indicates that the disaster was followed by a number of technological or physical changes dealing with organizational communication systems. For example, he notes that an inter-hospital radio telephone system was established in Indianapolis as a direct result of the disaster and steps were taken to improve police communication capabilities.\textsuperscript{16}

Usually, sociological and technological change will be inextricably bound as can be seen in the following excerpt taken from Ellemer's monograph on the Holland disaster.

Finally, we wish to mention one change in particular, namely the radical change in the warning- and safety-system in the south-western Netherlands. Through the cooperation of the meteorological stations, the Ministry of Waterways and Transport, polder organizations and municipalities, an external warning-system has been established. By means of this system, people are better informed about high water levels and dangerous situations and are better prepared for them. On the basis of existing organizations—polders, Red Cross, Civil Defense and others—an organization has been set up for the protection of the dykes, for relief, rescue and evacuation in case of emergencies.\textsuperscript{17}

The findings from many of the studies suggest that a community or society which is struck by a disaster may become

\textsuperscript{16}Thomas E. Drabek, \textit{Disaster in Aisle 13: A Case Study of the Coliseum Explosion at the Indiana State Fairgrounds, October 31, 1963} (Columbus: The Disaster Research Center, The Ohio State University).

\textsuperscript{17}Ellemers, \textit{op. cit.}, pp. 65-66.
more susceptible to change. For example, Prince observes that,

...when there comes the shattering of the matrix of custom by catastrophe, then mores are broken up and scattered right and left. Fluidity is accomplished at a stroke. There comes a sudden chance for permanent social change.18

And similarly, Fritz, drawing on his own experience with disaster research and his familiarity with the works of others, makes this observation:

Disaster provides an unstructured social situation that enables persons and groups to perceive the possibility of introducing desired innovations into the social system....the breaking of the "cake of custom" is often perceived by many groups in the society as desirable once the immediate problems of rescue, medical care, subsistence, and shelter become solved. Changes and adjustments made during the emergency give proof that restructuring or changing of the social system is possible. People see the opportunity of realizing certain wishes which remained latent and unrequited under the old system.19

The findings of Ellemers lend support to this view. In discussing one aspect of the response to the flood in Holland he points out that,

Projects were initiated which were not directly connected with the restoration. Restoration was considered

18Prince, op. cit., p. 20.

a matter of national concern. Attention was directed on the disaster area. Proposals, which before the disaster would not even have been considered, were promptly accepted. Requests by local officials and non-official bodies for cooperation and financial support received an appreciative hearing from the government.  

One generalization which appears in many of the studies is that disasters function as catalysts, i.e., they result in the acceleration of pre-disaster patterns of social change.  

Prince, for example, reports that some anticipated decisions and changes regarding city planning and civic improvement in Halifax were accelerated because of the explosion. Ellemers says that following the Holland flood, "The most important tendency seems to be the acceleration of an already existing process of social change." For example, he notes that pre-disaster plans for the alleviation of important social problems which had dragged on for years, received considerably more attention after the flood. Had it not been for the disaster "... it might have been decades before these plans were given proper attention by the government and by the public. Now they were worked out in detail." Bates et al., also report that pre-disaster change patterns or processes were accelerated following Hurricane Audrey. In one instance,

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20 Ellemers, op. cit., p. 55.
21 Sjoberg, op. cit., p. 373.
22 Prince, op. cit., p. 130.
23 Ellemers, op. cit., p. 60.
24 Ibid., p. 56.
the disaster was responsible for accelerating the trend toward increased formalization in social relations in Cameron Parish.  

There is at least one study which demonstrates that the tendency for disaster to function as a catalyst is not a phenomenon that occurs only in an industrial-urban society. Lessa conducted a study of the effects of Typhoon Ophelia on the Pacific atoll of Ulithi and observed this tendency occurring there. Ulithi is a small, once relatively isolated society of 514 inhabitants who engage in agricultural and fishing pursuits. Lessa attributes the hastening of several acculturative changes to the typhoon which struck in 1960. Dietary and economic changes were among those accelerated. For example, the latter involved a trend away from the native system of exchange based on ritualistic exchange, gift, and bartering toward an economy based on cash. Also noted by Lessa was the increased relaxation of sexual taboos which had begun prior to the impact of the disaster. He makes the following general observation with regard to the accelerating process which occurred following the typhoon:

The storm did not initiate change as much as it accelerated processes already under way. Most likely if there had been no acculturative influences or contacts with the outside world, the disaster would have had little effect in altering the existing way of life....Ophelia disturbed a system that now was no longer closed - a system already off balance by virtue of its enmeshment with the great

\[25\text{Bates et. al., op. cit., pp. 130-131.}\]
world beyond the sea. The catastrophe increased the imbalance and dictated that any return to a state of equilibrium would have to be on a different level.26

This completes our review of some of the salient findings of studies which consider long-term social and organizational change. These studies indicate that change does, indeed, frequently result from a community-wide disaster. One explanation which is suggested is that increased fluidity in the structure of a social system following a disaster makes it responsive to the introduction of new social organizational and technological patterns. Finally, there is also some evidence that disasters function as catalysts and are responsible for accelerating pre-disaster patterns of change.

In the chapter which follows, we will discuss the theoretical orientation and the methodological approach used in the study.

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CHAPTER II

THEORETICAL AND METHODOLOGICAL APPROACH

This is a case study of the long-term changes experienced by a number of organizations in Anchorage, Alaska following the March 27, 1964, disaster. We realize that in the pursuit of the objectives of this study, as in any scientific inquiry, there is a need for the precise defining of terms and concepts used. The argument can be made that this requirement is even more crucial with regard to a case study because it does represent only a single case and, therefore, its place within the context of a larger body of knowledge can be determined only to the degree that this is accomplished. Consequently, we will begin this chapter by (1) defining several of our key concepts, -- i.e., organization, long-term change, disaster, etc. This will be followed by (2) a general theoretical statement, and (3) a discussion of the methodology of the study.
Some Definitions

We define an organization as a relatively permanent and complex, discernible interaction system.\(^1\) Thus defined, an organization is complex in the sense that it tends to have several distinct levels of positions. Also, an organization is a system in that it is composed of a number of parts or units which manifest some degree of interdependence.

In this study, we define organizational change as any modification in the patterned interaction of an organization. Modifications may occur which involve internal patterns and processes, e.g., relationships between positions and units within an organization. Also, change may occur involving the relationship between an organization and its environment, e.g., other organizations.

Long-term organizational change refers to modifications in organizational patterns which appear to have become relatively durable features. Such changes are different from those modifications in organizational patterns which occur immediately after a disaster in response to rescue and relief problems. The latter are often emergency changes of short duration which may disappear once the emergency is over. In contrast, the long-term organizational changes are geared

\(^1\)This definition was derived from the work of J. Eugene Haas in Role Conception and Group Consensus (Columbus, Ohio: Ohio State University, Bureau of Business Research, 1964), pp. 25-31.
toward providing organizational adjustments for some time to come. These long-term changes may be seen in the daily patterned interaction of an organization or in some instances, they may be so designed as to change it only under certain circumstances. For example, an organization may establish disaster plans which will serve as a basis for changing its patterns of interaction only in the event of a disaster.

Our definition of disaster follows that of Marks and Fritz who conceive of it as follows:

a. The event affects a community of persons --i.e., a collection of people who occupy a common territory and are bound together in relatively permanent social relationships.

b. The event confronts a large segment of the community with actual danger, or threats of danger and loss to cherished values and material objects.

c. The event results in deaths, injuries, the destruction of property, and other losses and deprivations to the population, e.g., the disruption of community utilities and other community services.

d. The direct or indirect consequences of the disaster affect a large proportion of the population in the community --i.e., the repercussions are diffused throughout the community rather than focalized in a particular group or collection of individuals.2

The March, 1964, Alaska earthquake as it affected Anchorage meets all of the criteria for a disastrous event. It ranks as one of the major natural disasters that have occurred on

the North American continent during this century. Therefore, we feel that the study of the relationship between the disaster and organizational change in Anchorage permits some comparisons with other catastrophic situations.

General Framework

The general framework or perspective from which we have approached our research problem — the relationship between disaster and organizational change — has been to view organizations as dilemma-solving and tension managing social systems. From this perspective, internal and environmental problems are viewed as providing impetus to organizational change — both short-run and long-term change. Consequently in this study, the basis for organizational change was sought in both the internal characteristics of an organization and its relationship to its environment.

Our orientation evolved from the observations and findings of several other students of behavior. Let us turn to some of these observations. Wilbert Moore states the following:

regarding internal organizational characteristics and problems:

Some organizational changes . . . represent the gradual transformation of the organization in response to its own characteristics and its adjustment to relatively stable environments. Some persistent problems of organization, for example, though never fully "solved", provide the basis for the continuous quest for further approximations to perfection.  

It has been observed elsewhere that many of the changes which occur in organizations in response to internal problems are official, i.e., the modifications or innovations are initiated by officials who have the legitimate authority to do so. For example, this often occurs in industrial organizations as officials make certain structural adjustments aimed at increasing production levels. However, other changes which occur in organizations are unofficial. For example, Roethlisberger and Dickson in their now famous study of a shop department perceived the existence of an "informal social structure" among the workers which had emerged in response to certain worker-management problems. Dalton, too, noted the tendency for unofficial arrangements to develop in organizations as a

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means of adjusting to the tensions generated by staff and line conflict.  

Organizations may also change as they attempt to adjust to problems originating from their environments. For example, Selznick in his study of the Tennessee Valley Authority noted some very significant changes in that agency — both official and unofficial — as it attempted to function in a local environment where many leaders and groups opposed its policies and procedures. Burton Clark's analysis of the adult education program in California also indicates the role an organization's environment plays in the eventual modification of the organization. One of the adaptations which administrators of this program felt compelled to make in order to acquire public support was to base the program on consumer preference rather than professional considerations.

Organizations conceived as problem-solving systems are never in a state of perfect equilibrium or adjustment. Organizations of various types are always plagued with problems which are due to internal characteristics as well as external conditions. These problems require attention. In the process of adjusting to their problems, organizations

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take on new characteristics which become long-term organizational features.

The question can be posed, then, what bearing did this perspective on organizational change -- i.e., viewing organizations as problem solving systems -- have on our research effort? The answer is that it sensitized us to the possibility of change occurring from problems that were a direct result of the earthquake or from problems which existed prior to the disaster but which somehow took on new significance because of it. For example, frequently during a major community disaster organizations and agencies find it difficult to coordinate and control rescue, relief and rehabilitation activities. Several problems are often responsible for such difficulty, including the lack of a clear-cut division of labor among different agencies and organizations, ambiguity as to what officials and organizations have the authority for various decisions, and inadequate communications within and between organizations. Our orientation or perspective prepared us to be aware of the following possibilities resulting from such situations or experiences: (1) as these and similar problems became apparent during the crisis they may have served as a basis for temporary organizational modifications, and (2) such disaster related problems may have gener-

ated long-term organizational change as organizations established plans and procedures to prevent their recurrence or to minimize their effect in future disasters.

As previously mentioned, there have been very few studies on the long-term social consequences of disaster and even fewer in which organizations were the units of analysis. Consequently, relevant variables with regard to this important research problem have not been systematically identified. In utilizing our framework, it was our intention to provide rich descriptive data on which more analytical studies could be built, and to identify some of the variables that might account for long-term organizational change following disaster.

A number of sociologists have suggested that the notions of social conflict and strain are relevant variables in the analysis of social change. With this in mind, these notions were examined in our research to determine their utility as analytical variables in explaining disaster related long-term organizational adaptation. In terms of our general approach, we were interested in organizational strain as a type of internal organizational problem, and inter-organizational conflict as an environmental problem.
Strain is what Parsons refers to as endogenous sources of structural change. In the case of organizations, it is the inconsistencies or discrepancies between structural elements. Inconsistencies between official and unofficial structures, normative dissensus involving certain units of an organization, and role conflict are types of organizational strain. Among others, Moore and Feldman utilize the

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11 Talcott Parsons, "An Outline of the Social System," Theories of Society: Foundations of Modern Sociological Theory, ed. Talcott Parsons, Edward Shils, Kasper D. Naegele, and Jesse R. Pitts, Vol. 1 (New York: The Free Press of Glencoe, 1962, p. 71. Parsons conceives of strain as follows: "Strain here refers to a condition in the relation between two or more structured units (i.e., subsystems of the system) that constitutes a tendency or pressure toward changing that relation to one incompatible with the equilibrium of the relevant part of the system. If the strain becomes great enough, the mechanisms of control will not be able to maintain that conformity to relevant normative expectations necessary to avoid the breakdown of the structure. A strain is a tendency to disequilibrium in the input-output balance between two or more units of the system." Ibid. Merton makes this important observation regarding the notion of strain: "The key concept bridging the gap between statics and dynamics in functional theory is that of strain, tension, contradiction, or discrepancy between the component elements of social and cultural structure. Such strains may be dysfunctional for the social system in its then existing form; they may also be instrumental in leading to changes in that system. In any case, they exert pressure for change. When social mechanisms for controlling them are operating effectively, these strains are kept within such bounds as to limit change of the social structures." Robert K. Merton, Social Theory and Social Structure (2d ed. rev.; The Free Press of Glencoe, 1963), p. 122.

notion of strain in analyzing change in social systems:

This analytical problem (the need for accounting for change) has led us to a rather simple "tension or "strain" theory of social change. We may assume that persistent strains...are highly probable sites or points of social change, including deliberate efforts to remove the strains.13

This lack of perfect harmony in organizations, for example, creates problems and as Moore indicates:

...problems provoke attempted solutions. Individuals seek to further their interests, or, very commonly, the interests of organizational units they represent, and in doing so attempt to find new procedures, new distribution of power, influence, prestige and wealth. The divisive influences, however, need not dominate. Some problem-solving will be directed toward alleviating tension or removing strains, and will lead to compromise or to authoritative and disciplined decision.14

Conflict is another variable used by sociologists to, in part, account for social change.15 Coser, for example, sees "The clash of values and interests, the tension between what is and what some groups feel ought to be, the conflict between vested interests..." etc., as being responsible for generating new norms, institutions, and economic and technological changes in a society.16 Blau and Scott also suggest

13 Moore and Feldman, op. cit., p. 96.
14 Moore, Social Change, p. 58.
that organizational conflict may result in organizational change. In this study, we are using the term in its less violent meaning, in what La Piere refers to as its general and most frequently used sense. Thus, conflict may be used to refer to less dramatic situations as "...the opposition between the desire of workers to maximize their wages and that of their employers to increase his profits...although it may result in nothing more violent than haggling over wage scales."

We sought to make an assessment, then, of the usefulness of the variables of organizational strain and inter-organizational conflict in terms of our particular research problem. More specifically, we wanted to determine if, following disaster, (1) long-term organizational change occurs in sources of pre-disaster and disaster generated organizational strains, and if (2) long-term organizational change occurs in pre-disaster and disaster generated conflict relations between organizations.

Methodology

Selection of the disaster and organizational units

As previously indicated, the present study grew out of an earlier one which dealt with the response made by organizations

17 Blau and Scott, op. cit., p. 240.
18 La Piere, op. cit., p. 478.
19 Ibid.
in Anchorage in the emergency period following the March 27, 1964, earthquake. Consequently, the methodology of each of the two studies was inextricably bound and we will be discussing aspects of both.

Several hours after the disaster had occurred, a field team consisting of two persons, including the writer, was dispatched to Anchorage. This team arrived in Anchorage on the night of March 28, and was joined several hours later by the three Co-Directors of the Disaster Research Center. On this first of several research trips, elements of this group remained in Anchorage for one week interviewing various organizational officials and collecting other kinds of data. Second and third field trips were made in May and June of 1964, to complete the data gathering on the initial research problem. In addition, because of their high degree of involvement in

Those who have conducted field studies of disasters appreciate the need for beginning such research early after the disaster has struck. Killian notes, for example: "Field studies of disasters have been made at various intervals of time after the event, but it is generally desirable that field work begin as soon after the moment of impact as feasible." Lewis M. Killian, An Introduction to Methodological Problems of Field Studies in Disasters (Washington, D.C.: National Academy of Sciences - National Research Council, 1956, publication 465), p. 5. The sooner researchers begin their investigation the more likely they are to observe rescue and relief operations still in process. Also, the shorter the period between the event and the time when information is received from respondents the more accurate is such information likely to be. In addition, it is important that data collection be initiated prior to the development of a community definition of what occurred because of the tendency of persons to alter their perceptions to make them consistent with this definition.
emergency activities following the earthquake, two organiza-
tions were selected for more intensive or in-depth analysis.

The first three field trips were followed by three
others in which long-term organizational change, the subject
of the present study, was the research problem under consid-
eration. These trips were made in August of 1964, and March
and August of 1965. The data gathering period for this study,
then, was a year and a half. The writer was part of the field
teams on all of the first five Anchorage trips and was alone
responsible for the research on the sixth and final field trip.

The table which follows gives a chronology and other
important field trip information in capsule form.

At this juncture, it seems appropriate to indicate why
this particular disaster was chosen for study, and why we
focused on the greater Anchorage area rather than some other
community in the state since several were affected. Although
each disaster offers some unique problems for the investigator,
and frequent adjustments have to be made, such research,
nevertheless, requires that a general research design be
conceived which specifies the units which will be observed,
the variables to be considered, and the research procedures
which will be used. Our general research design called for
giving priority to those natural disasters which met the
following criteria: (1) the impact of the disaster agent was
sudden and unanticipated, (2) it resulted in a considerable loss
of life and property, (3) occurred in a metropolitan area, and (4) caused considerable disruption in normal community processes.

**TABLE 1**

FIELD TRIP INFORMATION

<table>
<thead>
<tr>
<th>TRIP</th>
<th>DATE AND LENGTH OF FIELD TRIP</th>
<th>NUMBER ON TEAM</th>
<th>RESEARCH PROBLEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>March 28, 1964 - April 4, 1964</td>
<td>5</td>
<td>Emergency organizational response</td>
</tr>
<tr>
<td>2</td>
<td>May 3, 1964 - May 9, 1964</td>
<td>3</td>
<td>Emergency organizational response</td>
</tr>
<tr>
<td>3</td>
<td>June 13, 1964 - June 26, 1964</td>
<td>4</td>
<td>Emergency organizational response and in-depth analysis</td>
</tr>
<tr>
<td>4</td>
<td>August 18, 1964 - August 27, 1964</td>
<td>2</td>
<td>Long-term organizational change</td>
</tr>
<tr>
<td>5</td>
<td>March 16, 1965 - March 27, 1965</td>
<td>2</td>
<td>Long-term organizational change</td>
</tr>
<tr>
<td>6</td>
<td>August 29, 1965 - September 21, 1965</td>
<td>1</td>
<td>Long-term organizational change</td>
</tr>
</tbody>
</table>
It was anticipated that a disaster with such characteristics would result in a multiplicity of contingencies and thus make it possible for the researcher to observe the development of emergency structures and processes in a community. Also, in selecting disasters to be studied, priority was given to those which occurred in large communities because of the presence of a variety of organizations and groups that could be studied. In summary, our research design called for giving highest priority to those disasters which struck relatively large communities and which afforded the opportunity to study a variety of organizations required to undergo sudden and considerable adjustment.

The earthquake affected communities throughout south-central Alaska, and Anchorage was, by far, the largest. Therefore, it was decided to concentrate our research efforts in the Anchorage area. The disaster met most of the criteria we had established for one with high research priority.

In studies by the DRC, organizations are usually the primary units of analysis. There are two reasons for this. First, it was recognized that there was a dearth of information on organizational functioning in disaster as most previous disaster research dealt with other levels of analysis; for example, studies focusing on the individual's emotional response to crisis have been very popular. Secondly, it was felt that the crucial roles which many organizations play during periods of community disaster, e.g., police and fire
departments, public works, Red Cross, etc., warranted more systematic study. In line with our general interest, then, a number of organizations located in Anchorage and representing both local and state levels were selected to be studied.

The data gathering in the initial research effort dealing with the emergency response of organizations was oriented toward acquiring answers to the following questions regarding each organization included in the study: (1) What was the organization like prior to the disaster? In other words, what were the internal characteristics of the organization, such as size, authority and decision making patterns, and activities? (2) What was the nature of its relationship with other organizations? (3) What were the major activities of the organization during the emergency period? Also, disaster created problems and adaptations were particularly noted. And finally, (4) What was the nature of the organization's involvement with other organizations and groups during the emergency period? In this regard, attention was given to instances of inter-organizational cooperation and conflict.

Stated in a more general fashion, then, the initial study was geared toward determining intra- and inter-organizational structures and functions during the emergency period following the earthquake. The emergency period was considered the first three days following the disaster when the greatest stress was placed on the resources of the community. In order to provide a context from which to view the emergency
response of community organizations, it was also necessary to acquire information concerning their predisaster structures and functions. Such data enabled us to understand the extent and significance of the emergency adjustments made by the organizations. We now turn to a discussion of how our sample of organizations in the initial study was determined.

A considerable amount of flexibility was required in selecting the organizations to be included in the first study. And, of course, this had implications for the present study since the sample of organizations used in it was based upon the initial effort.

The sample was drawn from the universe of organizations in Anchorage that were involved in the emergency community response. Initially, those organizations that were most actively involved in the emergency community response were selected and studied. It was reasoned that this would enable us to reconstruct the general pattern of the organized community response. From this point, it was felt that we could expand

21Our initial approach to the problem of sampling was based on the need in disaster research to get an adequate description of the major events of the disaster. Killian, for example, refers to the importance of this: "... no matter how narrow the interest and how well crystallized the design, every disaster field study should make provisions for securing an accurate description of the overall situation and sequence of events. ... The general sequence of events -- who was notified of the disaster and when, what rescue and relief forces and supplies arrived and when, what steps were taken to organize a coordinating body or directing authority, and similar factors -- should be discovered. Ibid., pp. 7-8.
our research to include organizations which were not as actively involved in emergency rescue and relief activities but, nevertheless, offered the opportunity to understand some interesting patterns or problems. Our sample, therefore, was a purposive sample rather than one of probability.

The requirement for flexibility in selecting organizations to be included in the initial study can not be overemphasized. A purposive sample of organizations suited our needs in terms of the research problem. Certainly, in determining the organizations to include in the study it would not have been beneficial to have obtained a listing of all the organizations in Anchorage for the purpose of deriving a probability sample. If this had been done, many organizations which played vital disaster roles would have undoubtedly been left out -- thus our understanding of the general organized community response would have been incomplete.

There were several ways in which the organizations that needed to be included in our sample were identified. The direct observation of some organizations involved in emergency activities was one important means of identifying such organizations. For example, some hours after arriving in Anchorage, the research team determined the location of the two principal emergency coordinating centers. Following their arrival at these centers, team members were able to locate themselves in vantage points in each of them and thus directly observe
and identify officials of some of the most involved organizations and agencies that would need to be contacted later.

As those organizational officials from organizations that were, or had been, most obviously involved in the emergency were contacted and interviewed, they frequently provided the field team with leads concerning other organizations that needed to be included in the study. Thus, the number of organizations proliferated or had a tendency to snowball as various organizational officials were contacted and they in turn referred us to other organizations. Finally, there were even a few instances on the first trip, after the field team had been in Anchorage several days, when some persons from organizations we knew little about came to us and volunteered information because they thought it would contribute to our research effort.

Twenty-three organizations were included in our longitudinal study. All of these organizations except two were part of the initial study focusing upon the emergency response. Most of the same organizations were included in this second study because (1) necessary base-line data from which the presence or absence of long-term change could be viewed had, for the most part, already been collected and (2) information regarding such organizations' emergency response which could have had some bearing on their subsequent long-term modification had also been collected. This meant that the primary
task remaining in terms of these organizations was the acquisition of the long-term change data. A broadcasting company and a daily newspaper were the two organizations which had not been included in the original study but were a part of the second. The broadcasting company was added to the second study when it was learned that it had experienced an interesting change, and the newspaper was added because it was felt that its inclusion would, more or less, round out the kinds of organizations considered.

The following were the organizations included in our long-term change study.

Anchorage Police Department
Anchorage Civil Defense Department
Anchorage Fire Department
Anchorage Port Department
Anchorage School District
Anchorage Public Works Department
Anchorage Municipal Light and Power Department
Anchorage Telephone Department
Alaska Native Service Hospital
Providence Hospital
Presbyterian Hospital
KENI Radio and Television
KFQD Radio
KHAR Radio
KBYR Radio
Northern Television, Inc.
Anchorage Daily Times
Chugach Electric Association
Anchorage Natural Gas Corporation
South Central Alaska Chapter, American National Red Cross
Alaska Salvation Army
Alaska National Guard
Alaska State Civil Defense

These organizations range from those that were the most actively involved in rescue and relief activities during the
emergency period following the earthquake to those that were the least involved. They also vary in terms of certain structural dimensions. For example, included in the sample are (1) large, highly bureaucratized organizations and smaller, less bureaucratized ones, (2) organizations with large numbers of volunteers and those that have few or no such personnel, (3) organizations whose normal function is to deal with emergency situations and those that never become so involved, and (4) local and state organizations.

Sources of data

Several sources of data were utilized in both studies. They were (1) unstructured and semi-structured interviews with organizational members, (2) on the scene and partly recorded observations of organizations in operation during the emergency period, and (3) various kinds of organizational documents (e.g., operation reports, policy statements, written disaster plans, logs, budgets, and newspaper and radio reports). Such a wide variety of data were collected in order to acquire as objective answers to our research questions as possible. The interview data were the most important data and the other sources were used as supporting information.

Interviews

In both studies, an attempt was made to interview persons at more than one level in an organization. There were
only a few instances when this could not be accomplished. Also, an attempt was made at interviewing persons at somewhat corresponding positions in the various organizations. In determining what specific persons in each organization should be interviewed, the general procedure followed in both studies was what Killian refers to as constructing a sample of points of observation. That is, as far as possible, persons interviewed were those who were thought to have been most familiar with a given situation or event as it affected their particular organization.

With the exception of the two organizations which were later analyzed in-depth, the interviews conducted during the first study were relatively unstructured. It was felt that such an approach would maximize the opportunity for acquiring rich descriptive accounts from respondents about important organizational patterns. The interviews were conducted by

22Killian notes in this regard: "Sometimes ... the investigator cannot define statistically the universe to be sampled. Some of the basic units of investigation are likely to be events or chains of events, rather than the distribution of attitudes, emotional reactions, or behaviors in a population. Here his concern is to obtain the most accurate reconstruction of the event possible and this need may best be served by tracing down and interviewing those persons who were participants in or witnesses to that event. His concern is sometimes with a particular decision - for example a decision to form a disaster committee representing different agencies - or a particular point in a process - for example, the origin of a rumor." Ibid., pp. 18-19.
field team members using an interview guide which was structured only in the sense that it outlined in a very brief fashion the topics which should be covered and the most logical point in the interview that such topics or areas should be introduced (see Appendix for interview guide).

The unstructured nature of the interviews were expected to elicit from respondents a comprehensive narrative account of their activities and those of their organization during the emergency period, and to a considerable degree this did occur. The flexibility of the interview situation enabled respondents to talk freely about their experiences; furthermore, this flexibility seemed to complement the desire of many respondents to share their experiences in considerable detail with the interviewer who was able, in many respects, to assume the role of the sympathetic listener.

In these initial interviews, it was the task of the interviewer to guide the respondent so that he would provide information regarding several broad areas. Also, he had to determine the tone of the interview, structure questions as it progressed, and present probes which would elicit information
regarding key events and problems. These interviews varied from one half to two hours in length.

Because they were highly involved in the community emergency response following the quake, two organizations, the Anchorage Public Works Department and the Alaska State Civil Defense, were subject to a more comprehensive analysis. Members of these organizations were interviewed in-depth and a more structured interview guide with open-ended questions was used by the interviewers (see Appendix). These interviews lasted from one and a half to three hours. Also, a larger number of persons were interviewed in these two organizations than in the others. These interviews also provided additional data on which to build our longitudinal study.

The interview guide which was used in our organizational change study consisted of a series of open-ended questions aimed at eliciting information regarding both intra- and inter-organizational change (see Appendix). The research

23 Riley captures the tone of the problem for the interviewer in these kinds of interviews. "Whenever the research design calls for intensive, exploratory interviews, the questioner must be able to handle lengthy conversations, often touching upon matters which are personal in nature. He must determine on the spot arrangement and wording of the questions. He must grasp the respondent's replies quickly enough to help him express his thoughts and to probe for further information when necessary. He must deal both with respondents who have difficulty in opening up and with the respondents from whom the questioning releases a flood of irrelevant material." Matilda White Riley, "Sources and Types of Sociological Data," Handbook of Modern Sociology, ed. Robert E. L. Faris (Chicago: Rand McNally and Co.), pp. 1006-1007.
problem in the organizational change study was more specific or had more focus than the initial one, so therefore, the interviews were somewhat more structured. Using the interview guide, the interviewers sought to determine whether the organizations had experienced any relatively long-term change in any of the following areas:

**Intra-organizational**

1. Structural change -- creation of new positions or units, change in lines of authority, decision making, etc.
2. Personnel -- general increase or decrease.
3. Function -- change in what the organization does, i.e., its activities.
4. Disaster planning -- development of disaster plans or revision of old plans.
5. Technical-physical -- development of disaster warnings facilities, change in supplies and material available, etc.

**Inter-organizational**

1. External relationships -- change in nature of involvement with other organizations, e.g., closer ties, or emergence of conflict relations.
2. Points of communication -- creation of inter-organizational liaison positions and committees.

3. Technical -- creation of new technical systems to facilitate communications, etc.

These areas were considered because they were suggested by the literature as being possible areas of change, and because our own experience in disaster research made us feel that change might occur in these dimensions. Also, even though we wanted some fairly specific information, we thought it was important, too, to be somewhat comprehensive. Therefore, we included in our interview schedule several general questions to enable us to get any data on change which did not fit into one of these specific areas. Further, during the course of the interviews, the interviewers were responsible for probing and asking respondents why they thought a change in a given area was related to the disaster experience or in the absence of change why none occurred.

Following each of the first two trips in which long-term organizational change was considered (trips 4 and 5), the interview schedule was somewhat revised. Some questions were added and a few were omitted which did not seem to be needed.

The long-term change interviews varied from one half to two hours in length. During the three field trips, ninety-four of these interviews were conducted.
An alternative to conducting interviews regarding long-term change as we did, i.e., on field trips at three different periods, would have been to have made only a single field trip about the time our final one was made in August, 1965. However, we feel that there were a few distinct advantages in the approach we took. For example, there was clear evidence to support the idea that had the alternative approach been taken much of the details regarding certain important changes would have been lost because respondents would not have been able to recall them. This was made evident by the fact that several persons that had been interviewed earlier were re-interviewed on the final trip and had difficulty in referring to events and situations about which they had provided considerable information earlier. In some respects, this is a consideration similar to the need for a field team to begin its data gathering as soon after a disaster as possible. One might argue that in terms of acquiring accurate information regarding long-term change that it is even more important for researchers to avoid, as much as possible, waiting until those who are to be interviewed become too far removed by time from the important events. Because such post-emergency period events as long-term changes are usually less dramatic, details and relationships may be forgotten even more quickly by those involved.
Another argument for the approach we used was that had only one organizational change data gathering trip been made at a year and a half following the disaster, several key persons in some organizations would not have been interviewed because, by this time, they had left their respective organizations. Fortunately, these organizational officials had been interviewed on one of the earlier field trips and their knowledge about their organizations and the problem of change was not lost to the researchers.

The interviews in both studies were tape recorded.\(^24\)

\(^{24}\)Based upon four years of experience using tape recorders in disaster research, the Disaster Project of the National Opinion Research Center at the University of Chicago found the following advantages in this technique:

1. Apart from the operational problems of obtaining proper audibility and voice fidelity, no verbal productions are lost in a tape recorded interview. Comparisons of tape recorded interviews with written interviews indicate that remarkably large amounts of material are lost in written ones.

2. The tape recorded interview eliminates a major source of interviewer bias — the conscious and unconscious selection on the part of the interviewer of the material to note down.

3. The tape recorded interview not only eliminates the omissions, distortions, elaborations, condensations, and other modifications of data usually found in written interviews, but it also provides an objective basis for evaluating the adequacy of the interview data in relation to the performance of the interviewer.

4. The tape recorded interview is a liberating influence on the interviewer, because it permits him to devote full attention to the respondent.

5. Other things being equal, the interviewer who uses a tape recorder is able to obtain more interviews during
They were then transcribed verbatim and analyzed. The nature of the interviews -- relatively unstructured with open-ended questions -- seemed to warrant this type of recording procedure. In contrast, a research problem which required interview questions that would elicit precise, or direct responses, such as "yes" or "no," and did not require descriptive data would not make tape recorded interviews necessary.

The vast majority of respondents seemed not to be affected by the use of the tape recorders. In only a few cases did persons express a preference to be interviewed without the tape recorder. There were some instances when interviewees were asked to talk about sensitive areas, such as conflicts and other problems, and they requested that such remarks not be tape recorded; however, in such cases, they did not object to having their remarks recorded by hand. Most respondents, however, made no such requests and generally seemed to be willing to discuss rather sensitive areas without too much hesitation. We assured each respondent that his anonymity would be maintained and, evidently, this assurance served to neutralize any threat most of them might have perceived in the a given time period than an interviewer who takes notes to reconstruct the interview from memory after the interview has been completed.

situation. The cooperation of organizational officials in Anchorage was, indeed, high throughout all phases of the research.

**Non-participant observation**

In addition to the interviews with organizational officials, direct observation of organizational activities was another source of data utilized in both studies. As previously observed, DRC field team members arrived in Anchorage during the emergency period. Consequently, direct observations were made of emergency operations as they were occurring and in some instances even when they were being organized. As a result, in some cases less reliance had to be placed on reconstructive interviews.

The non-participant observation included the presence of field team members at the principal emergency coordinating centers and attendance at organizational and City Council meetings. In a few instances, e.g., some City Council meetings, the proceedings were tape recorded. However, the usual procedure was for field team members to take hand-written notes.

The fact that field team members were able to observe emergency organizational processes, conflicts, and other problems underscores the importance of rapid dispatch to a disaster scene by researchers. Such observation not only serves as a check on the reports by respondents, but tends
to make the research less sterile for the investigators. Team members, for example, were able not only to perceive the extent of the damage but also such things as utility teams involved in restoration, the National Guard and police sentries at their emergency tasks cordoning off the disaster scene, etc. As a result, the descriptions of such activities as supplied by those involved were more meaningful and real to the researchers.

Non-participant observation was also a technique used on the field trips which dealt more specifically with long-term organizational change. For example, on the last field trip to Anchorage, a year and a half after the disaster, there was a need to attend some organizational meetings on a non-participant observation basis because they had some bearing on our research problem.

Documents

Various kinds of documents were the final source of data for both of the studies. These documents were used to supplement the interview and direct observational data. The following were the major types of documentary material used: (1) During the course of the data gathering on both of the research problems, organizational officials were asked to make available to field team members minutes of meetings, policy statements, disaster plans, communication logs, budgets, after-action reports, and recorded messages of various kinds. As a result, an extensive body of such data was acquired.
(2) Another source of supplementary data were several tape recorded radio broadcasts which had been made during the emergency and rehabilitation periods following the disaster.

(3) Finally, numerous newspaper accounts were used as supplementary information. One Anchorage newspaper was subscribed to from the time of the initial emergency throughout the rehabilitation period. In our analysis, the greatest reliance was placed on our primary data and these documents were used as back-up information. Let us now turn to a brief discussion of some of the limitations of our data and research in terms of our primary objective -- the analysis of disaster related long-term organizational change.

Some limitations

One of the most important limitations in our attempt to determine the relationship between the disaster and organizational change is that in some instances the pre-disaster organizational data which were collected during the early trips were meager. A reliable analysis of such a complex relationship is dependent upon there being sufficient baseline data from which change can be measured. In a number of cases when gaps were discovered, more complete pre-disaster data were acquired on later follow-up field trips. However, in a few other cases, attempts at collecting such data on later trips did not meet with as much success owing to the inability of respondents to remember the desired information, and because usable documents were not available.
Another limitation which can be noted resulted from the fact that in a few instances, between the periods when DRC personnel were not in Anchorage, events occurred which had some implication for our research problem but about which we could never get complete information. On return trips to Anchorage, those involved were interviewed. However, in a few cases these persons could not recall many of the details of the events. If it had not been financially prohibitive, it would have been very advantageous to have had at least one member of the field team remain in Anchorage during the entire data gathering period so that he could have responded quickly to such events.

A similar problem was that in many instances we had to rely upon the interpretation of interview respondents in determining if particular long-term organizational changes were related to the earthquake experience. It is possible that in some cases we might have reached somewhat different conclusions than our respondents if we had been present when such changes were conceived or implemented. Of course, we attempted to control this problem by conducting multiple interviews in each organization.

Finally mention might be made of the fact that the data gathering period was not extended beyond a year and a half because of time demands on the researchers. Ideally, such a study as this would cover a period of several years. At the completion of this study, for example, there were a number
of organizational changes planned for the future and many still in the process of being implemented. Also, the possibility certainly exists that other changes will still later be born from the earthquake experience. A study covering a greater span of time certainly would be needed to follow the change processes let loose by the disaster until they have worked themselves to completion.

In this chapter, we have defined such key concepts as organization and disaster, offered a general theoretical statement, and also discussed our methodology. In the following chapter, we will discuss the disaster setting and the response that was made to the disaster during the emergency and rehabilitation periods.
CHAPTER III
THE DISASTER RESPONSE

The Setting

The state

Alaska is by far the largest state in the Union in terms of area; with an area of some 586,400 square miles it is almost one-fifth the size of continental United States. The 1960 census places the population at around 226,000 with about 43,000 of this number classified as native, i.e., Indian, Eskimo, and Aleut.

There are large sparsely inhabited areas in Alaska as the population tends to be concentrated around a few principal urban areas. That part of the state which was impacted by the earthquake and subsequent seismic waves, the southcentral region, contains almost half of the total population.¹ This region includes Anchorage, Kodiak, Seward, Valdez, Whittier and Kenai. Approximately 100,000 persons reside in the Anchorage metropolitan area with about 50,000 of these living in the city proper. The combined population of the other communities in the southcentral region is less than 10,000.²

²Ibid.
Several industries have grown up around the natural resources of the state to become important aspects of its economic structure including fishing, mining and lumbering. Since 1957, oil refining and natural gas production have also become important; much of this activity is carried out in the Kenai Peninsula area to the south of Anchorage where several companies have constructed refineries.

Transportation is not very adequate in Alaska due in large measure to climatic and other geographic factors. The best highways are centered around Anchorage and Fairbanks, the two largest cities. Also, rail transportation facilities are so located as to provide service mainly between Fairbanks and the southcentral region. Shipping and aviation play important roles in the transportation system of the state. High bulk products are shipped from states such as Washington to southcentral Alaska and then transported inland by the Alaska Railroad. Also, the inadequacy of the highway system has led to considerable dependence on aviation as a mode of travel throughout the state's interior.

The military plays a vital role in the economy of Alaska. Many civilians are employed by the military and the income of military personnel support many of the state's service industries. Even large numbers of persons who are not directly employed by the military or federal government, e.g., people working in the construction industry, depend to some extent on federal

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defense spending for some income.

**Anchorage**

In addition to being the most populated section of Alaska, the Anchorage metropolitan area is the economic and trade center of the state.

Approximately 40% of Alaska's income, or about $252 million, is derived from the Anchorage area. Not being a major manufacturing center, Anchorage achieves its importance as the central transportation, communications and logistics support point with more than 2,000 persons employed in transportation and more than 500 in communications and electronics. It is also the headquarters for oil and gas explorations in Alaska and the focal point for this industry's management supply and support.\(^4\)

The kinds of organizations and groups located in Anchorage at the time of the disaster certainly bore some relationship to the fact that it was the financial and population center of the state. Many of the organizations which possessed important resources that were used during the emergency would not have been found in smaller communities in Alaska, or would not have had the same kind of capabilities. For example, compared to most Alaskan communities, Anchorage has relatively large fire and police departments with modern facilities. In addition, there are several state and federal agencies in the community, e.g., Alaska State Civil Defense and the Alaska District Corps of Engineers. Such organizations can provide the community with relatively rapid access

\(^4\)Office of Emergency Planning, op. cit., p. 17.
to state and federal resources. Finally, Fort Richardson and Elmendorf Air Force Base, with their vast resources, are located just outside of the city. Twenty-five thousand military personnel reside in the area.\(^5\)

Even though the military plays a very important role in the economic structure of the Anchorage area, as it does in general throughout the state, it is interwoven with civilian organizations and groups in more than an economic sense. For example, the children of military personnel attend the public schools in the area, wives of military personnel teach in the Anchorage schools as well as work as nurses in the hospitals and serve as secretaries in various organizations and agencies. Also, the military and civilian organizations frequently cooperate with one another; for example, Anchorage area fire departments have mutual aid agreements with their military counterparts. Further evidence of this military-civilian integration can be seen in the fact that some military personnel retire and become employed in organizational positions in Anchorage. Their prior relationships in the military and their knowledge of its operation enables them to act as effective liaison persons between the two elements of the community. Thus, a basis for cooperation existed between the military and civilian spheres of the Anchorage area which could be drawn upon during a period of

\(^5\)Ibid. p. 16.
emergency such as existed following the earthquake.

There was considerable change occurring in the Anchorage community at the time of the earthquake. In essence, it was becoming more urbanized. Between the decades of 1950 and 1960, the population of the city expanded from 11,254 to 44,237.\(^6\) Although population growth in the city seemed to have leveled off considerably after 1960, substantial expansion and development was still required of its institutions and organizations at the time of the disaster. For example, there was a new hospital and also one that only recently had expanded its operation. Also, there was a new gas utility in the city and a school system which was in the process of expanding and undergoing other changes. Considerable effort was being made to make Anchorage less frontier like and more urban in character.

**The Disaster**

The Alaska earthquake occurred on Good Friday, March 27, 1964, at 5:36 p.m. It was registered on the Richter scale at between 8.4 and 8.7 and thus was one of the largest earthquakes to be recorded in the United States.\(^7\) The epicenter of

\(^6\)From the records of the city of Anchorage Planning Department.

the earthquake was in Prince William Sound in the southcentral region of the state.\(^8\) Marked property damage occurred in southcentral Alaska over an area of about 50,000 square miles.\(^9\) Property damage has been estimated at over $300 million.\(^10\) One hundred and sixteen persons lost their lives in the disaster. The uplift and subsidence of the earth and seismic waves generated by the earthquake that struck communities adjacent to bodies of water caused most of the damage to property and loss of life. In addition to Anchorage, a number of communities were affected including: Seward, Valdez, Kodiak, Homer, and Whittier.

Anchorage, which is approximately 30 miles west of the epicenter of the earthquake, received the greatest amount of property damage.\(^11\) Both seismic shock and landslides account for the damage in Anchorage with the latter being responsible for the greatest amount. Unlike places such as Valdez and Kodiak, there was no damage in the Anchorage area from seismic waves. Fortunately, only nine persons lost their lives in the community.


\(^9\) Ibid.


Much of the damage in Anchorage was the result of four major landslides triggered by the earthquake. These were the Turnagain, "L" street, 4th Avenue, and Government Hill slides. The land in some of these areas is composed of a relatively unstable material referred to as Bootlegger Cove clay which subsided under the impact of the earthquake. The slides in the fashionable Turnagain residential area destroyed or severely damaged considerable personal property including 70 homes. The 4th Avenue slide area involved part of the city's business district; here, many buildings were destroyed beyond repair as a section several hundred yards in length subsided 10 to 18 feet. In the Government Hill area, a slide more than a mile long destroyed a grammar school in addition to other property. The land moved several feet in the "L" street slide area causing severe damage to many buildings and streets. In addition to the damage to buildings in the slide areas, there was damage done to utility facilities.

There were a number of buildings outside the four principal slide areas which were badly damaged or destroyed by seismic shocks including a 6 story apartment building, a 5 story department store and a 60 foot high airport control tower. Also, a 14 story hotel, two 14 story apartment houses, an 8 story office building, and a 6 story office building were among those that received structurally significant damage.13

12 Ibid.
Immediate post disaster

Immediately following the earthquake, normal community processes were interrupted. Major damage was sustained by the Anchorage water system. Two of seven wells were totally destroyed and the system was almost completely drained. Service was also disrupted to about 80% of the customers of the Anchorage Natural Gas Corporation. The area immediately experienced a complete electrical failure resulting from damage to the systems of the Municipal Light and Power Department and the Chugach Electric Association. Also, telephone service in the city was immediately disrupted. Organizations which had emergency sources of power and devices for emergency communications available began utilizing them.

While most persons in the community were no longer at their places of employment because of the time in which the earthquake occurred, emergency organizations, including the Anchorage Fire and Police Departments, had regular shifts of personnel on duty. There was no major structural damage done to the headquarters of these organizations, which were both located in the Public Safety Building in downtown Anchorage. The Public Safety Building became the headquarters for the city's emergency operation; here, various city and other organizations and agencies worked to coordinate the activities of their particular organizations with the over-all disaster operation.

All of the commercial radio and television stations went off the air at the time of the earthquake due to power failure. One radio station, KFQD, managed to return to the air as early
as 5:57 p.m. by using emergency generators.

The community's three civilian medical hospitals, Providence, Presbyterian, and Alaska Native, were without electricity, water, telephone service, and functioning sewage disposal facilities immediately following the disaster. Fortunately, the hospitals escaped major structural damage.

The two nearby military bases, Elmendorf Air Force Base and Fort Richardson, sustained considerable damage. However, with their immense resources their capabilities were not seriously hampered. Finally, it was fortuitous that the Alaska National Guard was on annual summer camp duty at Fort Richardson at the time of the disaster. This proximity to Anchorage enabled the National Guard to lend its assistance quickly when it was requested by civilian authorities.

The Disaster Response

Some social scientists have utilized the notion of time periods or stages in disaster. In general terms, it has been observed that particular functional or behavioral patterns seem to occur in certain sequences following a disaster. For example, Powell et al. conceptualize several time stages in disaster that are characterized by somewhat different functions as suggested by their labels, such as stages of disaster
warning, threat, impact, inventory, rescue, etc.\textsuperscript{14} Wallace, in turn, refers to a steady state, a period of warning, threat, impact, and so on.\textsuperscript{15} It should be rather obvious that for certain disasters some of these stages may not be present. For example, seldom are there warning and threat stages in earthquake caused disasters. For the purposes of this study, it will be necessary for us to think in terms of only two periods, an emergency period and a rehabilitation period.

Initially, we will discuss some of the salient features of the community and organizational response during the emergency period following the impact of the earthquake. By emergency period we mean that time segment which immediately followed the earthquake and which lasted approximately three days. It seems to us that this was when the greatest demands were imposed on the capabilities of the community, its groups and organizations. Also during this period of the disaster, search, rescue, and general preservation of life functions prevailed over other kinds of considerations.

Our discussion of the emergency period will be followed by one on the rehabilitation phase of the disaster. It appears

\textsuperscript{14}John W. Powell, Jeannette Rayner, and Jacob E. Fine-singer, "Response to Disaster in American Cultural Groups," Symposium on Stress (Washington: Army Medical Service Graduate School, 1953, pp. 178-181.

to us that the rehabilitation period commenced several days after the earthquake struck when the sense of urgency declined. Also at this time, many of the normal community processes and functions which had been interrupted were once again resumed. During the rehabilitation period of the disaster, organizational and community officials were pre-occupied with long-term and permanent recovery. To some extent, the community was still in the recovery or rehabilitation phase of the disaster when our research was completed as there was still earthquake related activity occurring.

The emergency period

Immediately after the earthquake, search and rescue activity began in Anchorage. A variety of groups, organizations and individuals participated in this crucial activity. Some of those who became thus involved had previous experience in rescue work, while many others had not. The organizations and groups who participated in this important function at one time or another during the emergency period included: the Anchorage Fire Department, the Army, the Anchorage Police Department, the Alaska State Police, a local mountain rescue group, the Spenard Fire Department, and personnel from the Anchorage Public Works Department. In addition, these organizations were from time to time joined by individual volunteers who represented no particular group or organization
such as private construction people who not only participated in search and rescue activities but also made their equipment available.

Most earthquake victims were discovered and taken to hospitals before nightfall on Friday; however, the search and rescue effort was continued until Sunday, March 29, as a precautionary measure and because people found it very difficult to believe that the number of casualties that had been uncovered could be so small in light of the devastation that had occurred. As early as the evening of the 28th, search and rescue teams had carefully searched on three or four separate occasions buildings in the damaged areas of the city including the Turnagain and 4th Avenue slide areas.

Initially, private citizens assisted persons in the damaged areas. Gradually, however, the search and rescue function took on a more organized character. Anchorage Fire Department personnel became engaged in rescue activity fairly early. Sometime after 5:40 p.m. on Friday, personnel from the department were involved in search and rescue work at a heavily damaged department store in the downtown area. Around 6:00 p.m., the Spenard Fire Department, a suburban department under contract with the city of Anchorage, began rescue operations in the Turnagain slide area; several minutes later, they were joined by men from the Anchorage Fire Department and the Alaska State Police.
Around 6:40 p.m., on Friday, a building construction and maintenance official of the Public Works Department and several other city employees began organizing teams composed of volunteers and city employees, including some from Public Works, to go into the damaged areas and search building by building for victims and to make damage inventories. This emergent structure organized by the building construction official and later known as the Disaster Control Group also engaged in a number of other important emergency functions such as neutralizing secondary hazards, locating and organizing public shelters, registering volunteers, and locating needed emergency supplies and equipment.

Sometime after 11:00 p.m. on Friday, an Army rescue group from Fort Richardson became involved in the rescue effort. Between 5:30 and 6:30 a.m. on Saturday, March 28, a volunteer was appointed Civil Defense coordinator of rescue operations and between 7:00 and 9:00 a.m. search and rescue activities were pretty much organized. Even after this period, however, there were some search and rescue efforts occurring that were not coordinated.

Providence Hospital functioned as the major medical facility in Anchorage during the emergency period. No major structural damage was sustained at the hospital. An emergency generator was pressed into service when city power was interrupted and provided power for limited areas such as the corridors, the emergency room, and operating rooms. For many hours
after the earthquake, hospital officials had no way of knowing the number of casualties to anticipate because the telephones were inoperative and no standby means for establishing communications were available. As a result, preparations were made to care for a large number of earthquake victims that never arrived. Between 6:15 p.m. on Friday and midnight, 21 casualties were received at Providence. Of this number, three were dead on arrival and only seven were admitted. Between Saturday morning, March 28, and Sunday night, 89 emergency cases were treated at the hospital, 18 of which were definitely earthquake related.

Throughout the emergency period, Providence had sufficient staff personnel to handle the emergency cases. A number of organizations provided the hospital assistance in some way or another including the Anchorage Fire, Police, and Civil Defense Departments, the Army and National Guard, Alaska State Civil Defense and various hospital supply houses. In addition, large numbers of private citizens volunteered their services. In fact, at one point the volunteer situation created a serious problem as time had to be spent trying to determine how to utilize them.

At the Alaska Native Hospital, as at Providence, preparations were made shortly after the earthquake for receiving hundreds of injured persons from the community, however, only eight persons were hospitalized with disaster incurred injuries. Also, a number of refugees were housed at the hospital
the night of the disaster. The lack of water, heat, power, and functioning sewage disposal facilities was probably the most critical contingency that had to be faced at Alaska Native during the emergency period. At one point before emergency generators had been borrowed, it would have been difficult to have performed major surgery at the hospital.  

Presbyterian Hospital is located in the downtown section of Anchorage and was in the "L" street slide area. The hospital was without power, water, and heat following the earthquake although sustaining no major structural damage. Around 6:00 p.m. on Friday, an evacuation of Presbyterian was begun due to the presence of what officials defined as dangerous gas leakage. Some patients were sent home, while 22 were transferred to Providence; this transfer of patients using vehicles provided by volunteers off the street was completed around 8:00 p.m. Prior to the evacuation, only 2 emergency cases had been dealt with at Presbyterian. The hospital was re-opened on Sunday afternoon, March 29.

In addition to the response of the hospitals, local, regional, and state public health officials, with the assistance of other organizations, worked to control public health hazards following the earthquake. Friday night, residents of

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the community were instructed by public health officials to either boil or chlorinate all drinking water because of the possibility of contamination. Also on Friday night the Army supplied local public health personnel with water trailers which they located at central points throughout the city; some of these trailers were maintained for a week after the disaster. The Army also made available four water treatment plants. On Saturday morning, March 28, public health officials established a number of inoculation centers in Anchorage. This program lasted for a week, during which time 38,000 typhoid inoculations were given.

Every major disaster presents problems with respect to security and control, and this one was no exception. Several organizations became involved in securing the damaged areas. On Friday evening after the earthquake, a group of civilian volunteers was organized to assist regular police personnel. These volunteers were deputized and given make-shift arm bands with "police" written on them. Teams of from three to six of these volunteers were sent out with a regular police officer into the damaged downtown areas to direct traffic, guard buildings, and control the entrance by the general public.

Sometime after 8:00 p.m. on Friday, Army troops from Fort Richardson that had been requested by city officials began arriving in Anchorage to lend assistance to the police
in securing the damaged sections. Alaska National Guard troops took up positions in Anchorage about the same time.

After the damaged downtown areas had been cordoned off, a serious problem developed for those persons and groups who had legitimate reasons for gaining entry into them such as crews on emergency assignments and businessmen who wanted to make damage inventories of their properties and prepare for re-opening. A number of organizations issued different kinds of passes and as a result guards on duty often did not know which ones to honor. To further complicate matters, many of the National guardsmen were Alaskan Eskimos whose English skills were minimal and sometimes they would not permit any persons with passes to enter the restricted areas of town. After a number of attempts were made to solve this problem, it was finally decided on Sunday, March 30, to establish three checkpoints downtown manned by police officers who were responsible for determining if a person's reason for needing to enter the restricted areas was legitimate. This procedure worked out reasonably well.

After Monday night, March 31, the National Guard began phasing out its troops. Also, the number of men that the Army had committed to security duty in Anchorage was reduced after Monday as the boundaries of the off-limits areas in the downtown section were compressed to permit the re-opening of businesses on Tuesday.
As the commercial radio stations returned to the air, they suspended all commercial broadcasting for the duration of the emergency period. Instead of following their regular programming, they functioned in a public service capacity by broadcasting emergency information and instructions from local and state officials, sending out appeals for help and vitally needed resources, disseminating missing persons information, and airing personal messages. The radio stations' role in emergency communications was particularly critical because of the unreliability of telephone communication. Station KFQD was supplied a short wave radio by Alaska State Civil Defense officials very shortly after the earthquake struck and throughout the emergency period the station did a considerable amount of broadcasting in cooperation with that organization. Station KENI located mobile broadcasting facilities at the Public Safety Building and established a similar relationship with city Civil Defense. In addition to the radio stations, citizen band and ham radio operators provided a sorely needed standby communications capability for the community.

The immediate response of the two principal electric utilities in the Anchorage area, the Municipal Light and Power Department and the Chugach Electric Association, was to send out crews to make inventories of the damage to their respective systems and begin restoration work. After 7:15 p.m. on Friday, power was restored to some parts of the community on a very
intermittent basis. It was not until about 5:36 p.m. on Saturday that somewhat dependable electric service was restored to Anchorage. About this time, the Chugach Electric Association and Municipal Light and Power were supplying power to most of their customers who could receive service. Work throughout the emergency period for the electric utilities consisted of making further damage assessments, temporary repairs and adjustments, and restoring service to buildings as they were determined to be safe for occupancy. Ahead of the electric and other utilities loomed a considerable rehabilitation and restoration effort.

Immediately following the earthquake, Anchorage Natural Gas personnel began surveying the damage to their transmission lines. Throughout the emergency period, crews were involved in isolating the damaged portions of the distribution system and restoring service to the unaffected areas of the city. Considerable assistance was provided the Anchorage Natural Gas Corporation by gas crews from Seattle who responded to the Company's request for aid and began arriving in Anchorage on Saturday night.

Similar to the other utilities, much of the work of the water utility division of the Anchorage Public Works Department during the emergency period consisted of locating damaged sections of the water system, isolating them, and then restoring service to the unaffected sections. Thus, areas that were
receiving water service were gradually expanded. Water service was generally available throughout Anchorage by Sunday evening except for some of the areas where major slides had occurred. Several days later, irrigation pipe was used for surface distribution of water in some of the slide areas such as Turnagain.

As noted elsewhere, the impact of the earthquake disrupted telephone service in the Anchorage area. Emergency work commenced shortly thereafter as employees began arriving at the four telephone exchange locations. Limited service was restored within each exchange by 8:00 p.m. Friday; however, calls could not be made between them. Lines were restored on a priority basis with key organizations and persons receiving first attention. By Sunday afternoon, a large portion of the telephone system was reported to have been operative after extensive temporary repairs had been made. For a number of days, however, overloading remained a serious problem causing portions of the system to break down from time to time.

The Salvation Army began a feeding operation in Anchorage on Friday evening following the earthquake; an operation which was continued throughout the emergency period. They provided coffee and sandwiches for emergency crews and military and civilian personnel on sentry duty, as well as the general public. On Saturday, the military also became involved in feeding as they set up field kitchens at a number of locations in Anchorage.
Also during the emergency period, several public shelters were established in the community. A number of groups and organizations were involved in making such temporary housing available to the public including the Salvation Army, city officials, the American Legion and various church groups.

For all practical purposes, Anchorage was without a local Civil Defense organization when the disaster struck. There had been only two full time employees in the Anchorage Civil Defense Department, a secretary and a director, and less than two weeks prior to the earthquake the latter had resigned. After the disaster, however, the former director made himself available to city officials and on Saturday morning he was appointed as acting head of city Civil Defense operations. Up until this time there had been a number of actions taken by various persons in the name of city Civil Defense. Yet, such an entity did not really exist until Saturday morning when the former director was temporarily re-instated and a number of volunteers began working under his authority. During the emergency period, the Civil Defense Director and his volunteers worked in a supportive and coordinating capacity with other community groups and organizations.

Alaska State Civil Defense, like the Army and Salvation Army, was involved in emergency operations in other communities in the state in addition to Anchorage. The organization's staff was expanded during the emergency to include
coordinators from the various state departments. Also, representatives from such organizations as the Army, Alaska National Guard, Red Cross and Salvation Army came together at Alaska State Civil Defense headquarters in Anchorage to coordinate an over-all state disaster operation.

As it did in other communities during the emergency, Alaska Civil Defense on a number of occasions located and provided needed resources to be used in the Anchorage area. For example, the state Radio Amateur Civil Emergency Service (RACES), which is a volunteer Alaska Civil Defense ham radio organization, provided a number of organizations in Anchorage with radio communicators for emergency communications. With respect to emergency activities in Anchorage, Alaska Civil Defense officials and city officials, including Anchorage Civil Defense personnel, functioned more or less independently of each other, although there were times when cooperation and coordination was required.

By Tuesday morning, March 31, there were a number of indices observable in Anchorage which suggested that the emergency period was over and a new phase of the disaster, the rehabilitation phase, had begun. By this time, the utilities were fairly reliable and had been at least temporarily restored in the major portions of the city. Streets were for the most part passable, except in some of the major slide areas, as debris had been cleared and cracks and crevices had been
filled with gravel by Public Works employees. Also by Tuesday, the perimeters of the restricted areas were significantly reduced and many businesses, including banks, had re-opened. Both city newspapers were publishing regular editions. Further, many important city officials who had been operating out of emergency headquarters at the Public Safety Building returned to their normal work locations on Tuesday; for example, the Mayor and City Manager returned to their city hall offices.

Rehabilitation period

In many respects, the activity in Anchorage during the rehabilitation period was considerably less dramatic than that which had occurred during the emergency period; however, it was also very important. During this period, community organizations and groups, with the assistance of state and especially federal agencies, worked to restore community capabilities back to their pre-disaster levels. We will not attempt to present here a complete description of the rehabilitation period. Rather, we will discuss briefly some of the salient features of this stage of the disaster in order to provide a broader context in which long-term organizational change can be viewed.

Shortly after the earthquake, representatives of a number of federal agencies flew to Anchorage in order to determine first hand how the resources of their respective organizations could be utilized most effectively in assisting
the communities of Alaska. Considerable federal aid was provided during the emergency period. However, federal assistance was even more noticeable during the rehabilitation phase of the disaster.

Since the President of the United States declared the Alaska earthquake a "major disaster," affected communities became eligible for long-term aid under the Federal Disaster Assistance Act (Public Law 875). The Office of Emergency Planning, the agency that is responsible for administering the funds that are made available through this act, appointed the Alaska District Corps of Engineers as contracting and supervising agent in most of the damaged areas in the state including Anchorage. Of the total damage to state and local public facilities in Alaska, $63,943,000 worth of restoration work was programmed under Public Law 875 alone.¹⁷

After the earthquake, the Office of Emergency Planning made over a million dollars available to Anchorage for demolition and debris clearance.¹⁸ This work was completed in the fall of 1964. In addition, under the supervision of the Corps of Engineers several million dollars were spent on the


¹⁸Ibid., p. 8.
restoration of water, sewage, power, and telephone systems; the repair of several schools and the rebuilding of one; the repair of city-owned buildings; and the repair of damage to the Port of Anchorage. It was anticipated that around $23 million would be spent in the Anchorage area under Public Law 875 and that by the time restoration was completed additional millions would be spent in money made available by other federal agencies. ¹⁹

The Urban Renewal Administration was one of the other federal authorities that provided assistance to Anchorage and other Alaska communities during the rehabilitation period. For example, the agency made funds available to Anchorage for stabilizing slide areas; also, it granted funds for an urban renewal program for the damaged downtown section of the city. ²⁰

Rehabilitation in Anchorage involved a network of interacting organizations and agencies, and to some extent the general public. Decisions with respect to long-term restoration goals and procedures had to be made by local, state, and federal organizations. Since the decisions and actions taken by one organization often involved or had consequences for others, coordination was necessary between them. Meetings were often held between local, state, and federal officials to iron out problems and explain required procedures. Many

¹⁹Ibid. p. 9.
such meetings were open to the public or were conducted expressly for public information and received considerable radio and newspaper coverage. The newspapers and radio stations in Anchorage also keep the public informed on other important disaster related events such as reconstruction actions taken by the City Council.

A number of local organizations, including the Public Works Department, the Telephone Department, Municipal Light and Power, and the Anchorage School District, worked closely with the Corps of Engineers throughout the rehabilitation period since the latter was charged with the responsibility for restoring their facilities. Liaison was established between these organizations and the Corps of Engineers as coordination was required in order to meet the long-term disaster problems effectively.

Alaska State Civil Defense was also part of the network of organizations involved in the rehabilitation process in Anchorage. Local authorities who seek federal disaster aid under Public Law 875 are required to apply through their respective states. Alaska Civil Defense played a particularly important role during the rehabilitation period because the Governor of Alaska assigned it the responsibility for processing local Public Law 875 project requests. Thus, Alaska Civil Defense officials functioned as a liaison between Anchorage and federal officials in terms of this aspect of the restoration program.
Finally, the Salvation Army and Red Cross were involved in rehabilitation work in Anchorage as well as in several other communities in the state. Most of the rehabilitation projects of the Salvation Army, however, were in communities such as Seward, Kodiak, and Valdez where officials defined the need to be greatest. Under the general guidance of staff personnel from the Pacific Area office in San Francisco, who arrived in Anchorage on Saturday, March 28, the Red Cross began providing long-term rehabilitation assistance to individual families. The bulk of this program was completed by October, 1964.

There was still considerable disaster related activity occurring and programed for the Anchorage area when our research was completed a year and a half after the disaster. Thus to some extent, the community was yet in the rehabilitation phase of the disaster. A number of persons reported that it would be a long time before their respective organizations were back to "normal."

In this chapter, we discussed the setting in which the disaster occurred, focusing on some of the significant social and economic features in the state in general, and Anchorage in particular. Also, we discussed in a somewhat abbreviated fashion the emergency response of some of the key organizations and groups as well as some of the general aspects of the rehabilitation period. In the next chapter, we will consider
the long-term organizational changes which resulted from the disaster.
CHAPTER IV

LONG-TERM ORGANIZATIONAL CHANGES

Change and the Conditions for Change

In this chapter, we will present the findings of the study. It will be recalled that our sample consisted of twenty-three organizations; we will discuss the long-term social consequences of the disaster for each of them.

The earthquake was responsible for initiating new patterns of organizational change as well as accelerating some pre-existing patterns. Seventeen of the twenty-three organizations underwent some long-term change. In some organizations, the disaster caused both the emergence of new patterns of change and hastened the implementation of pre-existing patterns. And in several other organizations, the earthquake was responsible for only the acceleration of prior existing patterns of change or just the emergence of new patterns.

The disaster was responsible for long-term organizational change to the extent that it brought about certain conditions which served as the impetus for change. The data of the study indicate that these conditions were either internal or external to the affected organizations. Some of the seventeen
organizations underwent long-term change primarily in response to new demands brought on by altered environments. Other organizations changed principally because of internal patterns and processes; for example, in response to strain or because new forms of organizational coping behavior were learned. Also, certain organizations underwent change in response to both internal and external variables.

In each of the organizations that experienced some long-term change, internal or external conditions, or a combination of the two, caused either (1) the development of new processes or patterns of change, (2) the acceleration of pre-existing patterns, or (3) led to the occurrence of both kinds of changes. The relationship between conditions and the kinds of changes each of the organizations experienced can be illustrated in a three by three table, as is done below. In the left margin the types of change producing variables are listed; here, "mixed" refers to the fact that both internal and external conditions produced change in some organizations. Along the top are the resultant changes; in this instance, "mixed" refers to the fact that in some organizations both the emergence of new patterns as well as the acceleration of prior existing ones occurred. Theoretically, nine associations were possible. However, as the table shows, only eight occurred.
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<th>Conditions</th>
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<td>New Patterns</td>
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<tr>
<td>Internal</td>
<td>I Anchorage Police Alaska Native Hospital Providence Hospital Alaska National Guard Anchorage Natural Gas Red Cross Salvation Army Anchorage Daily Times</td>
</tr>
<tr>
<td>External</td>
<td>II Anchorage Fire Department</td>
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<tr>
<td>Mixed</td>
<td>Anchorage Civil Defense</td>
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The presentation of the data will be organized according to the findings shown in Table 2. For example, we will initially discuss those organizations that appear in the first category; that is, those in which new patterns of change developed that were brought on by internal organizational factors. The final category of organizations from Table 2 which we will discuss will be those that experienced both the emergence of new patterns and the hastening of pre-disaster patterns of change as a result of both internal and external factors. The chapter will then be concluded with a discussion of the six organizations that did not undergo any long-term change. Relevant pre-disaster information regarding each of the organizations will be included so that we will have some baseline from which to view the modifications that occurred. Since we have focused the study on Anchorage, and because several of the organizations we will be discussing are part of the municipal structure, we will begin with a brief discussion of city government in Anchorage, and then proceed to the analysis of specific organizations.

Anchorage city government

The city of Anchorage has a council-mayor form of government. The City Council is composed of eight councilmen and a mayor elected at large in a non-partisan election; three members of the City Council are elected each year. The chief function of the Mayor and City Council is to determine governmental policy by enacting ordinances and resolutions.
The City Council has the responsibility for appointing a city manager who implements its policies.

The City Manager is the chief administrative officer of the city. As such, he has the responsibility for coordinating the activities of the municipal departments. He also has authority over all employees in these departments. This authority continues even under conditions of disaster. The City Manager's office includes the positions of assistant to the manager and management analyst; the latter performs various research tasks, works on special projects and generally advises and assists the City Manager.

The Mayor and City Council also appoint a city attorney and a city clerk. The city clerk conducts elections, serves as clerk to the City Council, maintains official city documents, and serves as voter registrar. The city attorney's office is composed of the city attorney and two assistant city attorneys. This office is responsible for representing the interest of the city in court proceedings and for providing legal advice and counsel to the City Council and other city employees.

Several commissions and boards assist the City Council in carrying out its policies. They are the transportation commission, board of gas fitters examiners, and appeals, parks and recreation board, planning commission, board of examiners and appeals, and telephone commission.

The operational functions of the city are performed by several departments (see Chart I). At the time of the earthquake, the
CHART I

CITY OF ANCHORAGE

MAYOR

CITY COUNCIL

PARKS & REC. BOARD

PLANNING COMMISSION

PARKING & TRAFFIC COMMISSION

TRANSP. COMMISSION

PORT COMMISSION

ELECTRIC UTILITY COMMISSION

BD. OF EXAMRS. & APPEALS

BD. OF GAS FITTERS EXAMRS. & APPEALS

TELEPHONE COMMISSION

CITY ATTORNEY

CITY MANAGER

CITY CLERK

LIBRARY

FINANCE

PLANNING

CIVIL DEFENSE

PORT

POLICE

FIRE

TELEPHONE

PARKS AND RECREATION

PUBLIC WORKS

MUN. LIGHT & POWER

CITY HEALTH OFFICER

* Under contract through Alaska Department of Health and Welfare.
following departments met the operational requirements of the city: Library, Finance, Planning, Civil Defense, Port, Police, Fire, Telephone, Parks and Recreation, Public Works, and Municipal Light and Power. The city did not have a health department; public health services were provided through contract with the Alaska State Department of Health and Welfare.

This, then, was the general structure of municipal government in Anchorage when the disaster occurred. We are now prepared to proceed with our analysis of the disaster induced long-term changes undergone by a number of organizations in Anchorage.

Organizations in Which New Patterns of Change Were Initiated by Internal Conditions

In this section, we will discuss those organizations that acquired new patterns of change in response to certain internal characteristics, and in which no pre-disaster patterns of change were accelerated. Such internal organizational characteristics either came into being because of the disaster situation itself, or if they existed prior to the disaster they exerted more pressure for change because of it. The following eight organizations fall into this category: the Anchorage Police Department, the Alaska Native Hospital, the Providence Hospital, the Alaska National Guard, the Anchorage
Natural Gas Corporation, the Red Cross, the Salvation Army, and the Anchorage Daily Times. The Anchorage Police Department, which is a part of the municipal structure described above, will be the first organization that we will consider.

Anchorage Police Department

Pre-disaster structure — The Police Department at the time of the earthquake had 89 full time employees. The department was organized into four divisions: operations, service, vice investigation, and training. The largest of these four divisions was operations which consisted of three bureaus: traffic and records, investigative, and patrol. The operations division was supervised by a captain who was assisted by a lieutenant in the traffic and records bureau and the investigative bureau, and by three lieutenants in the patrol bureau. Chart II outlines some of the major features of the organization.

Through its service division, the Police Department operated two jail facilities — the city jail and a prison farm. The city animal shelter was also managed through this division. A sergeant was responsible for the over-all supervision of the service division.

The Chief of Police was responsible for the operation of the department. He was directly responsible to the City Manager, the head administrative official of the city.

The Police Department did not have an auxiliary police force. This meant that in the event of a major disaster in
CHART II

ANCHORAGE POLICE DEPARTMENT

CHIEF OF POLICE

OPERATIONS DIVISION

TRAFFIC & RECORDS BUREAU

PATROL BUREAU

TRAINING DIVISION

INVESTIGATIVE BUREAU

JAIL BUREAU

VICE INVESTIGATION

SERVICE DIVISION

FARM BUREAU

ANIMAL SHELTER
which more manpower was required to carry out police functions, as was the situation following the earthquake, assistance from external organizational sources was required.

The Police Department also did not have a written disaster plan prior to the earthquake. It was felt by some in the organization that it would be impossible to effectively pre-plan for disaster. Others felt that the demands which would be made on the department during a disaster would differ from the requirements of routine emergencies primarily in a quantitative rather than a qualitative sense. Consequently, it was thought that an adequate response could be made to most disasters by referring to basic police procedures and using an increased number of men.

The police station is located in the city's downtown Public Safety Building. At the time of the disaster, the central fire station and the local Civil Defense headquarters were also housed in this building. Whenever major emergencies occurred, off-duty policemen were notified to report to the station.

**Long-term changes** — The earthquake demonstrated rather conclusively that the demands made on the Anchorage Police Department during periods of major emergency might be so great as to require additional manpower. Thus, police and local Civil Defense officials decided that in the future instead of augmenting the size of the police force with untrained volunteers, as was done following the earthquake, a more
effective measure would be to establish and train an auxiliary police force which could be called upon for assistance. Several months after the disaster, two Anchorage veterans organizations, the American Legion and the Veterans of Foreign Wars, were contacted and agreed to cooperate in this project by each organizing a group of men to be included in the auxiliary force.

A year and a half after the earthquake, one unit of the auxiliary police force had been organized by the V.F.W. and was working with the Police Department and Civil Defense. The group met in the evenings once a week and was being trained by the Police Department's training officer. The American Legion had not yet formed its unit but was expected to do so some time in the near future. The total force was expected to number around 60 men when it was completed. Some Civil Defense funds were to be used to purchase equipment for the group.

The auxiliary police force personnel were expected to be called upon during major emergencies primarily to handle such tasks as traffic and crowd control. This would leave regular police personnel relatively free to engage in more important activities and duties.

The Police Department also had some difficulty notifying off-duty officers following the earthquake and during a major fire which occurred in the Port area several months later. As a result, a back-up notification procedure was established.
This procedure involves giving the local radio stations instructions to broadcast a notice for off-duty personnel to report to the Public Safety Building in the event of a major emergency.

Our data indicate, then, that the Police Department did undergo some change following the disaster. The changes which were made resulted from a form of "organizational learning." In other words, these changes evolved from some of the contingencies faced by the organization during the disaster and accordingly are attempts at preventing their recurrence.

**Alaska Native Hospital**

**Pre-disaster structure** — The Alaska Native Hospital is a service unit of the Alaska Native Health Area. The area office is located adjacent to the Alaska Native Hospital in Anchorage. It is part of the United States Public Health Service and is assigned the function of administering and coordinating the state-wide health program for Alaska natives.

There are Public Health Service hospitals in several communities throughout Alaska which come under the jurisdiction of the Alaska Native Health Area Office. Alaska Native is the largest of these hospitals. In addition to being the largest medical center, it is also the major Public Health Service referral hospital in the state. All complicated cases are referred to it from other hospitals.
Alaska Native has a large tuberculosis and pediatric patient load. Active general medical, surgical, and internal medical programs are also pursued at the hospital. The medical staff of the hospital, along with the staff that is connected with the area office, also works at the village level where clinics are held and both preventative and direct treatment programs are administered.

Just prior to the disaster, the medical staff of the Alaska Native Hospital consisted of approximately 22 persons with training in all of the various specialties. Maximum bed patient capacity is 301. Treatment at the hospital is free to all those persons defined as descendants of Alaska natives — i.e., Aleuts, Eskimos and Indians.

The Alaska Native Hospital is organized similarly to other medical hospitals. The head official is called the service unit director. This person is responsible for the hospital's overall operation. Under the service unit director is a clinical director and a hospital administrator. The clinical director is charged with the responsibility of overseeing all of the clinical service departments such as surgery, medicine, pediatrics, x-ray, nursing, and medical records. The non-medical functions and departments, such as maintenance, housekeeping, laundry, buildings, and grounds, come under the direction of the hospital administrator. At the time of the disaster, the hospital was without a hospital
administrator because the former administrator had transferred
to a different hospital and his replacement had not yet arrived.

The hospital had had no previous experience with disas­
ters. A disaster committee had been organized to write a
disaster plan and a plan which was primarily oriented toward nuclear catastrophe was completed prior to the earthquake but had not been well distributed among the hospital staff. Also, personnel turnover in the hospital prior to the disaster had been very high. As a result, all but the chairman of the disaster committee had transferred to other hospitals. This meant that, except for the chairman of the disaster committee, the hospital personnel who had known most about emergency plans and procedures were no longer in the organization when the disaster occurred.

The hospital had an emergency generator with a 10 KV capacity which could provide lighting for the surgery and emergency rooms. This generator had been regularly inspected and was considered to be adequate for any emergency situation that might develop.

Long-term changes — After the earthquake, a committee was appointed from among the hospital staff to critique the performance of the organization during the crisis, and to make recommendations with regard to needed changes. As a result, some changes were made which reflected the earthquake experience.
A new disaster plan was published following the disaster. The format of the new plan differed from that of the pre-disaster one in several aspects. For example, the new plan was altered so that members of the staff could more quickly and with less effort locate the sections which pertained to their own particular tasks or duties. Also, a distinctive cover was designed for the new plan so that it could be easily recognized. One of the problems which reportedly occurred during the emergency was the difficulty of finding copies of the disaster plans which had been made available to some of the staff members before the disaster. To prevent this problem from recurring in the future, copies of the plan were placed in brightly colored covers and located in conspicuous places.

The disaster plan was also changed to permit the use of some patients as volunteers during emergencies under the direction of hospital personnel. This change also reflected the earthquake experience in that patients proved to be a valuable source of manpower at that time. "They performed as messengers, stretcher bearers, janitors, elevator operators, dietary helpers, and general straightener-uppers." ¹

The disaster demonstrated to the hospital staff that the use of the emergency room and the outpatient department for treatment of large numbers of victims would have been exceedingly difficult. The physical layout of the outpatient department would have been particularly inadequate if the number of disaster victims that were treated had been larger. The committee appointed to review the hospital's disaster problems recommended that a number of architectural features in the department be modified. The recommended physical changes were made to the extent that available funds would permit.

Some long term changes, then, were made at the Alaska Native Hospital. There remained, however, a number of changes which were suggested but which were not implemented due to the absence of needed financial resources. For example, all of the problems with regard to the layout of the outpatient department were not solved because it would have required the expenditure of a considerable sum of money. Also, the disaster pointed out the need for a larger auxiliary generator. For a number of critical hours following the earthquake, some important areas of the hospital had no light because the emergency generator that was on hand was too small to meet the hospital's needs. However, a new generator was not purchased due to a lack of funds.
Providence Hospital

Pre-disaster structure -- Providence Hospital is a general hospital owned and operated by the Sisters of Charity of Providence. With 155 beds, it is the largest civilian hospital of its kind in Alaska. The hospital was founded in 1939 in a building with a 50-bed capacity. At that time, Anchorage had a population which was considerably less than its present size. Several years later, Anchorage mushroomed into the state's largest city and with this growth came the need for a larger hospital. Seeking to meet this need, the Sisters of Providence re-opened the hospital in its larger and present facility on October 26, 1962.

An administrator is responsible for the overall operation of the hospital. She is assisted by two administrative assistants. Prior to the earthquake, the hospital employed nearly 200 full- and part-time persons including over 100 full- or part-time registered nurses. The medical staff consisted of 57 physicians who were almost equally divided between specialists and general practitioners. Providence does not have a resident staff; so therefore, patients are admitted through private physicians and clinics. Chart III outlines the major structural aspects of the organization.

The hospital had not experienced any previous emergencies as demanding as the earthquake. Also, there had been written disaster plans for the old hospital building, but
plans for the new one had not been completed. At the time of the earthquake, the old disaster plans were in the process of being revised to fit the new hospital situation. The disaster coordinator for the medical staff had completed a first draft of the revised plan only a week prior to the earthquake. The hospital did have an auxiliary generator available which could provide some power in the event of an emergency.

**Long-term changes** -- Very few long-term changes occurred in the Providence Hospital following the March 27, 1964, earthquake. When the research for this study was completed a year and a half later, a disaster plan had not yet been completed although there had been some work done on one. Similar to the Alaska Native Hospital, the lack of adequate auxiliary power proved to be a problem at Providence during the emergency. The generator that was on hand was not adequate to provide power for light in several areas of the hospital, such as the x-ray area, the kitchen, and the patients' rooms. As was the case at the Alaska Native Hospital, the staff at Providence recognized the need for a larger emergency generator. Likewise, funds were not available to purchase one.

Water was available to Providence throughout the emergency period even when it was not available to other hospitals because pumps were borrowed to transfer water from an adjacent spring site into the hospital's mains. Thus during this critical period, drinking water was available as well as
water for the hospital's sewage disposal system. As a result of the success of using the adjacent spring in this fashion, a pump was purchased so that the spring could be utilized as an emergency source of water whenever it was necessary.

**Alaska National Guard**

**Pre-disaster structure** -- The Air and Army elements of the Alaska National Guard are both under the authority of the Alaska Adjutant General. The Air unit, called the 144th Air Transport Squadron, has its headquarters at the Anchorage International Airport. One of the army's three battalions, the 3rd, also has its headquarters in Anchorage.

When the earthquake occurred, the units of the Alaska Army National Guard had just completed their annual two weeks of training and active duty at Fort Richardson. This was a force of some 1300 men and officers. Included in this group were the 1st and 2nd Scout Battalion, composed primarily of Eskimos and Indians from villages along the Arctic rim; the 3rd Battalion, 297th Infantry; the 216th Transportation Company, the 910th Engineer Combat Company; and smaller signal, ordnance, and special forces detachments. The Alaska National Guard had not had any previous experience functioning in a major natural disaster.

**Long-term change** -- Only one change was initiated in the Alaska National Guard as a result of the earthquake experience. National Guard personnel reported a year and a half later
that they were taking the experience into account by revising their emergency troop plans. At the time, it was anticipated that it would be several months before this was completed.

Anchorage Natural Gas Corporation

Pre-disaster structure — The Anchorage Natural Gas Corporation is a relatively new organization. At the time of the disaster, it had been established only three years. The company operated 130 miles of gas distribution mains and provided gas service for 5,000 customers in the Anchorage area.

Prior to the earthquake, Anchorage Natural Gas employed 64 persons. An executive vice president and treasurer, and a vice president and general manager were responsible for the overall operation of the organization. Structurally, there were six major divisions or departments in the company: a technical staff group, controller's department, distribution, customer service, customer installation, and sales department.

The Anchorage Natural Gas Corporation did not have a written disaster plan. As is sometimes the case, the general feeling in the organization was that the best preparation for disaster was the experience acquired in meeting the frequent emergencies. This sentiment is evident in the following observation made by one official:

We do not have any emergency plan or procedure as such. I am reluctant to do so because how are you going to define an emergency? With a little experience in the gas business and with good operating maps, I don't think
an emergency plan is required. With a map covering the entire system, and a working knowledge of that map, and in our case good valve locations, you can define the problem in this case by a quick field examination, and the course to follow is obvious because of previous experience.

Similar to the other utilities in the city, Anchorage Natural Gas had a back-up communications capability in its mobile radio system. A standby generator was also available for emergencies.

**Long-term change** -- Only one change occurred in the company after the earthquake which could be attributed to that event. The vice president and general manager was promoted to president six weeks following the disaster. Apparently, his promotion was due to his demonstrating unusual ability to deal with a variety of contingencies during the emergency situation. It was disclosed that if the disaster had not happened he would not have been advanced to this new position.

**Red Cross Southcentral Alaska Chapter**

**Pre-disaster structure** -- The headquarters of the Southcentral Alaska Chapter of the American National Red Cross is located in Anchorage. The jurisdiction of this chapter includes an area of 65,000 square miles. There are representatives in outlying communities who report to the headquarters in Anchorage and make available to their respective areas such traditional Red Cross services as disaster relief and home service.
The chapter's organization follows the usual pattern for Red Cross chapters. It is supported by the resources which are available in the local area and the membership is composed of both paid and volunteer personnel.

The chapter is within the jurisdiction of the Red Cross Pacific Area which has its headquarters in San Francisco. Pacific Area officials did not consider the chapter to be a particularly strong one and approximately two years before the earthquake they had made an attempt to strengthen its disaster preparedness program. Prior to the earthquake, there were just two paid persons on the Southcentral Chapter's staff, an executive secretary and a secretary. The remainder of the chapter consisted of volunteers. There was a chapter board and executive committee which met monthly to discharge the business of the chapter. Also, there were the usual committees formed to handle particular Red Cross programs such as nursing, water safety and first aid, and disaster preparedness.

The disaster committee was headed by a local volunteer who had considerable experience in Civil Defense work. The committee was assigned the responsibility for surveying the community to determine the kind of disaster planning that was needed. Following a disaster, the disaster committee was expected to organize shelter operations, food and clothing distribution, emergency medical care, and handle welfare
inquiries. The disaster committee guided by its chairman, then, was expected to be the key to the emergency response of the local chapter in the event of a disaster. The importance attached to the position of disaster chairman can be judged by noting some of the actions he is instructed to take in the Red Cross Disaster Manual.

1. Direct your survey subcommittee chairman to secure on-the-spot information about the extent of the disaster, casualties, damage and emergency needs.
2. Alert all other subcommittee chairmen to stand by or report to headquarters.
3. Provide first aid, emergency medical and nursing, and canteen services according to the need for them indicated in the survey report. Relief of disaster sufferers is your first and continuing responsibility.
4. When the situation warrants, open disaster headquarters and identify it with Red Cross flags and signs. Ask your Family Service chairman to set up information, welfare inquiry, and registration services.
5. Notify your area office by the quickest available means of the occurrence of disaster, stating:
   - Nature of the disaster and time of day it occurred
   - Area affected
   - Preliminary estimate of persons dead, injured, ill, and hospitalized
   - Preliminary estimate of homes destroyed and damaged and of persons made homeless
   - Action taken by the chapter in organizing emergency relief
   - Help needed immediately from the outside

Under the leadership of the disaster chairman, therefore, the local chapter was expected to use its resources primarily to meet immediate emergency relief needs; and representatives of

the larger Red Cross organization, as they arrived in the community, were expected to focus primarily on long-term family rehabilitation.

**Long-term changes** -- The Southcentral Chapter did not respond as quickly as it was expected to do following the earthquake. The disaster chairman did not bring together the members of the disaster committee and it did not fulfill its expected functions. Moreover, the executive secretary of the chapter did not organize a disaster operation during the crucial period following the earthquake.

The disaster chairman did not function in this role following the earthquake because of a stronger commitment to another role. At the time of the disaster, he had a position with one of the local hospitals and it was in this hospital that he worked throughout the emergency period. During an interview he noted: "...I'm a former member of the Red Cross board...but I wasn't active in the Red Cross during the emergency -- I had a job to do here." Thus, the disaster chairman's multiple organizational membership resulted in his not performing his important Red Cross duties. And relatedly, the local chapter did not organize the type of disaster operation that was expected. The disaster chairman's multiple organizational membership, therefore, was a latent source of strain for the local Red Cross chapter which became manifest after the earthquake.
The lack of an organized effort on the part of the local chapter was the cause for considerable concern on the part of the Pacific Area Red Cross staff who came to Anchorage. For example, one official observed:

I would say that if this disaster proved one thing it has proved...to us that any chapter should have a disaster committee well organized with somebody ready to take care of food and clothing, shelter and make arrangements for supplemental emergency medical care. Without this basic organization in a chapter very valuable time is lost because the first few hours are critical in terms of getting into operation, letting the public know who you are, where you are, what you can do. Unfortunately, time was allowed to elapse before this was accomplished.

Red Cross Pacific Area personnel remained in the Anchorage area for several months after the disaster providing rehabilitation assistance. Also during this period, they worked with the local Red Cross chapter in an attempt to strengthen some of its weaknesses, especially its disaster preparedness organization.

The disaster committee was reorganized; a new chairman was appointed and a co-chairman was also named in order to provide the committee with some back-up leadership. The new committee also included three people to handle mass care and one person was assigned to handle each of the responsibilities for: emergency communications, transportation, volunteer services, supply, and public relations.

The reorganization of the disaster committee can be interpreted as an attempt by the organization to enhance its effectiveness in responding to emergencies and as a means
of adjusting to the strain resulting from the multiple organizational membership of the disaster chairman. The strain was controlled by replacing the role incumbent in this position and further, by selecting a disaster co-chairman and thus providing added insurance against a similar problem occurring in future emergencies.

**Alaska Salvation Army**

*Pre-disaster structure* -- The Salvation Army has been operating in Alaska since 1898. Prior to the earthquake, there were, including the Anchorage center, 14 corps centers in the state. These centers provide the customary Salvation Army programs to their respective areas, such as welfare assistance and religious service. Professional Salvation Army personnel carry out the programs in these centers.

In addition to the 14 corps centers, there are several Salvation Army service extension units in Alaska. Committees composed of local lay people administer programs in these units.

Anchorage is the hub of Salvation Army activity in the state. Prior to the disaster, there was a staff of 12 in the city. The head of the organization in Alaska, the Alaska divisional commander, has his headquarters in Anchorage. The divisional secretary, who is second in command, also works at the divisional headquarters. All of the Salvation Army's functions in the state come under the supervision of these two officers. Two institutions are operated by the organization
in the city -- an institution for unwed mothers and a social rehabilitation center for men.

During major emergencies, Salvation Army personnel in Anchorage, similar to Salvation Army units elsewhere, assist the personnel of emergency organizations by providing them with food and coffee. Most of the personnel are trained in disaster service, having attended Civil Defense courses.

In January of 1964, the men who were beneficiaries of the rehabilitation program and who resided at the rehabilitation center were organized on a volunteer basis into emergency crews which would respond in the event of community disaster. The crews were organized around several functions: food preparation, housing or relocation, transportation, and communications. These emergency crews are headed by one key man with five others working under him. Although the composition of the men in the rehabilitation program and on the emergency teams changes from time to time, there is always a nucleus of experienced persons available. The crews are activated under the guidance of a professional Salvation Army worker when a major community emergency occurs.

Long-term changes -- Salvation Army officials reported having only a few changes occurring in their organization as a result of the disaster. First of all, plans had been made just prior to the earthquake to begin organizing a new corps center in Kodiak. The disaster was responsible for causing
a delay in the implementation of these plans for approximately two years.

Salvation Army officials also reported that the earthquake experience sensitized them to the need for increased disaster preparedness. They attributed the purchase of a new canteen which can be used to prepare food during emergencies to this increased awareness. The canteen was considered an important new resource because it has a self-contained power unit on which it can be operated for about a week during periods when the normal sources of power are unavailable.

**Anchorage Daily Times**

*Pre-disaster structure* -- The Anchorage Daily Times was the largest of the two newspapers in Anchorage at the time of the disaster. It had a daily circulation of approximately 27,000 and was published six days a week in the afternoon.

About 62 persons were employed by the newspaper. Structurally, it was divided into several functional units typical of newspapers: circulation, advertising, accounting, and news room. An editor-publisher was responsible for the operation of the organization.

*Long-term change* -- Prior to the earthquake, the Anchorage Daily Times had membership in the Associated Press. Consequently, it had the responsibility for supplying the news gathering organization with news regarding the Anchorage area. Following the earthquake when there was considerable difficulty using normal means of communications, the Anchorage Daily
Times was able to maintain contact with Associated Press officials outside the state through the assistance of a number of local ham radio operators. This was all done on an informal basis. After the disaster, however, the Associated Press and the Anchorage Daily Times made a formal agreement with several local ham operators whereby the latter would be called upon to again lend assistance in the event of future emergencies. Thus, an emergent pattern which grew out of the exigencies of the earthquake became a formal standby mechanism.

New Patterns of Change Initiated by External Conditions

In only one organization, the Anchorage Fire Department, did new environmental conditions result in the emergence of new patterns of change without also causing the acceleration of pre-disaster processes of change. In this section, we will consider the disaster related changes undergone by the Anchorage Fire Department.

Anchorage Fire Department

Pre-disaster structure — Fifty two firemen were employed by the Anchorage Fire Department at the time of the earthquake. The upper echelon of the department consisted of a fire chief, two assistant chiefs, and a fire prevention officer. The actual fire operations were normally coordinated by the assistant chiefs. The fire chief generally became
familiar with each fire call, but unless the operation was unusually large he did not become directly involved. The department was divided into two shifts with each shift being on duty alternating 24 hour periods. Some of the structural features of the organization are outlined in Chart IV.

Fire Department officials reported that the organization was under-manned. High operational costs related to the special environmental and climatic problems which communities in Alaska must face was said to be primarily responsible for the inability of the department to keep manpower up with requirements.

To ease their manpower shortage, the Fire Department used volunteers. These volunteers received a specified fee for each call they made. The turnover rate for such volunteers was rather high and they could not always be available for duty. Generally, about ten volunteers were available for call.

The Fire Department operated out of four fire stations strategically located throughout the city. The downtown station located in the Public Safety Building was also the headquarters. Volunteer firemen were quartered in each of the four stations to increase the availability of manpower. Both operational and reserve fire fighting equipment were housed in the stations.

In addition to its fire fighting function, the Fire Department also operated an emergency ambulance service.
CHART IV
ANCHORAGE FIRE DEPARTMENT

FIRE CHIEF

ASSISTANT CHIEF

ASSISTANT CHIEF

FIRE PREVENTION OFFICER

STATION 1

STATION 2

STATION 3

STATION 4
The department had three ambulances to carry out this function.

As was true of the Police Department, all Fire Department vehicles were equipped with two-way radios. The base station and dispatching room for the department's communication system were located at headquarters in the Public Safety Building. The headquarters received all alarms and dispatched fire equipment from any of the stations to the emergency area. As the department became involved in major fires, off-duty personnel were called in. At the time of the earthquake, the only method for calling such persons in was by public telephone.

The personnel of the Fire Department were accustomed to working with city policemen. When firemen made a call, it was routine procedure for the police to dispatch men to the same area to maintain traffic and crowd control and to generally provide assistance.

The Anchorage Fire Department had mutual aid agreements with the two military installations in the area, Elmendorf Air Force Base and Fort Richardson. These agreements involved the use of men and equipment.

A 14 square mile section of the Anchorage area, known as the Spenard-Turnagain area, received added fire protection from the Spenard Fire Department, a primarily volunteer department operating under contract with the city. The
Spenard Fire Department had a permanent staff consisting of a chief, two assistant chiefs, and four additional paid men. The remainder of the department consisted of 36 volunteers. This department provided the city with additional fire fighting capability.

The Anchorage Fire Department neither anticipated nor planned for a natural catastrophe such as an earthquake. There had been discussion concerning the possibility of a nuclear disaster and the possibility of evacuation had been considered. In considering these contingencies, Fire Department personnel had worked with Civil Defense officials.

*Long-term changes* — The Anchorage Fire Department was responsible for providing fire protection to the Port of Anchorage and the surrounding industrial park area. After the disaster, Port area business experienced unprecedented growth because of the decline of competing ports in the state due to the earthquake damage they had received. We will discuss this important change in the Port of Anchorage in a subsequent section and here we need only to point out that the dramatic expansion at the Port created a serious problem for the Fire Department. The problem became one of how to provide additional fire protection to the Port area since the fire hazard there had increased considerably along with the expanded business. The seriousness of such a problem should be apparent in light of our earlier discussion with
regard to the manpower shortage which faced the Fire Depart-
ment even before the earthquake.

In order to have provided the most adequate protection
for the expanded Port operation, it would have been necessary
for the Fire Department to have hired a number of additional
firemen. However, the cost of such a solution to the problem
was considered prohibitive; therefore, an alternative was
found. One fire official was designated as a fire inspector
and assigned to the Port area to conduct a systematic fire
prevention program and thereby reduce the fire hazard. This
position was established in January, 1965. Also, a civil
fire brigade was formed by the Fire Department to assist
with any fires which might occur in the area. The brigade
was composed of personnel from various businesses in the
Port area. They are trained by the Fire Department and work
under the supervision of the fire inspector.

In conclusion, the Fire Department found it necessary
to adjust to new circumstances brought on by the changes under-
gone by the Port. An organization functions in an environment
composed, in part, of other organizations, and as one organiza-
tion changes it may create problems for others, making it
necessary for them to also change. We have here an empirical
case of this phenomenon occurring.
New Patterns of Change Initiated by a Combination of Internal and External Conditions

New patterns of change were initiated in the Anchorage Civil Defense Department as a result of both altered environmental and internal factors. Following the disaster, the organization received greater external support, and new patterns of coping behavior were learned and converted into long-term organizational features. We will discuss the Anchorage Civil Defense Department in this section.

Anchorage Civil Defense

Pre-disaster structure — The Anchorage Civil Defense Department was established in 1962, and a retired Army lieutenant colonel became director. It operated with a staff of two persons, the director and a secretary, until the director resigned a few weeks before the earthquake.

The Anchorage Civil Defense program followed the usual guidelines established by the federal government. The city received matching operating funds from the federal government administered through the state of Alaska. The Civil Defense program included identifying and stocking public shelters, installing and maintaining public warning facilities, and providing the public with Civil Defense training and education.

In addition to the two regular employees, the heads of the various city departments, such as Fire, Police, Telephone, etc., were expected to cooperate in developing Civil Defense
plans and other programs and activities. Other persons that were involved in Civil Defense programs at one time or another were individual volunteers and members of various community groups and organizations.

The Cuban missile crisis occurred shortly after Civil Defense was organized and for a brief period thereafter an unusual amount of interest was felt in Anchorage regarding Civil Defense preparedness and programs. Many persons during this period volunteered their services and numerous groups and organizations requested the director to present talks on topics relating to individual and community Civil Defense needs.

The interest generated in Civil Defense programs by the Cuban crisis was almost entirely in terms of war caused, rather than natural, disasters. The public expected officials to be similarly oriented and, indeed, most of the activity of the Civil Defense Department was related to the threat of nuclear attack. The director published an 18 page pamphlet of Civil Defense emergency instructions for the community as a result of the Cuban scare. This pamphlet covered such topics as: "How to Take Cover," "Facts About Radioactive Fallout," and "Public Fallout Shelters." Only the following paragraph considered natural disaster and interestingly enough, this was about earthquakes:
Severe Earthquake: If you are indoors, remain inside. Protect yourself by crouching under a well-built table or by standing in a doorway, closet or hallway. This will prevent walls, ceiling or other debris from falling on you. If you are outside: avoid standing by ornamented, faced, or brick walls which might fall or drop. If possible, get into a doorway, or stand in the middle of the street. 

The director believed Civil Defense should have a program which took into account the possibility of natural catastrophes occurring. However, he felt such a program would receive little support because most people in the community perceived Civil Defense's role as limited to man-made disaster.

Under state law, and for the administration of federal funds, Anchorage is part of what is called the Greater Anchorage Civil Defense Disaster District; this district includes an area of approximately 800 square miles. The Anchorage Civil Defense head also functioned as the director for the district.

The only disaster plan that local Civil Defense had was a district dispersal and evacuation plan which was geared for nuclear disaster. The plan called for the evacuation of residents of the metropolitan Anchorage area, if sufficient prior warning was received, to areas to the south along predetermined travel routes. Such communities as Homer, Whittier, and Seward were designated as reception areas for specific

categories of persons. For example, the plan indicated that Air Force dependents and dependents of state employees living in the Anchorage area should seek refuge in Seward. Local Civil Defense personnel had stored emergency hospital facilities in the southern reception area.

The Civil Defense director kept a list of key community persons that were to be notified in the event of disaster. This group, called the Civil Defense Emergency Action Group, was composed of the following persons: the Mayor of Anchorage; the City Manager; the Police Chief; the manager of the Telephone Department; the city health officer; an Alaska State Police divisional commander; and representatives of the state amateur radio group known as RACES, the local school system, and the official Civil Defense radio station. These persons were expected to become a part of the greater Anchorage area emergency Civil Defense organization during periods of disaster and would be responsible for coordinating the activities of their respective groups and organizations with the over-all emergency effort.

An emergency broadcast center had been established at Civil Defense headquarters which was located in the basement of the Public Safety Building. Several years prior to the organization of the Anchorage Civil Defense Department the city was tied into the now defunct Conelrad emergency system. Under the more recent Emergency Broadcast System which has
replaced Conelrad, one station in the city was designated to function as the official Civil Defense or emergency broadcast station. Station KFQD, which had operated in a similar capacity under the obsolete Conelrad system, was named the local Civil Defense station. Because it was the official Civil Defense station, KFQD was connected with the emergency broadcast center at Civil Defense headquarters by a direct telephone line. It had been planned that in periods of emergency Civil Defense officials would transmit from the broadcast center over the Civil Defense station and have it re-broadcasted by other stations in the community. At the time of the earthquake, then, Anchorage Civil Defense and the community did have some emergency broadcast capability. However, this capability was limited and it was not until after the earthquake that area Civil Defense and radio officials, along with state and national officials, began systematically to consider the development of an adequate emergency broadcast organization.

The intensification of interest in Civil Defense resulting from the Cuban crisis was short lived. When the memory of the threat waned, some people began questioning the need for providing funds for the department. On one occasion the director requested the addition of an assistant director to his staff but the City Council failed to approve the position. When the 1964, city budget was submitted to the
City Council for approval, some councilmen were opposed to continuing the department. There was enough support, however, and the department was budgeted operating funds.

On March 15, 1964 less than two weeks before the earthquake, the Civil Defense director resigned to enter private business. The City Manager began recruiting for a replacement but there were some city councilmen who felt a new director should not be appointed and that out of financial considerations the department should be discontinued. So at the time the disaster struck, Anchorage was without a Civil Defense director and there was serious doubt that the department would be continued.

Long-term changes -- A number of disaster related changes occurred in the Anchorage Civil Defense organization following the earthquake. Probably the most important change was the increased support the organization began receiving. In a very real sense, the earthquake contributed to the survival of the department. It provided those persons who favored the continued allocation of resources to the support of a local Civil Defense program a more convincing argument that such a program and an organization for its implementation was needed. It seemed to be the consensus of officials in the community that local Civil Defense had done an admirable job during the crisis and that the director out of regard for the stricken community returned to the post he had earlier vacated.
Following the disaster, the climate was such that certain gains could be made in terms of local Civil Defense programs and operations which might have been all but impossible under more stable circumstances.

As previously noted, when the director resigned there were a number of city officials who questioned the need to seek a replacement, or even the desirability to support a Civil Defense organization. The occurrence of the disaster, however, for the time being anyway, neutralized this threat to the survival of a local Civil Defense organization in Anchorage. During the emergency period, the former director was reappointed to that post without opposition. In this regard one Civil Defense official notes:

...following the earthquake they made the decision immediately that they were going to keep it (Civil Defense office) open...So that was a direct result of the earthquake. I rather expect if we hadn't had the earthquake that they wouldn't even have an office or if they did, it would probably be the additional duty of someone in the Police Department or Fire Department.

City Council's failure to approve the position of assistant director was further evidence of the lack of support for Civil Defense prior to the earthquake. If the position had been approved, the assistant director was to have served as a back-up to the director during periods of emergency. Also, he was to have handled the acquisition and distribution of emergency Civil Defense supplies and equipment in the Anchorage area. Because no one had devoted much time to this
function, considerable equipment and supplies had been lost and also it was not known how much of it was still usable. This situation created a problem for the relief effort in Anchorage following the earthquake. Since the earthquake experience provided rather concrete evidence regarding the need for an assistant director, the position was afterward approved by the City Council. One official in the City Manager's office observed:

We had some lack of support for Civil Defense in Anchorage prior to the earthquake, but it has been changed at least in part...we did have one addition as a result of the earthquake and this was the deputy CD director... who was placed in charge of inventory and control as well as coordination (and) public relations along with the director to expiate this one problem. We didn't have proper inventory and control of supplies as to location.

Another change in local Civil Defense was the creation by the City Council on January 5, 1965, of a Civil Defense and Disaster Board on the recommendation of the City Manager. Some of the leading citizens of Anchorage were appointed to serve on this body. For example, the man who was mayor of the city when the earthquake occurred was appointed chairman. A total of seven members serve on the board.

The Anchorage Civil Defense and Disaster Board was given a similar function as other municipal boards and commissions. It was to advise the Mayor and City Council on the city's Civil Defense problems and needs. The Civil Defense director
was appointed as executive secretary to the board. Thus, the creation of this new group seems to reflect at least a temporary change in stature of local Civil Defense.

After the earthquake, the Anchorage Civil Defense director published a greater Anchorage Civil Defense basic plan. This plan outlined in very general terms the authority and responsibilities of the director. Also outlined in a similarly general fashion was the nature of the greater Anchorage area emergency Civil Defense structure and the tasks and functions of its operating units. For example, the plan called for health and medical functions to be carried out by the Greater Anchorage Health District.

Although there was some attempt in the basic Civil Defense plan to sketch the form an emergency organization should take, and there was some assignment of tasks and functions, the plan was so general as to make it not very useful unless it was followed-up by more specific plans. Also, the plan seemed not to have had wide distribution. Many officials who supposedly were to perform key Civil Defense roles were unfamiliar with it. However, these problems might have been worked out since the time we completed our research in Anchorage.

Also with regard to planning, the Civil Defense director drafted a reporting procedure whereby certain key city employees, such as department heads, were assigned specific
places to report in the event of another community disaster. Relatedly, when our final data gathering trip was made to Anchorage a year and a half after the earthquake Civil Defense officials were involved in a project to provide city employees who possessed emergency relevant skills with identification cards.

One of the most serious contingencies during the disaster was the difficulty encountered by organizations and groups attempting to coordinate their activities. As mentioned in a previous chapter, the impact of the earthquake disrupted the telephone service in the Anchorage area. For a considerable period thereafter, intra- and inter-organizational communications had to be carried out primarily by runner or radio. The use of runners proved to be a relatively slow process, and many groups and organizations did not initially have radios at their disposal. In addition, there were organizations which had radios but found that they still could not communicate with others because they happened to be on different frequencies. As a result of this experience, a Civil Defense emergency communications network was established in Anchorage. The equipment for this network was purchased by local Civil Defense on a matching-fund basis.

The emergency network was installed in April, 1965. The control station for the system was located in the Anchorage Civil Defense headquarters. The equipment included eleven
battery operated mobile transceivers. Key city personnel and departments were assigned the use of one of these transceivers including: The City Manager, the Mayor, the local Civil Defense director, the assistant director, the Civil Defense information officer, the Civil Defense communications officer, the Police Department, the Fire Department, and the Municipal Light and Power Department. Also, two of the transceivers were placed in reserve. One transceiver was placed on standby as a replacement for any set which ceased to function properly and a second was set aside to be used by emergency rescue groups. A test of this system was conducted every week.

Providence Hospital, the largest hospital in the community, was given a communicator by Civil Defense which tied into the emergency radio network; a communicator was also made available to KFQD. Somewhat later, the Alaska Disaster Office was given a communicator which also tied into the emergency radio system.

The earthquake, therefore, demonstrated the need for some reliable back-up system of communication which could be utilized to maintain inter-organizational communications when customary means failed. In response to this need, a Civil Defense emergency communications network was established which provides direct radio communications between a number of key officials and organizations in Anchorage.
There was one final change in local Civil Defense which also involves emergency communications. During the emergency period following the earthquake, the local Civil Defense effort was considerably assisted by a number of citizen band radio operators who volunteered their services and equipment. This was done on an emergent basis since no agreement existed between Civil Defense and the radio operators prior to the disaster. In developing a community shelter program after the earthquake, the Anchorage Civil Defense director, recalling the value of their contribution, made a formal agreement with a newly formed citizen's band radio club. Under the terms of this agreement, a radio operator was assigned to each shelter. Thus, this important communications capability would be used in the event of a nuclear or natural disaster.

**Pre-existing Patterns of Change Accelerated by Internal Conditions**

As Table 2 shows, the only organization which had pre-disaster patterns of change hastened by internal factors without also having new patterns of change evolve was the Anchorage Municipal Light and Power Department. We will discuss this organization in this section.
Anchorage Municipal Light and Power Department

Pre-disaster structure -- The Municipal Light and Power Department (M.L. and P.) is headed by a manager who is directly responsible to the City Manager (see Chart V). A chief electrical engineer is second in command in the department. Fifty persons were employed by M.L. and P. just prior to the earthquake. The department is divided into the following five divisions: accounting and service, operations, engineering, and construction and sales.

Most of the consumers of M.L. and P.'s power reside within the city limits of Anchorage. Within recent years, the number of customers served averaged over 8000.

M.L. and P. receives power from its own two turbine generators and six diesel engines, and from a U.S. Bureau of Reclamations hydroelectric plant. The two turbine generators both have a 14,000 kilowatt capacity and can be operated by using either gas or diesel oil. The second dual fuel generator had been installed by the department only a little more than two weeks prior to the disaster. The six diesel engine generators each have a capacity of 1000 kilowatts. The Bureau of Reclamation's hydroelectric plant, located some 50 miles outside of Anchorage at Eklutna, supplied M.L. and P. by contract an additional 16,000 kilowatts.

The Municipal Light and Power Department did not have a written disaster plan. Officials believed departmental personnel
CHART V

ANCHORAGE MUNICIPAL LIGHT & POWER DEPARTMENT

ACCOUNTING AND SERVICE DIV.

OPERATIONS DIVISION

ENGINEERING DIVISION

CONSTRUCTION DIVISION

SALES DIVISION

MANAGER

SECRETARY

CHIEF ELECTRICAL ENGINEER

CLERK-STENO
were geared to emergencies as a matter of routine due to their frequency. They felt, for example, that an effective pattern of response had evolved among the emergency crews because of the vulnerability of the power system to the elements which resulted in frequent minor crises.

M.L. and P. had mobile radios in all 16 of its vehicles. These proved to be an important resource following the earthquake. The department also had a radio link with the Bureau of Reclamation's generation station and with the Chugach Electric Association, operators of the other major power system in the Anchorage area.

Long-term change -- No new patterns of organizational change evolved out of the disaster experience of M.L. and P. For example, a year and a half after the earthquake the department still did not have, nor was it felt necessary to have, a written disaster or emergency plan.

Officials did report, however, that a technical modification in the power system which had been considered before the disaster had been, in part, accelerated because of the earthquake experience. This modification, which was in the process of being completed a year and a half after the disaster, involved installing equipment which divided the city's transmission system into four areas, each of which could in the event of difficulty be isolated from the others. This will mean that a power outage in one of the areas will not
take the entire system out; that is, it will effect only the one area and thus can be restored more rapidly. Comparing this new capability to what existed at the time of the disaster one official observed, "If we'd had that separation we could have cleared up trouble after the earthquake in pieces and put it back one by one rather than having to go through the entire area to see that all your trouble was cleared before you could restore service to the city."

Pre-existing Patterns of Change Accelerated by External Conditions

In this section, we will discuss the two organizations -- Northern Television and radio station KBYR -- which had prior existing or latent patterns of change accelerated by external conditions created by the earthquake. External organizational support and other disaster related circumstances led to some change in these two organizations.

KBYR Radio

Pre-disaster structure -- Radio station KBYR in Anchorage had an affiliated station in Fairbanks, station KFRB. Prior to the earthquake, the station was operated by 13 persons including a general manager, who was responsible for overall operation, a newsman, 5 announcers, a sales manager and 2 salesmen, and 3 secretarial personnel.
Northern Television, Inc.

Pre-disaster structure -- Anchorage television station KTVA and station KNIK FM were owned and operated by the Alaska corporation, Northern Television, Inc. KTVA was established on December 11, 1953, making it the first television station in Alaska. In 1960, KNIK FM was established in Anchorage and it was the first "good music" station in the state. The corporation also owned a television station in Fairbanks, Alaska, station KTVF. A president and general manager supervised the operation of Northern Television stations.

Long-term change -- Northern Television had been interested for a number of years in expanding its broadcasting operations to include AM radio. Relatedly, there had been a number of negotiations in the five year period before the earthquake with the owner of radio stations KBYR, Anchorage and KFRB, Fairbanks who was interested in selling the two stations. However, an agreement was never reached between the two parties. The earthquake was responsible for bringing about the circumstances which eventually led to Northern Television purchasing the two radio stations.

The earthquake caused considerable damage to the building where the Northern Television studios were located in Anchorage. A disaster loan was applied for by the broadcasting organization to the Small Business Administration and was
granted to construct a new building in which to locate new studios and to replace some equipment. Stations KBYR and KFRB were still available for purchase at the time; so encouraged by the loan, and the prospect of setting up a new operation in Anchorage, Northern Television officials decided to make the acquisition.

A second factor was also involved in the decision to buy the stations at this particular time. In seeking a site on which to locate the new facility that was made possible by the loan, one had to be chosen on which the Federal Aviation Authority would endorse the construction of a broadcasting tower because of the possible air navigational hazard. By purchasing KBYR, the problem of finding an approved location would be solved because the site on which the station was located was already approved by the FAA. With this in mind, the two stations were purchased and became a part of the Northern Television organization.

There was, then, a definite relationship between the disaster and the change which occurred in the two broadcasting organizations, i.e., the change in ownership of the two stations. The earthquake was followed by a set of circumstances or conditions favorable to the purchase of the radio stations by Northern Television; these conditions were responsible
for this change happening at a particular point in time.

One official put it this way:

We knew we were getting into the radio business. I knew that twelve years ago when we started the station, but just exactly when was all a matter of timing...so this earthquake catalyzed that.

Northern Television officials reported that had the earthquake not occurred they would not have purchased any AM radio stations until some later period.

New Patterns of Change Initiated and Pre-existing Patterns Accelerated by Internal Conditions

New patterns of change were initiated by internal conditions, and pre-existing patterns were accelerated as well in the Chugach Electric Association. We will consider these disaster related changes in this section.

Chugach Electric Association

Pre-disaster structure — The Chugach Electric Association (C.E.A.) is a member-owned cooperative financed by the Rural Electrification Administration. It was founded in 1948 to help alleviate the lack of central station power available to people living outside of Anchorage.

Fifteen thousand consumers were served by the Chugach Electric Association prior to the disaster. Of this number, about 6,000 resided within the city limits of Anchorage. In addition to its retail sales, C.E.A. also sold wholesale power to such areas as Seward and the Kenai Peninsula.
The members of the cooperative in an annual meeting elect from among the membership a board of directors composed of seven persons. The directors appoint a general manager who has the responsibility for the operation of the Chugach Electric Association. On the general manager's staff are a staff assistant, legal counselor, and managers of the several departments: office service, operations, engineering, and production.

The Chugach Electric Association operates three power plants, the Knik Arm plant in Anchorage, and the Bernice Lake and Cooper Lake plants on the Kenai Peninsula. These three plants have a combined generation capacity of over 37,000 kilowatts. The C.E.A., like the Municipal Light and Power Department, is also supplied some power from the Bureau of Reclamation's plant at Eklutna. Nine thousand kilowatts are purchased from this source. The lines of the three power systems, C.E.A., M.L.&P., and Eklutna, are joined in one sub-station owned by the Bureau, thus enabling the transfer of power between them. There had been times prior to the earthquake when C.E.A. and M.L.&P. found it necessary to borrow power from each other.

The Chugach Electric Association did not have written disaster plans but, due to the frequent occurrence of power emergencies, standard procedures and routines had been worked out. One official reported that an average of two complete
area power outages were experienced a year due to climatic and geographic conditions and because the systems were still in the process of being developed.

Long-term changes -- Two relatively long-term changes in the Chugach Electric Association followed the disaster. First of all, it was disclosed that before the emergency a relatively new pattern had evolved whereby the board of directors had allowed the general manager and his staff considerable autonomy in managing the organization. After the disaster, however, the board returned to a previous policy in which it was more directly involved in the operation of the organization. This was manifested in such a fashion as the staff being required more frequently to acquire approval from the board in making major expenditures. Officials attribute this change in the relationship between the board of directors and the management staff to circumstances following the earthquake. The disaster precipitated a critical period for the Chugach Electric Association, as it did for a number of organizations, and key decisions had to be made with regard to the rehabilitation of facilities and plans for future development. It seems that within this context the board became more concerned about the operation of C.E.A. and, therefore, the trend toward increasing autonomy for the management staff was changed. Thus, a year and a half after the disaster
there was a different relationship between the two levels of
the organization.

The earthquake was, moreover, responsible for the Chugach
Electric Association accelerating plans for adding new gener­
at­ing facilities in the Anchorage area. The organization's
transmission line from generation facilities on the Kenai
Penninsula into Anchorage was considerably damaged. In
assessing this damage, officials determined that it would
be a number of years before the line could be repaired and
power could once again be transmitted from the Kenai facilities
to Anchorage. To offset this loss of power, pre-disaster
plans to install new generation facilities in Anchorage were
considerably advanced. Two large turbines were located in
the city. Officials reported that these new pieces of equip­
ment eventually would have been installed anyway; however,
the installation was carried out sooner than had been planned
because of the circumstances produced by the disaster.

**New Patterns of Change Initiated and Pre-existing
Patterns Accelerated by External Conditions**

In this section, we will discuss the changes that
occurred in the Anchorage Port Department. In this organiza­
tion, new patterns of change were initiated by external
conditions and also pre-disaster plans were hastened by them.
The Port Department

Pre-disaster structure -- The Port Department is responsible for the maintenance and operation of the city owned Port facilities. At the time of the disaster, the Port Department had a small staff consisting of a port director, terminals manager, business manager, two pier foremen, two accounting clerks and a secretary. The Port director is responsible for the over-all administration of the department and the Port.

The Port is located at the head of Cook Inlet about a mile from downtown Anchorage. At the time the earthquake occurred, the major facilities at the Port consisted of a single berth dock and an industrial park area which the city leased for industrial purposes. The dock had been completed in 1961, and until the time of the disaster there had been no regularly scheduled carrier which utilized the facilities of the Port.

Shipping has long been one of the most important means of transportation in Alaska due in large measure to the inadequacy of other modes of travel. The major ports in the state have been those located in the ice-free Prince William Sound, the Ports of Seward and Whittier. Before the disaster, the typical pattern for getting commodities into the state had been for shipping companies operating out of the state of Washington to transport goods to the Ports of Seward and Whittier, and from there the cargo would be transported into
the interior (e.g., to Fairbanks) by the Alaska Railroad which served as a land link with the water transportation system. The pattern of shipping goods to the Prince William Sound area and then taking them by rail to interior communities was usually followed even when such goods were destined for Anchorage. This route was preferred by shippers largely because the ports at Seward and Whittier were ice-free the year around.

Prior to the disaster, the Port of Anchorage was operating at a financial loss because of the lack of carrier service. Shortly before the earthquake, however, there was some indication that the situation would be somewhat improved as city officials were in contract negotiations with a major carrier for weekly service to the Port. While it was anticipated that this regular shipping service would provide the Port with needed revenue, it was also recognized that much more business had to be attracted before it would no longer be operating at a deficit.

Long-term changes -- The Ports of Anchorage, Seward and Whittier were all affected by the disaster. However, damage was much more extensive at the latter two ports. Docking facilities were virtually destroyed at Seward, and at Whittier they received considerable damage. Also, petroleum storage tanks were heavily damaged at Seward and Whittier. The Port of Anchorage in contrast, although sustaining some damage, fared much better. Emergency repairs were begun quickly on
the facility and three days after the disaster it was able to receive its first vessel. It was, indeed, fortunate that at least one of the three ports in the disaster struck south-central region could be made operational in order to receive much of the sorely needed relief and reconstruction materials.

A few days after the earthquake, emergency as well as non-emergency shipping, which normally would have gone to one of the ports further south, began coming to Anchorage. This shipping included the oil tankers of companies which had petroleum storage farms at the damaged Ports of Seward and Whittier. As a result, the amount of tonnage received at the Port of Anchorage was unprecedented. To cope with the increased shipping of oil products to the Port, a temporary petroleum berth was completed in July, 1964. Largely because of the disaster, then, Anchorage became the shipping center of the state, handling more tonnage than any other terminal.

Because the Port of Anchorage was the only such facility operational for some time after the disaster, several oil companies either expanded their installations or built new ones in the industrial park area. Shell Oil and Standard increased their storage facilities, and Union Oil and Texaco constructed new installations in the Port area. These expanded facilities, many of which replaced those that had been destroyed at Seward and Whittier, increased the storage capacity at the Port by 290%. 
All of the increase in shipping at the Port was not due to the disaster. In addition to the increase in bulk petroleum tonnage, there was also an increase in general cargo handling. This increase in general cargo was due, for the most part, to the fact that the carrier known as Sea-Land, which had been negotiating with the city prior to the earthquake, decided to continue with its plans to establish regular shipping service to the Port of Anchorage. In fact, because of the serious transportation problems following the disaster, the company began its operation in May rather than in June as originally planned. Sea-Land also made shipments during the winter, making it the first time such a feat had been carried out. With the increased petroleum shipping, as well as the increase in general cargo, city and Port officials were optimistic that the expanded Port operation would continue beyond the reconstruction period.

The dramatic effect that the post-earthquake situation had on the fortunes of the Port is indicated when tonnage figures for the first three years after the dock facility was opened are compared, as we have done in the table below, with 1964, the year of the disaster.
TABLE 3
PORT OF ANCHORAGE TONNAGE FIGURES

<table>
<thead>
<tr>
<th></th>
<th>General Cargo</th>
<th>Petroleum</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961</td>
<td>38,259</td>
<td>(no figures given)</td>
</tr>
<tr>
<td>1962</td>
<td>44,575</td>
<td>52,888</td>
</tr>
<tr>
<td>1963</td>
<td>97,507</td>
<td>98,903</td>
</tr>
<tr>
<td>1964</td>
<td>159,608</td>
<td>656,009</td>
</tr>
</tbody>
</table>

(From Port of Anchorage public information brochure)

As shown in the table, there was a substantial increase in general cargo handled by the Port in 1964, over preceding years, and an even greater increase in petroleum tonnage handled. It is apparent that all of this increase in the amount of shipping handled at the Port cannot be solely attributed to the earthquake; however, it is also just as obvious that much of it has to be so attributed. Although no figures had been released by the time this study was completed, Port and city officials expected the tonnage handled in 1965, to be even greater than in 1964.

As a result of the increased use of the facilities of the Port of Anchorage, and relatedly, the fact that it was operating for the first time without a loss, Port programs which had been conceived prior to the disaster and whose implementation was not expected for some time to come were implemented sooner. The increased use of the single berth
dock made the facility inadequate. As a result, city and Port officials pushed ahead with plans to enlarge the Port. The new financial status of the Port operation gave the officials confidence that the citizens of Anchorage were prepared to support such plans. Accordingly, a two and half million dollar general obligation bond issue was put before the city voters on March 9, 1965. Increased Port business and the need for more adequate facilities in order to attract new trade was the reason given the voters for the expansion plans. The bond issue passed and, as a result, a permanent petroleum dock was completed in November, 1965.

Before the new dock was completed, city and Port officials, after further consideration, felt that its addition would not be sufficient to handle the expansion in Port activity. Therefore, in October, 1965, a second bond issue was put before the voters and likewise passed. This provided twice as much expansion funds as the first bond issue and is being used to construct a second dock which is scheduled for completion sometime in 1967. Thus, programs for the physical expansion of the Port of Anchorage, which were probably years away, were catalyzed, at least in part, by the circumstances following the earthquake.

The expansion in Port operations was responsible for some modification in the structure of the small staff. One new position was established and there was some re-alignment
of responsibilities. Shortly after the disaster, the position of port engineer was established. The port engineer was made responsible for preventative maintenance and various engineering planning functions. Before the disaster, the terminals manager had been responsible for the maintenance of Port facilities.

The position of terminals manager was re-classified and re-named operations and sales manager after the earthquake. The operations and sales manager was made responsible for sales promotion. In addition, he assumed some of the duties which the terminals manager had, such as overseeing the handling of cargo. Finally, an additional utility man and a secretary were hired.

According to our respondents, these few structural changes had been anticipated before the earthquake. However, with the increased Port activity, they were implemented sooner for the sake of greater operational efficiency.

One of the latent consequences of the expanded Port operations was the increased formalization which developed. It was reported that standard operating procedures evolved in areas where they had been lacking prior to the disaster. For example, written procedural files were started which covered several aspects of Port activity, and a much greater emphasis was placed on maintaining records.

At this point, let us recapitulate. Since the city of Anchorage is the economic and population center of the state of Alaska, it receives a considerable amount of the commodities
that are shipped to the state from the "lower 48." However, before the earthquake, its municipal Port had not developed to where it could compete successfully with the ice-free ports at Seward and Whittier. The usual pattern was for goods to be shipped to these two points and transported into the interior via the Alaska Railroad. After the disaster, the status of the Port changed considerably.

The disaster essentially assisted in creating circumstances favorable to the expansion of the Port. It modified the environment in which the Port organization had to function. The facilities at Seward and Whittier were destroyed or heavily damaged and Port officials in Anchorage were able to pursue their plans without competition. Thus, they were able to accelerate plans for both structural and physical changes in the Port; such changes had been viewed as being years in the future.

New Patterns of Change Initiated and Pre-existing Patterns Accelerated by Both Internal and External Conditions

As table 2 indicates, the Anchorage Public Works Department and the Alaska State Civil Defense were the only two organizations in which a combination of internal and external factors initiated new patterns of change and also accelerated pre-existing patterns. We will consider these two organizations in this section which will conclude our discussion
of the organizations that experienced some long-term adaptation.

State of Alaska Civil Defense

Pre-disaster structure — The State of Alaska Civil Defense organization is a division of the Alaska Department of Public Safety; headquarters for the division is located in Anchorage. Prior to the earthquake, the permanent staff consisted of eight persons all of whom worked at the divisional headquarters except for a deputy director who was stationed in Juneau.

The Alaska Civil Defense director is appointed by the Governor and is directly responsible to the commissioner of the department. The remainder of the staff is under civil service.

An assistant director-administrative officer was second in authority in the organization; prior to the disaster he was responsible for administrative matters, and assumed command of the organization in the absence of the director. Under the assistant director were the operations, resources, and training officers. The remainder of the headquarters' staff consisted of a secretary and a clerk-typist.

The organization was understaffed at the time of the earthquake; this was, in part, reflected in the fact that some of the employees spent a considerable amount of time engaged in activities other than those suggested by their official titles. For example, the training officer spent
little of his time involved in Civil Defense training activities. Instead, much of his efforts involved directing the state's public shelter program. Also, the resources officer spent little time with Civil Defense resources matters; he was more involved with other things such as developing emergency plans. Versatility was required of the employees, then, as they were often required to work on projects which were not their particular specialties. As a strong supporter of Civil Defense, the Governor had urged the State Legislature to provide for a larger Civil Defense organization.

The several state departments had been assigned emergency Civil Defense functions, and certain officials from each were designated as Civil Defense coordinators. By order of the Governor, these officials would be required to function under the direction of the State Civil Defense director during periods of major emergency. Thus during a disaster, the State Civil Defense organization could be expanded to include not only the permanent staff members, but also representatives of the state departments who would coordinate the activities of their respective organizations with the overall disaster effort. There had never been an occasion in which the State Civil Defense organization was required to increase in size in this fashion; however, on some occasions, the assistance of a number of these state officials had been utilized by the permanent State Civil Defense staff.
As an organization whose primary function was to serve as a coordinating body, State Civil Defense worked with many organizations of various levels in administering federal programs and planning for disaster. State Civil Defense officials reported that they worked closely with such organizations as the Civil Air Patrol, the Red Cross, and the military. There had also been cooperation with the local Civil Defense organization up until the time that Anchorage no longer had a Civil Defense director. The state staff also cooperated with the representatives of various federal agencies that maintained offices in Alaska as well as the state agencies. Joint meetings were held several times each year with federal and state officials during which disaster plans were outlined and various problem areas were considered.

State Civil Defense had written agreements for cooperative action during emergencies with the Corps of Engineers, Alaska District; the Civil Air Patrol, Alaska Wing; and the American National Red Cross. The agreement with the Corps of Engineers makes it possible for State Civil Defense officials to seek assistance from the Corps when local and state resources are no longer available. In such instances, the District Engineer is authorized to utilize the resources of the Corps of Engineers, whether it is a flood or some other type of natural disaster. The agreement with the Civil Air Patrol read in part: "During a Civil Defense emergency declared by
the Governor or the Director of Civil Defense, the Alaska Wing, Civil Air Patrol, will employ its facilities, personnel and equipment to support the Division of Civil Defense consistent with its mission as a volunteer civilian auxiliary of the United States Air Force." This agreement became effective in 1962. The written agreement with the Red Cross says in part: "The ANRC and Alaska Division of Civil Defense have a close working relationship in natural disaster. Therefore, ANRC Pacific Area and Alaskan Chapters will plan and act in unison with appropriate provisions of the current Alaska Civil Defense plan [including those of the several State departments and incorporated municipalities], pertinent federal statutes, and this agreement." This agreement was also concluded in 1962. All three of these agreements served as the basis for cooperation following the 1964, earthquake.

State Civil Defense officials perceived their role to be planning and developing an effective organization which could assist communities in Alaska in meeting either man-made or natural disasters. Most of their planning was oriented toward war-caused emergencies rather than emergencies resulting from some natural disaster agent or force. For example, the public shelter, training, and public warning programs were developed in anticipation of a nuclear attack. This emphasis, to a considerable degree, resulted from the fact that the federal government stipulates that the funds given to the
various states for their Civil Defense organizations be used for these kinds of programs. Thus in order to have continued financial support from the federal government, State Civil Defense had to meet certain government requirements, and these requirements were that programs primarily geared toward nuclear disaster be pursued.

State Civil Defense officials were also hampered in their desire to treat natural emergencies as within the scope of their responsibility by the fact that, in terms of state law, the organization had no legal basis for expending state funds for such operations. They hoped that such a law would sometime be passed. Along these same lines, prior to the earthquake, State Civil Defense officials had hoped to redesignate their organization as the Alaska Disaster Office so that the public would recognize and come to support the notion that it had a function other than war recovery. The general feeling was held that the Civil Defense label was misleading and did not suggest the total function of the organization.

Although hampered by a lack of funds which could be used directly for natural disaster planning and operations, State Civil Defense had been involved in several small natural emergency operations. During the spring, some of the rivers in the state frequently flood requiring the evacuation of nearby villages. On several occasions, State Civil Defense staff members cooperated with the Red Cross, the Corps of Engineers,
and the military in evacuating, housing and feeding the evacuees.

When the disaster struck, State Civil Defense did not have a completed disaster plan. There had been a plan published in 1958; however, some years later, it was assessed to be outmoded and the staff decided to rewrite it. A revised rough draft of this earlier plan was made in 1962, due in part to the anxiety generated by the Cuban crisis. Plans had called for the State Civil Defense staff to write the basic state disaster plan, and for each state department to write more specific plans called annexes which would complement the general guidelines established by the state plan. There had been meetings between the State Civil Defense staff and officials of the various state departments regarding disaster planning and preparedness. The goal had originally been set for such meetings to occur each month, but this did not come about because interest in this matter was not high on the part of many departments. Some of the departments were reported to have been working on their phase of the plan, but very few had completed them. So when the disaster occurred, there was little in the way of pre-established emergency norms for the state organizations to follow.

A back-up radio communications capability was provided State Civil Defense by a local group of the organization called Radio Amateur Civil Emergency Service (RACES). RACES
was established by the Federal Communications Commission to handle emergency radio communications and to act as a standby mechanism for the normal communications system in the states. There are local groups, like the one in Anchorage, throughout the country whose members have a serious interest in radio communications and are licensed ham radio operators.

The Anchorage RACES organization was loosely organized. The members were considered volunteer State Civil Defense personnel and meetings were held three times a week in their headquarters in the basement of the State Civil Defense office building where their radio equipment was kept. The group was supervised by the state RACES director, who was also a volunteer; he was appointed by the State Civil Defense director. About 50 amateur radio operators were considered members of the organization. Some of the equipment operated by the RACES volunteers was purchased by State Civil Defense with federal funds. For example, the group had about 22 mobile radio units which had been acquired in this fashion.

The RACES volunteers conducted periodic drills in order to keep in readiness for any emergency in which they might be called upon to lend their assistance. Oddly enough, two years prior to the 1964 disaster an earthquake disaster was simulated by the members. During the exercise, mobile radio units were dispatched to the Police Department, the hospitals, and the city Civil Defense headquarters; this procedure had to be repeated following the real earthquake! There had been
only one complete mobilization during an actual emergency by the group and this was during the Cuban crisis. During this period, a 24 hour alert was maintained for several days.

A few weeks before the disaster, the State Civil Defense organization was in danger of losing its financial support from the State Legislature. Because of this, members of the staff became involved in a campaign to publicize the function of the organization and to make the public aware of why it was needed in the state. Appearances were made by staff members on radio and television, and articles were released to the newspapers. Civil Defense in the State of Alaska, then, was experiencing difficulties prior to the 1964 earthquake.

**Long-term changes** -- On July 1, 1964, the Alaska State Civil Defense organization was renamed the Alaska Disaster Office. It was hoped that the new name would more accurately convey to the public the actual and broader function or responsibility of the organization. There were a number of noteworthy long-term changes which emerged out of the earthquake experience of the Alaska Disaster Office. Some of the changes were related to the disaster only in terms of their rate of occurrence. That is, the patterns of change existed in the organization prior to the disaster and were somehow accelerated by it. On the other hand, the earthquake experience also had the affect of initiating new patterns of change in the Alaska Disaster Office. In other words, changes occurred which had not been anticipated before the earthquake.
The disaster was a learning experience for members of the Alaska Disaster Office. Consequently, in assessing the organization's performance, the members identified a number of problem areas which had developed. Some of the changes which were made were based on the desire to control such problems in any future emergencies. In other words, some of the changes were geared toward making the future disaster responses of the organization more effective.

Analyzing the changes that were made in the Alaska Disaster Office following the earthquake from another perspective, we note that some of them were primarily internally determined. That is, persons within the organization had the authority to initiate and implement them without having to seek the approval of external sources of authority. However, in a number of other instances, not only was approval from outside authority figures required, but also requests for resources had to be granted by them if certain changes were to be made in the organization. In some cases, it seems that the disaster (as already noted with regard to some other organizations) provided the Alaska Disaster Office with a stronger case for why certain of its programs should be supported. One result of the disaster, then, at least for a short period, was that it allowed the organization greater control over an important aspect of its environment — that aspect which determines the resources it will be allocated. Let us now consider more specifically the disaster related
long-term changes which occurred in the Alaska Disaster Office or Alaska State Civil Defense as it was known before the earthquake.

Before the earthquake, the authority structure of the Alaska Disaster Office was such that the director was at the head followed by the assistant director-administrative officer. The three remaining non-clerical members — operations, training, and resources officers — were under the assistant director and on a common level in the organization. Since the organization had not been involved in any major disasters prior to the earthquake, the effectiveness of this structural arrangement under such conditions was not known.

As Alaska Disaster Office officials began setting up their operation during the emergency period, they perceived their problems to be of two sorts. First of all, it became apparent that one of the main problems was the need to coordinate emergency rescue and relief activities. Secondly, they felt the other demand to be the handling of administrative work related to acquiring federal disaster assistance for the affected communities in the state. Accordingly, the work assigned to staff members was divided in a like fashion. The director and assistant director began handling the administrative phase of the organization's emergency response, and the operations officer was given a free hand to deal with the operational aspect. The resources and training officers were assigned to work under the operations officer.
This manner of organizing the regular Alaska Disaster Office staff which finally emerged during the emergency period differed from its organization prior to the disaster. Officials felt the structure which evolved during the crisis was more functional. In referring to an earlier period when the new arrangement had not yet emerged one official noted:

Well, early experience in the quake indicated that this (the pre-disaster structure) was just not too functional because we had an operations officer, but he was all by himself. He had no one actually working for him. Resources was helping him, but he was not under him. So we then took another look at our organization and we split it up to two particular sections within the...division.

Since the new structure which developed during the emergency period was defined as more satisfactory than the pre-disaster pattern, the decision was made to make it a "permanent" feature of the organization.

After the earthquake, then, the Alaska Disaster Office's non-clerical staff underwent some reorganization in order to cope most effectively with the numerous contingencies that developed. What was initially perceived as an emergent kind of organization in which the regular staff members stood in new relationships with one another became a relatively long-term arrangement. Let us look more closely at this new arrangement which developed.

First of all, the responsibilities below the director, in contrast to the pre-disaster situation, were divided between
the assistant director and the operations officer who were now on the same level. As previously mentioned, two sections were established in the organization. The assistant director was made responsible for an administrative section and the operations officer was made responsible for an operations section.

The resources officer position, which was later redesignated as an assistant operations officer position, and the position of training officer were made part of the operations section. Both came under the authority of the operations officer. It will be recalled that in the pre-disaster organization the training and resources officers were on the same level as the operations officer.

The administrative section headed by the assistant director came to include a supply officer and an assistant operations officer. The assistant operations officer in this section became routinely involved in administrative tasks; therefore, his designation was misleading. This position was so labeled in order that a new civil service classification would not have to be established. Both of these positions which came under the authority of the assistant director were new ones which the Alaska Disaster Office was able to add as a result of the disaster. For example, with regard to the position of supply officer one official observed:

And we picked up...another new position, a supply officer which is in administration. This is something we never had...Well (during) the quake it
was very clear we needed a supply officer, somebody who devoted full time to this. Would know where these supplies were, to handle the paper work involved...

The organization was also able to add two more clerical persons to the staff, a secretary and a clerk typist. By the summer of 1964, the staff had increased by four persons. In attributing this over-all increase in personnel to the disaster, one official said:

(We) went over this organization and we came up with this recommendation. (The director) in turn then recommended it to Commissioner. who approved it. It's the best thing we've ever gotten through in our life, through with no sweat, and this was directly due to the quake because we had no intentions whatsoever of increasing our staff.

There was one case of inadequate role performance on the part of a member of the regular Alaska Disaster Office staff during the emergency period following the disaster. For purposes of anonymity, we will use the fictitious title of plans officer when referring to this person. Reportedly, there was some question about the plans officer work and contribution prior to the disaster; however, dissatisfaction with his performance reached the critical point following the earthquake. For example, one person noted:

During the quake we'd look for him and there'd be periods of an hour, two hours, when we just didn't know where he'd be. He'd come back and have no logical explanation of where he'd been. He was logically the one who should have taken over the fuel coordination. I assigned it to him, but he was incapable of handling it. He didn't have the ability to see what had to be done and then go ahead and do it.
Because he was not performing his role as expected, the plans officer was informed during the emergency that he was being discharged effective as of the end of April. Later, this was temporarily reversed. However, during the first of July, 1964, he resigned by "mutual consent." His resignation might have occurred eventually even if there had not been a disaster because, as previously mentioned, there had earlier been some dissatisfaction with his performance. Yet, the resignation came when it did because the demands of the disaster had made his below par work even more critical and apparent. Under more stable conditions, organizations can use various devices in order to control, to some extent, the dysfunctional consequences of inadequate role performance; for example, by not assigning important work to those persons who are defined as performing under par. During periods of crisis, however, control devices sometimes break down and latent problems become manifest. It is our contention that the inadequate role performance of the plans officer, as defined by Alaska Disaster Office officials, was a source of strain for the organization. The removal of the role incumbent was the means used in adapting to this strain.

It was reported that with the reorganization of the Alaska Disaster Office staff there was also an attendant greater delegation of responsibility and increased formalization. For example, some members of the staff expressed the
belief that prior to the disaster the director supervised too closely the work they were doing on various projects and programs. They felt that this created a morale problem. However, it was reported that following the disaster and the reorganization there was much more delegation of responsibility and less close supervision. One member noted, for example:

I don't bother him (the director) with all the detail work on what we're doing, giving details unless there is a specific problem, and there's one of two ways that we can go. Then I contact him as to what way to go. He knows nothing about the routine, the procedure or anything. Prior to the earthquake he would have.

Evidently, this change was, in part, due to the modification in the interpersonal patterns of the organization with the addition of the new personnel. There seemed to be a considerable amount of confidence placed in some of the new role incumbents.

There was also a more specific assignment of tasks after the disaster and subsequent reorganization.

Prior to the quake it seems like everybody did a little bit of everything. We still do but we have now made specific assignments to individuals -- this is the responsibility of a given individual. He may get assistance from someone else but we look to this individual for the accomplishment of this program and prior to the earthquake it wasn't that formal.

And along these same lines it was observed:

...we are now trying to concentrate on making sure that a call coming in pertaining to operations is handled by operations where prior to
the earthquake an incoming call would be
taken just about by anyone and they'd go to
work on this problem...We're getting quite firm
in insisting that these calls go directly to the
operations officer and then if he wants to
assign this particular problem that is posed or
whatever it happens to be, he can, but it's
called to his attention.

Thus, one result of the earthquake experience for the Alaska
Disaster Office was that some new normative patterns emerged
with regards to the delegation of responsibility and the
assignment of tasks. The organization, then, was different
from what it had been prior to the disaster.

As previously mentioned, the Alaska Disaster Office
did not have an operational disaster plan when the earthquake
struck. Work on a basic state plan had not proceeded as
rapidly as had been planned. The disaster served to stimulate
work on the plan, and it was published in February, 1965.
It was a plan which was geared toward nuclear disaster;
however, Alaska Disaster Office officials thought it would
also provide some guidelines for natural disaster operations.

Prior to the earthquake, work had also been started
by the Alaska Disaster Office on a state seismic sea wave
warning plan. The plan was published in September, 1965, and,
like the basic state plan, its completion was accelerated by
the disaster. One official put it this way: "...it (the
earthquake) certainly stimulated getting it out. It pointed
up the importance of the plan and I think it's coming about
a year earlier than it normally would have."
A few changes also occurred in terms of the physical facilities available to the Alaska Disaster Office. In the summer of 1964, the State Legislature approved $25,000 to be used for the purchase of radio communications equipment in order to establish an emergency communications system throughout the state. By the fall of 1965, equipment had been purchased for this new capability including a 1500 watt base station with auxiliary power to be installed at Juneau, Anchorage, and Fairbanks; three 150 watt transceivers which can be taken to disaster areas for emergency communications; and a number of five watt mobile units and walkie talkies. Relating the acquisition of this equipment to the earthquake experience one Alaska Disaster Office official said:

This is a direct outcome of the earthquake. We had attempted to acquire such a system for three years and had always been rejected. We went in with the supplemental one -- the emergency portion of our budget -- and it was approved without any question.

Another change in terms of physical resources was the acquisition of a new office facility. This change grew out of the serious problem that developed during the disaster when the emergency operation of the organization with its expanded staff was seriously hampered by the lack of sufficient physical space. The 20' X 80' Alaska Disaster Office headquarters was much too small for a large emergency operation and four mobile homes had to be used.
After the disaster, a 24' X 60' redwood building was donated to the state of Alaska for use by the Alaska Disaster Office. Local contractors and labor unions provided some materials and labor, and the building was erected adjacent to the headquarters building to provide additional office space. Thus, the new facility provided a needed resource.

Our data, then, indicate that the Alaska Disaster Office underwent a number of long-term changes which were related to the earthquake experience. Some of the changes were structural changes; that is they involved modifications of normative patterns in the organization. Others involved the replacement of role incumbents or the addition of personnel. Also, some changes occurred with regard to physical resources available to the organization.

We might mention, again, that the disaster created a climate in which the Alaska Disaster Office received an unusual degree of support from other organizations and agencies. In this one respect, it had a measure of control over its environment that was absent during more stable periods. An organization or group has a certain amount of control over other groups and organizations when it can make certain requests of them and have such requests taken into account or acted upon favorably. For several months after the disaster, the Alaska Disaster Office was able to request and did, in fact, receive an unusual amount of cooperation and support for its
programs. For example, one official during this period made the following observation:

It's just like turning 180°... the close cooperation we now have with other state agencies and other federal agencies, the increased stature that we have gained as a result of it and as a result of this we're able to work a lot better with other agencies and they with us... It'll probably take two or three years of nothing where Civil Defense will slip into the background like it was before. So there's been irrevocable changes. In fact, friends of mine have accused me of engineering the earthquake.

However, such a climate of cooperation showed very definite signs of dissipating a year and a half after the earthquake, and Alaska Disaster Office officials began to once again complain about the indifference shown by some groups and organizations to its programs. This certainly has implications for those who must develop disaster preparedness programs and plans. It means that sensitivity to such matters may be short lived following a disaster, and, consequently, support for disaster programs and projects ought to be sought as soon after such an experience has occurred as possible.

The Public Works Department

Pre-disaster structure -- With 169 employees at the time of the disaster, Public Works was the largest city department. It was almost inevitable that with its many, and varied resources -- men, equipment, and material -- it would play an important role in the disaster response of the community.

The department was responsible for a multiplicity of functions. The following were the major assigned functions
of the Public Works Department at the time of the earthquake:
(1) the maintenance of streets, sewers, and city buildings;
(2) the design and construction of streets, water and sewer
lines; (3) the maintenance and operation of the municipal
airport and water utility; and (4) traffic engineering and
building inspection.

The director of Public Works is head of the department
and is also city engineer. He is directly responsible to the
City Manager. Under the director of Public Works is an assistant
director who also functions as the assistant city engineer.

The department was divided into six divisions: traffic
engineering, building inspection, engineering, municipal
airport, maintenance, and water utility. The assistant Public
Works director was head of the engineering division, a
chief building inspector was head of the building inspection
division, a traffic engineer supervised the traffic engineer-
ing division, an airport manager supervised the operations of
the airport division, a water utility manager was the head
of the water utility division, and a superintendent of Public
Works was responsible for the maintenance division. The head
of each division was responsible to the director of Public
Works. Chart VI outlines some of the major pre-disaster
structural features of the organization.

The Public Works Department did not have a disaster plan
when the earthquake struck. Many of the employees of the
CHART VI

ANCHORAGE PUBLIC WORKS DEPARTMENT

DIRECTOR OF PUBLIC WORKS - CITY ENGINEER

- ASST. DIRECTOR - ASST. CITY ENGINEER
  - ENGINEERING DIVISION
  - TRAFFIC ENG. DIVISION
  - SUPERINTENDENT OF PUBLIC WORKS MAINT. DIVISION
    - BUILDING INSPECTION DIVISION
    - WATER UTILITY DIVISION
    - AIRPORT DIVISION
    - SANITATION SECTION
    - MECHANICAL MAINTENANCE SECTION
    - GENERAL MAINTENANCE SECTION
      - SURVEY SECTION
      - CONSTRUCTION SECTION
      - DESIGN SECTION
      - BLDG. CONST. & MAINT. SECTION
department did have, however, special skills and experience which were relevant to emergency rescue and restoration activities. For example, personnel in the maintenance and water divisions had had prior experience responding to minor crises in connection with their work. Also, various employees, such as those in the building inspection division, engineering, and maintenance, possessed skills which could be utilized to lessen the danger of a secondary disaster. In addition, the department had internal resources -- heavy equipment, emergency parts, etc. -- which were vitally needed during the disaster.

**Long-term changes** -- Following the earthquake, the Public Works Department underwent considerable change. Some of the modifications can be, in part, attributed to the disaster experience, i.e., to developments which occurred during the emergency or later rehabilitation periods.

The data clearly indicate that several changes might not have occurred when they did had it not been for certain pre-disaster characteristics and circumstances. It also seems fairly evident that had the disaster not occurred, some of these modifications would have eventually come about anyway. Thus, in many respects, the earthquake functioned as a catalyst; that is, certain processes of change that were pre-disaster features of Public Works were accelerated by conditions which prevailed following the disaster.
The Public Works Department at the time of the earthquake was experiencing a period of reorganization; consequently, it was in a state of considerable flux or fluidity. A number of changes had become operational only several months before the disaster and many more were anticipated by officials. These changes had been made in order to bring about a more efficient use of resources.

In addition to the patterns of change which had become manifest prior to the disaster, there were some areas of strain and tension which were partially responsible for some changes which later emerged. Relatedly, the two principal officials in the organization — the director and his assistant — were expected to administer an organization which consisted of several units with highly diversified functions. At the same time, they were also expected to function in specialized engineering roles. This situation created certain problems and provided the context in which some long-term organizational adaptations emerged.

The major disaster related long-term changes that occurred in the Public Works Department involved the water utility division, traffic engineering, building inspection, engineering, and building construction and maintenance. Let us now turn to a discussion of these changes.
Water division — On October 8, 1963, less than a year before the earthquake, the water utility was organized into a separate division within the Public Works Department. Prior to that time, the responsibilities of the utility were divided among several municipal agencies. The reorganization was made as it was believed that a centralized operation would be more efficient, and because of an increase in customers and the desire to provide them with more adequate service.

A utility manager was appointed to supervise the newly centralized operation. Like other division heads, he was made responsible to the director of Public Works. Plans called for the water utility to develop into a separate department over a period of several years as the operation expanded, with the manager directly under the authority of the City Manager. There were twenty-five employees in this division prior to the disaster.

The earthquake resulted in accelerating the development of the water division closer to the time when it would operate as a completely separate unit from the Public Works Department. The responsibilities of the division were considerably enhanced following the disaster, and a few permanent positions were created. These changes were made because they were seen as necessary to cope with the increased demands of rehabilitation. The damage by the earthquake to the city's water system required an expanded operation in order to (1) restore and rehabilitate the portion of the water system
which had been damaged or destroyed, and (2) to meet new requirements for continued service which were related to the disaster; for example, the need to return service to those persons who were forced to move into areas which previously received no water service. Since many of the changes that were made had been programmed by officials for some later period anyway, the decision was made to continue with them beyond the recovery period. In other words, they became long-term changes.

One key official observed, "We have added staff, professional people, increased its scope of duty and responsibility to permit a greater flexibility in the expansion of the redevelopment program." In this regard, prior to the earthquake, the engineering division of Public Works met all of the engineering requirements of the water utility. In November, 1964, the utility took over some of this responsibility with the establishment of the beginnings of an engineering section. At this time, an engineer and a draftsman were added to the staff. The position of engineer was established not only out of engineering considerations but also in order to have an administrative assistant to the utility manager. This administrative back-up to the utility manager provided by the addition of the assistant, as well as the creation of the position of draftsman, was expected to contribute to the utility's capability of handling the expanded operation made necessary by the disaster. According to officials, these
changes had been planned for some later period and the earthquake hastened their implementation.

In addition to expanding its services to include those new residential areas which developed as people moved out of damaged ones, some other expansion plans made prior to the disaster were also being advanced a year or more. Mention has already been made of the relationship between certain changes which occurred in the Fire Department and the expanded Port operation. The modified Port of Anchorage situation had a similar effect on the water division. It required the acceleration of planning to extend water mains and lines to the developing Port industrial area for fire protection purposes.

Traffic engineering -- Traffic engineering was a small division. At the time of the disaster only nine persons were employed in it. In October, 1964, several months following the earthquake, traffic engineering was taken out of the Public Works Department and made into a separate city department. The traffic engineer was retained as head of the new unit and, like other department heads, he became directly responsible to the City Manager.

Traffic engineering had an increased work load following the disaster; with major street damage and damage to the downtown area a considerable redevelopment program was required. For example, new traffic patterns had to be established as well as a new public parking program in conjunction
with the rehabilitation of downtown Anchorage. City officials said that this expanded program was primarily responsible for the change in position of traffic engineering in the municipal structure. Yet, it seems that other factors were also very important in this regard.

Prior to the disaster, traffic engineering had been allowed to function fairly autonomously by the Public Works director and assistant director. The rationale was that here was a highly specialized function that required professional training and which should be primarily administered by those who possessed such skills, i.e., the traffic engineer and his associates. However, it is evident that more was involved. This was that the two key Public Works officials found it necessary to spend the bulk of their time dealing with city engineering concerns and often did not have time for overall departmental matters, including the close supervision of traffic engineering.

Because of traffic engineering's considerable autonomy, officials in the division were encouraged to seek official separation from Public Works. Thus, there was pressure for a change in the status of traffic engineering even prior to the earthquake. This pressure or strain became manifest as an unofficial policy. Members of the division systematically disregarded the organization's official lines of authority by going directly to the City Manager on important matters
and thus by-passing the Public Works heads. This unofficial pattern was followed by traffic engineering in hopes of demonstrating that the division could operate at the departmental level in the municipal structure.

It is apparent from our interview data that this strain existed in the Public Works Department prior to the disaster and that several persons were aware of it. The data also suggest that this situation had some influence on the eventual change in the status of traffic engineering following the earthquake. A combination of pre-disaster and post-disaster conditions, then, appear to be primarily responsible for this long-term change.

Building inspection — Another structural change in the Department of Public Works which was related to the disaster was the separation of the building inspection division. This unit became a separate department in October of 1964. Thus like traffic engineering, the new department was elevated to the same level in the municipal structure as Public Works.

Prior to the earthquake, building inspection was not considered an important function by many city officials. This was, in part, reflected in the fact that the division had been understaffed considering the work that had to be done. There were ten employees in the division at the time of the disaster. The extensive damage to the buildings in the city caused by the earthquake and the subsequent rebuilding which was then made necessary was responsible
for heightened interest in the building inspection division and its function. One high city official noted, for example, "We will make sure in the future that we have fully adequate inspection of all buildings."

Two additional building inspectors were hired in June of 1964. Requests for such additions to the staff had been turned down by City Council prior to the disaster. This increase in size of building inspection and its new departmental status were based on an increased work load following the disaster and an anticipated generally expanded operation.

There was also greater attention paid to building and construction standards following the earthquake. Relatedly, in order to encourage the construction of buildings which could resist earthquakes, a code committee was organized following the disaster composed of the head of the building inspection department and a number of local architects and engineers. This committee wrote a number of amendments to the building codes used in the community which reflected the earthquake experience. These amendments were adopted in April, 1965.

**Engineering division** -- Prior to the earthquake, consideration had been given by Public Works officials to the establishment of a position to coordinate the underground construction activities between public and private agencies in the Anchorage area. It was held that such a person could
serve as a clearing house in the scheduling of construction work carried out by such organizations, and in the location of utility lines. This type of coordination was believed to have been needed for a long time, but nothing had been done about it.

Also in a related engineering sense, there had been a need for a centralized location of new construction information in the form of utility drawings. The Public Works Department had utility drawings of the facilities in the community, but they had not been kept up to date because of budgetary considerations. The drawings that were available proved invaluable for reconstruction work that had to be done on city utility lines following the earthquake.

Reportedly, the considerable amount of reconstruction and improvement of underground utility lines by Public Works and other organizations following the earthquake made it even more important that someone coordinate and make a record of the new construction. It was felt by city and Public Works officials that if these functions were carried out a considerable savings in project costs would be made over the long run. As a result, in late 1964, a new position called projects control engineer was added to the engineering division of Public Works; also, a draftsman was added to work on utility maps on which new construction data were recorded.
These changes in the engineering division can be seen as an adaptation on the part of the organization to problems which persisted from the pre-disaster period. It seems that the changes were made when they were because the problems that they were expected to correct had assumed greater proportions with the earthquake related reconstruction activity.

The earthquake was also indirectly responsible for several personnel changes on the administrative level, and in the engineering division of the Public Works Department. Some of these changes occurred because a few persons were afforded the opportunity to acquire what they considered to be more attractive positions and, of course, these changes precipitated others.

In the summer of 1964, the assistant director left the department for a position with a state agency. The position he assumed had been established because the agency had become involved in a considerable amount of earthquake related reconstruction work. Thus in one sense, the assistant director owed his new position to the disaster.

A new assistant Public Works director was appointed from within the engineering division of the department. The succession of the newly appointed assistant director to his position resulted in a few other personnel changes in the engineering division. One man resigned, in part, because before the disaster he had had his differences with the new assistant director and thus chose not to work under him.
Also, the interview data show that a second man resigned when the new assistant director passed over him in selecting a successor to fill his vacated position.

Finally, in July, 1965, the director of Public Works resigned to take a position with an engineering firm which had been engaging in reconstruction work on city facilities. In his capacity as Public Works director, he had had considerable contact with the personnel of this firm and thus, was in an advantageous position to learn of and vie for employment opportunities it offered. Had it not been for the disaster, such an opportunity would not have been available since the firm's presence in Anchorage was due to its serving as consultant to the Corps of Engineers on rehabilitation work. When the director resigned, the man who had been the assistant director during the emergency returned as his successor.

It is possible that similar changes in personnel, as noted here, might have occurred even without the earthquake. There is a high rate of turnover in personnel in most organizations in Anchorage anyway. The point we wish to make here, however, is that these particular changes happened when they did, in part, because of post-disaster circumstances. That is, the earthquake provided the opportunity at a specific point in time for those who might have been contemplating a change of jobs anyway; it added a necessary ingredient.

Finally, although these changes in personnel in themselves are not long-term changes as earlier defined, they can be,
nevertheless, assumed to bring about such changes. This is true to the extent that different role incumbents perform their duties differently and also to the degree that interpersonal patterns are modified by changes in personnel.

**Building construction and maintenance** -- Prior to 1963, there was no one organization or agency that was responsible for the maintenance of city owned buildings and related functions. Instead of this responsibility being centralized in one agency, it was divided among a number of city departments. The department which used a particular building was also responsible for its maintenance. Such maintenance was quite limited and usually took the form of breakdown maintenance; little of what might be called preventative maintenance was attempted. In late 1962, engineering personnel in the Public Works Department were assigned the responsibility of repairing and remodeling certain city buildings. As this work was done, the inadequacy of the maintenance program became apparent to Public Works and other city officials.

In 1963, several contracts were let by the city of Anchorage for architectural work. An engineer in the Public Works Department was assigned to administer the contracts and to coordinate the work. Also during this period, other city departments called upon Public Works engineering personnel for building design and estimating work. These developments made the need to establish some kind of permanent group that
would be responsible for city buildings more apparent. An engineer and a repair crew were assigned such responsibilities and a new section was unofficially created in the engineering division. The section became official in 1964, with the approval by the City Council, and it was designated as the building construction and maintenance section. There were seven employees in this section prior to the disaster.

The official responsibilities of this section were (1) to provide a planned preventative maintenance and repair program for the 86 city buildings, and thus, reduce the general cost of maintenance over the long run; (2) to provide supervision and coordination for architectural firms engaged through contract by the city; and (3) to do design work for municipal buildings. The building construction and maintenance section, then, was established because it was felt that these responsibilities would be more adequately carried out if they were assigned to a specific unit rather than being diffused throughout several departments.

At this point, mention may again be made of the fact that according to the organizational chart of the Public Works Department, the director and assistant director had authority over section and division heads. Therefore, building construction personnel were officially supposed to refer to either one of these two persons regarding matters of major policy.
Also as previously noted, administrative decisions which affected the entire Public Works organization were supposed to be made by the director, and to a lesser extent by the assistant director. In addition to being concerned with the over-all administration of the department, the director, as city engineer, was also expected to be involved in engineering matters. Relatedly, the assistant director, in addition to being an administrative assistant to the director, was also the operational head of the engineering division. It was in the activities of this division that both the director and assistant director concentrated most of their efforts.

Although the director and assistant director officially had two roles, then, they were more active in one than the other. They were not actively involved in the affairs of the several divisions with the exception of engineering. And in the engineering division, they were less involved with the new building and construction section. Consequently, prior to the disaster, the heads of the several divisions of Public Works, and also the head of the building construction section, enjoyed considerable autonomy. We have already discussed the implication this situation had for traffic engineering. Likewise, it had some consequences for building construction and maintenance.

The structural characteristic of the Public Works Department referred to here was partially responsible for the
fact that decisions were often made in the building construction and maintenance section which should have been cleared by the director or his assistant. The inaccessibility of the two administrators, however, due to their being involved in other duties and problems, meant that they did not encourage or make it necessary for building construction personnel frequently to seek approval of their decisions. As would be expected under these circumstances, this sometimes led to decisions being made and actions being taken that they would not have approved. The pattern evolved for one of the head officials of building construction to first engage the section in some activity or project and then seek the support of those higher in authority. For the sake of anonymity, we shall, throughout the course of this discussion, only refer to this official by using the fictitious name of "Mr. Brown."

As in any organization, Mr. Brown, as an employee of Public Works, was expected to follow certain organizational rules and procedures in making decisions and in engaging in activities which did not necessarily need authorization from those in positions of higher authority. However, he had the tendency to use unofficial means and procedures rather than those which had been officially outlined. His philosophy was that it was more important to get things done than going through official channels and using official procedures.
Because of this tendency, and encouraged by the frequent inaccessibility of his immediate supervisors, Mr. Brown frequently went beyond his authority and responsibility as an official of building construction, and this sometimes got him into trouble. For example, at times he made certain decisions which required the expenditure of considerable amounts of money before such money was available to him. One of his supervisors commented:

...he'll get things done and without going in proper routes, so to speak. Sometimes he doesn't find this out till too late, then we have to manipulate to financially get the job done.

Others in the Public Works Department described Mr. Brown as a "doer" or "a person who gets the job done" but not likely to follow the official normative structure. Prior to the disaster, then, he frequently went beyond his designated authority and involved his section in projects and activities which should have been initiated or approved by higher-ups.

The response of Mr. Brown, who organized the previously mentioned Disaster Control Group, and those regular employees and volunteers who followed his lead during the emergency period was in a general sense a continuation of unofficial normative patterns that had evolved before the disaster. Our interview data indicate that this was at least true in terms of this group's orientation towards established rules and regulations. For example, one member who participated in
the emergency rescue and relief activities comments as follows:

We commandeered all the equipment we needed, all the material we needed, and we just did the job. That was a projection of what we normally do. We do these sort of underhanded things normally, but we don't do them so flagrantly as we did then.

Mr. Brown and his organization of regular employees and volunteers were quick to make decisions and to respond to the problems and needs of the emergency period following the earthquake. Also, the pattern of this response was an extension of normal behavior. It was the consensus among city officials that his emergency group did an outstanding job during the emergency.

Prior to the disaster, then, officials tended to generally perceive the ignoring of rules and regulations, quick judgments, etc., by building and construction as dysfunctional for the Public Works Department and the larger municipal organization. In terms of our conceptualization, this was a source of strain. However, similar activities by building construction personnel during the disaster tended to be defined at the time as functional. Put in a more general sense, a modus operandi which was seen as creating instability under relatively stable environmental conditions was defined as functional under emergency conditions when adaptive rather than routine behavior seemed to be called for.

Some time after the disaster, Mr. Brown and his section were again perceived as creating problems because of the unit's
manner of operating. Almost exactly one year after the disaster, for example, a high Public Works official made the following comment regarding this section:

You get in the problem there of people that are real good in a crisis and perform outstandingly because they have initiative, but they don't work too well. They can't work continually that way because if they do, they will run over everybody.

This same official contrasted the above type of person with another:

Now you take a man like __________, he's worthless in a crisis, absolutely worthless. But on the long haul that's the kind of guy that the Council wants and that's the kind of guy you have to have.

The unorthodox fashion in which building construction and maintenance operated was primarily due to the official of this section to whom we have been referring as Mr. Brown. This was recognized by Public Works and other city officials. Also, our data suggest that he had a tendency to act even more in an unofficial fashion following the disaster due to (1) the increased pre-occupation of his superiors with rehabilitation problems, and (2) the general fluidity which characterized the situation in which he and others had to operate following the disaster. Public Works officials adapted to this source of strain by removing Mr. Brown from his position. This occurred in June, 1965. However, before this was done, he initiated some interesting changes in his section which had implications for other city department.
On October 1, 1964, the building construction and maintenance section became a separate division and was re-named the city structures division. It is not clear whether this change was somehow related to the disaster. Some of our respondents, for example, reported that they believed the change was made necessary because of an increased work load following the earthquake and others reported that they did not feel such a relationship existed.

The disaster experience remained of interest to the city structures division long after the emergency period had passed. Many informal critiques were held at which time the actions that had been taken were discussed along with the problems that had been encountered. This was done with a view toward ascertaining what alternative adaptations might have proved more satisfactory. Such continued interest in the disaster experience seemed to have stemmed from two sources: (1) during the rehabilitation period, the men in the division in the course of their work were constantly faced with physical reminders of the earthquake, and (2) Mr. Brown, who was retained as a top official when the section was made into a division, was militant regarding the matter of emergency preparedness.

In the course of these informal critiques, several problem areas were identified. It was agreed in general terms that the problems experienced by their group and others during the emergency resulted from two things. First, there
was an absence of a disaster plan which would have specified
the roles of key people so that a division of labor and co-
ordination could have occurred more rapidly. And secondly,
there was a lack of needed emergency equipment such as cer-
tain kinds of tools and radios. Mr. Brown decided to initiate
a disaster and emergency preparedness program in his division
which would take these problems into account.

To engage in such a project in a bureaucratic setting,
it is usually necessary for officials of a unit to acquire
the approval of those higher in authority, unless such a program
is an assigned responsibility. Usually too, such approval
will not be forthcoming if the project is considered the func-
tion of another unit of the organization or if the means to
carry it out violates organizational norms. As noted above, Mr.
Brown frequently used unofficial means of operating and this
pattern persisted in his program for disaster preparedness for
his division. Also, city officials tended to define disaster
preparedness as a function of the Civil Defense Department.
Accordingly, this program met with resistance.

Mr. Brown and others in the division wanted to play a
similar role in future emergencies or disasters as the divi-
sion had played in the emergency period following the earth-
quake. They were encouraged to proceed with plans for such
a role by the fact that following the earthquake little still
had been done to prepare the community to face the threat
of possible future disaster. Months after the earthquake, an active Civil Defense program had not yet been established and so city structures personnel took the initiative and began functioning in this area as they had done during the emergency period. Some of their ideas were later adopted by other city departments.

One of the first things that was done to prepare the division for emergency or disaster duty was the acquisition of a considerable amount of equipment. One year after the disaster, for example, the division had acquired several additional radio equipped vehicles. Also, the men in the division were issued protective clothing such as hard hats, rain gear, heavy boots, etc. Such clothing was to enable the men in the division to work on an emergency basis in all kinds of weather and in all types of situations. Relatedly, Mr. Brown requested the personnel to carry basic emergency tools in their vehicles — e.g., cutting torches wrecking bars, etc. — in anticipation of emergency operations.

A considerable amount of the equipment acquired to increase the emergency capability of city structures was acquired somewhat unofficially. For example, certain funds from the city budget were allocated to the division for small tools which usually meant wrenches, hammers, and the like. Instead of purchasing these things, cutting equipment, wrecking bars and similar pieces of equipment were bought. Also, some equipment
was purchased and justified on the basis that it was needed for routine work with an eye toward using it primarily in emergencies.

As previously noted, much confusion occurred during the emergency period because persons who had disaster roles could not be easily identified. In anticipation of this problem in any future emergency, each employee of the city structures division was given an identification card and their hard hats were prominently marked with the city of Anchorage emblem and a reflectorized emergency symbol. City police and firemen were acquainted with these cards and hats so that divisional personnel could pass police lines and enter emergency areas without difficulty. Also, vehicular identification plates were made up for the employees of the division.

A written emergency plan was also prepared for the division. In writing this plan, an effort was made to anticipate and make allowances for the kinds of situations and problems which had occurred following the earthquake. The plan was not lengthy but covered several important problem areas. The following important areas were considered: (1) emergency responsibilities of the division, (2) emergency communications, (3) the use of volunteers, (4) emergency lines of authority, and (5) reporting procedures. As it was written, the plan reflected the tendency of Mr. Brown
to emphasize the adaptation to situations in terms of expediency rather than in terms of established procedures.

Some key officials were opposed to Mr. Brown's initiative regarding disaster planning and preparedness on the grounds that he went "overboard" and that the city structures division was engaged in a program or function for which it lacked authorization. Such statements as the following that appeared in the disaster plan were objected to by some officials:

If you are turned back at a police post, try to get through another one. Use talk, trickery, or muscle if you have to, but get through.

Also, some officials felt that while the city structures division could be called upon in the event of an emergency like any other city divisions, it, nevertheless, should not concern itself to such a degree with these matters. Emergencies, they reasoned, involved the responsibilities of the Police, Fire, and Civil Defense Departments, and the latter had the responsibility for making plans and preparations. Thus, there existed considerable concern regarding the activities of the city structures division.

On January 23, 1965, less than a year after the earthquake, the city structures division was once again involved in an emergency operation. At this time, a major fire occurred in the Port area involving petroleum tanks located there. Personnel of the city structures division were mobilized and appeared at the scene of the fire to generally assist city firemen. Some city officials felt that they tended to get
in the way somewhat because they had no special training. As a result of this experience, and as a result of the belief by some that the city structures division had in general gone far beyond its sphere of responsibility, some pressure was brought to bear on the Civil Defense Department by city officials to become more involved in establishing an inter-departmental emergency and disaster program.

Civil Defense officials were instructed to work with the various city departments whose personnel could be called upon during periods of disaster or emergency. What is interesting is that Mr. Brown was told to discontinue his "go it alone" activities and several of the ideas used in his division were incorporated into a proposed inter-departmental Civil Defense program. For example, in the following quotation from an interview with a high city official the similarity will be noticed between this proposed Civil Defense program he talks about and the one which we have already discussed and which had been implemented earlier in the city structures division.

As we go along with this program these people will be provided with hard hats and with turn out clothing such as volunteer firemen have and certain vehicles. When they are responding, for example, to assist the firemen and police at a large conflagration, they will be able to go through police lines and get into the scene of the emergency to be useful. And also we will probably develop a new identification card system so that those persons who are specially talented to be helpful in such emergencies will have cards that identify them as emergency rescue persons.
In terms of the data, we conclude that Mr. Brown was defined as a disturbing influence not only with regard to the Public Works Department, but in terms of the general municipal organization as well. Officials in the Public Works Department and the City Manager's office were concerned about his tendency to proceed in an unofficial and unorthodox fashion as well as the assumption of functions which were recognized as being assigned to another department. Officials tried to avert this threat to stability by pre-empting Mr. Brown's ideas on disaster planning and assigning the responsibility for their development on an inter-departmental basis to the Civil Defense Department. Thus, it was hoped that the initiative would be wrenched from Mr. Brown and there would no longer be any need for his division to have a separate disaster program. Mr. Brown, then, served as an impetus for change within the context of the disaster not only in the Public Works Department, but in the municipal organization in general. When the final field trip was made to Anchorage, one aspect of the inter-departmental disaster preparedness program was in the process of being completed. This involved providing city employees who possessed emergency relevant skills with city identification cards.

The pre-emption of the disaster program was not the final adaptation made by Public Works and city officials to the unsettling influence of the city structures official.
As previously noted, he was asked to resign as a result of his continued policy of ignoring organizational norms.

Mr. Brown, then, seemed to have been out of place in the bureaucratic setting of the Public Works Department. He played, however, an interesting role in terms of long-term change. In some respects, he fits the description of the organizational type that Presthus refers to as the ambivalent.

Despite his inability to meet bureaucratic demands, the ambivalent type plays a critical role, namely, that of providing the insight, motivation, and the dialectic that inspire change. ...the ambivalent is always sensitive to the need for change...few ideals or institutions escape his critical scrutiny. In his view custom is no guarantee of either rationality or legitimacy.⁴

We have pointed out that disaster related long-term change did, in fact, occur in the Public Works Department. Some of the changes which occurred were structural, that is, they represented an actual modification of normative patterns of the organizations, as when traffic engineering and building inspection became separate departments. Other modifications involved disaster planning, personnel, and physical facilities and systems.

Our data also indicate that the earthquake functioned as a catalyst with regard to some changes. In addition, some of the changes evolved out of pre-disaster and disaster problems and sources of strain.

Organizations in Which No Observable Disaster Related Long-Term Change Occurred

Six of the organizations in our sample did not experience any disaster related long-term change. That is, the disaster did not bring about conditions which initiated new patterns of change nor accelerated prior existing ones in these organizations. In this final section of the chapter, we will discuss these organizations.

**KHAR Radio**

**Pre-disaster structure** — Radio station KHAR had a staff of 13 at the time of the earthquake. It was one of four AM stations in Anchorage. Organizationally, it followed the usual pattern of radio stations; a manager was responsible for the overall operation of the station and the remainder of the staff consisted of an assistant manager, several announcers, sales personnel, and business office personnel.

**KENI Radio and Television**

**Pre-disaster structure** — Anchorage stations KENI AM and KENI-TV are owned and operated by the Midnight Sun Broadcasters, Inc. The corporation also has several affiliated
radio and television stations -- KFAR and KFAR-TV in Fairbanks, KINY and KINY-TV in Juneau, and KTKN in Ketchikan. The president and general manager is the head of the organization. Other key positions in the Anchorage organization at the time of the disaster included an operations manager for KENI radio, a sales manager, 2 salesmen, a copy writer, a traffic manager and several announcers, and for the KENI-TV operation the staff included an operations manager, a copy writer in charge of commercial productions, a news editor and sales manager.

**KFQD Radio**

**Pre-disaster structure** -- With 10,000 watts, KFQD was the most powerful commercial station in Anchorage. For this reason, it had been designated as the community’s official Civil Defense or emergency broadcast station.

Station KFQD was organized along the lines of the other stations. A general manager supervised the overall operation, and other positions included a program director, music director, chief engineer, news director and several announcers. One of the station’s announcers had the position of public information officer for the Anchorage Civil Defense Department prior to the disaster.

**Anchorage Telephone Department**

**Pre-disaster structure** -- Unlike most American cities, Anchorage owns and operates its own telephone system. The
operation of the utility is carried out in one department under the direction of a manager.

Prior to the disaster, the telephone department employed 134 persons. Structurally, there were eight divisions in the department: administration, traffic and equipment, construction, plant extension, commercial, sales and service, outside wire, and inside wire divisions (see Chart VII).

At the beginning of 1964, the utility served 4,187 business lines and 12,919 residence lines. There were four exchanges, Broadway, Fairfax, Diamond, and Federal; Broadway was the largest of the four.

The telephone system was operating at maximum capacity, but, nevertheless, could not keep pace with the demands for new installations. Except for high priority requests, the exchanges had been closed for new service since December, 1963. Before the earthquake, the telephone department was holding about 2500 requests for service.

The telephone department had a disaster recall plan which had been developed approximately a year and a half prior to the earthquake in anticipation of a possible Civil Defense emergency. The plan designated, in terms of where employees resided, the particular exchange building to which they were to report following a disaster. Emergency supplies had been stockpiled in each of the exchanges. Telephone officials did not base the recall procedure on the use of
CHART VII

ANCHORAGE TELEPHONE DEPARTMENT

TELEPHONE UTILITY MANAGER

- CHIEF ENGINEER
  - TRAFFIC & EQUIP. DIVISION
  - PLANT EXTENS'N DIVISION

- ADMINISTRATIVE DIVISION

- OPERATIONS MANAGER
  - COMMERCIAL DIVISION
  - OUTSIDE WIRE DIVISION
  - INSIDE WIRE DIVISION

- CONSTRUCTION DIVISION

- SALES & SERVICE DIVISION
the telephone system because previous experience suggested that it might not be very reliable. For example, during one period at the time of the Cuban missile crisis the telephone load increased at such a rapid rate that it blew out the system's main fuses.

**Presbyterian Community Hospital**

**Pre-disaster structure** — The Presbyterian Community Hospital began operating in June, 1963. It was organized by a non-profit organization, the Presbyterian Ministeries, Inc. The small hospital leases building space from a group of doctors who are organized into the Anchorage Medical-Dental Building, Inc. This group of doctors own the building and lease the basement, the third, and the fourth floors to the hospital.

Prior to the disaster, Presbyterian had about a 50-bed capacity and a small staff with several of the key positions occupied by new persons. The hospital administrator had held his position for only about a month prior to the earthquake and he was still in the process of becoming familiar with the operation of the hospital, and with the Anchorage community when the disaster occurred. The director of nursing had been in her position for only a few hours when the earthquake hit. Also, the comptroller, who was being groomed to assume the functions of an assistant hospital administrator, had held her position for only several days before the fateful event.
There were no doctors in residence at the hospital prior to the disaster. Many of the doctors who were members of the Anchorage Medical-Dental Building, Inc. and who had private offices on one of the two floors of the unleased portion of the building, referred patients to Presbyterian and used its facilities.

During its short existence, the hospital had experienced a series of financial crises. In December, 1963, financial difficulties forced a layoff of some personnel and also, just prior to the earthquake, the hospital was operating at a deficit.

Presbyterian did not have a disaster plan when the disaster struck and neither was there an auxiliary power source available.

Anchorage Independent School District

Pre-disaster structure -- The Anchorage school system at the time of the earthquake was known as the Anchorage Independent School District. Approximately 16,350 students were enrolled in its 20 elementary, 3 junior high and 2 high schools.

Administratively, the school district's board of education, comprised of seven members and elected for three year terms, established policy with regard to operating procedures, staff, and finances. The superintendent of schools was the executive officer for the board and was
CHART VIII
ANCHORAGE INDEPENDENT SCHOOL DISTRICT

BOARD OF EDUCATION

SUPERINTENDENT OF SCHOOLS

ASST. SUPERINTENDENT FOR INSTRUCTIONAL SERVICES

PRINCIPLES

TEACHERS

ASST. SUPERINTENDENT FOR ADMINISTRATIVE SERVICES
responsible for the operation of the school system.

An assistant superintendent for instructional services and an assistant superintendent for administrative services were two of the other key staff people in the school system. The assistant superintendent for instructional services was in charge of the recruitment and management of personnel and the supervision of the instructional program. The assistant superintendent for administrative services was responsible for building operation and maintenance, purchasing and supply, etc. Chart VIII outlines some of the structural aspects of the Anchorage School District.

School principals and teachers were under the direct authority of the superintendent of schools. At the time of the disaster, there were approximately 800 certified teachers in the Anchorage school system.

The absence of disaster related long-term change

A year and a half after the earthquake, some changes had occurred in these six organizations. However, as far as we were able to ascertain, none of them had any relationship to the disaster experience. For example, the Anchorage School District was in the process of implementing pre-disaster expansion plans in the fashion as had been anticipated by officials, and the Anchorage Telephone Department was also involved in carrying out a program which
had been conceived prior to the disaster. Likewise, some changes had occurred in Presbyterian Hospital, and in stations KHR, KFQD, and KENI which appear not to have been linked to the disaster. Thus at this point, it seems that the March 27, 1964, earthquake did not have a lasting effect upon these organizations.

This concludes the summarization of data. We have indicated that a number of long-term changes were, in fact, precipitated by the March 27, 1964, earthquake. Some of the changes that occurred were new organizational patterns, while others were pre-existing patterns that were accelerated. Also, such changes stemmed from both internal and external sources. Finally, some of the changes have consequences for the day to day patterns of interaction of the organizations in which they appeared, while other changes were in the form of disaster plans and procedures and were thus intended to alter such patterns only during periods of emergency.

In the next and final chapter, we will put our findings into a more general framework.
CHAPTER V

INTERPRETATION AND CONCLUSIONS

In the preceding chapters, we discussed (1) the need for the sociological study of long-term social and organizational change as such is related to catastrophe; (2) our theoretical and conceptual orientation as it relates to the manner in which we have approached our research problem; (3) the modus operandi we have utilized in seeking answers to our research questions; (4) the disaster setting and the emergency and rehabilitation periods; and (5) the empirical data which indicate that a number of organizations in Anchorage underwent some kind of disaster related long-term change. In the final chapter, we will make an attempt to put the findings into a somewhat more general framework.

Disaster and its social consequences

When disaster strikes a community, as it did in Anchorage and throughout southcentral Alaska, certain direct consequences or changes become apparent immediately to even the most casual observer. People are killed and injured, and buildings and other kinds of physical structures are destroyed or damaged by the impact of the disaster agent. Beyond these purely direct or physical consequences and changes, however, are the sociological consequences of such events. Many of
the social consequences which unfold following a disaster are more or less short lived and are in response to problems and situations which are usually present during the immediate emergency period. For example, soon after the earthquake in Anchorage new and often unexpected organizational structures and relationships emerged. In addition, a number of organizations and groups engaged in novel tasks and activities such as search and rescue. Of course, there were some organizations and groups in Anchorage that were neither directly affected by the disaster nor experienced any significant social consequences during the emergency period.

Just as there were organizations which experienced various earthquake induced social consequences during the immediate emergency stage, there were also some that were so affected on a long-term basis. Also, there were a number of organizations in Anchorage which did not experience any long-term changes. In general terms, the findings of this study point out that a disaster may (1) precipitate or set in motion new patterns or processes of long-term organizational change, (2) accelerate change that was already underway or was more or less latent in an organization, (3) impede change that was in process or had been planned, and (4) have no perceptible long-term effect on an organization.
We might again ask the question, why did the earthquake have long-term consequences for some organizations? That is, why did it in some instances generate new processes of organizational change and in others become responsible for hastening pre-existing patterns of change? By answering such questions, we hope to also shed light on the question of why many organizations seemed not to undergo any long-term modifications. Also, we found that, in general, very few organizations reported that the earthquake had the effect of significantly impeding the realization of pre-disaster plans for future growth and development. We will make an attempt, too, to explain this pattern in view of the data that is available.

Internal and External Factors Related to Long-Term Organizational Change

As we have previously observed, organizations are problem or dilemma solving social systems. The contingencies with which they must come to grips are both internal and external in nature. In the most general sense, then, organizational change represents a reaction by an organization to external or environmental conditions, or the response of an organization to its own internal characteristics and problems. We pointed out in chapter two that this perspective with respect to organizational change closely coincides with the theoretical statements and research
findings of a number of students of organizational behavior.

The data of this study indicate that we can account for disaster induced long-term organizational change in a similar fashion as we account for other instances of organizational modification. The Alaska earthquake modified the environment and was responsible for altering the internal patterns and characteristics of some organizations. Thus, the consequence was long-term change as these organizations adapted to the internal and external circumstances that were altered by the disaster situation.

The disaster experience influenced the development of two internal and two external factors or conditions which provided the impetus for long-term organizational change in several organizations. The internal factors were organizational strain and what we have come to label as "organizational learning." The external factors were increased environmental support and new environmental demands or requirements. We might add that this is a highly provisional manner in which to conceptualize the internal and external organizational variables related to organizational change and we anticipate that further research will lead to more abstract statements with respect to such notions. We will discuss initially the intra-organizational change producing factors.
Internal factor (a): "organizational learning" occurs

The emergence of new patterns of change — As problem solving entities, organizations incorporate into their structures and processes knowledge and skills gained from experiences with various kinds of events and situations. Accordingly, unique events, such as disasters, afford the opportunity for organizations to discover alternative modes of operating as well as the opportunity for innovation. Following the earthquake, many organizations found it necessary to deal with a number of new contingencies. Also, some organizations discovered that their operations were seriously handicapped as a result of the absence of important resources, such as mobile radios and auxiliary generators. A number of long-term organizational changes were made in light of such experiences. Some procedures which proved satisfactory during the disaster became prescribed routines. Also, some of the emergency adjustments which proved functional were incorporated into organizational disaster plans. Further, some of the physical resources that were wanting following the earthquake were later purchased to be maintained as standby emergency mechanisms.

The emergency period was followed by considerable reflecting and second guessing particularly on the part of those organizations that played prominent disaster roles. A number of organizations wrote "after action" reports in
which their disaster activities were described and in some cases evaluated with an eye toward making better preparations in the event of future disasters. Some organizations held formal meetings in which their emergency activities and problems were reviewed, while most had more or less informal critiques. Undoubtedly, such reflecting had some influence on the implementation of a number of new organizational patterns.

The new patterns of change which seem to be a consequence of organizations taking into account their disaster experiences are of several types. For example, some of the changes that occurred in the Alaska Disaster Office were structural in nature; it was reorganized into two new sections and the assistant director and the operations officer were placed on the same authority level. It will be recalled that this modification became a long-term organizational feature because it was believed to have been very functional during the emergency period following the earthquake. Another type of change occurred in the Alaska Native Hospital; for example, some revisions were made in the hospital's disaster plans in light of the earthquake experience. Several cases of long-term changes in physical resources occurred. The disaster experience demonstrated the need for a Civil Defense communications network which was subsequently established. Also, the disaster experience pointed out the availability of a spring site located adjacent to Providence
Hospital as an emergency source of water. Consequently, a pump was purchased so that the spring could be used in this manner. These examples should suffice, then, to demonstrate that the knowledge gained from the disaster experience by many organizations was transformed into new long-term organizational characteristics.

Acceleration of pre-existing patterns of change — A similar "organizational learning" process was involved in the acceleration of pre-existing patterns of change in some organizations. In other words, the implementation of some pre-disaster forms of change was catalyzed by the earthquake experience because it somehow demonstrated their importance for organizational viability. The disaster experience, for example, offered further proof to the Alaska Disaster Office of the importance of written disaster plans. As a result, plans which were being worked on prior to the catastrophe, and which in some instances had been receiving only slight attention, were completed much sooner than they otherwise would have been. In like fashion, the disaster brought about an acceleration in plans to implement a technical change in the Municipal Light and Power Department's transmission system, which would permit faster restoration in the event of outages. Thus, latent patterns of organizational change became more relevant in terms of the disaster experience.
Internal factor (b): organizational strain

The reaction of some organizations to a second type of internal pattern, i.e., organizational strain, also accounts for the emergence of some new patterns of long-term change. Disaster related long-term changes arose out of internal sources of strain in the Public Works Department, the Alaska Disaster Office, and the Southcentral Alaska Red Cross Chapter. Prior to the earthquake, these strains were controlled, or at least more or less tolerated. However, the controls which had been relatively effective prior to the disaster broke down following it; this resulted in an intolerable amount of pressure being exerted for the removal of the strains. Let us briefly review our earlier discussion regarding such strains and the adaptations that were made to them in light of our more analytical discussion.

Considering initially the Anchorage Public Works Department, the data indicate that the inclination of one of the city structures officials, i.e., "Mr. Brown," to utilize unofficial means to get things accomplished was defined as a threat to the organization's stability. This strain was present prior to the disaster; however, it became greatly magnified after it and was particularly threatening during the rehabilitation period. Following the earthquake, Mr. Brown used unofficial procedures and channels even more with the increased pre-occupation of his immediate superiors
with rehabilitation problems. He also endeavored to establish a disaster preparedness program in his division -- a function that city and Public Works officials defined as the responsibility of another city department. The initial adaptation to this divisive influence was the pre-emption of this disaster program by city officials. Finally though, Mr. Brown was forced to resign. Thus, the two changes which grew out of this source of strain were the incorporation into local Civil Defense plans disaster preparedness ideas which were initially implemented in the city structures division, and the replacement of role incumbents in the one position in the division.

Our interview data also suggest that traffic engineering became a separate department from Public Works as a result, in part, of the unofficial policy it was pursuing of bypassing the heads of this department. Through this policy, traffic engineering exerted pressure on city officials to change its status in the municipal structure. It appears that the disaster provided the opportunity for making official what was being done on an unofficial level. Thus, the argument could be presented to those who might have objected to the change, e.g., the heads of Public Works, that it was being done to maximize the handling of traffic engineering problems brought on by rehabilitation.
In the local Red Cross chapter, latent pre-disaster strain became manifest following the earthquake and resulted in some long-term change in the organization. The multiple organizational membership of the disaster chairman led to his not performing his expected role during the disaster and, therefore, the emergency response of the chapter was seriously curtailed. The adaptation to this strain involved the replacement of the role incumbent in this important position and the re-organization of the disaster committee, including appointing a co-chairman as a back-up.

Finally, our data indicate that the inadequate role performance of the "plans officer" in the Alaska Disaster Office was a source of strain to the organization even prior to the disaster. However, this was kept within limits to a great extent by not assigning him important duties. But during the emergency and rehabilitation periods following the disaster, this kind of control could not be maintained due to the increased demands -- everyone had to pull his own weight, so to speak, because there were so many things that had to be accomplished. As a result, a different kind of adaptation to this problem had to be made, which was the replacement of the role incumbent in this position.

External factor (a): new demands

Emergence of new patterns -- In addition to responding to internal problems, organizations must also adjust to their
environments. As external conditions undergo alteration, they must, in turn, make certain adjustments and adaptations. To do otherwise may over the long-run threaten the very existence of an organization. For a number of Anchorage organizations, the earthquake introduced new environmental problems or demands which had to be met, and in the process of meeting them, new organizational patterns developed.

The expanded Port of Anchorage operation created a new set of environmental problems for the Anchorage Fire Department. As a result, the Fire Department found it necessary to make some long-term changes. A fire inspector was appointed to try to control the increased fire hazard at the Port, and a new body, a Port fire brigade, was established to lend assistance.

Changed environmental circumstances brought on by the earthquake was also, in part, responsible for the increase in size of building inspection and the new departmental status it acquired. Increased task demands made a larger staff seem warranted. Also, city officials felt that the work following the earthquake would mean greater responsibility for building inspection; therefore, it was transformed into a department so that it would have more autonomy.

Thus, the disaster was followed by a new set of circumstances for some organizations. The new patterns of
change envolved as they attempted to establish viable relationships with these different conditions.

**Acceleration of pre-existing patterns of change** -- Just as modified external conditions brought on by the disaster were responsible for the appearance in some organizations of new patterns of change, similarly caused altered environmental settings led to the acceleration of a number of pre-disaster organizational patterns of change. Long-term changes that had been programmed for the future were advanced a number of years either because they were perceived as relevant in terms of organizational viability or because it was felt that certain gains would be made in light of the altered environment.

Consider for the moment the latter situation. Port and city officials had a different set of environmental conditions and relationships to contend with after the earthquake due in large measure to the neutralization of the competition which was usually offered by the other major ports in Alaska. So in order to take advantage of the absence of competition, and to establish the Port of Anchorage as the major water terminal in the state, officials hastened the implementation of plans for expansion and development by several years, and reorganized the Port Department's staff.

Certain pre-disaster patterns of change were accelerated in the water division of the Public Works Department because
of their relevance to new external conditions. For example, officials reported that the division's move toward autonomy from Public Works was accelerated because of new environmental demands, such as the need to expand operations in the booming Port area. Two new positions were created and the division was given more responsibility. Such changes had been planned prior to the earthquake, but the change in external circumstances made them necessary sooner than had been anticipated.

**External factor (b): increased support**

A number of new patterns of change emerged in some organizations because they were given increased outside support following the earthquake. For example, within the context of the disaster, Civil Defense programs seemed, for a while anyway, more important than they had been before. As a result, official bodies, such as the Anchorage City Council and the Alaska State Legislature, that determine the amount of resources which will be allocated organizations engaged in these programs, became more generous to them.

This seems to be the case in the Anchorage City Council's approval not only of the re-appointment of the director of the Civil Defense Department after the disaster but also its approval of the appointment of an assistant director. It will be recalled that the City Council had failed to approve the position of assistant director before
the earthquake and, indeed, there had been some question whether the department would even be continued after the resignation of the director. Another indication of the increased support given Civil Defense after the earthquake was the creation by the City Council of the Civil Defense and Disaster Board.

Some of the changes which occurred in the Alaska Disaster Office can also be explained by the unusual amount of support the organization received following the disaster. It was able to acquire additional personnel and the Alaska State Legislature appropriated money for a new communications system.

In sum, what seems to have been operative in these instances was that the desire for growth and expansion which was stymied before the disaster could be realized afterwards because the bargaining positions of the organizations were improved. Within the context of the earthquake experience, Civil Defense programs acquired more relevance and thereby assumed greater priority. State and local Civil Defense officials were thus able to utilize to their advantage the apparent breakdown of inertia which followed the disaster.

**Conditions for maximum long-term organizational change**

In view of the above discussion, we will attempt to suggest what would be the conditions under which maximum
disaster related long-term change would occur in a given organization. Such conditions would seem to be as follows: (1) a number of latent changes were present in the organization, or in the process of being realized when a disaster occurred and which became more relevant because of it, (2) new strains were generated by the disaster or old ones were made more critical by it, (3) the organization experienced a significant alteration in its relationship to its environment such that new demands were placed on it, (4) alternative organizational procedures and norms were suggested by the disaster experience, and (5) increased external support was given the organization following the disaster. The presence of these internal and external conditions would exert considerable pressure for organizational change.

As some supporting evidence for the above thesis, it can be pointed out that these conditions existed for Public Works and the Alaska Disaster Office -- the two organizations in which in a qualitative sense probably the most change occurred. As noted in the last chapter, these were the only two organizations in which new patterns of change were initiated, and latent patterns were accelerated as well by both internal and external conditions. Thus, these conditions placed pressure on the organizations to make some long-term adjustments.

Thus far, we have only attempted to explain why the disaster set in motion new forms of organizational change.
and in other instances accelerated pre-existing processes of change. At this point, we will consider why the organizations generally did not find that the disaster impeded or retarded plans for growth and development.

**Infrequency in the Retardation of Organizational Change**

Theoretically, one of the most important consequences of any community disaster might be its retardation of change that was already in process. The destruction of important organizational resources by a disaster agent most certainly has been responsible on numerous occasions for the abandonment of plans for growth and development that had been established and were in the process of being realized before such events happened. In these instances, such plans are often forgotten because mere recovery or survival of the organization itself becomes a real challenge. Oddly enough, in this study it was clear in the case of only one organization that the earthquake was responsible for impeding important change on a long-run basis that had been in process. This one instance, to which we have previously alluded, involved the Salvation Army which had to postpone plans to organize a new center because of the disaster.

There appear to be two reasons why the earthquake did not generally inhibit changes that were underway. First of all, many organizations were able after a fairly short time
to control the amount of disruption they experienced and also to absorb the loss of resources. For example, among others this was true of the Anchorage Natural Gas Corporation. This is not to say that the disaster was not a shock to such organizations; it was. Yet, they were able to restore their equilibrium to a large degree and continue with pre-established programs and plans.

Secondly, many of the organizations that undoubtedly would have found it necessary to make significant modifications in their existing structures, as well as in plans for growth and development due to the loss of resources, did not have to do so because new external sources of financial assistance were made available to them. This was particularly true of the public agencies or organizations. For example, state and local agencies directly and indirectly benefitted from the extensive federal aid that was given state and local governments following the disaster, thus offsetting possible curtailment of their programs. As previously noted, such federal agencies as the Office of Emergency Planning, the Small Business Administration, the Urban Renewal Administration, and others, provided millions of dollars in assistance.1

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The case of the Anchorage Independent School District is a good example of how the availability of new external sources of assistance prevented budget and program casualties in a number of the organizations. School officials had made plans prior to the disaster for adding additional personnel including, among others, a psychologist and a librarian. Shortly following the earthquake, these staff additions were deleted from the coming year's budget. However, they were again restored when a special $484,000 grant was given to the schools by the Ford Foundation in June, 1964. The Office of Emergency Planning provided even greater assistance. It spent funds amounting to millions of dollars for the reconstruction and rehabilitation of damaged Anchorage facilities.  

The Absence of More Long-Term Change

When the magnitude of the earthquake is taken into account, it is somewhat surprising to note the actual extent

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2After the earthquake, the Anchorage Independent School District expanded its jurisdiction and operation to become the Anchorage Borough School District. This had been planned prior to and was independent of the disaster experience.

of the long-term changes which were initiated by it. While some organizations did experience significant change, there were also a large number which underwent few or only minor long-term adjustments. The question immediately comes to mind then, why did the disaster not cause more long-term change? Realizing, however, that our research was completed a year and a half after the disaster, which is fairly early as far as longitudinal studies go, this may not be the best question to ask because some changes may yet appear. In other words, all of the long-term changes which may eventually evolve from the disaster experience might not have been observable, or even present, in the organizations when our research was completed. A better question to pose at this point would be, why were there not more long-term changes initiated by the disaster a year and a half later? It is no less difficult an assignment to account for the absence of change as it is to account for its presence. Nevertheless, we shall make some attempt at answering this question in light of the data available. At this point, two factors seem to, in part, account for the absence of a greater amount of long-term organizational change.

Absence of significant environmental modification

First of all, it seems that a number of organizations experienced little or no long-term change because, except for the relatively brief emergency period, the disaster did
not appreciably alter their relationship to their environment. Among other organizations, this was true of the Anchorage Daily Times, the Anchorage Telephone Department and station KENI. By and large, once the initial emergency was over, these organizations did not find it necessary to adapt on a long-term basis to a new set of external conditions as was true of some other organizations such as the Anchorage Public Works Department.

Low-priority of needed changes

Also, in some instances certain long-term changes were not initiated because they were of low priority vis-à-vis other considerations. Organizations have to allocate the skills and time of their members among a number of concerns. By having their members focus on certain activities at a particular time, less time can be spent on other organizational considerations. Thus, a priority of organizational tasks evolves and those assigned low priority receive less attention. Similarly, organizations allocate financial resources on a priority basis. Usually high priority items override low priority ones when a determination is made as to the distribution of scarce financial resources. Accordingly, in some organizations needed changes in the area of disaster preparedness had not been made because such changes were treated as secondary to other organizational problems or matters. For example, some organizations had
not written disaster plans because they were unwilling to divert their members from more routine tasks and activities to work on such plans. Also, many organizations were not willing to allocate funds for emergency equipment and facilities when it would mean that other things would have to be set aside.

Presbyterian Hospital represents an extreme case where overriding priorities interfered with the implementation of needed long-term change. It seems that the serious financial situation the hospital was in prior to the disaster had not improved a year and a half later. In some respects, it had become more acute. Thus, little was done with regard to disaster preparedness because the most pressing concern was the very survival of the organization itself.

**Inter-Organizational Conflict**

One of the objectives of this study was to explore the utility of the notions of organizational strain and inter-organizational conflict as analytical tools in accounting for the relationship between catastrophe and long-term organizational change. The data indicate that organizational strain is an important variable as it enables us to explain certain of the observed changes. Organizational strains were among the internal types of problems to which some of the organizations found it necessary to adjust. Remaining
for us to consider is inter-organizational conflict which will be discussed in this section.

It seems almost inevitable that some inter-organizational conflict will emerge out of the uncertain conditions generated by community disaster. There are probably a number of reasons for this: (1) disaster may bring in closer contact groups and organizations that are normally competitive and slightly antagonistic towards one another and thus provide the opportunity for latent hostilities to emerge; and similarly (2) some organizations and groups may perceive a disaster as an opportunity to out perform others and consequently a highly competitive situation may develop with all the potential for open conflict occurring; (3) some groups and organizations during a disaster may insist on the usual adherence to rules and regulations while others may insist on operating more in terms of expediency; and (4) new rules and procedures may be introduced at various stages of a disaster which are little understood and thus lead to situations in which misunderstanding and disagreement can develop. In times of community disaster, these and similar situations may be responsible for new conflicts arising, or the heightening of old hostilities.

Our data indicate that earthquake influenced inter-organizational conflicts were experienced between: KFQD and KENI, the Red Cross and Salvation Army, the Chugach Electric
Association and the city administration, and the Alaska Disaster Office and the city administration. We might add that while there were undoubtedly other situations of conflict which were similarly related to the disaster these were the ones that came to our attention.

The city administration and the Alaska Disaster Office

During the emergency period, Alaska Disaster Office officials had infrequent contact with the Anchorage city administration, as we mentioned above. However, since the Governor designated the former as the state agency through which local governments had to process their Public Law 875 project applications, more contact was required between these state and city officials during the rehabilitation period. The city and state officials have had a history of conflicts and rivalry which manifested itself at one period in a bitterly fought attempt on the part of some Anchorage interests to re-locate the state capital in their city. It is not clear how much influence, if any, past differences between state and local officials had on the difficulty which developed between the Alaska Disaster Office and city officials during rehabilitation. It is apparent, however, that a certain amount of conflict occurred. One high official in the city administration noted, for example:

Perhaps the most difficult relationship we've had has been with the state. Whether this is a result of pre-earthquake political problems or partially
a lack on the state's part of some organization, I don't know...We're required under the procedures established shortly following the earthquake to process our use of federal funds for emergency reconstruction through State C. D. It has been done, and is being done. We have had some confusion, some lack of communication in this particular phase of the operation.

City officials felt that the requirement that the Alaska Disaster Office review their project applications for federal disaster assistance was an unnecessary step which created delays. For example, the above quoted official noted:

The Office of Emergency Planning and the Corps are here; they're on the job; they know the project; they know the cost. If they approve it why take the next step? It may be that the federal government felt they needed a vehicle for allocation statewide. And I think this might well be true for the smaller communities that don't have an organization (to handle large funds)...but that isn't true here. Our auditing staff...is as well equipped and well trained as the state's.

Alaska Disaster Office officials noted that on some occasions their office was by-passed by Anchorage and Office of Emergency Planning officials who, contrary to official procedures, directly consulted with one another in working out restoration project applications. Reportedly, this contributed to some misunderstanding and lack of communication between the Alaska Disaster Office and the city administration.
The city administration and the Chugach Electric Association

Even prior to the disaster, relations between the city administration and the Chugach Electric Association took on the character of a conflict of interests. They were involved in an intense struggle over the domination of electric service in the city as both were in the electric business. The city operated Municipal Light and Power Department served about 8,000 Anchorage residents while the Chugach Electric Association provided power for about 6,000 residents.

During the emergency period, the city and the Chugach Electric Association forgot their differences and cooperated with one another. Personnel from the latter assisted in restoring the city's turbine generators back to operation and for several days the city supplied the Chugach Electric Association with power until its own system became operative.

However, this cooperation was shortlived as the factions began competing even more aggressively during the rehabilitation period than they had prior to the earthquake. Reportedly, part of the reason for this was that the disaster created the need for new sources of revenue. One of the parties accused the other of paralleling its system to put themselves in a more advantageous position in which to sell electricity. The situation was summed up in this fashion: "So they did embark upon a very major extension of their system into our area...we have a very cold type war going now between the two utilities."
Red Cross and Salvation Army

Red Cross-Salvation Army conflict was not unique to this disaster situation. Although the two organizations often cooperate with each other with respect to disaster operations, as they did at times even during the Alaska disaster, they, nevertheless, have had a history of antagonism and difficulty in their relations. Thus, it appears likely that the conflict which manifested itself between the two organizations during this particular experience was, in part, the emergence or continuation of what could be defined as a national problem.

The American National Red Cross is the official volunteer disaster relief organization in the United States and operates under a charter granted by Congress. Accordingly, it is expected to assume leadership in providing individual and family assistance during periods of community disaster. It has a highly competent national staff to assist local volunteers in carrying out Red Cross functions. The Salvation Army also frequently becomes involved in various disaster relief functions and activities. These activities are often similar or identical to some of those usually performed by the Red Cross. This similarity of functions sometimes leads to considerable competition and misunderstanding between the two organizations. Red Cross personnel often express the sentiment that since they are the official relief
agency and have a professional disaster staff that organizations like the Salvation Army ought to serve in a supportive fashion. The general feeling among many Red Cross personnel is that the Salvation Army, in particular, is not equipped to handle the complex problems of disaster relief. Salvation Army officials, on the other hand, tend to feel that the Red Cross could not possibly "do it all," and that just because the latter has a charter granted by Congress it, nevertheless, does not have exclusive rights to disaster relief functions. These orientations, which many members of the two organizations are inclined to hold, became apparent following the earthquake.

Both Red Cross and Salvation Army officials alleged that the other did not cooperate to the extent that was desirable during the disaster. For example, the Red Cross claimed that the Salvation Army would not provide them with information regarding the number of persons they had assisted. Similarly, the Salvation Army contended that the Red Cross used tactics designed to prevent the public from learning what the Salvation Army was doing to assist disaster victims.

Salvation Army officials felt that the Red Cross wanted to dominate the Alaska disaster relief effort. This is evident in the following remarks by one Salvation Army official:

There was a shipment consigned to the Salvation Army and the Red Cross signed for it and took it and we weren't happy about that. I mean, we said well it was intended for people and got to people and that was the main purpose, but we didn't appreciate the manner it was done. And
the Red Cross did it assuming that they were supposed to be the agency handling it. And of course we had always disputed that there is one agency handling any situation. There is work for all to do and it is much better that we work together rather than one agency setting themselves up as the final governing body as it were and sort of calling all the shots. Because in a situation particularly as large as the earthquake, it isn't possible.

The Red Cross viewed Salvation Army activities as often not up to the required professional standards and thus hindering their own efforts. One official observed, for example:

I'm not saying this in a derogatory way because they did a lot of good, but they took over a job, or attempted to, that they weren't prepared to do completely...the Salvation Army went around and sort of in a hit and miss kind of way made large grants to people here and there but they didn't uniformly set up an office in the communities that had a need. So it created a disturbing note for the Red Cross insofar as we weren't certain who got assistance and who didn't...

Although there was this basic conflict between the two agencies, they did cooperate on some occasions. Also, it is probable that the conflict involved the national Red Cross staff to a greater extent than the local staff since the former guided the disaster relief operation. Also, the national staff would be more predisposed to view Red Cross-Salvation Army relations in conflict terms having most likely experienced such problems in other disaster situations.

Broadcasting is normally a highly competitive enterprise. Radio and television stations vie for the listening
audience in a community in order to enhance their ability to attract advertising clients. Anchorage was no exception as there was considerable competition within the broadcast media. The rivalry was especially acute between KFQD and KENI.

The competition between some of the radio stations in Anchorage continued during the disaster. Also, the desire on the part of some stations to be the first to report information or make some announcement, coupled with the frequent absence of reliable informational sources due to the general breakdown in means and channels of communication in the community, too frequently led to the utilization of unofficial and unreliable sources of information and reports. It is hardly surprising then that in a number of instances gross misinformation was reported. For example, particularly bothersome were false reports that certain occupied buildings were in danger of collapsing. This is not to say that the broadcast media did not generally do a good job; under the circumstances, it did. However, there is no denying that the broadcasting of misinformation became one of the most serious problems of the disaster which persisted for several days.

The competition for sources of information and recognition during the disaster resulted in open conflict between KFQD and KENI. Both of these stations had maintained a certain amount of hostility towards one another even before
the earthquake; however, following the disaster, it became more pronounced. KFQD accused the other station of engaging in sensationalism and irresponsible reporting during the emergency period in order to gain listeners. At one point, KENI displayed in the local newspapers a commendation it had received from the Alaska State Legislature supposedly for broadcasting services rendered to Anchorage and the state during the disaster. This action was bitterly criticized in the newspapers and in broadcasting editorials by KFQD as being a publicity stunt which was most inappropriate in light of the tragedy and suffering involved in the disaster situation. Thus, according to one KENI official, "This really split the sheet between KENI and KFQD." The hostility between the two stations persisted throughout the rehabilitation period.

Unlike the concept of organizational strain, the concept of inter-organizational conflict does not appear to explain any of the observed changes. In other words, we were unable to find evidence which indicated that any long-term changes had resulted from the above mentioned conflicts.

One possibility is that the conflict which developed between some of the organizations during the emergency and rehabilitation periods have not had sufficient time to run their course, and that there will eventually be some resultant long-term social consequences. Reportedly, relations between
the Alaska Disaster Office and the city of Anchorage had returned to being relatively satisfactory a year and a half after the earthquake. Also, national staff Red Cross personnel were no longer present in Anchorage. Therefore, the major parties to the Salvation Army-Red Cross dispute would not have to directly confront one another. However, two of the conflict situations—those involving the Chugach Electric Association and the city, and KFQD and KENI—seemed to be as serious as ever. And it was particularly in these cases that the potential for long-term change quite clearly still existed.

For example, there was a lawsuit pending that involved KFQD and KENI over which one had the right to broadcast the 1965, Alaska State Fair. One of the stations claimed that the other violated its exclusive right to broadcast the event. Also, there were lawsuits pending between the Chugach Electric Association and the city of Anchorage in which one of the parties claimed that the other was making illegal inroads into its electric service territory. Thus, although there were no long-term changes as a result of such conflict relationships a year and a half after the disaster, the possibility, nevertheless, exists that some will still be forthcoming.
Some Suggested Hypotheses

One of the functions of research is to generate hypotheses. This is an especially important task when dealing with the kind of subject we have been considering because so little in the way of systematic research has been attempted which has any bearing on the problem. Accordingly, we will conclude by offering some hypotheses which seem to be suggested by the data in the study. Perhaps such hypotheses might serve as the basis for future research.

The first suggested hypothesis, which should be prefaced with "all other things being equal," is as follows:

1. Those organizations most in a state of flux prior to a disaster will experience the greatest degree of long-term change following it.

Thus, we would anticipate that organizations which were going through a period of re-organization before a catastrophe would experience a considerable amount of change after it. It seems probable that such organizations would have a number of latent changes ready to be let loose by a disaster situation. The Anchorage Public Works Department was going through such a period of change and it was also one of the organizations that experienced the greatest amount of change. Our data suggest -- and thus the above hypothesis -- that Public Works changed, in part, because of the presence in the organization of some latent patterns of change that could be set free by the disaster.
The second hypothesis, which also should be prefaced with "all things being equal," is as follows:

2. Those organizations most marked by pre-disaster strains will evidence more long-term change following a disaster than those with few strains.

Again, this hypothesis is only suggestive and our hunch is admittedly based on only a limited number of cases, i.e., the Red Cross, the Alaska Disaster Office, and Public Works. Yet, we feel that such a hypothesis merits consideration.

The third and final hypothesis is as follows:

3. Organizational officials will utilize the disaster experience as a means of making long-term changes aimed at improving the status of their organization or their particular unit within it.

The behavior of a number of organizational members following the earthquake suggests that this hypothesis might have some general application. For example, Port, Alaska Disaster Office, traffic engineering and some other officials perceived the situation following the disaster as one in which certain improvements and gains could be derived by their respective organizations or units.

This study was undertaken in response to the need for further knowledge regarding the very complex relationship between community disaster and long-term organizational change. We hope we have provided some of the required foundation on which more sophisticated analytical research
efforts can be built. It seems to us that such efforts ought to be made because a fuller understanding of disaster induced long-term organizational change most certainly would have significant theoretical import for the discipline of sociology.
APPENDIX A

ORGANIZATIONAL EMERGENCY RESPONSE

INTERVIEW GUIDE

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INTERVIEW GUIDE

I. The Person

A. Space-time dimensions.  
   (Establish WHERE and WHEN)

Start with point in time when first heard of the disaster or potential threat, and trace ecological location from that point on, hour by hour, up to time of interview.

B. Perceptual-interactional aspects.  
   (Establish WHO and WHAT)

For each space-time phase above, obtain picture of who with or contacted and who contacted respondent, and what respondent did and what he saw others doing.

II. The Organization

A. Intragroup dimensions.  
   (1. Establish STRUCTURE)

Start with position of respondent, and get role description, lines of authority and communication channels in his specific unit, and then broaden out to larger organization, if any, of which unit is a part.

(2. Establish disaster ACTIVITIES)

Using respondent as informant find out where, when, who, and what for his unit and then for organization as a whole.

(3. Establish disaster PROBLEMS)

Using respondent as informant get problems of person, unit, and total organization and how they were solved.

B. Intergroup aspects.  
   (1. Establish RELATIONSHIPS)

Find out awareness and knowledge of respondent on contact with other organizations, and particularly
if he had any responsibility, by systematically going through manifest crisis organizations and any other organization specifically mentioned earlier in the interview.

(2. Establish disaster PATTERNS)

Using respondent as informant get details on kinds, frequency, and control of contacts at personal, unit, and organizational levels.

(3. Establish disaster DIFFICULTIES)

Using respondent as informant get difficulties at personal, unit, and total organizational levels, and how they were solved.

III. Background: Experiences and Plans

A. Prior disaster experiences.
   (Establish for person and organization)

B. Prior disaster plans.
   (Establish for person, unit, and organization)

IV. Suggestions, Advice and Recommendations

   (Establish lessons person, unit and organizations learned.)
APPENDIX B

IN-DEPTH INTERVIEW GUIDE
IN-DEPTH INTERVIEW GUIDE

General Instructions to Interviewer

The pattern of the schedule is to start with $T_2$ (response to emergency period - Friday through Monday). Most of this can be covered by letting interviewee describe what happened, i.e., what he did, but be sure that you obtain a clear picture as to why. Who directed him? Who did he direct? Of particular importance is the time of each activity.

Be sure to trace in sufficient detail so as not to leave major gaps; for example, if interviewee suddenly starts talking about being in another geographical location than where he was previously, be sure and ask how he got there and why he went there.

Schedule is oriented to the actions of the individual. The decisions he made or orders he was given or gave. It is not desirable to ask telephone linemen to describe decisions made by top executive. The distinction must be kept in mind, we are not after interviewees perceptions of the tasks that the "organization" performed, only what he performed. We will determine what the "organization" actually did or did not do after we get all the interviews covering the activities of each individual.

Both the time period in question and the dimension of the performance structure being dealt with are included to help you remember the intent of the item. You may have to rephrase the question several times.

Hints and comments to the interviewer are enclosed by parentheses. These are not to be read to interviewee.
Where were you at the time of the quake?

Who was with you?

What did you do right after the quake, say in the first five minutes?

(If not at work at the time of the quake) What was your first contact with people from ______________(name of org.)? Did you contact them or did they contact you?

At what time did you start to work in the job that you normally do?

(If time lag between this time and soon after quake) What did you do before that?

What major activities did you engage in during the emergency period (Friday - Monday)? (Both on and off work)

NOTE: Have interviewee reconstruct major activities performed for 3 days after quake - Friday - Monday. Be sure to find out who gave him orders or suggestions to act in each case. Find out what he did, why he did it and when he did it. Try to obtain as many time referents as possible.

Now then, will you describe a "normal" day before the quake, say 3 weeks before? What time did you come to work? What time for coffee breaks? What did you do? Just trace through your activity on a typical day.

How would you contrast this normal day to what you did on the Saturday following the quake? (NOTE: If he didn't work on the Saturday following the quake, have him compare his normal day to the first day he worked following the quake.)

Are these tasks that you described in discussing your normal day your official tasks? I mean, what I might find in your job description?

Do you have any special responsibilities or tasks that you are to perform during an emergency? (If so,) are these specified in writing?

Often individuals perform certain activities that are not part of their official responsibility such as one might find indicated in their job description. Are there
any activities that you perform that are not part of your "official job"? What are they? How did you happen to start doing these things? Are there others with jobs similar to yours that also do any of these things (unofficial tasks)? (If so,) is this part of their "official job"?

Most people develop their own ways of doing things on their jobs. Are there any short-cuts that you consistently use in carrying out your job that not everyone knows about?

During "normal peak periods" when you can't do everything assigned, what do you let go first? Which of what you do is most important to get done?

Do you have any choice as to who you work with?

Do you normally get to work with them?

Do you have any special friends in this organization (any level)?

Do you ever help each other with special problems on the job? If so, who initiates this?

Did you work with any of these friends during the emergency response following the quake? If so, who initiated this contact? What types of things did you work on?

Now let's go back to the several days following the quake. You indicated several things you did. Who made the decisions that these activities should be carried out?

(Note: The intent here is to get a clear picture of the decision-making pattern during the emergency period. Use examples of the tasks he performed to get started. Start with the interviewee and go as far up and down as he can but concentrate on those immediately above and below.)

In each instance ask whether the person (making the decision) made it on the basis of:

a. he was supposed to (official)

b. he usually does it (unofficial)

c. he was someone I knew and trusted (interpersonal)
How does what happened during the couple of days following the quake compare with the way that decisions are usually made in the organization?

In other words, what is the official policy as to how and who makes decisions?

Did you have any plans which would suggest a different way of making decisions during an emergency period?

In many organizations, you often can’t tell anything about decision-making by looking at a chart of the organization. Is this true in your organization? Are there types of decisions which are made by people other than those indicated on the chart?

(Probe: If so, who? Under what circumstances? How did this come about?)

Often there is a person who seems to be a "natural leader" who often plays a more important part in making decisions than do others, even at higher levels. Are there any such persons in your organization?

(Probe: Who? What kinds of decisions do they influence or make that are not a part of their regular job?)

What part did such persons play in the period following the quake?

You referred to several decisions that were made during the emergency period. Would you take some of these and trace out what happened after the decision was made?

In other words, how were these decisions implemented? What path did they follow? Who gave orders to whom before the task was completed? Were there times after the quake when you received orders from someone other than the person from whom you usually receive them?

What is the official policy in the organization as to the chain of command?

(NOTE: Start with the interviewer and trace the path of orders up and down as far as he can go. Concentrate, however, on those immediately above and below.)

Is there a written or unwritten emergency plan in which this chain of command is changed from the normal day to day operation?
How did the chain of command during the emergency compare to that designated in the plan?

If there were no disaster plans, how did the chain of command after the quake compare to the officially designated structure?

In most organizations, day to day operations vary somewhat from the chain of command as it is written out. How does what actually occur in day to day operation vary from the official chain of command? Do you often get orders from someone other than the person who is supposed to give them to you?

Often there are persons who take "short cuts" in the chain of command - that is, some people are avoided and others are consulted who don't have to be. Does this occur in your organization?

Who are the people who are always consulted? Is there anyone who is avoided?

Shifting back to the period just after the quake, you have indicated that several decisions were made and that there was a great deal of activity going on. During this time, how did you communicate with others in the organization?

For example, how were orders communicated to the various members of the organization?

What means were used? Memo, face to face, telephone, radio, etc.

What other kinds of things were communicated? (Requests for specific materials, personnel, information, etc.)

How was this information sent back to the person requesting it?

How was incoming information processed and recorded?

Was there ever a time when you needed information from someone in your organization and you could not get it?

Was there ever a time when you needed to have some information to make a decision and you could not get it? Explain.

( NOTE: Much of this might have been covered before but the attempt here is to be more specific and to indicate
not only the direction but also the form of communication.)

What is the official direction or path that communication is to follow? (Take an illustration from a usual or routine action prior to the quake.)

Are there official means that are to be used? (Telephone, memo, etc.)

Were these official directions and means followed after the quake or were other methods devised?

(If other methods devised, what were they? Where did they originate? How long did they remain in use? What problems did they create?)

In most organizations, the official way of doing things is not always followed. People find ways around the "red tape". What kinds of "short cuts" do you have? Can certain people or positions be by-passed?

Are there persons to whom you talk about organizational problems or decisions that don't have to be consulted? Who? Why?

CONCLUDING QUESTIONS

Note: It is assumed that the interviewer will skip any of the following questions to which he has already obtained a definite answer.

1. Does the (name of organization) have a disaster plan?
   a. Written or unwritten?
   b. How clearly does it spell out what you are to do?
   c. How often had you read it before the quake?
   d. Did you refer to it at any time during the emergency response? (If so,) for what purpose did you refer to it? Was it of any help? Specifically, what was or was not helpful about the plan?
   e. As far as you know, how widely was the plan distributed within (name of organization)?
   f. Did you ever participate in a rehearsal of the plan? (If so,) when?
   g. How long had it been, as far as you know, since the plan was revised?
   h. Are there currently plans for revision? (If so,) specifically, what and why?
2. Does your organization have any type of working relationships with other organizations in an emergency like a disaster?

  a. Who originated these? (which organizations and who in these organizations?)
  b. Written or unwritten? If written, probe.
  c. Ever rehearsed?
  d. Did you refer to such plans?
  e. How widely were such plans distributed and known in each involved organization?
  f. How long since last revised?
  g. Are there currently plans for revision? (If so,) specifically what and why?

3. Have there been any "precedent setting" events that you think were important in the response of your organization to the quake?

  a. Any previous disasters or similar occurrences that may have helped to structure the way your organization mobilized to handle the quake?
  b. Any previous disasters or similar occurrences that may have affected the relationships between your organization and any other organization?

4. Following the quake,

  a. Did your organization use any extra-organizational personnel? (If so,) probe. Why were these people used? Did any of them have special skills that were utilized or were you just using anyone you could get?
  b. Did your organization use any extra-organizational equipment? (If so,) probe. What kind? Why was it used? Special types needed that the organization did not previously have?

5. What kinds of working relationships does your organization have with other organizations during non-emergency periods?
LONG-TERM ORGANIZATIONAL CHANGE

INTERVIEW GUIDE

We are interested in those changes that have occurred in the organization as a result of the Good Friday Earthquake (i.e., as a result of experiences during the emergency and rehabilitation periods). Where appropriate, probe for: (1) When the change was implemented, (2) Why, (3) Who was responsible, (4) Affects of change on day to day operations, and (5) Type of change, e.g., official or unofficial.

A. Intraorganizational Change

1. Have there been any new permanent positions created?
2. Have there been any positions eliminated?
3. Has there been an increase or decrease in employees?
4. Have any employees been promoted or demoted?
5. Were there any volunteer or part-time employees who were given permanent full-time positions?
6. Have there been any important changes as to who makes certain kinds of decisions?
7. Have there been any important changes as to who is involved in certain kinds of tasks or activities?
8. Have there been any changes in communication patterns within the organization? For example: (1) Have there been any changes in the channels of communication? (2) Are there now means available which were not available before such as radio or teletype?
9. Has your organization taken on any added responsibilities or services to the community since the quake? Have any activities or services been discontinued?
10. (If the organization had disaster plans prior to the quake) have there been any changes in regards to whether or not they are:
   a. Written
   b. More specific
   c. More widely distributed throughout the organization
   d. Rehearsed more frequently
11. (If the organization did not have written or unwritten disaster plans prior to the quake) are there now such plans or will they be drawn up in the future? What is or will be the nature of such plans?
12. Has your organization had a critique of its disaster activities since the quake? What problems were identified? Have any measures been taken to prevent these problems from recurring?
13. Has there been any change in the responsibility your organization has to the community in future emergencies?
14. Any changes in supplies and reserve resources?
15. Were there any changes already taking place in this organization which were accelerated as a result of the quake? Were there any changes in process which were halted?
16. Were there any changes in this organization being planned prior to the quake which were implemented more rapidly because of it? Were there any changes that had been planned which had to be abandoned?
17. No organization is ever in perfect harmony or adjustment. Prior to the quake, what were some of the points of tension or strain in this organization? Did these become apparent following the earthquake, and, if so, what were some of the consequences? Are these tensions or strains still present in the organization? Did any new tensions or strains develop as a result of the quake experience?
18. Has your organization received any criticism from higher officials or outside groups and organizations regarding the response of your organization during the emergency or rehabilitation periods following the quake? What has been the nature of such criticism? Has it resulted in any kind of modification in your organization?
19. How long was it after the quake before the organization was back to "normal"?
20. How much is the quake still in the "minds" of most organizational personnel? Is it ever talked about or considered? If so, in what manner?
21. If a quake occurred today, would the response of this organization be any different from the response made last year to the Good Friday Earthquake? If so, in what way and why?
22. Would you describe for me the various positions in the organization and the duties of the persons occupying them? How would you compare this pattern with the pre-disaster organizational system?

B. Interorganizational Change

1. Are there some organizations with whom this organization works more closely since the quake? Are there any with whom this organization works less closely? Why?
2. Have there been any new channels of communication opened with other organizations since the quake; for example, has there been any appointment of liaison persons or the utilization of committees and joint meetings?
3. Are there now available in this organization new means for communicating with other organizations which did not exist prior to the quake, such as radio and teletype? If so, are they for normal times and/or emergencies?

4. Does this organization have any new agreements with other organizations? For example, agreement, involving the borrowing of personnel and equipment?

5. Has a community disaster plan been established which involves this organization? If so, what is the outline of the plan and how does it include this organization?

6. Are there any new organizations or groups in the community with whom your organization regularly works since the quake or would work in the event of another disaster? What is the nature of such relationships?

7. Sometimes a crisis creates strained relations between organizations. Can you think of examples where this happened following the quake? How did such relations compare to what they were prior to the quake? Has this caused any modification in your organization, e.g., in policies and procedures?

8. What has been the nature of the involvement of your organization with State and/or Federal agencies since the quake? Has this involvement created any need for change in your organization?
   (NOTE: If there has been little change in the organization, inquire as to why.)


Drabek, Thomas, et al. "A Theory of Organizational Stress," a paper read at the annual meetings of the American Association for the Advancement of Science in Montreal, Canada, on December 28, 1964.


