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HISTORICAL AND COMPARATIVE SERIES
#8

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A COMPARATIVE STUDY OF JAPANESE
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Preface

In the late 1970s discussions were held by Japanese and American disaster researchers concerning the possibility of initiating cross societal studies involving the two countries. This mostly stemmed from earlier contacts and especially a bilateral meeting held in the early 1970s (see, Proceedings of Organizational and Community Responses to Disasters, 1972). For various reasons, an early decision was made that the mass communication area could be a particularly worthwhile focus for such research, and especially the disaster news reporting at the local community level. After this decision, there were a number of meetings and exchanges of informal research protocols. Finally, the Japanese side was able to obtain the necessary funding for the field research and a cooperative study was initiated in the early 1980s.

A major motivating factor for both parties in the study was that, at least at the macro level, it seemed that there were both similarities and differences in the existing mass communication systems in Japan and the United States. Thus, it was believed that comparative research would allow the start of disentangling "universal" from "specific societal" features of disaster news reporting. However, in general, the expectation was that at the end of the study we would find substantially more differences than similarities, given markedly different macro level social and cultural features of Japanese and American society. It was assumed that these macro differences would clearly manifest themselves in the mass communication disaster behavior of the two societies.

In addition, a major joint decision was made to focus more on organizational aspects in disaster news reporting rather than audience features of the local mass communication system. A concern with organizational behavior had long existed in the work of American researchers, particularly in the studies of the Disaster Research Center. So the focus on mass communication organizations represented continuity of interest. However, for the Japanese, it involved the development of a new major area of interest. In 1977 the leading social science researchers in Japan had initiated a series of studies on warnings in disasters that were transmitted through mass media outlets, and how populations reacted to them. However, much of the work dealt primarily with the social psychological factors that affected responses to the warnings. Thus as a historical survey of Japanese disaster work noted: "Most of the sociobehavioral disaster studies were initiated in the past by psychologists or social psychologists" (Okabe and Hirose, 1985: 13). Therefore, the shift to a more organizational focus represented a major change in Japanese disaster studies, and is important because it allowed a comparative study.

In what follows, we mostly report what we actually found as over against what we expected with respect to the news reporting behavior of local mass communication organizations in disasters.

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CHAPTER 1

INTRODUCTION

This work reports on the first ever effort by researchers from the United States and Japan to undertake a collaborative social science study in the disaster area. The agreed upon focus was the operation of local mass communication systems during the emergency time periods of disasters in both societies. Using a mostly common, although not identical research design, the Americans studied local reporting of a major hurricane (Hurricane Alicia in the Houston, Texas metropolitan area in 1983) and a major sudden flood (around Tulsa, Oklahoma in 1984). The Japanese in turn researched the local reporting of two similar disasters (the floods and landslides around Nagasaki in 1982 and the earthquake-tsunami disaster in Noshiro City in northern Japan in 1983). The overall objective of the collaborative work was to ascertain the similarities and differences in disaster news gathering and reporting at the local community level in the two societies.

The research in the United States focused mostly upon the organizational behavior of the major local mass media outlets in the two impacted communities. The data were obtained mostly through field interviews with reporters, editors, newscasters, etc. from all the commercial television and radio stations and the major newspaper in each community. A telephone survey was also undertaken to obtain a profile of the activities of the local mass communication system at the time of the disaster. In addition, a content analysis was made of the local newspaper stories on the disaster, as well as some national media operations.

The Japanese researchers also had a three fold focus. First, they examined, through field interviewing, the newsgathering and processing activities of the local mass communication system in the two impacted communities. A content analysis was also made of certain of the broadcast and printed material. This part of the work was the closest parallel to the study done in the United States. Second, the Japanese also looked at the role and effectiveness of the local mass media system in providing warnings about the disasters. Third, an examination was made, through the data obtained through two population surveys and supplemented by a content analysis, of how well what was reported met the information needs of the residents of the impacted localities.

After the data had been gathered in both societies, the major researchers from Japan and the United States met in San Antonio, Texas. In that meeting the research results obtained in both countries were presented and compared. On the basis of this exchange of data and ideas, as well as later communication of findings and analyses over a period of several years, a systematic comparison was eventually made of the similarities and differences in the disaster reporting in the two social systems. On balance,

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far more similarities than differences were found.

In Part 1 of this volume we present the approach and the results from the work done in the United States. First, we present the objectives, background and methodology of our approach. We then separately discuss the two communities we studied, but deal with the same topics in each case. Thus, we first present the characteristics of the community and its local mass communication system. A description of the disaster is then presented. Next we set forth the findings on the survey we made of all the mass media organizations in the community. In presenting the profile we describe their normal organizational structures and news processing patterns and then indicate what changes occurred in these dimensions. In the next section, we take a similar approach in presenting the six in depth case studies of the radio, television and newspaper outlets we studied. Comparisons between the print and electronic media operations and outputs are especially highlighted. Finally, we present the results of our content analyses.

In Part 2 of this volume we summarize the approach and the results from the work done by our Japanese colleagues. The presentation of these research findings is basically a summary since a mostly Japanese language version of their research has been already published in Japan (See Shunji Mikami, Osamu Hiroi, E. L. Quarantelli and Dennis Wenger. **A Cross-Cultural Comparative Study of Mass Communication in Disasters**. The Japanese version contains considerably more details about the work done in Japan and less about the research done in the United States as reported in this volume. While the American and Japanese authors exchanged draft texts prior to publication, the authors in the United States are responsible for this English language production, as were the Japanese authors for the publication issued in Japan.

In Part 3 of this volume we first present the similarities and differences found in the research results in both societies. Since similarities predominated, an explanation is advanced that attributes this overall unexpected finding to certain universal characteristics of mass communication systems in developed societies. We conclude this part with a presentation of a future research agenda for those interested in local news reporting in disasters.

In the appendici to this volume, we provide information on three matters. The basic study we undertook with our Japanese colleagues focused on <u>local</u> mass communication system (those in place in the impacted communities). However, as a related but side study, we did concurrently gather some data on the national electronic news treatment of Hurricane Alicia, in particular what the three major American national networks telecast for the first week of the disaster period. We also obtained information on what the CBS radio hourly national news programs aired about the hurricane for

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about a 40 hour period around the time of impact. A description and qualitative content analyses of these two sets of recorded data are presented in Appendix 1. This insures that there will be a documented record for future researchers who might do studies at the national level.

The other two appendici present some of the major research instruments used in the field work in the United States. In Appendix 2 we display a copy of the research instruments we used in both gathering and analyzing the data we obtained from the local mass communication systems in disasters. Appendix 3 presents the content analysis code used for looking at the Houston newspaper studied.

PART 1. THE STUDY IN THE UNITED STATES

CHAPTER 2

OBJECTIVES, BACKGROUND AND METHODOLOGY OF THE STUDY

In this chapter we discuss the objectives of our research, the background of the study, and the methodology we used.

Objectives

In 1978-80, a United States National Academy of Science committee examined what was known at that time about:

> the role of the mass media as educational and informational agents for mitigating hazards that could lead to disasters, for promoting disaster preparedness, and for helping in relief and recovery from disasters (1980: 1).

In a 1980 publication reporting the proceedings of a workshop held by the committee, it was stated that:

> scientists have not begun to provide a reliable body of knowledge (1980: 1)

because, among other reasons:

> there has been minimal research on mass media reporting of disasters (1980: 2).

This was documented in two general surveys of the literature undertaken for the committee (see Kreps, 1980; Larson, 1980).

The final report of the committee, which was never published, had as its most general recommendation:

> that the gathering of data for such research must be systematized

and that a:

> program of strategic case studies of media disaster coverage ought to have the highest research priority.

This study represents an initial contribution to that suggested effort (since that time there has been other relevant research although the total body of different studies is still not large; see a listing for work up to 1988 in <u>Mass Media and Disasters: Annotated Bibliography</u>). The **Disaster Research Center (DRC)** undertook a comparative study of the local mass communication system response to two disasters, Hurricane Alicia, which struck the Houston, Texas metropolitan area, and a major flash flood which

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inundated Tulsa, Oklahoma. As indicated elsewhere, these were also used as somewhat parallel and comparative studies to what the Japanese researchers were doing in their own country.

The **DRC** research examined the operations of local mass media organizations in the immediate preimpact phases, the transimpact or emergency and crisis time periods, and the immediate postimpact periods of disasters and compared the observed patterns with normal, day-to-day processing of news stories. To accomplish this goal, it was necessary to undertake three tasks.

First, for each community the research developed a profile of involvement in disaster reporting by the local mass communication system outlets. Who participated and in what ways? Mostly through telephone interviews, a survey of all the local radio, television and newspaper organizations was carried out. The objective was to obtain data on the normal organizational structures, resources, and news processing activities, and to compare these everyday patterns with those that were observed during the disaster.

Second, in depth case studies were developed within each community of the major radio, television and newspaper organization involved in disaster news reporting. Once again, the focus was on the issue of change: what, if any, alterations in normal operations could be observed in the local mass communication outlets as they responded to the disaster. This necessitate a direct comparison between everyday operations and activities undertaken during the emergency time periods of the disasters. Most of this information was obtained through in depth interviews of key informants in the selected organizations.

Third, we undertook some content analyses of the relevant stories produced by the local mass communication system outlets. The major focus was on newspaper stories. Our intent was to determine the nature, magnitude and characteristics of local print accounts of the disaster.

Background

In this section of the report we briefly note what the extant literature (up to about 1983) said about the social nature of the organizations in mass communication systems, how they process everyday news, and the content which is produced. More specifically, we considered questions and issues related to organizational structure, news processing, and print media content analysis.

The area of mass communication has long interested social scientists. In fact, several pioneering scholars and founders of the disciplines at the start of the 20th Century saw the advent of mass circulation newspapers as major contributors to as well as being distinctive features of modern societies.

For example, Max Weber (in a paper delivered in 1910 to the first Congress of German Sociologists, and recently reprinted in English in 1976) wrote:

> The first subject deemed suitable...for a purely scientific treatment is a sociology of the press...It is useless to speak here of the magnitude of the overall importance of the press...Erase the press from your memory and think about what modern life would be without the kind of publicity created by the press (1976: 96).

He then asked a series of questions that are quite familiar to current students of mass communication:

> What is publicized by the newspaper and what is not? (1976: 97)...and [what is]...its role in the process of public opinion formulation (1976: 99)...how does the press obtain the material that it offers to the public? Is the steady increase in the importance of purely factual accounts...a general phenomenon? ...what are ultimately the source of news and what is the function of the large news agencies?...what are the effects of this product, the complete newspaper, upon the reader? (1976: 100).

Another pioneer, the French scholar, Gabriel Tarde, also argued for major research into the functioning of mass communication in the then developing urban and industrial societies of Western Europe. In particular he stressed that the new developing institution based on the growth of newspapers was a major contributor to new social forms such as that of the public. According to Tarde, the public, which is central to what is discussed and argued about by citizens, was a product of the printing press. He wrote:

> It remained for our century, through its perfected means of locomotion and instantaneous transmission of thought from any distance...[that there has been] the true advent of journalism, hence that of the public...the public can be extended indefinitely and since its particular life becomes more intense as it extends, one cannot deny that it is the social group of the future...I cannot agree...that our age is the "era of the crowds." It is the era of the public (First written in 1901 but reproduced in Clark, 1969: 277-297).

In line with this view on the vital and central role of mass communication in modern societies, one of the first textbooks in sociology in the United States conceptualized the media as "the social nervous system" of the social organism (see Small and Vincent, 1894). Research in the area in particular was done at the University of Chicago prior to World War II (see, e.g., Park's work on the press's role in helping immigrants adjust to urban life, 1922; also, the writing of Helen Hughes, 1940, on the human interest or soft news story that was developed in American journalism). However, studies especially accelerated after the war and particularly at Columbia University in the early 1950s under Paul Lazarsfeld and Robert Merton (for a brief history of this work see Tuchman, 1988: 602-604).

The Structure of Mass Communication Organizations.

The sociological analysis of mass communication organizational structures became an increasingly productive endeavor starting in the 1950s, especially on the American scene. It was influenced in the early stages of that time period by the turn of sociology in the United States towards the study of organizations and work (Tuchman, 1988: 610). This focus can be seen in the pioneering studies by White (1950), Gieber (1956) and Carter (1959) on "gatekeepers", i.e., those positions within mass media organization that can influence the production of the content, and the work by Breed (1955; also a 1952 publication reprinted in 1980) on social control forces in news gathering operations.

This kind of research laid the groundwork for a variety of later insightful studies of the structure of both print and electronic organizations during the gathering of everyday news. Gatekeepers continued to be studied (e.g., Buckalew, 1974; Harless, 1974; Janowitz, 1975 and Whitlow, 1977). The multiple effects of legal, political, group and financial variables on the production of television news was especially examined by Epstein (1973). A somewhat similar and analytical analysis of newspapers was undertaken by Bagdikian (1974), while Bogart (1974) identified important middle range management variables that affected content output. Additional insights into structure were provided by Altheide (1976), Tuchman (1978), Molotch (1979) and Lester (1980). The in depth study by Gans (1979) of national print and television news operations further illustrated how organizational factors strongly influence the nature of mass communication content.

The image that emerges from this body of literature is that distinct patterns of financial, legal, political, structural and normative constraints strongly affect the day-to-day operation of the mass communication system in its surveillance or news gathering activities. For example, decision making structures in mass media organizations tend to be rather centralized. Top management personnel, i.e., managing editors, producers, and directors exercise considerable control over the daily operation of their

news departments. Their decisions with regard to assignment of reporters, events and occasions to be covered, space to be devoted to news, and priorities to be given to different kinds of stories are influenced by a number of economic and time constraints. In addition, reporters, though operating under general values of "professionalism", are subject to having their work supervised and altered through the gatekeeping process.

This general image of news processing has been reinforced by the findings both within and outside the United States of more recent studies done since we initiated the work reported in this volume (see the summaries in McQuail, 1983; Wright, 1986; DeFleur and Ball-Rokeach, 1989). Typical is the specific study by Stemple (1985) which confirms the gatekeeping notion, and the more general essay by Schudson (1989) that argues journalists do not reflect reality but "construct" news. In addition, the critical theory approach in the field, mostly used by West Europeans, has particularly emphasized the larger institutional and social power aspects (see Real, 1986) which continues the work done initiated in Great Britain in the early 1970s (see Cohen and Young, 1973) which showed:

> that political ideologies and historical
> circumstances form an inferential structure
> for selecting and interpreting events
> (Lester, 1980: 985).

Now, the traditional patterns of decision making and the normal day-to-day division of labor within mass communication organizations are factors that are geared to producing news content in a somewhat predictable, known environment. However, a community disaster in varying degrees severely disrupts that environment. It creates extensive demands, both of a qualitative and quantative nature, upon mass media organizations, even if none of their capabilities are negatively affected by the disaster. In this kind of socially disrupted environment, to what degree and if they do in what ways, do the organizations have to alter their traditional structures?

There is a rather limited, although somewhat insightful, knowledge about what alterations are most likely to occur in the structure of mass communication organizations during crises or emergency time periods (for a listing of studies up to 1987 see Quarantelli, 1988). For instance, Adams (1974) noted that there were alterations in the external linkages of local mass media groups to other local groups and agencies; the local outlets became linked as part of the information gathering operations of the other organizations. Kueneman and Wright (1974) found that some alterations in the implementation of news policies occurred with regard to radio stations especially with respect to civil disturbances more than disasters, but these were rather informal and minor, and the extent to which they applied to newspapers and

television stations was not studied.

Up to the time of the research undertaken for the study detailed in this volume, the most insightful observations of structural changes were those reported by Waxman (1973). He noted that the process of gatekeeping became truncated in the operation of radio stations during the height of a disaster. In other words, he found, as had others, that news stories would normally pass through a number of different gatekeeping positions, i.e., reporters, writers, editors, producers, and anchorpersons, before it was disseminated as content to audiences. However, during disasters, information often tended to be broadcast without going through the full gatekeeping process. In such occasions fewer persons were involved in constructing, editing and verifying stories. In some cases, stories would reach the radio station in "raw" form, that is, unedited and unverified, and be broadcast with little change if any.

This shortening or truncating of the gatekeeping process in radio stations was viewed by Waxman as an organizational adaptation to the problem of providing massive and immediate coverage of a disastrous occasion. The normal processes used during nonemergency times were not suited to allowing the necessary volume of information that was required to fill the void of "continuous disaster coverage."

The **DRC** study focused to a considerable extent upon the internal or intraorganizational structure of local mass communication organizations. Among the internal dimensions we considered were the nature of the division of labor, the kind and magnitude of human and material resources available, the authority structure, patterns of decision making, and organizational constraints of time, work schedules and technology. The study examined such questions as: "Do the organizations alter their normal organizational structure during the emergency time period of a disaster?" If they do not: "What factors allow them to operate in traditional ways and what effect may this have on covering the occasion?" If they do alter their structures or processes: "What is the nature and magnitude of the alterations and how do they affect the coverage of the disaster?"

News Processing.

Even at the time of our study, there was a considerable literature on how news is normally processed in mass communication organizations. Such varied topics as pseudo-events (Boorstein, 1961), interaction with official sources (Sigal, 1973), the reconstruction of reality (Epstein, 1973), and time (Molotch and Lester, 1974), are just a few of the many variables examined and studies undertaken on the processing and producing of news. The literature has especially focused upon the extent to which the news gathering process is "routinized" and tightly patterned into a rather standardized procedure. Some of the work has been on local

outlets and some on national level outlets (e.g, see Gans, 1979).
Tuchman (1974; 1978), for example, looked at how news is identified
through the ritual of "objectivity" and the importance of the "news
net" in determining mass media content. Lester argued that:

> news is a product of reality-making activities
> and not simply reality-describing ones. A
> critical sociological task is to examine
> newsworkers' transformation of the everyday
> world into published or broadcasted events-as-
> stories (1980: 984).

Since the time we conducted our field research, additional studies
have been conducted on the processing of news by mass communication
organizations and their personnel, but the overall findings have
been consistent with the earlier work (see Wright, 1986: 61-84 for
summaries of some of these later studies; see also, Schudson, 1989
for a discussion of three major theoretical perspectives on the
factors involved in the production of news by journalists).

A general conclusion of the literature is that news processing is
fundamentally keyed to covering expected, predictable and planned
events. Through the use of traditional (and relatively limited)
sources and relatively dependable channels for information such as
press conferences and wire services, the realistically impossible
task of "monitoring the entire world for news" is routinized and
made manageable for journalists and others involved. Tuchman (see
1973, 1974) in particular has well documented this position (but
see others also, e.g., Altheide, 1976).

As in the instance of organizational structure, the occurrence of
a disaster within a local community will disrupt this traditional
infrastructure and create pressure for alterations in the news
processing. However, at the time of our research, the degree to
which the normal, patterned, and routinized procedures for news
processing are altered during disaster times had been little
studied. The extent to which changes occurred in reporter
assignments, the editing or gatekeeping process, the inclusiveness
of the news "net", and other factors had not been systematically
examined.

Quarantelli (1981) had argued that during major emergencies
(including civil disturbances as well as disasters), the local mass
communication system tends to rely heavily on a few official
sources, such as city police and fire departments and emergency
management agencies for information and news stories. He concluded
that this heavy reliance upon particular community and
organizational officials in reporting emergencies results in a
limited and selective view of the crisis occasion. Quarantelli
refers to this perspective as the "command post view" of disasters,
since the key entities involved tend to be those with primarily
social control functions. The implication in this observation that

other views of the occasion are ignored in news accounts is important; these other perspectives might involve victims, non social control local organizations, such as relief or religious groups, neighborhood or citizen action groups, extracommunity agencies, etc. This limitation of perspective is also consistent with what has been found by non-disaster studies, and has led to the conclusion that:

> If there is one truism in contemporary media research, it is that news stories are assembled in large measure from the observation and accounts of legitimated institutional sources (Clayman, 1980: 1).

In a more recent study of organizational structure and news processing during disasters, Friedman (1987) looked for changes in the normal patterns of gatekeeping, decision making, reporter autonomy, sources of information, and other organizational dimensions within local mass communication entities. Based upon a case study of a train derailment and toxic spill studied by DRC, the author found general support for the ideas earlier expressed by Waxman (1973) and Quarantelli (1981). However, she did not find that the gatekeeping process was truncated in the newspaper studied. In addition, while traditional sources were certainly utilized by reporters, members of the impacted population were used most of all as major sources of information about the occasion. Finally, with regard to decision making, it was found that collective decision making highlighted the operations of the newsroom, at the same time that reporter autonomy increased (Friedman, 1987: 98-99).

The **DRC** study looked for changes in both internal and external dimensions involved in news processing during disasters. The internal elements include the assignment, news gathering, editing, packaging and reporting patterns. The external elements include the use of sources, the inclusiveness of the news net, and the impact of the altered social environment on the news gathering activities.

After our study was finished, additional disaster related works in the mass communication area have continued to appear (e.g., Burkhart, 1991). In particular we should note that after the initial draft of this manuscript was completed, there appeared a relevant study by Smith (1992). He examined news coverage of the Yellowstone forest fires, the Exxon Valdez oil spill, and the Loma Prieta earthquake. Based on interviews, survey findings and content analysis of print and television reports, he looked at the processes by which journalists identified sources and gathered data, what professional values they had, and how those values affected the reporting. The similarities and differences to what we found are briefly noted later.

<u>Print Media Content</u>.

Most researchers would agree that:

> Content analysis is a research technique for
> the systematic classification and description
> of communication content according to certain
> usually predetermined categories (Wright,
> 1986: 125).

In that context, the systematic analysis of the content of mass communication systems, of course, has a long history (see Berelson, 1952). Initially the work undertaken was primarily qualitative, then swung over to an extreme quantitative orientation, although in more recent times a blend of qualitative and quantative has become acceptable to students in the area. An important substantive theme in the literature about content is that it does not necessarily reflect or "mirror" whatever social phenomena the mass communication communicator purports to report.

In line with the last point, therefore, it is not surprising that a general theme in the literature on disasters is that mass communication content presents incorrect or "distorted" images of disasters. Some of the earliest reports by the pioneers of disaster research advance this thesis (see Fritz and Mathewson, 1957); in fact, a recent examination by a journalist indicates that the widely known story that the Great Chicago Fire of 1871 was started by Mrs. O'Leary's cow kicking over a lantern was apparently invented by a reporter at that time, see Fedler, 1985). In addition, there are the very extensive and continuing studies of Joseph Scanlon and his group in Canada who have examined such dimensions as the nature and accuracy of mass media coverage (Scanlon, 1978; 1980).

More generally, it has been contended that rather than mirroring the behaviors and happenings in crisis occasions, the content presented is rather selective, and in many cases "creates" what is perceived by audiences as the reality of disaster phenomena. Later students of disasters have also argued that the content reinforces, if not creates, beliefs in disaster myths, and otherwise produces deleterious consequences for efficient and effective disaster response, especially at the emergency time periods of such occasions (Quarantelli and Dynes, 1972; Wenger, Dykes, Sebok and Neff, 1975; Wenger, James and Faupel, 1980).

Some of the researchers who have focused on the content of the mass communication system have looked at other than the American scene. For example, recently Blong (1985) examined at the content of the Australia mass media in a replication of the Wenger, James and Faupel study (1980) and found that there is a tendency for the mass communication system in Australia to perpetuate disaster myths (although McKay, 1983, looked at the accuracy of mass communication

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coverage of brush fires in Australia, and determined that within the limits of normal coverage, the stories tended to be accurate). Goltz (1984) also has challenged the notion that mass media sources are perpetrators of myths about disasters. His analysis of the coverage of four earthquakes, domestic and foreign, by two major American newspapers indicated that little attention is paid to mythical elements, and that the overwhelming image is organizational and emergent adaptive action. However, this conclusion was challenged in a later study by Wenger and Friedman (done earlier but published only in 1986) who argue that a qualitative analysis indicates that local mass communication coverage does perpetuate certain mythological beliefs. On this continuing research question, in a most recent study, Gorney (1992) concludes that the American network television coverage of the Chernobyl disaster was generally not "sensational" in its coverage.

In addition, other content dimensions have been examined by researchers. For example, Turner (1980; 1982) and his colleagues have studied the nature of the content about earthquake topics in six local Los Angeles newspapers and electronic media, especially focusing on such factors as whether the source of the information was scientific or otherwise, and the treatment and prominence of both official and unofficial sources in the news reports. Nimmo (1984) has also compared the reports of disasters around the world produced by the three national television networks and concluded that each one had a different "frame" or storyline that it utilized in its coverage. More recently, Newhagen and Lewenstein studied whether the television reports of the Loma Prieta earthquake supported "cultivation theory" which argues that the aggregation of telecasted content will produced a symbolic social reality that can be compared to what exists in the "real world" (1992: 49).

Given what we have just noted, the study we did with our Japanese colleagues gave us the opportunity to do two things with any content analysis undertaken. One, we could examine to what extent the content disseminated was incorrect or distorted given what we knew actually happened in the disasters from other sources. Two, we could compare the similarities and differences in content in the local mass communication systems in Japan and the United States, and attempt to ascertain universal as over against societally specific aspects of news reporting.

Methodology

At the time of this study, DRC had done field studies of behavior in over 490 different disasters and mass emergencies, mostly in the United States but also elsewhere in the world, including Japan. Basically the Center utilizes quick response field research techniques. This involves the development prior to any particular study of sets of interview schedules, observational guides and documentary checklists that are oriented towards gathering data relevant to the research objectives. Such an array of instruments

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were prepared, field tested, and used for this research on the operations of local mass communication systems. (See Appendix 2 for copies of the instruments used).

In order to study the local mass communication system response to disasters in American society, two different disaster occasions were researched. The impact of Hurricane Alicia upon the Houston-Galveston metropolitan area of Texas, and flooding in Tulsa, Oklahoma, were selected for three major reasons. First, both communities were large enough to have a full complement of local mass media outlets. Second, the disasters were severe enough that the significant disruption which occurred to the local community social system necessitate mass communication system coverage. Third, comparisons in mass media outlet responses to a disaster with some forewarning (the hurricane) as opposed to one with rather limited warning (the flood) were possible.

At the times of the hurricane and flood, teams of **DRC** field researchers were sent to the impacted cities. One task, mostly done through telephone calls, was to conduct a survey of the disaster relevant activities of all the local commercial mass media outlets in the area. This information was usually gathered from one key informant in each of the organizations contacted. Another task was to pick, gather information on, and analyze the three organizations selected for intensive case studies. Basically the groups chosen for this in-depth examination were the largest and most heavily involved local radio station, television station, and daily newspaper. Within each of these entities, **DRC** field workers interviewed key informants at all levels of the organization, from top management to reporters.

In all, a total of 71 in-depth interviews were conducted for the **DRC** study with members of the local mass communication system. In Houston, 49 such interviews were completed. Of these, 17 were with informants initially contacted in the general phone survey and the rest were with key personnel from the media organizations selected for the case studies. In Tulsa, a total of 22 in depth interviews were obtained, of which 11 were within the three local mass media groups selected for case studies. Additionally, in both communities, there were several dozen less systematic interviews with non-mass meda individuals from the affected localities, such as the local emergency management official and police officers involved in the disaster response.

In addition, the field researchers also collected observational and documentary data which ranged from staff meetings to station logs. Also, such recordings as were available of the broadcasting of the local radio and television stations at the time of the emergency were obtained, as well as all copies of the local daily newspaper issued just prior to impact as well as for the full month following the disaster. Furthermore, **DRC** made a series of tape recordings of news stories on the disasters that were broadcast over national

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network radio systems and national television systems (see Appendix 1 for a limited description and analysis of this content). For background purposes, statistics were collected from city agencies and such groups as the local Chambers of Commerce and the local Red Cross chapters; census data were obtained from standard government documens.

Even in the early 1980s, at the time of our study, content analysis as a research procedure had been discussed in the literature (e.g., see Holsti, 1969; Krippendorff, 1980). Unlike some other methodologies, there is an understanding of the issues and problems involved, and the better or most efficient ways to proceed. In particular, there is widespread agreement that the analysis undertaken can be no better than the coding categories used.

In the **DRC** study, a detailed content analysis was done of the disaster coverage of the two major newspapers we studied in Houston and Tulsa. The focus of the analysis concerned the nature and magnitude of the reported content. Such dimensions were considered as: (1) the placement of the story; (2) the space devoted to the story; (3) the source of the story; (4) the location of the events recounted; (5) the disaster time period covered in the story; (6) the disaster agent-generated activities discussed in the story; (7) the response-generated activities considered; (8) the estimates provided of the destructive impact; (9) the sources explicitly cited in the story; (10) whether the story was hard news, soft news, hard analysis or soft analysis; (11) the tone of the story, that is, wether or not it was primarily instrumental or expressive; and (12) the inclusion and treatment of such disaster myths as panic flight, the occurrence of looting, the imposition of martial law, heightened criminal behavior, and psychological shock of victims. In addition, a qualitative analysis utilizing inductive techniques were undertaken to discern general themes inherent in the coverage.

However, for logistic and technical reasons, the systematic analysis of the output of the two papers were not identical; the content of the Houston paper was analyzed in somewhat more detail and in greater depth than that of the Tulsa newspaper. However, the general research thrust was the same in both instances: the nature and magnitude of the news stories reporting about the disasters in the local community. Also, despite some differences in the methodology used, the substantive research findings turned out to be quite similar for both newspapers.

All the indicated material was analyzed by **DRC** researchers, some of whom had also undertaken the field research. The findings and conclusions reached will now be presented in the rest of the chapters in this part of the volume.

We next discuss in chapter 3 the effects of the disaster in the Houston metropolitan area (including Galveston), and then in

chapter 4 what occurred in Tulsa. In both cases, we first describe the community setting and the local mass communication system. The impact of the disaster in each locality is then noted.

In chapter 5 we then present a profile of the response of the local mass communication systems, combining what we found in Houston and in Tulsa. In the next chapter, we describe and give our findings from the six case studies we put together, treating each case separately for some purposes and comparing them for other purposes. We conclude Part I with a discussion in chapter 7 of the results of the content analyses we undertook.

CHAPTER 3

THE HOUSTON-GALVESTON, TEXAS HURRICANE DISASTER

In the middle of August 1983, Hurricane Alicia coming out of the
Gulf of Mexico swept into the northeast coast of Texas. It came
across the coastal barrier island of Galveston and the eye of the
hurricane went right over the city of Houston. DRC had monitored
Alicia from the first National Weather Service announcement about
its formation as a tropical storm. When it appeared that the
Houston metropolitan area and nearby Galveston were going to be
impacted, a field team was dispatched. This DRC team landed at the
airport north of the city just as the hurricane winds reached the
southern edge of Houston, and its members were driving around the
city at the height of the storm. Besides this initial trip,
another field study was done to gather follow up data.

The Community Setting

The greater Houston community, a heavily built up and densely
populated area, includes the city proper and over 30 satellite
communities. The 556 square mile city is located on the Texas gulf
coastal plain, about 50 miles north of the Gulf of Mexico. About
45 miles southeast of Houston is the coastal barrier island where
Galveston is located.

The county seat of Harris County, Houston, at the time of the
disaster was the fastest growing urban area in the United States,
ranking fourth in total population in 1980 (this statistic and the
others in the following paragraphs were obtained from the sources
indicated in the previous chapter). Increasing by 45 percent in
the last decade, the Standard Metropolitan Statistical Area (SMSA)
population for 1980 was 2,905,344 people. The incorporated area
population for the city of Houston increased 38 percent during the
same time period, reaching 1,595,138 (with 1984 estimates of the
population being 1,725,617). Primarily as a result of migration,
Houston's population had doubled every 20 years since the mid-
nineteenth century, making it in 1983 the nation's fifth largest
city. The racial/ethnic distribution of the area in 1980 was 72.8%
White and 18.2% Black, with persons of Spanish heritage being 14.5%
of the total population.

Houston became the center of U.S. aerospace activities in the early
1960's. The city also emerged as a corporate center through the
1970's when over 200 major companies relocated to the community.
In 1983 the area was a leading center of energy technology having
one fourth of the nation's refining capacity and more than 435 oil
companies including the largest 34. The city is also noted for
major medical research facilities. The port ranked third in the
nation in terms of total tonnage handled and was used by more than
5,500 ships in 1981. In the same year, average annual employment
in the area was over a million and a half workers, and wages and

salaries paid amounted to over 31 billion dollars.

Galveston, as of 1980, had a population of 61,382 which indicated little growth in recent years. In the last census, the racial/ethnic composition was 62% White and 28% Black; 17% of the population was of Spanish heritage. The principal industries of Galveston were shipping, fishing, food processing, and meat packing. While the city has little by way of a chemical-related industry, it is the entrance (port) to the Texas City ship channel which stretches from the bay and ends about six miles east of downtown Houston. Along this channel are more than 130 petrochemical plants.

By almost any criteria that could be used, the Houston-Galveston area would have to be ranked high for both risk and experience of natural and technological disasters.

The locality is subject to tropical storms and hurricanes. In 1900, a hurricane struck Galveston and killed more than 6,000 people; the worst casualty producing sudden disaster in the history of the United States (see Ousley, 1900; Weems, 1957; Mason, 1972). Three other major hurricanes have made landfall in the area since the turn of the century, and it also has felt significant effects from hurricanes directly impacting elsewhere; Hurricane Carla in 1962 being the best remembered. Several localities in and around Houston were flooded in the 1970's and early 1980's. Subsidence was also a major problem in a number of neighborhoods. In the summer of 1983, tornadoes hit the Houston metropolitan area and the county ranks high nationally in tornado frequency; in fact, it is listed by the NWS as the most likely locality to be hit by tornadoes (in 1991 Harris County, home of Houston was said to have a 99.2% chance of being hit by one or more tornadoes during the year).

In addition, because of the petrochemical and other industrial complexes in the area, technological emergencies are ever present. Since the turn of the century these have included plant explosions, chemical spills, toxic landfills, transportation accidents, etc. These sometimes eventuated in such disasters as the Texas City ship explosion which killed 512 and injured over 4,000 people in 1947 (Logan, Killian and Marrs, 1952). The threat of major fires is associated not only with industrial accidents, but also with rapid development and lax building codes which can become manifest in such events as a massive fire at a large apartment complex in the early 1980's.

Given all the hazards and threats in the area, there had not been a commensurate development of disaster planning. During the 1980s, DRC undertook a variety of studies focused on localized disasters in the area and on citizen groups concerned with preparing for and responding to a variety of natural and technological disasters. In those different research ventures, we found a moderate degree of

planning in Harris County, Houston and Galveston; not as poor as in other sections of the country, but also not among the very best. For example, an unpublished DRC field report noted that the planning of the major emergency organizations:

> appeared to avoid any type of coordination functions that would threaten their organizational autonomy during or outside of disaster instances.

With respect to the local mass communication systems in the area, it can be assumed that they were not particularly well integrated with overall community planning.

However, on the other hand, to keep matters in perspective, there was considerable even though unintegrated disaster preparedness by different organizations in the area. For example, all major communities had operative Emergency Operating Centers (**EOCs**), many of the emergency personnel had had experience in responding to disasters, and some of the staff members were highly professional.

So while the disaster planning in the area fell short of what should have been in place for a high risk locality, what existed was better than what would have been found in the typical American community during the early 1980s (for an analysis of local community disaster planning, the varieties that existed, and the more likely problem areas, see Wenger, Quarantelli and Dynes, 1986).

The Local Mass Communication System

Consistent with being one of the largest metropolitan areas in the United States in 1983, there were a large number of mass media outlets (some of the following statistics and figures are from standard yearbooks). In the Houston area there existed 26 radio stations, seven television stations, two daily newspapers, and over a dozen weekly community publications as well as several cable systems, which reached nearly 29% of all households. There were also three radio stations in Galveston, as well as a daily newspaper. (In addition, there were six other small radio stations in the outskirts of the Houston metropolitan area). Thus, in both quantity and range, the local mass communication system is typical of what could be expected for a metropolitan area in the United States about a decade ago.

In terms of format and content, the electronic outlets reflected the heterogeneous nature of the population in the area. Of the 26 radio broadcasting organizations studied by DRC, (of the other three, two had no news programming and the other had a very limited operation), 13 were AM and 13 were FM stations. Eight of the stations were "twins", that is, an AM and FM station owned by the same company. Five of the FM stations were non-commercial, three

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being the stations of three local universities. Eleven of the stations had some kind of network affiliation (including one owned by the national American Broadcasting Company).

Many of the program formats were typical of the early 1980's. That is, they had Top 40, MOR or Middle of the Road, and all news/talk formats. Others reflected certain characteristics of the Houston area; for example, five were oriented towards the black population, three were Spanish speaking, and four had primarily a "Country and Western music" format. Some kind of news coverage was provided by 88 percent of all the stations, although only about half had some kind of separate news operation. Although 20 stations had some individual with the title of news director, about half of the stations depended on non-news personnel reading wire stories from a teletype, i.e., a practice that is often called "rip and read" within the mass media industry.

The Houston television market, the eleventh largest in the country at the time, included 20 ADI (Areas of Dominant Influence) counties in an arc around the city; this area was estimated in 1983 to have 1,326,000 households. Each of the major national networks, ABC, CBS and NBC, had an affiliated station in the area. The CBS affiliate was top rated in the market, followed by the NBC and ABC affiliates respectively. The Public Broadcasting Station (PBS) was part of the University of Houston and did not telecast news; neither did one of the UHF television stations. The three national network affiliated stations had major news operations, but the other two television stations, UHF operations, had limited news departments and offerings.

An unpublished non-DRC study done in the early 1980s found that only a handful of the electronic media in the Houston metropolitan area attempted to provide any kind of disaster education. Four of the radio stations, including the one with the largest audience, and the three network affiliated television stations provided almost all of the information, with most of it consisting of non-prime time public service announcements of 10-60 seconds in length. The season of the year was the prime determinant of when hurricane or other weather related public announcements were aired. The scheduling of announcements about nonseasonal disasters depended on such other factors as the subject and production quality of the messages. The study concluded that for all practical purposes, there was very little disaster education attempted by the electronic media in the metropolitan area, and that any effort to touch upon highly politically controversial topics, such as the question of development and resettlement in high risk flood plains, was unlikely to be attempted.

In 1983 there were three daily newspapers in the area, two in Houston and one in Galveston. The Houston Post was the morning publication, while the Houston Chronicle was the afternoon paper; both published on Sunday. The Chronicle ranked 18th in circulation

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in the United States at that time, and had a weekday circulation of 276,000 and a Sunday circulation of 437,000. The Post's circulation was somewhat less, ranking 20th in the country. The Galveston Daily News had a circulation of about 28,000.

There were also more than a dozen weekly community and neighborhood newspapers. A half dozen of these primarily served specific suburban communities in the Houston metropolitan area and had an approximate total circulation of around 240,000. Four of the weekly newspapers were aimed at the black population and had a total circulation of about 158,000. There was also at least one Spanish language newspaper.

A **DRC** study of emergent citizen groups in the area, undertaken for reasons unrelated to our mass communication study, found very little coverage of natural disaster matters apart from when emergency occasions occurred (the results of the larger study covering more than 50 such groups around the country are reported in Quarantelli, 1985). While the two Houston papers had infrequent stories on environmental threats such as pollution and toxic waste sites, the electronic media gave even these reports little attention. While the community newspapers did sometimes focus on local activities in connection with neighborhood environmental problems, natural disaster issues were seldom highlighted.

As to the coming of the hurricane, the mass communication system as a whole (with some qualifications we shall discuss later), paid a great deal of attention starting with the first advisory from the National Weather Service (**NWS**). For example, the Tuesday, August 16 edition of all three major newspapers in the area carried front page stories about Hurricane Alicia. The next day, one paper devoted extensive space to the storm, including a map of evacuation routes, an article on how to decide whether to evacuate, and a probability table of which localities were likely to be impacted with the probabilities correctly summed across the columns (Committee on Natural Disasters, 1985: 127). A number of the radio and television stations, as we shall detail later, also transmitted the weather advisories and local statements, as well as local officials' statements and their observations.

The Impact of the Disaster

The hurricane, while it was the first tropical cyclone of full hurricane intensity to strike the mainland in over three years, did not strike unexpectedly, since it had been monitored for days while it was in the Gulf of Mexico. On August 16, the Public Information Emergency System was activated. This resulted in direct broadcasts from the Houston Emergency Operations Center (**EOC**) to all Emergency Broadcast System (**EBS**) licensed stations in the area. By the morning of August 18, the **EOC** was issuing hourly updates on the approaching storm. When it reached the coast of Texas the storm was slightly above average in terms of size and intensity,

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strengthening considerably in the 12 to 18 hours before landfall, and reaching a minimal category 3 on the Saffir/Simpson scale of 1 to 5 (Committee on Natural Disasters, 1984: 18).

Shortly after 3:00 a.m. on August 18, Hurricane Alicia impacted Galveston Island with 115 miles per hour winds, driving rain (probably to a total of 7 inches), and a 12 foot sea surge. Substantial damage was done, especially to a 19 mile stretch on the west side or end of the city, and the causeway link to the mainland was temporarily flooded. The storm moved northward and between 5:00 a.m. and 1:00 p.m., torrential rains (10 or inches), high winds, and at least eight tornadoes battered Houston (23 tornadoes in all were reported to the NWS). In the downtown central business district, hundreds of plate glass windows were blown out of numerous high rise office buildings, and several suburbs such as Baytown, a neighborhood of 1,200 which had suffered severe subsidence, were flooded for several days. Or as a report said:

> The city was in shambles, with trees strewn across streets. Street lights, traffic signals, glass, and debris littered virtually every section. Electric power lines dangled throughout the city. Windborne debris, parts of billboards, sheet metal from buildings, and material construction sites were deposited all around the city during the storm...A majority of apartment complexes throughout the city experienced at least some cosmetic damage to the roof. Every housing subdivision experienced damage, either to roofs, wooden fences, trees...Wood-shingled houses lost shingles...Some brick chimneys were blown over (Committee on Natural Disasters, 1985: 69)

An assessment of the impact of the hurricane presents a somewhat mixed picture. In terms of some absolute and relative figures, this storm was one of the worst disasters to ever impact American society. In fact, a National Academy of Science committee (from whose report we have taken most of the statistics which follow in the next few pages) stated that insofar as disasters were concerned up to that time it could be said that:

> it will be recorded as the second most costly storm ever to strike the United States (Committee on Natural Disasters, 1984: 1)

The coastal property damage that it occasioned was exceeded only by that of Hurricane Frederick in 1979. However, along certain other lines, the consequences of the storm were relatively minor, especially given that it struck one of the very largest metropolitan areas in the United States.

For example, there was very low loss of life and other casualties. A total of 21 deaths in all localities were attributed to the hurricane, but no one died in Galveston, and only ten were killed in Harris County. Injuries from the storm were said to number around 1,530 in the county, but this is out of a population of approximately three million. Harris County alone has 62 hospitals with more than 16,000 beds; the Texas Medical Center alone, with about a fourth of the bed capacity, in 1981 treated 165,840 in-patients and more than two million out-patients. The emergency medical service system at that time had more than 145 ambulances at its disposal. (For everywhere Hurricane Alicia impacted, the official Red Cross estimates were 17 deaths and 3,243 injuries).

Other storm related statistics, while perhaps high in absolute numbers, are also relatively low in terms of the total population base involved. Thus, although state officials recommended at 2:00 p.m. on August 17 the evacuation of Galveston, city officials urged residents not to leave, and it is probable only several thousand people at most left the island. (A survey by Baker, 1984 found that while 44 percent of the residents left their own homes, almost 40 percent of those stayed with friends and relatives on the island). The Red Cross reported sheltering about 18,000 evacuees in 76 shelters in 14 different counties in the whole of Texas. The highest estimates advanced indicate that possibly 50,000 evacuated inland from the coast, although in this, as well as most disasters, it is difficult to see what the numbers are based on, and in the view of DRC are suspect figures probably on the high side.

Some after impact figures also present a picture of high absolute but low relative numbers. By October 19, there had been 8,634 applications for family grants and 3,002 families had applied for housing at the three federal disaster relief centers in Houston, with most qualifying for such assistance. Approximately 6,400 storm victims visited the centers during the first six days that they were open in the area. One newspaper story estimated that about 5,000 workers had become unemployed because of the disaster, and 679 individuals did apply for unemployment assistance from the Federal Emergency Management Agency.

Property losses while also relatively low were notable in absolute numbers. Table 1 on the next page, mostly taken from local Red Cross statistics, indicates the initial damage estimates for private properties in Houston and Harris County as well as overall figures.

Public facilities also were damaged. Initial damage figures for the Houston area were 46.8 millions of dollars. These estimates reflected about 33.2 millions in damage to city owned property. The Houston city figures included 10.5 millions for clearing debris which was estimated to amount to 2,000 000 cubic yards. An additional 18.2 million in expenses was calculated as a loss which could not be recovered from the federal assistance program.

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Table 1.

Damage Estimates for Private Properties

	Houston	Harris County	Overall
Homes Destroyed	360	410	1,209
Homes Damaged	1,950	2,293	12,472
Mobile Homes Destroyed		38	455
Mobile Homes Damaged		253	1,034
Apartments Units Destroyed		131	633
Apartments Units Damaged		355	2,857
Businesses Destroyed	230		
Businesses Damaged	500		

Overall damage losses were substantial, with estimates ranging from about 750 million to 1.65 billion dollars (see, Committee on Natural Disasters, 1985). One figure, advanced nine months after impact, indicated that economic costs in Galveston alone were around half a billion dollars. For all of Texas, private insurers eventually paid more than 676 millions of dollars of claims, involving about 275,000 claims. The federal government allocated about 338 millions of dollars to cities and individuals in nine Texas counties affected by Hurricane Alicia. For Houston alone, retail sales the week of the hurricane fell 28% below those of the same period a year earlier, since little business was done on Wednesday, everyone was closed on Thursday, many did not open Friday, and some even on Saturday. The entire downtown area was cordoned off early August 18 and remained closed to public access for approximately 36-72 hours while city maintenance crews removed the plate glass debris.

Besides shops, many other places of work, and the area schools, were not operating for varying periods of time. Severe disruption of community life was also brought about by electric power and phone system failures. At one point more than 750,000 customers were without electric power as over 8,000 miles of electric lines

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were out of working order, and 569 out of 1,100 distribution centers were out. At least 2,400 telephone poles were knocked down. At the height of the emergency, approximately 20% of the telephone service in the Houston-Galveston area was lost; an estimated 103,000 persons were without service for at least one day. Even by Friday, August 26, 50,000 customers were still without electric power and 43,500 phones were still not in service. As late as September 1, phone service had not yet been restored to 43,500 customers (including 30% in the city of Galveston), and electric power to 3,000 (about half of these in Galveston).

Overall, as said earlier, Hurricane Alicia was both a moderate size disaster and a major emergency. It left few casualties or homeless. Property damage was noticeable in absolute terms, but relatively low when measure against the total base at risk. Economic losses, however, were substantial. Disruption of community life was massive, although this did not last for more than a day or two except in a few localities.

In many ways, the occasion around Houston illustrates what elsewhere has been argued are more likely to be the disasters of the future (Quarantelli, 1992). That is, while the toll of dead and injured may be both absolutely and relatively low, the impacted localities will suffer serious social disruptions and economic losses, particularly in metropolitan areas. This mostly results from the nature of modern societies and especially urban life, which can help keep casualties low, but which almost insure major interruptions of community and social life from any disaster.

CHAPTER 4

THE TULSA, OKLAHOMA FLOOD DISASTER

On the Memorial Day weekend of 1984, May 26-27, the residents of Tulsa, Oklahoma were enjoying the traditional first holiday of the summer. There had been some indications that rain and stormy weather might disrupt some outdoor plans. In fact, during Saturday afternoon, the local National Weather Service issued watches and warnings about severe thunderstorms and flash flooding in the area. Nevertheless, by early evening the rains which had come had ceased. Judging from the reported behavior of emergency organizations and what they reported about the activities of citizens, it is clear that almost no one expected anything unusual to develop later that night. However, within a later six-seven hour period an estimated 11-12 inches of rain pelted the area which led to severe flooding in virtually all low-lying sections of the city, including the downtown area. Having heard of the disaster, **DRC** dispatched a team the following day.

The Community Setting

The city of Tulsa is located in the northeast part of the state of Oklahoma in the south central region of the United States. It is the state's second largest city both in terms of land area and population size. Most of the community is located on the north side of the Arkansas River which passes through the city.

The metropolitan limits of Tulsa range over 185 square miles. In 1980, its population was about 360,000, which represented a 9.3% increase over its 1970 size. By 1983, at the time of the disaster, it was estimated 375,000 lived in the city. As to their racial and ethnic composition, Tulsa was primarily white (82.8%) with 11.9% and 1.7% of its residents being black or hispanic, respectively. According to census figures, the remaining 3.6% of the population was mostly people of Native American origin.

Tulsa was once known as the "Oil Capital of the World". Although it's economic base is still primarily the oil industry, there has been considerable diversification of industry in recent years. In 1982 the civilian labor force consisted of about 189,000 workers, who had an unemployment rate of roughly six percent.

Located in one of the prairie states, the Tulsa area is subject to tornadoes and other high wind storms, particularly during the spring months. However, in the early 1980s there had not been a recent major tornado disaster in the city. But there had been a long history of flooding problems in the area from the Arkansas River and its tributary streams. There had been minor floods in 1957 and 1959 followed by a more severe one in 1974 (Patton, 1988). Prior to the 1984 flash flood disaster, the worst occasion had been a flood on Memorial Day in 1976 which affected several thousand

structures, killing three residents, and resulting in $34 million worth of property damage (In a more recent analysis, it has been pointed out that the city has been declared a federal flood disaster area ten times with flood losses in the $300 million range, see Patton, 1988: 224). Finally, due to its involvement in oil extraction and refinement, the community was specifically exposed to certain kinds of technological hazards such as refinery explosions and fires, and toxic spills. However, as of the early 1980s there had been no major disasters.

Thus, the Tulsa area overall cannot be ranked as high on any scale of risk and experience with natural and technological disasters. Perhaps it may best be characterized as being on the low side of a moderate disaster risk situation. It certainly is not as hazard prone as Houston.

Given the community's relative lack of prior history with disasters, it is not surprising that generally the local emergency organizations were not well prepared for quick emergencies. For example, while the Tulsa City/County Civil Defense organization (its name in 1984 at the time of the disaster) did have a flood response plan as part of its planning, it was set up more for relatively slowly rising waters from the river and its tributaries, rather than a quickly rising flood from massive rains. In addition, its original emergency center located at the headquarters of the Tulsa Police Department, operated out of a cramped office with limited telephone capacity and poor access. In fact, only after the flooding had begun did the operation move to the more centrally located and telephone equipped **EOC**, also located at police headquarters. As was reported in the press afterwards:

> once in the room, officials found no current
> telephone books and only one list of emergency
> numbers and contacts (Foran, 1984: 5).

The police department did have as part of its disaster planning, procedures to be followed in the case that heavy rainfall might occur in the city, but they proved very difficult to initiate and implement in the middle of the night on a holiday weekend. Little thought apparently had been given to planning for disaster-relevant interactions between emergency organizations and mass media personnel. In fact, almost all the emergency organizations learned of the rising waters from members who listened to late Saturday night newscasts.

The Local Mass Communication System

Like Houston, Tulsa was serviced by a variety of mass media outlets. In total, in 1984 there were 13 radio stations, six television stations, and two major daily newspapers in the area, as well as two weekly newspapers. In format and content, the system was representative of what is likely to be found in a typical,

regional American community of similar size.

The 13 radio stations were almost all affiliated with some national network, such as Mutual, ABC and CBS, or were linked to such organizations as Affiliated Press Radio or RKO. Six of the stations were AM; seven were FM. Three of the stations were "twins". One of the stations was non-commercial being owned by a university (**DRC** did not study this station because it had no news operations). One additional station that did broadcast news, a minor one, was not included in the sample because it refused any cooperation with the study.

The stations' programming reflected diversity, catering to the different preferences of listening audiences. For example, some stations primarily played "easy listening" music, while others focused on MOR by playing "oldies" and adult contemporary music. One station concentrated on rock and Top 40's music, while another was almost exclusively devoted to a news/talk format. The regional character of Tulsa was also revealed through the programming in place. Two radio stations only played country-western music; whereas the programming of two others was mostly limited to religious music and sermons. In addition, a weekly farm report of two or three hours in length was carried by two stations.

All 12 studied radio stations provided some news coverage as partly indicated by the fact that each station had a news director. However, two of the stations were exclusively "rip and read" operations. Two other stations also fell within this category, even though they did have some reporters on their staff. Therefore, only eight of the radio stations could be considered as having had some type of active news operations. Of these, only three had a full time news staff of six or more persons.

Tulsa's television market, which at the time of the study was the 57th largest in the country, encompassed 21 ADI counties which formed a circle around the city. Approximately 430,800 households were included in the area. All of the major national television networks (ABC, CBS and NBC) were represented through affiliated stations. Within the local market, CBS was the highest rated station, followed by ABC and NBC respectively. The Public Broadcasting System outlet was operated by the University of Tulsa and did not telecast news. Neither did one of the independent UHF stations. The remaining UHF station had only rather limited news programming in that only two minutes of headlines were broadcast several times a day. Consequently, only the three national network local affiliates had major news operations in Tulsa in the early 1980s.

At that time, there were two daily newspapers serving the metropolitan area. The <u>Tulsa World</u>, a morning paper, was published daily including Sundays. In contrast, the <u>Tulsa Tribune</u> was an evening paper published daily, except Sunday. The <u>World</u>, which

ranked 83rd in the nation in terms of circulation at that time, sold about 140,000 papers daily and 230,000 on Sunday. On the other hand, the _Tribune_ had a daily circulation of only 75,682. There were also two other newspapers which published weekly: the _Skiatook Journal_ with a circulation of 5,700, and the _Tulsa County News_ which had about 3,960 subscribers. Both had a community based orientation and were not targeted to meet the needs of a particular religious or ethnic group.

Although the Houston mass communication system is obviously larger than that of Tulsa, the two local systems are remarkably similar. Both had a varied lot of radio stations with alternative formats. Both had all three major national television networks represented by affiliates, plus **PBS** and independent stations. Interestingly, both cities had competing daily newspapers. Even in the early 1980s this was an increasingly rare situation in the United States (see Bagdikian, 1983).

The Impact of the Disaster

At approximately 11 p.m. on Saturday night, May 26, a cold front stalled directly above the city of Tulsa. This led to the area being inundated with rain. The local weather service office did manage to get out a flash flood warning sometime after midnight, but it does not appear that it was heard at that hour by too many organizational personnel or citizens. In that sense, the disaster was an unexpected one, unlike Hurricane Alicia impacting Galveston and Houston.

The heavy rain pattern persisted for a six-seven hour period with nearly a dozen inches being measured in several places around the city. It should be noted that this figure exceeds the standard rainfall expected for Tulsa's 100 year flood (6.5 inches), as well as its projected 500 year flood, and that the city receives only a little over 30 inches of rain annually. Consequently, massive flooding occurred throughout the metropolitan area of Tulsa, although somewhat affecting more the northeast part of the city. In contrast to previous floods which primarily resulted from the overflowing of the Arkansas River and its tributaries, the pelting rain this time flooded localities and neighborhoods away from those places. In that sense, the occurrences of the disaster was not only unexpected, but it happened also where it would not have been anticipated, unlike the expectations of Galveston with respect to a hurricane.

By almost any standard used, the flood of 1984 was by far the worst disaster to that time in the history of the city. A total of 14 lives were lost; twelve deaths were due to immediate drowning and two resulted from injuries sustained during impact. In addition, some 296 other persons also suffered injuries; 80 of these required medical assistance with 16 of them being hospitalized for a number of days.

Initial property damage to the city was estimated at around $150 million; final figures were in the $183 million range (from Patton, 1988: 227 from which many of the statistics presented in these pages were obtained). In terms of losses to residential property, a preliminary figure of $54 million was projected at the time (this amount did not include damage suffered by private businesses). According to a Red Cross household survey done after impact, about 2,400 single family homes in the city suffered an average of $18,000 worth of damage, as well as 600 more families living in other kinds of structures. About 4,500 automobiles were destroyed or damaged. Of the 417 mobile homes that received damage, 352 were totally destroyed. Finally, 1,921 apartments and condominium units were damaged, although only 49 were destroyed.

Damages to publically owned property, apart from engineering losses, were initially estimated at $7.7 million. City officials expected to recover all of this, except for $1.7 million, via insurance claims. In as much as the area received a federal disaster declaration, the city was able to obtain federal assistance which allowed recovery for uninsured damages from the flood waters. Most of the uninsured losses were due to damage to streets, bridges and public recreational facilities, and amounted to around eight million dollars. Among the major items lost were 150 city owned vehicles, including 81 police cars, eight ambulances and three fire trucks. In all, the Federal Emergency Management Agency eventually provided about $6.2 million of disaster aid.

About 3,100 families were forced to evacuate their homes as a result of the storm, almost all of whom sought shelter, as is typical of disaster, with friends and relatives. In addition, on Sunday, May 27th, 176 male prisoners had to be evacuated from a minimum security prison in the area as a result of flood damage sustained by the facility. These prisoners were temporarily housed in other city and county jails and all were returned to their own detention center on Tuesday, May 29.

Disaster relief services were provided to flood victims by the local Red Cross chapter and other agencies. On Sunday, May 27, the Red Cross set up four shelters to provide food, clothing, shower facilities and medical assistance to victims. Although officials of the organization stated that it was impossible to determine the number of people who had used these services, they estimated that over 8,000 meals had been served by Tuesday, May 29. Eventually, the Red Cross projected that the total costs of the emergency relief services they provided amounted to $2.4 million, with approximately 70 victims receiving an average of $700 per family.

In addition to these losses, considerable temporary disruption to community life was also occasioned by the flood. Severe damages to public utility systems left some 10,000 residents without electric power and 3,500 homes without telephone services during and immediately after the storm. While most of these services were

restored by late Sunday, May 27, approximately 300 customers were left without electricity until Tuesday, May 29. Furthermore, minor failures in the city's water and natural gas systems resulted in localized losses in these services for a small number of Tulsa residents. Other disruptive effects of the flood on everyday life included the closing of all public schools for two-three days with 64 schools suffering some damage, the destruction of 117 privately owned businesses, the shutting of eight city bridges, and the demolition of four churches throughout the area.

Overall, the flood had a rather noticeable short term disruptive effect on the city of Tulsa. The loss of life and property, the interruption of public utility services, and the cessation of both business and community oriented services represented a marked departure from normal, everyday life. While this was truer for the community as a whole, it was particularly true for the northeast part of the city.

However, while the disruption of community life was across the board, it was shortlived--approximately two-three days--for most parts of the population and different city areas. There were also situational factors which generally worked to minimize the degree of social disruption occasioned by the flood. In particular, the social time involved played an important role in the situation. Considering that the flood peaked late at night during the Memorial Day holiday weekend, most of Tulsa's residents were at home and united with family members and/or significant others during the height of the emergency. Thus, initial responses to the threat and decisions about evacuation, for instance, were facilitated by this time contingency. Also, because of the time of occurrence, the low lying central downtown area was virtually devoid of people. This allowed emergency organizations to quickly mobilize and move about given the absence of any traffic congestion. Had the flood impacted the community during the middle of a work day, it is certain that there would have been far more social disruption and organizational difficulties in coping with the occasion.

However, on the negative side, the timing of the impact meant that many of the emergency groups and agencies in the city were operating with minimal number of staff members. Most organizations, including the mass communication ones, were either shut down or at a very low operating level. Some key workers, as well as officials, had left town for the holiday. Also, even though the great majority of residents were at home during the height of the emergency, because it was after midnight, very few heard the flash flood warnings issued by the local weather service.

Overall, what happened in Tulsa in May 1984 was far from a catastrophic occasion. On the other hand, it was more than a minor emergency confined to one or a few neighborhoods. Tulsa did undergo a small to moderate disaster, although not as serious as what occurred in the Houston area from Hurricane Alicia.

CHAPTER 5

A PROFILE OF THE RESPONSE OF THE LOCAL
MASS COMMUNICATION SYSTEMS

How did the local mass media organizations in Houston and Tulsa respond to the disasters in their communities? To begin to answer that question, we will provide a general profile of how the print and electronic media reacted in both cities. For this particular analysis, we combined the two sample, for what is most apparent is the similarities of response by the local mass communication system in the two communities to the different types of disaster occasions.

In Houston we gathered data from 25 radio stations, four television stations, and one of the daily newspapers. In Tulsa, we obtained data from eight radio stations, four television stations, and two newspapers. Therefore, our total sample was of 44 organizations, including 33 radio stations, eight television stations, and three newspapers.

Size of Mass Communication Organizations

Research by Brooks (1970) on local systems suggests that the best analytical approach is to focus on actual commitment to news dissemination. This commitment can be inferred by such indicators as variety in news sources, amount of resources available, and especially the type and number of personnel staffing the news department or section. The size of the news departments of the mass media outlets we studied varied considerably. They ranged from a one person operation to another group which had 164 full time employees involved in processing news. Given this, we trichotomized our sample in Table 2 into small, middle range and large news departments as follows: Small= 0-5 staff members; Midrange= 6-10 staff members; Large= over 10 staff members.

Table 2.

Local Outlets in Houston and Tulsa
by Type and Size of the Organization

	Houston			Tulsa		
	Radio	TV	Paper	Radio	TV	Paper
Small	15	1	0	3	1	0
Midrange	8	0	0	5	0	0
Large	2	3	1	0	3	2
TOTAL	25	4	1	8	4	2

Normal Time Operations

Our analytical focus was upon the structure and functioning of the personnel and departments or sections in the local mass media outlets which were involved in the handling of news stories. We first discuss their normal time operations and then their activities during the disaster occasion. While ours was not primarily a study of the everyday behaviors of local mass communication systems, without understanding how the system acts in routine situations, it is impossible to understand how it changes during crisis occasions such as disasters. Thus, the next several pages are on routine operations.

There is a positive relationship between size and commitment to news. That is, the commitment to news increase as the size of the news department increases. The variables previously mentioned parallel this trend, e.g., news sources become more varied, available resources increase, and the structure of the news staff becomes increasingly complex. This complexity is reflected in a greater division of labor and increased specialization.

Small Outlets.

Ninety percent of the news department designated as "small" in our two samples are radio station. The only non-radio outlets were two small, independent television stations. Structurally, the news sections of these organizations rested at the low end of the continuum in terms of differentiation (i.e, the degree of specialization and the complexity of their division of labor). These news departments lacked specialization with respect to role responsibilities; i.e., most, if not all, of the positions in these departments required the assumption of multiple responsibilities. For instance, a news reporter would double as a disc jockey, announcer, or anchor on a normal daily basis. This kind of structure minimizes the amount of time and resources that can be devoted to news gathering and processing.

The activities and processes involved in the dissemination of news stories from these outlets are limited. These organizations are characterized by what has been termed "rip and read" operations, since the majority of the news items they pass on are gathered through wire services. Therefore, the decision making process is relatively simple with respect to news story selection. The information is frequently collated, written and broadcast by the same person. The gatekeeping role, in effect, is compressed into one individual role.

It is important to note that this type of dependency on automated news sources can severely limit organizational capabilities in emergencies and disasters. Power outages and other technical failures can render these news sources inaccessible, therefore,

secondary news sources of local officials are likely to assume even more importance.

Therefore, it was not surprising that we found that in addition to the wire services, the other predominant method of obtaining information was through official sources (e.g., police and fire departments, local emergency management agencies, and local government offices). The majority of respondents in this category reported no use of "stringers" or freelance news gatherers. None of these departments or sections that we studied had the resources or personnel to do extended, in depth reporting, and as a result, news stories tended to be brief and descriptive in nature.

Midrange Outlets.

The news departments in our sample in the midrange category were all radio stations. There was greater organizational complexity in these departments in terms of both structure and the process of producing news. However, our close examination of these sections indicated a position on the lower end of the continuum with respect to commitment to news. Although these mass media outlets exhibited greater specialization and division of labor, many news relevant processing positions still retained multiple responsibilities, and available resources were not great in number.

In terms of the division of labor, positions were more specialized in the higher echelons of the organization, whereas low level job incumbents were expected to perform multiple tasks. For example, we generally found that the role of the news directors in these mass media outlets is almost exclusively limited to the administration and coordination of staff activities. On the other hand, their subordinates typically have responsibilities that cut across horizontal lines, that is, both in the newsroom and other departments.

These midrange news stations did make use of all the wire services and official sources, and several also use stringers. However, most of these departments relied predominantly on the wire services and local official sources for their information. In this regard, they were very similar to the small department or section. In addition, like their smaller counterparts, they generally limited news coverage to brief reports and periodic updates throughout the broadcasting day. Their reporting tended to be descriptive in nature. Field operations and resources were relatively limited, though somewhat more extensive in the mid range stations. It may be appropriate to refer to the midrange departments as "modified rip and read" operations, that is, they retained many of the normative characteristics of the previous category, yet in some instances were more structurally and functionally complex.

With regard to the authority structure and the gatekeeping process, midrange departments were somewhat more centralized in terms of

news items selection and story assignments. The news director was further removed from the rest of the staff and there was less overlap of duties. Given the greater number of staff in these departments, some coordination of reporter activities seemed required. Consequently, it was frequent that one individual assumed the responsibility for story assignment. Most of these stations had an assignment editor who worked with the news director to determine which news items should be covered. This assignment process involved considerable flexibility, since most of the reporters were "general" as opposed to "beat" reporters. Beat reporters are those which are regularly assigned to the same:

> established beats located at institutions
> where news is expected to break regularly over
> a long period (Goldenberg, 1975: 79).

Examples would be the courthouse, the mayor's office, the police department headquarters, etc. Conversely, general reporters have no beats, and are not specialized in their coverage (see also Gieber and Johnson, 1961 for a description of beat reporting at the local community level).

Now in these midrange stations, once a story was covered, written, and prepared for broadcast, decision making authority for inclusion in programming typically became more decentralized since news anchors generally had discretionary powers regarding which news stories are aired. These individuals were the primary gatekeepers in determining what was actually disseminated as "news". Hence, decision making in these mass media outlets was characterized by somewhat more complexity than that evidenced in smaller stations.

Large Outlets.

The most dramatic contrasts emerged when we compared the large news departments with the small and midrange ones. The eleven largest departments were in two all news/talk radio stations, six television stations, and three newspapers.

Resources within these larger news departments were naturally more extensive. In addition to the availability of multiple wire services, these mass media outlets made use of stringers or free lance news gatherers throughout their regional area. Furthermore, many of these organizations possessed computerized equipment for monitoring weather, other breaking stories, and editing and processing the news product. Also, every organization in this category used beat reporters to some extent, although the radio stations tended to have more of a mixture of beat and general reporting than the other two types of news departments.

In general, a hierarchial form of authority characterized these organizations. The division of labor was even more specialized due to the greater number of personnel available for news related

activities. The range of responsibility for each employee was considerably smaller than that observed in the other two categories.

Decision making authority tended to be vested in the upper levels of the newsroom staff. For the most part, the decision making process took place in the context of formalized meetings (called "huddles" or "budget meetings" in the various mass media outlets) between the news director, the managing editor or similar executive position, and some chosen associates. These core individuals also played key roles in the gatekeeping process which is typically a multi phase procedure.

In contrast to the smaller outlets, there was usually a minimum of three individuals involved in the processing of a news story in these large mass media organizations. There was either a news director or assignment editor who assigned a reporter to a story. This reporter in turn passed the information gathered while covering a story to another staff member who served as story editor. The news story is then passed on for broadcast or publication. This process is the essential core of news dissemination. The larger organizations altered this process in a quantitative sense (e.g., by adding personnel to the gatekeeping process.). The best example of this in our sample was a newspaper where every story passed through at least five gates.

In these organizations there were normally several individuals able to influence what was ultimately presented as news. In the radio and television stations these individuals normally were the news director, assignment editor, reporter, producer, and anchor person. The newspapers differed only in the sense that the gatekeepers filled essentially the same role in the organization. That is, whereas in radio and television many of those who influenced the process were not editors as such, for the newspaper usually three or four of those involved were by title, editors or assistant editors.

Inasmuch as beat reporting was utilized, the news sources tapped by these organizations were generally far more extensive than those used in the smaller mass media outlets. Virtually every key governmental official in the community might be contacted on a daily basis. In addition, the reporter's familiarity with relevant individuals in their specialized news area afforded them entry to the more informal, but knowledgeable sources with local groups and agencies. The result was an ability to do more in depth reporting than that possible in the smaller organizations.

In sum, these larger groups placed highest on the commitment to news. They had the most resources and equipment available, made the most extensive use of news sources, and had the most structurally complex news departments.

How did the 44 news organizations we studied operate in the hurricane and the flood occasions? In dealing with the contingencies produced by the disaster and in attempting to cover this major story, did we observe any changes in the disaster time structure, news process, or product of these organizations from their normal operative patterning?

In general terms, we can say that the systems responded to the crisis situations in both Houston and Tulsa with relatively minimal revision of their news gathering and processing operations. However, some changes in their structural arrangements were observed. The patterns of response were remarkably similar in both Tulsa and Houston, although there was greater alterations from normal operations in the latter community where the scope, intensity and destructive effects of the hurricane were greater than the flood in the former city.

Before discussing specific structural and processual changes, we need to make a few general observations. Both the dimension of size as well as the type of mass media had to be considered in our analysis.

General Observations.

When we searched for general patterns with respect to the size of the mass communication organizations, we found that the most noticeable changes occurred within the mid range mass media outlets. The news departments of these radio stations appeared to experience the most difficulty in gathering and disseminating news about the disaster. They typically used field reporters as gatherers of news, but they were limited in the number of employees they could recruit for this purpose at the height of the disaster occasion. Hence, while it was typical for most organizations to attempt to operate in their usual normative manner in the emergency time period, it was all but impossible for these organizations to do so and still provide expanded coverage about the occasion. The resources available to these news departments were inadequate, and, therefore, they were somewhat overwhelmed by the demands of the disaster situation.

The least amount of change seemed to occur within the small and the large organizations. With respect to the small news departments, this finding is not surprising considering the limited nature of their normal everyday news operations. Since they were primarily "rip and read" electronic operations that usually did not involve any reporting from the field, these mass media outlets lacked any capability to expand and more actively respond to disaster situations. Rather, they responded in a passive fashion, relying upon the same news sources as in the normal context, that is, using the wire services and phone contacts with local officials. Given

their overall lack of news coverage capability, these organizations, in effect, had no alternative other than to continue along their everyday lines of operation.

In contrast, the large organizations were endowed with a variety of multiple resources which could be easily mobilized for coverage of events and happenings. Considering the greater number of personnel these mass media outlets had involved in everyday news operations, generating an adequate staff for covering stories about the disaster, did not usually prove to be problematic. For this reason, it was possible to assign staff members to disaster-generated tasks which paralleled or were similar to their normal, daily activities. As such, this significantly reduced the need for making changes in work role responsibilities which enabled the organization to proceed along familiar, normative modes of action.

Put another way, the news processing procedures, despite the use of greater number of employees, were not severely altered from what occurred normally. In fact, the ability to select staff members in relation to the tasks which needed to be fulfilled facilitated access to information about the disaster. For example, the beat reporters, who were normally assigned to covering police and fire departments, were able at the time of the disaster to make contact both through usual formal and informal channels with knowledgeable sources in these departments.

If we single out the different types of media--that is, radio, television and newspaper--it appears that the latter underwent the least change, while more significant alterations could be observed for the electronic media, especially radio. In general, we observed that disaster coverage neither generated nor necessitated a significant alteration in the structure and news processing of newspapers. Since these mass media outlets have more time in preparing their final news products, they do not work under the same temporal constraints as do radio and television stations. Thus, they are more in a position to plan the type of coverage they want, select the appropriate staff members to do the work, and implement their news processing procedures, much in the same manner as during normal time periods.

Furthermore, although the electronic media must decide if disaster coverage should take priority over regularly scheduled programming and advertising, newspapers are not faced with this decision. In the event that additional space is required for disaster related news, newspapers can and do add extra or "open" pages or supplements to their usual final product. Although open pages do represent some financial cost for the newspaper, prepaid advertising and other formal features need not be omitted.

The electronic media in both cities we studied underwent more change in their structure and news processing than did the print media. These mass media organizations are generally expected to

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provide very quick if not instantaneous, coverage of an important occasion as it develops; therefore, they must mobilize their resources much more quickly than newspapers. As a result, the staffs they have present in the newsroom during the initial stages of a disaster emergency, will assume multiple responsibilities and perform tasks which lie outside the purview of their work roles.

In addition, instantaneous coverage often results in a truncation of the news processing procedures. While we will discuss this in more detail below, we will simply note here that due to the overwhelming amount of incoming information about the disaster occasion, normal editing procedures must be sharply altered if not abandoned in order to keep audiences abreast of the current status of the crisis occasion. Given our previous discussion of the influence of size upon organizational change, it follows that the mid range radio stations changed the most.

We have been discussing general trends across all the 44 mass media outlets we studied. However, it has to be emphasized that there was considerable variation with the sample. Some of the organizations, such as a few small radio stations, did not alter their structure or format at all. A few other organizations underwent very significant and massive alterations.

Specific Observations.

What specific types of changes can we cite that support our general conclusion of what occurs? For the most part, the changes observed during the emergency time period were primarily concentrated in the organizational structure of the mass media outlet. They included an increase in the time/space devoted to news, selective changes in the gatekeeping process, variations from the usual availability of personnel and work schedules, indirect and minor modification of news priorities, and holding back on the dissemination of certain kinds of information. We will now discuss these matters in more detail.

1. A General Increase in the Time/Space Devoted to News.

There was a rather dramatic increase in the broadcast time and column space devoted to news in both communities we studied. For example, in Houston, the 25 radio stations in our sample normally devoted an average of 5.6 minutes per hour to news. The range devoted to such stories varied from no news programming to 20 minutes per hour; however, 50% of the stations normally aired between two and seven minutes. However, during the hurricane, the average amount of news time increased to 31 minutes per hour. The range of news broadcasting increased from zero minutes to sixty minutes per hour. Over 75% of the stations devoted at least 10 minutes per hour to coverage of the hurricane, while 26% increased to 24 hour coverage. These data indicate the tremendous variability in commitment to news during the emergency period. In

addition, it should be noted that most of this increase occurred among the mid range radio stations. A similar pattern was observed to occur in Tulsa in response to the flood.

The print media also increased its space to news coverage. In Houston, over 16 open pages of hurricane stories were added to the normal paper. In Tulsa, four open pages were added on the days after the flood and an entire supplement devoted solely to the disaster was produced later in the week. Therefore, we can generally conclude that news coverage increases significantly in a local mass communication system during a disaster, but not for all local mass media outlets.

2. Selective Changes in the Gatekeeping Process.

Earlier studies such as by Waxman (1973) have reported that during a major community emergency, the normal gatekeeping process is bypassed due to the increased flow of information into the mass media outlets. Our midrange sample of radio stations supports this conclusion to the extent that more discretion was given to individual reporters. It is important to note that the reporters for these stations usually double as broadcasters in terms of everyday operations. However, during the height of the disaster time period, the formal gatekeeping process between the reporter/broadcaster and the news director of the station became more lax and informal, as the news director could no longer handle all the editing of the increased flow of news stories. As Waxman observed of the emergency time period:

> Almost anything and everything concerning the community and its disaster is important and newsworthy...an emergent norm [develops] that all information should be allowed through the channels to meet the increased demand (1973: 756).

Although the data from our midrange stations support Waxman's conclusion, they were the only mass media set that clearly did so. Due to their size, as well as the nature and extent of news operations, the small and large news departments did not undergo this type of alteration. The small stations, as previously noted, for the most part continued operations on a "rip and read" level, while the larger stations were better equipped and staffed to handle the increased flow of news without restructuring the gatekeeping process. The changes underwent by the larger stations and newspapers were in terms of personnel substitution, not alteration in the basic process. Examples of this substitution included the following: in a television station the authority for coordination of hurricane news coverage was given to the director of special projects rather than the news director; at a newspaper, the responsibility for assignment was solely given to the metro desk as opposed to the editor of each separate department.

However, the effect of the type of mass media involved must also be considered, because the large all news/talk radio stations did tend to experience some alterations similar to that undergone by the midrange radio stations. All of the radio stations, for the most part, underwent a truncation of the news gathering process to an extent not evidenced by the television and newspaper mass media outlets in our sample.

We might hypothesize two factors contributing to this observed difference. First, it is necessary to consider the nature of each type of news mass media. For example, news radio by its very nature is geared more towards immediacy of presentation than either television or newspapers. In fact, one respondent from an all news/talk radio station observed that:

> This is the most exciting time to be in radio--all my friends in television are wishing they were still in radio.

Respondents from both television and newspaper organizations also made comments to the effect that radio was better able to broadcast information with a minimum of delay, which is in keeping with the general expectations of mass media audiences.

Second, radio stations are not usually sufficiently equipped or staffed to handle the increased amount of information that they attempt to disseminate at times of disasters. In our study, both the large television stations and the newspapers had far more equipment and personnel than even the very large all news/talk radio stations in our sample. Thus, a combination of the actual nature of the particular mass media, and the adequacy of available resources, may help to explain in part the concentration of changes in the gatekeeping process mostly within radio stations.

In connection with the gatekeeping process, we examined whether our mass media outlets experience telephone overload, that is, being swamped with calls from the outside. According to Waxman (1973) telephone convergence contributes to the disruption of the gatekeeping process. He notes that the tie up of phone lines and the subsequent need for newspersons to go into the field for information results in an "opening of the gates." Our data partly support this observation. Although most of our mass media outlets did not report telephone overload as a major or serious problem, there was a significant difference depending on the size of the news department. Thus, only 25% of the small ones claimed having been overloaded, and only 33% of the large departments made the same claim. However, 85% the midrange stations said they experience a telephone overload. Thus, these stations stand out again as contrasted with the other mass media outlets. Both the greatest alteration in gatekeeping and the most severe telephone convergence occurred within the midrange stations. However, a generalization of this pattern as implied by Waxman to all small

and large mass communication organizations, does not seem to be appropriate.

3. Variations in Availability of Personnel and in Work Schedules.

We also found in our research some variations in the availability of personnel and their work schedules.

About 65% of the mass media outlets we studied said that there was no problem with regard to availability of staff members. That staffing was adequate was certainly evident in the newspapers and most of the large television stations. However, there was an interesting difference between the small radio stations and the midrange and large stations. The small stations experienced a pronounced decrease in the availability of personnel. To some extent this was because, if there was a station that had only four persons normally involved, if one could not participate in the coverage of the disaster, this meant a loss of 25% of the work force. In contrast the midrange and large stations, since they could draw from other departments within the organization, actually increased the number of staff members they had processing the news during the emergency.

As might be expected, the news departments we studied faced the necessity of rearranging organizational work schedules. Over 80 percent reported changing their normal shifts to accommodate the increased flow of news. Usual work shifts were often set aside, and personnel were frequently required to work around the clock. In fact, in one all news/talk radio station, personnel were called to the organization for an "indefinite" period of time, while in a television station, staff members were informed to pack clothing and supplies for "at least three days." These more dramatic shifts occurred in Houston, where coverage of the hurricane extended over several days. In Tulsa, the changes were less dramatic.

4. Indirect and Minor Modification of some News Priorities.

Virtually every news department in our sample stated that the criteria they normally employed in determining news priorities did not change at the time of the disaster. They claimed that while the type or content of stories was different, the underlying rationale for their selection was not substantially altered. To a considerable extent this was true, but it is also clear that there were some minor and indirect modifications in the priorities that usually guided the gathering and dissemination of everyday news stories.

The discussion by Dynes (1974) of the "emergency consensus" that emerges regarding the reordering of community priorities during disasters can be extended to the local mass communication system in such occasions. He argues that an emergency consensus develops during disasters that gives highest priority to altruism, the

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expansion of the citizenship role, and an emphasis on cooperation. It is of interest that while our respondents from the local mass communication systems stated that news priorities were not changed in any way at the time of the disaster, almost all of them spoke in their interviews of what Dynes discussed as the emergency consensus, and how it affected their operations.

There was an obvious manifest impact on story selection in that all news items with immediate effects on the community were given precedence. As one of our respondents noted:

> We put a very high premium in a disaster situation...on things that some people say are not news...We are covering the obvious things--civil defense, weather--but we're also trying to tell you what to do about your house, pets, preparing plants, yourself...and we give that as much prominence as possible during that time.

In an indirect way, the emergency priority hierarchy also contributed to a state of less interorganizational conflict or competition for news items. During the emergency period, there was more of a desire to cooperate rather than to continue normal time normative preoccupation with "scooping" a story and gaining organizational and professional recognition and reward.

5. Reluctance to Disseminating Certain Kinds of Information.

In an earlier DRC study, Kueneman and Wright (1975) identified a direct link between the perception of news organizations about public excitability during emergencies such as civil disturbances, and the withholding of information. Thus, we could ask if the local mass communication system was reluctant to disseminate particular kinds of information during the emergency time period of disasters to audiences? We found that there was some reluctance to disseminating certain kinds of stories.

For our entire sample, about 30% reported that they were reluctant to disseminate particular news items. In our interviews with mass communication personnel, we found that some discretion was applied in making decisions about presenting certain stories and the manner in which they were presented. On the other hand, a strong majority of our respondents were very explicit in stating they did not and would not withhold or "play down" almost any news story.

This apparent disparity warrants a brief discussion of the mass media's role in news coverage and dissemination. The extent to which the mass communication system subscribes to the "myths of disaster behavior" has been examined by a number of researchers (see, Dynes, Quarantelli, 1972; Goltz, 1985; Wenger and Friedman, 1986). In general, their studies have noted that the system has

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often been charged with disseminating disaster myths, that is incorrect views about how human beings react to disasters, such as that panic is widespread and that there is much looting and antisocial behavior. It can be argued that this perception of human behavior in disasters would tend to influence the dissemination of certain kinds of stories during such occasions.

The issue is not simply whether certain news items are actually withheld at a given time. More importantly, it is the possibility of a precensorship by those who process the news due to the perception of potential excitability accompanied by non-normative behavior among disaster victims. For example, both In Houston and Tulsa, many of our respondents in the local mass communication system voiced concern over the ways in which information on possible evacuations or instances of looting might be presented to audiences. The general feeling about holding back certain stories is well summarized by a respondent's observation that it is important:

> to downplay tragedy because people are already
> nervous and panicked...there is no room for
> even the hint of [more] panic.

The way in which mass media outlets consider themselves must also be considered. As Quarantelli has noted, many mass media professionals apply the mirror notion of news reporting to their own coverage of events. This mirror notion is echoed in the familiar cliche of reports that:

> We don't make the news, we just report it
> (1981: 57).

Thus, the dual role of mass communication personnel especially in the United States emerges. In part, there is the role of reporter of happenings, and in part, there is the role of being part of the response to happenings. On the one hand, there is the goal of professional objectivity in news reporting, while, on the other hand, there is concern for community safety and welfare based on widely accepted popular images of disaster behavior.

The mass communication system's perception of disaster behavior is often reinforced as it gathers information and attempts to verify stories. As Quarantelli concludes:

> the reporting is primarily from one
> perspective--what we call the command post
> point of view, i.e., the world as seen by the
> formal social control agencies in the
> community, particularly the law enforcement
> organizations (1981: 59).

Virtually all of the mass media outlets in Houston and Tulsa used

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such local official sources. They were almost exclusively used for purposes of story verification. However, police departments and local emergency management agencies were used extensively not only for verifying stories, but also as primary sources of emergency related information. Thus, the reliance on local official sources for information led to a focus by the mass communication system on highly visible happenings and official actions, rather than on important but obscure activities as well as long term consequences (A more detailed examination of the content produced in the local newspapers and the extent to which it indicates a "command post point of view" is discussed later in chapter 7).

Summary and General Impressions
Regarding the Survey Findings

What did our survey findings indicate about changes in the local mass communication system at times of disasters? Was there change? At one extreme, taken as a whole, the local systems in Houston and Tulsa showed relatively few changes. However, individual mass media organizations varied considerably as to the kinds and degrees of structural and processual modifications they underwent, and for a few, the changes were substantial.

Furthermore, the whole matter of change needs to be seen in a larger context. Disaster research is fairly consistent in reporting that, while temporary and minor alterations in behavior may occur, maintenance of familiar and regular patterns of behavior is the norm even in very stressful emergencies, whether the responding entities be individuals, organizations or communities (see Anderson, 1970; Quarantelli and Dynes, 1977; and Kreps, 1984). (At least this seems to be true of the response to disasters in developed societies; the situation insofar as catastrophes and developing countries may be the same, but the evidence is not yet as conclusive). So, if in the mass communication area there were significant and major changes in operations during disasters, this would be at variance with what has been found elsewhere.

Therefore, we can interpret our findings on structures and processes of the mass communication organizations as primarily reflecting an extension and enhancement of normal time operations, rather than a qualitative divergence from established activities. Thus, a number of the quantitative changes that we have observed can be seen as related to having to adjust to more than normal logistical problems and the need to process a greater amount of news. (Logistics are viewed here as those changes created by actual agent impact, e.g., absence of personnel and the need to juggle work schedules).

With regard to qualitative changes in the actual structure and process of news gathering, it would appear that the small stations were affected the least. As previously noted, these news departments are very limited in terms of resources and equipment,

news sources tapped, and the number and type of personnel available. Since their news gathering efforts are normally not extensive, the disaster occasion had very little effect on their standard operating procedures. The majority of these "rip and read" stations continued to do just that, i.e., gather whatever information possible from the wire services and traditional local official sources. The process was essentially the same, that is, one or two staff members collating news items and editing this information for broadcast by themselves.

The larger radio stations, television stations, and newspaper were better prepared to cover the disaster occasion in an in-depth manner, due to their more structurally complex organizations and their greater normal time commitment to news gathering. Therefore, it was in the midrange radio stations, perhaps partially attempting to mimic some of the more in-depth coverage of the larger stations, that we observed the greatest amount of manifest change. These changes can be attributed to a combination of logistical problems generated by a disaster impact, and an overextension of normal time activities.

In conclusion, we should note that most of the mass media outlets believed that they had done an exceptional job in their coverage of the disasters. Therefore, it is not surprising that the great majority saw no reason for organizational or operational revisions as a result of the disaster experience. In fact, this observation reaffirms the findings of Kueneman and Wright (1975) who in their study found that most of the post disaster changes which take place in the mass media as a result of undergoing a crisis situation, are mechanical rather than structural or operational in nature. In line with this, the most frequently mentioned planned changes in Houston and Tulsa concerned the stockpiling of disaster supplies and equipment and the building up of reserve resources.

CHAPTER 6

DESCRIPTION AND FINDINGS FROM THE CASE STUDIES

In the pages which follow, we present a description and analysis of
the six case studies we put together. Within both Houston and
Tulsa we undertook research on the local radio, television and
newspaper outlets that were the most heavily involved in coverage
of the disaster in the community. As such, they are not
necessarily typical of the mass media organizational response
patterns that have been discussed to this point.

Likewise, as indicated earlier, since these six mass media outlets
are among the largest of all mass communication organizations in
these cities, they do not necessarily illustrate the high degree of
change that was observed to occur among a few of the mid range
radio stations. Nonetheless, these six organizations are probably
representative of those major, although local, news-oriented media
outlets in the United States who play an important role in disaster
response.

The basic issues and questions we addressed however were the same.
How were these organizations structured? During normal times, what
patterns of news processing could be observed? What effect, if
any, did the impact of a disaster have upon these patterns? We
will begin by first discussing the radio stations.

The Houston Radio Station

Everyday Operations.

KAAA (a pseudonym) was an all news/talk radio station on the air 24
hours per day broadcasting news, talk shows and regular features
such as a business and economic segment. Approximately 20 minutes
per hour were committed to news broadcasting during a full day.
Aside from the one full news hour from 10:00 to 11:00 p.m., there
were hourly newscasts which run 10 to 12 minutes long and short
"cut ins" which are four minutes at the longest. A national radio
network news program was broadcast for six minutes on the hour,
just before local news. Advertising announcements took a maximum
of ten minutes per hour.

At the time of our study, a total of 86 persons were employed who
were divided into six major departments or sections in the
organization: news, programming, sports, engineering, sales, and
administration.

Structurally, the news and programming sections existed as separate
entities. However, they functioned together as one "information
department" in the processing and disseminating of news. For
example, the anchor positions, considered part of the news staff,
were directly responsible to the programming director.

The news section was the largest in the station, having 30% of the total employees. The newsroom was staffed by full time workers except for two part time university interns. In addition, the news department employed five to eight "stringers" in Washington, D.C., Austin, and along the Gulf Coast. Members of the news staff, while expected to fill the job requirements of their specific positions, were also involved in all phases of processing and producing news stories. For instance, reporters could be involved in such diverse activities as identifying potential news stories, information gathering, writing, editing, taping, and even taking part in the final broadcasting.

The authority structure of this department was fairly centralized. The news director and assignment editor were the primary decision makers in the process of news production. However, input was desired and encouraged from other members of the news team. This input appeared to be structured through an informal hierarchy, with the more specialized reporters at the top.

The work of reporters was organized in terms of specific and general assignments. This was a modified beat system in that a number of reporters specialized in certain areas of regular news coverage, such as the police beat reporter. Usually one reporter was assigned per story (The jargon in Texas was "one rider, one ranger"). The number of reporters assigned to a story was influenced by the number of "angles" involved (e.g., the number of people to interview, level of controversy, etc.).

Reporters were generally given great discretion in their work. However, a relationship seemed to exist between the experience of the individual reporter, the type of decision to be made, and the final decision source. There was an informal understanding that the reporter's recommendations would be the basis for the news director or assignment editor's final decision.

The organizational work schedule was divided into approximately ten separate shifts, some of which overlapped. No more than four people were scheduled to come in at a given time, and work shifts ran anywhere from five to nine hours in length. Morning time was the busiest time (heaviest in volume), and therefore the most heavily staffed period.

Every morning, the news director and assignment editor decided in the words of one of them: "what their futures look like for the day." In other words, they sorted through potential story ideas and set up a tentative schedule of operations. Normal sources of news stories included the following:

1) reporters on regular beats,
2) press releases,
3) reporter's "scooping out" a story,
4) fire and police department dispatches,

5) accounts in other media such as newspapers,
6) wire services, and
7) suggestions from listeners.

The assignment editor assigned specific stories, taking into account the source, the staff personnel available, and the interest and expertise of available reporters. As previously noted, under usual circumstances, only one reporter was assigned per story. The assignment editor and the assigned reporter decided the direction and form the story would take. The reporter was then responsible for gathering relevant information, being given relative discretion in decision making, depending upon the level of experience and situational factors in the field.

There were various methods of collecting information and transmitting stories to the home office. On "smaller" stories, the reporter generally taped the relevant information and returned to the office to type it. From there it went to the appropriate anchor person, who also had the option of editing the story or reading it verbatim. On "larger" stories, the reporter could choose to do a "voice rap" (a taped narration of the event), which was passed on to the anchor for broadcast. These narrations were "set" unless the assignment editor or anchor decided to rewrite the lead before air time. In the case of extraordinary news stories, live broadcasting became the norm. The reporter would call in and go straight on the air with the latest updated information.

The final broadcast decision was left to the individual anchor, who arranged the newscast with the assistance of the producers. The assignment editor and news director also had input in this phase of news production. Each story might be aired on several newscasts in different forms, with updating or rewriting being the responsibility of the assignment editor.

The criteria underlying the definition of news used by KAAA could be summed up in one word: information. As one respondent explained:

> News is the information people need to make
> decisions in their community...where to live,
> have fun, be safe.

There seemed to be consensus on the information-focus of news, and a general feeling that people in the profession implicitly understand news and "know it when they see it."

Emergency Time Operations.

On Thursday, August 19, 1983, Hurricane Alicia impacted the Texas coast at Galveston. KAAA had been planning for the impending storm since earlier in the week when the news of a tropical depression was received through a private weather service. The decision to

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begin coverage of the situation was that of the news director, who was criticized for his "hastiness" by some others in the local news industry.

The early stages of planning involved establishing the official language to be used for the emergency time period, decision making about format and schedules to be followed, and the activating of the KAAA "Emergency Communication System." Developed earlier in the year as a means for notifying audiences about business and industry cancellations and closings, this procedure was the only discernable evidence of previous disaster planning at the station.

The programming director, the programming coordinator, and the news director were the primary decision makers in the early planning stages. At this point, any structural differentiation between the programming and news departments became virtually nonexistent as members of both departments came together to plan strategies for the projected upcoming emergency. The news director became the central authority for coordinating the station's coverage of the hurricane, as total control of the radio station was given to the news department for the emergency time period.

As the storm moved toward the Texas coast, the station went to "hurricane status." A team was formed to gather information about the disaster and the regular broadcast format was replaced with live, continuous coverage. The hurricane coverage team was formed with input from all levels of the department. Reporters interested in "working the storm" made application to the news director, who made the final decision in conjunction with the assignment editor and the assistant editor. Reporters were assigned on the basis of seniority, previous experience in covering disasters, and professional considerations ("the person who is going to do the best job in that situation).

Twenty four hours before Alicia hit the coast, KAAA had suspended all regular programming for continuous coverage of the storm. All talk shows, news features, as well as advertising were suspended for live broadcasting. Work schedules were set aside and members of the news team were called in for an indefinite, extended period of time. Sixteen of the 24 full time employees in the newsroom were mobilized for covering the story of the hurricane. Approximately 85 percent of the entire work force of the station was active throughout the emergency time period. The majority of this "storm team" was drawn from the programming, production , and news section.

Broadcasting the news basically became a two stage process, involving a very small, centralized coordinating group. In the first stage, a network to gather information was established throughout the nearby southern coast of Texas, by the strategic positioning of news reporters in the area. Each reporter was assigned a telephone number and an approximate "call in" time.

Other sources tapped for storm related information included official organizations such as civil defense agencies, public utilities (i.e., telephone, water and gas companies), and the National Weather Service.

The second stage of the process involved the transmission of news to audiences. This team was coordinated by a four-five person team consisting of the assignment editor, programming coordinator, the technical producer, and two anchors. The programming coordinator, in particular, became a pivotal figure in orchestrating the activities of the news production team.

Dependence on the telephone for the majority of information was exacerbated by the loss of electrical power in many places at the height of the hurricane. Emergency generators were used to produce the minimal energy necessary for broadcasting. Telephone messages overload became a serious problem, as more and more citizens began contacting local radio stations for immediate information and assistance. The KAAA station was primarily interested in the information they were getting through private "hot" lines to the local civil defense agency and other official sources. However, the phone calls from citizens were used to enhance the flow of information. One staff member noted that:

> Later when the storm got closer, we were
> taking information from anywhere...not too
> many people are going to be making prank phone
> calls in a hurricane.

The definition of what constituted news in the emergency time period became more localized and targeted. Specific details increased in importance as people's lives and property were seen as depending on the flow of protection oriented information. The number of staff personnel needed to gather the news increased, as did information selectivity. For example, KAAA reported very little about a three alarm fire which occurred at the height of the hurricane as its staff struggled to cover the numerous direct and indirect effects of the hurricane.

Stories which KAAA was specifically interested in covering included anything which provided information about the progress and movement of Alicia, the destruction wrought by the hurricane, and human interest angles which lent "color" to the hard news. Any news story unrelated to the effects of Alicia on the coastal area was eliminated from coverage or broadcast. Even the national radio news network reports were dropped if they interfered with live coverage or more immediate, hurricane related information, although this happened only three or four times.

The general feeling about withholding any information from the audience is best summarized by a respondent's observation that it is important:

to downplay tragedy because people are already
nervous and panicked...there is no room for
even the hint of panic.

Although no one advocated direct suppression of any available news
items, a prevalent attitude was one of concern how the audience
might react to particular stories or news items. Strategies for
handling potentially harmful information included rephrasing or
downplaying the intensity of the message, and a time delay in
releasing certain news items.

Comparison of Everyday and Emergency Time Coverage.

The most pronounced change at KAAA during the emergency time
broadcast period was in its structural composition. For example,
although formally the programming and news departments had
independent existences, they were actually interrelated subsystems
of a larger information processing system. During the time of the
disaster, any nominal boundary between the departments was
discarded. As one key official in the organization explained:

> When we go into live coverage...we really
> break down barriers between all
> departments...on a temporary basis.

Other structural changes which occurred included the expansion of
the time committed to broadcasting news stories. From a normal 33%
of time given to news, during the time the hurricane was present in
the area, the news coverage was often close to 100%. During the
emergency time period the broadcasting of anything unrelated to the
immediate disastrous occasion, was automatically suspended,
including advertising. The station went over to continual, live
coverage of the disaster. The number of staff personnel on duty
increased. Over 84% of the total newsroom staff members took part
in covering the hurricane.

Concurrent with the unilateral focus on the hurricane, in the
emergency the division of labor in the station became more obscure.
Practically everyone became involved in all phases of news
processing and production. Reporters served as news gathers and
announcers, often working directly from field locations.
Programming personnel generated information by contacting relevant
local community organizations, as well as coordinating live news
production. Anchor persons not only conversed with the co-anchor
and audience members, but also interviewed those providing updated
information on the air. Multiple role responsibilities became the
norm for almost all members of the radio station organization. As
one respondent described it:

> Engineers were cleaning out toilets, managers
> were going for food...everyone [was] doing
> what needed to be done.

Perhaps the lack of an organizational work schedule was the most noticeable change in structure which occurred. The usual shifts were eliminated as staff personnel worked around the clock, resting and eating in an intermittent fashion. The most frequently mentioned problem was the lack of rest and an urgent need for other personnel to provide relief during the height of the storm. A telling example of the lack of replacement personnel can be found in the case of the programming coordinator, who was a central decision making during the crisis occasion. Due to the large number of staff members dispatched to the field and the general unavailability of "extra hands", this person worked without relief for over 36 hours. In a candid self-evaluation during our interview with him, he admitted that the quality of the news broadcast was jeopardized by the lack of any logistic planning for relief personnel.

News processing during the emergency time period became less complex, involving fewer stages between the collecting of information to final broadcasting. For example, during normal times there are a multitude of news story sources, while during the disaster the news sources were reduced to officials messages, reported-generated information, and input from audience members. Also, decision making about the news worthiness of a story lost relevance since any storm related information automatically qualified for broadcast.

The key to news processing during a crisis occasion such as Hurricane Alicia can perhaps be summed up in the KAAA catch phrase at that time, namely, "Think Live." This necessarily entailed simplification in the processing of information for audience use. A reporter called in a story and was patched through to broadcast live over the air. A programmer contacted the representative of an official emergency agency (e.g., the Civil Defense Director), and requested a live interview. A private citizen called in information about serious neighborhood flooding, and this was presented by the anchor as the report of hazardous conditions in certain localities. There was no rewriting, editing, or prearranged study schedule.

In a sense, the decision making process becomes more segmented during an emergency occasion such as a disaster. In the station we studied in depth, the news director and assignment editor were primarily responsible for deployment of staff personnel in the targeted area. Individual reporter discretion increased as the situation dictated greater autonomy and flexibility in the field. Programming personnel became responsible for providing the hard news (the official version of the disaster). The final decision concerning what was broadcast was left to the programming coordinator and technical producer.

While the definition of news was based on the same criteria used in normal time periods (i.e., news remains the information citizens

need to make decisions within their community), the definition became more focused and specific, as it was primarily concerned with the effects of the disaster on community life. As one respondent observed:

> We put a very high premium...in a disaster situation...on things that some people say are not news...we are covering the obvious things--civil defense, weather--but we are also trying to tell you what to do about house, pets, preparing plants, yourself...and we will give that as much prominence during that time.

The decisions the community members must make are seen by mass communication personnel as potentially a life and death matter. Therefore, the information broadcast became much more than the conventional news of normal time periods; it was a necessity for protection and perhaps even survival.

The Tulsa Radio Station

Everyday Operations.

KAAT (a pseudonym), an affiliate of one of the major national networks, was basically a talk/news radio station. Under normal conditions, it broadcasts 24 hours a day except for Saturday night when it signs off at 1:00 a.m., so that maintenance work can be done on the transmitter. It transmits at twice the power during the day than it does at night.

While about 30 musical records are played on an average day, far more emphasis was placed on talk programs, especially those which encouraged listeners to call in. Thus, the station tended to have much contact on a daily basis with its audience. This was particularly true of the programming which runs from 6:00 p.m. to 4:30 a.m.

During weekday morning and afternoon rush hour "drive times" there were five to six newscasts per hour which range from 30 seconds to three minutes. This was supplemented by both traffic and weather report updates, as well as five minutes of national network news on the hour. In addition, there was a full half hour of news broadcast at noon and at 6:00 p.m.

No more than 18 minutes per hour would be devoted to advertising. However, at the time of our study, only about 15 minutes of an average hour consisted of commercials. Almost all such announcements were booked three weeks in advance.

Structurally, the organization was divided into four major divisions. They all fell under the authority of a general manager. The employees of the division were divided as follows:

Sales- 11;
       Engineering- 2;
       Programming- 18; and
       Administration- 6, for a total work force of 37.

The station's news component was included within the programming
unit.   In total, six, or one third of the 18 employees were
directly involved in news gathering, processing and dissemination.
Five of these staff members, including the news director who
reported to the operation manager, held full time positions, with
a high school senior working part time on the weekend.

The responsibilities of these individuals varied somewhat.   Two
full time staff members worked exclusively in the field covering
stories.   The three remaining full time employees served
concurrently as both anchors and field reporters.   The news
director fell within the latter category.   The part timer's
activities were restricted to "working the board,", that is, acting
as an anchor person.   In addition, full time staff members were
responsible for editing their own reports and, when working with
anchors, were responsible for determining whether or not a
particular story would be aired.   Thus, these persons performed a
programming function also.

Among news personnel, work shifts varied due in part to the fact
that some of the staff members were on-the-air at different times
throughout the day.   Furthermore, it was also necessary for each
anchorperson to work as a producer while another newsperson was on
the air.   Staff members were available from 5:00 a.m. until 6:00
p.m.; however, staffing was heaviest at the station between 10:00
a.m. and 6:00 p.m.

The news team was only scheduled to work during the day, except for
the part time anchor on Saturday evenings.   However, if an
important story broke in the evening or late at night, the news
director usually sent a staff person to cover it.   This had
happened a few times.

The news department did not utilize stringers as such, but did have
an agreement with another station in Oklahoma City to cover stories
for one another in their respective communities.   In addition, the
station had a contract with a pilot who had both a plane and a
helicopter available.   This individual provided traffic reports for
both morning and afternoon rush hour traffic, and was also useable
for work during emergencies.

The sources of information tapped by news personnel included a UPI
wire service with an audio line and a hook-up with **NWS** whose
messages were transmitted through both teletype and an audio line.
In addition, the meteorologist from one of the television stations
also did the weather reports for the station and notified the
newsroom in the event of severe weather emergencies.

Ordinarily, the news director with the aid of the news editor, decided what stories should be covered. However, the suggestions of reporters were encouraged and often followed. After the choices had been made, a daily assignment sheet was drawn up. Assignments were arranged so that they do not conflict with the reporter's schedule and were typically consistent with each person's experience. For example, the same individual usually handled stories pertaining to the police. The news editor was responsible for completing the assignment sheet, although the news director might be asked to help. The news director also had the prerogative of assigning a certain person to a particular story.

Each morning, the reporters came in, checked the sheet and then proceeded to the field or prepared for going on-the-air. Only one reporter generally was assigned to a story, although this could change if the story demanded additional staff personnel. Reporters were accorded a wide range of discretion in the field and were expected to make their own decisions. However, it was notable that almost all of these reporters were "seasoned veterans." After a reporter had acquired the information needed for a story, a script was written and edited. Quite often, this was done in the press room at City Hall. Once the story was written, reporters usually phoned it in to the station. This information was taped and then transferred to a cartridge for use on the air. The anchorperson then decided if and when the story would be used. However, in a situation which was outside the normal journalistic guidelines, the news director had the responsbility for the final determination of its use.

Emergency Time Operations.

On Saturday afternoon, at about 5:00 p.m., the television station's meteorologist informed the radio station that there might be a severe thunderstorm later that evening. It was believed that, at worst, hail and high winds reaching 40-50 miles per hour might be experienced in some local areas. The decision was made to maintain regular programming at KAAT since the part time newsperson was working as anchorperson that might, and could make periodic updating on weather conditions on the scheduled programming if warranted by the developing situation. At approximately, 8:00 p.m. that evening, the NWS issued a severe thunderstorm warning. The station was informed of this fact by both the NWS audio line and the meteorologist at the television station. The part time anchorperson immediately put the warning on-the-air, and called the news director who then promptly returned to the office. In the meantime, the anchor contacted other staff members by phone or page and told them to report to the newsroom.

Since a recently revised disaster plan outlining who to call and what to do had been discussed with each staff member, the person on duty knew what action should be taken. As one respondent noted:

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> We found out in our first tornado that you
> can't wait until it hits and then figure out
> what you're going to do. It needs be very
> structured so everybody will respond
> automatically.

Regular programming was dropped and the radio station began its continuous coverage of the storm.

In addition to the information provided by both the NWS and the television station meteorologist, a mobile unit was to sent to phone in live reports in order to determine which parts of the city had been most severely affected by the storm. Listeners were also encouraged to call in for the purpose of locating which local areas had been hardest hit.

This storm passed through in less than an hour. Although it had rained heavily, no flooding had occurred. Since no additional weather warnings were issued, continuous coverage was wrapped up at about 9:30 or 10:00 p.m. Regular programming was resumed, and the news team went home, leaving the part time newsperson to staff the operation.

Later, at approximately 12:15 a.m., another severe weather warning came over the line and was immediately broadcast over the air. The same staff mobilization procedure undertaken earlier was initiated again, with everyone being told to report to KAAT at once. However, this time the widespread flooding soon became a problem and prevented two staff members from getting to the station until a few hours later.

Once again, regular programming was interrupted and the station began continuous coverage of this later storm situation. Instead of signing off at 1:00 a.m. as was the usual practice on routine Saturday nights, the station continued to broadcast throughout the night.

Since the news director was one of the first staff members to get back to the radio station, he took over the control room until one of the anchorperson arrived. Then, the news director assigned that individual to the control board for the rest of the night. These two staff members are used to working together; one produces the other's show.

As staff members reported in to the station, the news director assigned them to various tasks. Each persons was given something to do that was similar to what they normally did. For example, reporters called various organizations to find out what they were doing in responding to the emergency occasion. However, during the impact time, when the rainfall was massive, no reporters went into the field since it was learned very early that the flooding had made many roads impassable. This was initially discovered when the

news director took the station's four wheel drive van for the purposes of checking the extent of the flooding in the city. Before he had driven too far, the high waters he encountered started to stall the van's engines, forcing his return to the station. Since no field work could be done at this stage of the emergency, the staff at the station was not shorthanded despite the absence of two news persons.

With the exception of the five minutes of national network news which continued to be broadcast on the hour, all of the remainder of the station's programming focused exclusively on the flash flooding. Listeners were urged to call the station and report the conditions in their neighborhoods. For this reason, as one staff member said, programming took the form of an "elongated talk show." As another respondent stated, the audience:

> can serve as a warning system in and of itself.

Even though the authenticity of reports phoned in by audience members might seem suspect, staff members of KAAT claimed that almost all such calls were accurate. These feelings were summed up by one who said:

> Listeners are an important thing...I was a little leery of just taking listener calls on the air and using them as substantiated. As we went through the two tornado things thought it was very informative...They were very honest with it...They were very accurate.

Although about 75% of listener calls contributed information about the flooding, some persons phoned in to request assistance because they were stranded, injured, or in some type of trouble. While the police did monitor the station's broadcast, many of these people could not be quickly reached because most roads were impassable. The anchorperson tried to help these individuals by offering them such advice as:

> get on top of the kitchen table.

Despite the many calls, staff personnel had no difficulty in getting an outside phone line since the radio station has four unlisted numbers. In addition, two other hot lines were at their disposal. The calls from audience members came through five lines normally used for this purpose. Although some callers may have been placed on hold for a while, the lines were not jammed with calls and the anchorpersons had no difficulty handling the volume. (None of the telephone lines at the radio station were at any time ever disrupted by the flooding, nor was there ever any need to use the auxiliary gas generators).

In addition to the information which audience members contributed, other sources of information were tapped. Initially, reporters contacted the Emergency Operations Center (EOC) by telephone; later, when roads could be traveled, a staff person was sent there for the duration of the disaster emergency. Additionally, periodic updates were acquired from the EOC, and the mayor was also interviewed on a regular basis. Current weather information was frequently obtained from the meteorologist at the television station. In fact, since both television meteorologists were on duty, one person worked specifically on weather updates for the radio station.

Continuous coverage of the emergency occasion was maintained until 5:30 a.m., Sunday. At that time, the station started to move back into more regular programming, but periodic updating reports were provided until 10:30 a.m. At that time, the regular programming schedule was resumed. Staff members who had been mobilized for the emergency period started to leave and by 10:00 a.m., all personnel, other than those normally assigned to work at this time, had gone home.

During the height of the emergency, KAAT sought information on the extent of damage suffered, e.g., how many people were killed and injured, as well as what neighborhoods were affected. Once the heavy rain had ceased, an effort was made to identify potential traffic problems as a result of streets being flooded. Beginning Sunday morning, interviews were conducted with governmental officials in order to inform residents where they might go for assistance. Interviews with disaster victims were also aired. On Monday, the emphasis was on "people sharing." Announcements were made about physicians giving free tetanus shots. Mechanics went on the air to explain how people might salvage their flooded cars. Business which still had subpumps were mentioned, and the needs of the local Red Cross were listed. As one staff member interviewed stated:

> We know people want to help each other out,
> and we can be the vehicle for putting them
> together. that's what we're kind of here for
> now.

At no time throughout the emergency period was information withheld because of any concern that it might have a detrimental effect on audience members or the community. However, the radio station personnel we interviewed stressed the importance of staff members maintaining "emotional control" in a crisis occasion such as the flood disaster. One respondent noted that:

> It's important not to sound like the voice of
> doom even if it is. If you're telling people
> that this is a very life threatening flood,
> you have to be calm. Because if you sound

alarmed and excited, people will panic
somewhat.

Comparison of Everyday and Emergency Time Coverage.

From a comparative perspective, the structure and functions of this
news organization were not drastically changed during the disaster.
The exigencies of the flood occasion necessitated some adjustments
and modifications in operations. However, almost all the
alterations during the emergency time period were extensions of
normative expectations for everyday operations.

As the programming format indicates, **KAAT** is an information
oriented station. Consequently, there was no ambivalence regarding
whether or not continuous news coverage of the storm should
commence, once word about the emergency was received. That such a
procedure was in line with standard operations at this station was
evidenced by the fact that regular programming had been interrupted
earlier in the evening, even though a "disaster" was not
anticipated. The priority given to this kind of coverage is
perhaps more readily understood when it is recognized that live
coverage of the Tulsa Outlaws football game was dropped at 8:00
p.m. when the severe weather warning was issued. This action, to
cut off a popular sports program, angered many listeners who voiced
their displeasure through telephone calls to the station. However,
the staff did not feel hat this programming change was an abrupt
departure from normal practices but, rather, viewed their action as
being consistent with existing policy which was to offer their
audience up-to-date, complete and accurate information on both news
and weather as information becomes available.

In order to maintain this policy, it was necessary for many staff
members to be mobilized despite the fact that they were not
scheduled to work at the time of the emergency. However, those who
were called in to the station were news personnel, the persons who
normally cover such occasions. Although the constraints and
demands inherent within this disaster situation may have affected
the way in which a job was done, each staff member was given work
tasks which were quite similar to those instances in which multiple
responsibilities were assigned. Those members who were expected to
complete these various tasks were the same individuals who would
normally be involved in several activities of the station during a
typical day.

It is also interesting to observe that prior work role
relationships remained intact throughout the emergency period. The
news director was clearly the person in charge. In fact, it
appears as thought the disaster occasion itself reinforced this
recognition. Since each staff member was basically covering the
same story, it was necessary to coordinate efforts instead of
letting each person "do their own thing". Consequently, the news
director had to assign station workers to specific stories in

contrast to the rather anonymous daily assignment sheet. Such an overt action emphasized the lines of authority existing within this department. Centralization of control was also strengthened by the fact that the news director was the first person to get to the office. Thus, he was the individual that others needed to contact in order to find out what was happening.

Given the nature of the disaster occasion, the coverage could not be specifically preplanned; rather the story followed the development of the situation. In order to do this best, the station went "live." This act, in and of itself, was not indicative of a radical departure from normal operations. Much of the programming of this station was conducted in this vein. Even so, live coverage created a different set of conditions which affected news processing procedures. In an effort to keep the audience abreast of the current state-of-affairs, reports were broadcast as they were received. No time was given for rewriting and editing stories. This live coverage, then, did not offer the news director the opportunity to evaluate the newsworthiness of a story. This was particularly true with respect to the telephone calls received from listeners. Such contributions of disaster relevant information were put on-the-air without seeking further substantiation, a practice not followed during normal situations.

In addison, some of the effects of the disaster itself imposed certain limitations on information gathering. Access to some official sources was difficult given that certain of them were heavily involved in responding to the disaster. Also, the flooding prevented reporters from getting into the field for several hours, thereby physically isolating them the EOC.

Yet, despite these contextual differences, news processing was conducted in a manner which was basically similar to the one which characterizes normal, everyday operations. Reporters contacted local authorities for information; weather conditions were monitored and updated; and government officials, eyewitness, and direct victims were interviewed.

The very immediacy of the danger and destruction which this disastrous occasion posed led to an intensification of activities as a result of a narrowing of focus of attention. Every staff member was working on the same story. In addition, the time devoted to news broadcasting was significantly expanded. However, these acts were a response to the traditionally perceived purpose and responsibility of the organization, that is, keeping citizens and the community informed as completely and accurately as possible.

We can generally conclude that the organization and operation of KAAT did not undergo a radical transformation during the disaster. Situationally, specific limitations and demands were placed upon the information gathering and news dissemination process. Yet the

modifications which were instituted in order to adjust to this occasion did not significantly alter the structure and activities of this radio station. As such, this comparison of normal and emergency time periods points to continuity in both the form and function of this mass communication organization.

A Comparison of the Houston and Tulsa
Radio Stations Operations

Although the degree of change in structure, decision making, and news processing was greater in Houston, both of these radio stations as a result of the impact of the disasters underwent alterations in their normal organizational patterns. The normal, day-to-day structure and procedure of producing news were not considered to be appropriate for covering these unexpected, major stories. Therefore, in both communities, the entire everyday programming schedules and advertising were scuttled and all air time was devoted to covering the disaster occasion. In both radio stations, the normal work shifts and staffing were altered to ready resources for coverage of the emergency situation. Furthermore, traditional sources of news were still utilized by both stations and certainly support the notion of a "command post view" of what was happening in the disaster.

However, we also noted that both mass communication organizations relied more heavily upon the audience as a source of information during the disaster than they normally do. The expansion in time devoted to news resulted in an expansion of the "news net," i.e., any source that could provide needed information was utilized (Tuchman, 1978). Therefore, in both stations the gatekeeping process was altered. In effect, it was shortened or truncated. Information was broadcast without undergoing the usual editing and, in some cases, verifying procedures. These observations generally support the work of other researchers who have studied radio stations during disasters (e.g., Waxman, 1973; Adams, 1974; Quarantelli, 1981; Friedman, 1987).

Certainly the organizational alterations were less extreme in Tulsa. Of course, the occasion was also of a lesser magnitude. It did not stretch out over a number of days, and the station was able to return to normal programming within about ten hours after the flood. This may indicate that when the levels of stress and demands being made upon the organization are not overly severe, the "normalization principle" becomes operative, that is, groups first attempt to respond to disaster by utilizing their normal, day-to-day structure and activities (Quarantelli and Dynes, 1978). But even in Tulsa, some modifications could be observed to have taken place. However, when the demands become more quantitatively and/or qualitatively intensive as was the case in Galveston and Houston, the traditional, everyday structure is no longer effective, and alterations in operations are required.

As an electronic media, radio has the ability for immediacy of coverage. At a time of disaster, it can disseminate information more readily than can television, and particularly newspapers. This technological ability may also be a factor in influencing the alterations we observed in our study. The pressures for immediate coverage of an unexpected and sudden occasion that creates a drastically altered environment, necessitates altering a news organization that is geared to covering expected and known events through its normal beat arrangements and definitions of news (see Friedman, 1987: 112-115).

We now turn to presenting the case studies of the other major electronic media, that is television. In part, we want to see to what extent its response in disasters is similar to that of radio.

The Houston Television Station

Everyday Operations.

KBBB-TV (a pseudonym), a national network affiliate, was one of seven local television station serving the greater Houston area. Ranked second in audience popularity, the station was the only one in the city to possess its own weather-radar system. In the local mass communication system, furthermore, it had the reputation as being the most reliable in terms of weather related reports.

The news staff at the station consisted of approximately 70 full time employees out of a total staff count of 185. In addition to these full time workers, the news department employed 15 to 20 part time "news interns,", most of whom were college students from a nearby university.

The authority structure of the news section was somewhat centralized. According to the formal table of organization, he news director and managing editor had the most decision making authority. However, according to what our study learned through interviews, input into the decision making process was informally encouraged at all levels.

During a typical week, KBBB normally was on the air 20.5 hours per day, beginning with a syndicated news show at 5:30 a.m. and ending with a local news update at 2:00 a.m. The weekend broadcasting time given over to the same content was somewhat less, averaging 19.5 hours on Saturday and 18 hours on Sunday. The total amount of time devoted to local "live" news broadcasting was two and three quarter hours per day during the week and two hours per day on weekends.

Most of the local news broadcasts at KBBB were presented in 30 minute segments (with the exception of brief news updates). A typical news segment consisted of the following: 12 minutes of "hard" or informative news; three minutes of weather related

information; three minutes of sports news; four minutes of "feature" or human interest stories; and eight minutes of advertising.

The staff reporters at KBBB worked on a modified "beat" system, with individuals specializing in certain topical areas such as business and economics, government and politics, and sports and entertainment. These staff members were generally given a significant degree of discretion in their work. However, they were expected to clear their decisions through the news director's office before acting upon them.

Under normal or everyday circumstances, reporters were assigned to various stories on the basis of decisions reached by a station planning committee, consisting of the news director, the managing editor, the assignment editor and various news producers. In addition, all reporters and photographers on the news staff were encouraged, but not required, to attend. This group met each morning to discuss the manner in which news events occurring throughout the city should be covered. Although it was claimed that all decisions reached during meetings were collective in nature, the news director and assignment editor had veto power over all proposals.

After a particular story was approved by the planning committee, a news crew (consisting of one reporter and one photographer) was assigned to cover it. The selection of the particular staff members of the crew was grounded in the aforementioned "beat" assignment utilized at the station. While in the field, the reporter had authority over the photographer for making on-the-spot decisions. In the case that the reporter decided to cover the story in a manner significantly different from that which was decided upon by the planning group, it was expected that the news director's office would be contacted in order to obtain a new approval from the management of the station.

After the news crew returns to the station, the reporter was expected to write, edit, and record the substantive narrative of the report, while the photographer was responsible for editing the visual aspects of the story. Once this was completed, the entire news package was given to a news producer for review and grammatical editing. In the event that the producer found it necessary to make changes in the script, the story was given back to the reporter for rewriting.

The work schedule at the station was divided into three overlapping shifts. The morning one began at 9:00 a.m. and lasted until 6:00 p.m. Approximately 25 staff members were scheduled to work during this time period. The afternoon shift, for which 10-15 workers were scheduled, spanned from 1:30 to 10:30 p.m. The overnight shift was filled by four individuals who were expected to work between 9:30 p.m. and 6:00 a.m. The time period between these

major shifts (spanning from 6:00 to 9:00 am) was handled by two engineers who were responsible for broadcasting prerecorded tapes and network material.

Emergency Time Operations.

The initial move toward the implementation of disaster operations at the station was the distribution of a staff memo which delineated the preparations to be made for news coverage of the storm. This memo was written and distributed on August 15, 1983 by the station's Director of Special Projects, a person who had a great deal of experience reporting on disasters in general and hurricanes in particular. It is interesting to note, as far as our study was able to find out, that no one had given this individual the authority for developing and distributing the procedures detailed in the memo. He made this decision on this own in light of incoming reports from the station's weather radar system as well as from the NWS. They were reporting the formation of a tropical storm located 135 miles offshore in the Gulf of Mexico.

Subsequent to the circulation of the memo, the news director assigned responsibility for the overall coordination of the station's disaster operations to the Director of Special Projects. He was also conferred the title of "Hurricane Coordinator."

On the evening of August 15, the news director scheduled a staff wide meeting for the purpose of discussing the manner in which the newsroom would cover the storm. At this time, the Hurricane Coordinator assigned teams of one reporter, one photographer, and one engineer to each of six different news teams or crews. The "central base" crew was dispatched to the NWS office in Galveston, while the "extreme southwest" team was sent to the Corpus Christi area. The "easterly" crew was given instructions to proceed to Beaumont in order to cover the flooding which was expected to occur on the "dirty side" of the hurricane. An "odyssey" crew was established to cover news on any evacuation occurring in the area between Corpus Christi and Galveston. This team was expected to shuttle back and forth between there two localities and to report in a comprehensive manner on any evacuation which might occur. A hurricane tracking crew was sent to Biloxi, Mississippi with instructions to board the plane used by the NWS for tracking the development of tropical storms and hurricanes. Finally, a team was assigned to cover aspects of subsidence and flooding in the Houston-Galveston area, and was told to maintain continuous contact with civil defense officials in each of these communities.

All of the crews went to their assigned positions the following day. Individuals comprising the teams were instructed to pack clothing and supplies for a minimum of three days, and to be prepared to work around the clock if necessary. In addition, they were directed to report for further instructions on an hourly basis, if possible, to the Hurricane Coordinator's desk at the

television station.

During the day of August 16, additional crews were mobilized for the field. In fact, by that evening, all 20 reporters of the news staff were either in the field or actively preparing for field reporting. Most, if not all, of these reporters were either sent to the Galveston area or instructed to remain in Houston to report on the city's efforts to prepare for the storm.

Later that evening, the news director met with the station manager to propose broadcasting hurricane news updates throughout the night. At this time, Hurricane Alicia was about 110 miles southeast of Galveston and moving at a speed of five miles per hour, in a west-northwesterly direction. Furthermore, the NWS had estimated that the storm had a 35-40% probability of impacting Galveston Island. Upon hearing this report, the station manager held a brief conference with the general manager where it was decided that, since the storm was not expected to make landfall until 3:00 to 6:00 a/m. on Thursday, August 17, it would not be necessary to stay on-the-air through Tuesday night. However, they did agree that it would be appropriate to telecast around the clock on Wednesday, the following day.

By Wednesday morning, August 17, the station had moved into full scale disaster operations. Regular network programming was preempted throughout the day to allow for news updates on the status of the storm. By that evening, updated storm information was being telecast at half hour intervals, with each update lasting from 10 to 30 minutes. The station continued to telecast this information throughout the entire night using live reports form the Galveston crew. All previously established work schedules were set aside, in that the management of KBBB requested that all available personnel work continuously to assure that news about the storm would reach citizens in the area.

Field workers were generally overwhelmed by their work loads during the immediate pre and postimpact periods. In fact, one reporter commented that most of her peers were:

> in the dark about what was actually going on
> with the storm.

It appeared that reporters in the field only had very limited knowledge concerning when the hurricane would reach landfall, how destructive it would be, and what precautionary and protective measures were being undertaken by many emergency organizations. This was primarily due to a general lack of communication between field workers and personnel at the station regarding major questions about the storm. Although reporters were expected to phone or radio the home office on an hourly basis, these contacts were made for the purposes of delivering information to the station rather than acquiring information on the status of events. As one

reporter stated:

> I simply forgot to inquire about the storm
> when I called in. What was important to me in
> the field was what was going on in front of my
> face.   I was amazed at the number of media
> people in the field who didn't know the
> central issues.

As Hurricane Alicia moved northwest toward Houston, field crews
stationed in the metropolitan area were instructed to cover news
stories related to damage and destruction in the city.   No
additional teams were mobilized from the various localities on the
coast to assist in gathering this information. In fact, all crews
were directed:

> stay put in their areas and cover stories
> related to damage and clean-up.

It was during this time period that the Galveston team began to
move from a straight "live" coverage format to a phone-in reporting
scheme. That is, rather than filming and microwaving news stories
back to the station, the Galveston crew was telephoning news
anchorpersons and going directly on-the-air with reports of storm
damage.

Throughout the duration of the disaster, KBBB was primarily
interested in providing informative or hard news about the
occasion.   However, station personnel felt it important to weave
lighter material into all reports about the storm.   The news
director estimated that each report on the hurricane was composed
of approximately 90% hard news and ten percent "lighter material."
As he commented:

> We felt it important to do this because people
> can't be battered about the head with hard,
> unhealthy items.   We have to leave, in any
> newscast, a certain amount of time for lighter
> items.

Although the hurricane story was the central focus in all of KBBB's
telecasts throughout the 24 hours preceding impact, as well as the
36 hours following it, it is important to note that the station did
not preempt any network news shows for purposes of telecasting
hurricane related news items.

Comparison of Everyday and Emergency Time Coverage.

The most pronounced change that occurred at KBBB during the
emergency time period involved the structural components of the
organization. As previously noted, authority for coordination of
hurricane news coverage was vested in the Director of Special

Projects rather than the news director. This was primarily due to the Director's past experience in reporting on disasters. However, another reason for this change in the authority structure involved the perceived need to free the news director from excessive logistical decision making so that he would be available for strategical decision making purposes. Other structural changes included the setting aside of normal organizational work schedules, the preemption of local regular programming, the intensive use of "live" news reports from the area, and the 24 hour telecast schedule adopted on Wednesday, August 17. Therefore, at one level, there was major structural alterations in the face of the disaster occasion.

It is of interest, however, that the situation on the scene was perceived in a somewhat different way. In fact, all the respondents we interviewed from KBBB stated that there was very little "real" change in station operations during the disaster. Most of the modifications and alterations that did occur were perceived by our respondents as an enhancement of normative operations rather than the emergence of new tasks and responsibilities. Perhaps one explanation for this perspective from within KBBB lies in the relatively loosely coupled work environment with respect to job responsibilities at the station. As stated earlier, employees at this mass communication organization normally have multiple role responsibilities, and there is a lack of structural definition in the station's division of labor.

There were also a number of functional changes, although their significance is difficult to assess. For instance, as in most organizations during disasters, decision making authority became more decentralized at the station during the emergency time period. Reporters in the field were permitted a greater degree of freedom with respect to news coverage. They were instructed to simply: "do the best job they could" in the event that they were unable to contact the home office for approval on their decisions. Similarly, back at the Houston station, the news interns, who normally run errands, answer the phones, and type news copies, were permitted to rewrite news stories for update material.

Although these changes do represent some departure from day-to-day operations, most we found in doing our research, had previously occurred in the past outside of any disaster context or environment. For example, news interns had rewritten stories for updated news reports in the past when the station was short handed, and reporters had made their own decisions in the field when they were unable to contact the home office. Therefore, many of the more important functional changes which occurred at KBBB during Hurricane Alicia had precedence in a non-disaster context. However, it is unclear from the data we gathered whether or not the functional alterations during this occasion resulted from following these prior precedents or were generated afresh by this particular

disaster.

Our data also indicate that the gatekeeping process became less complex than in the normal time period. Intensive reliance on live coverage and phone-in reporting from the field resulted in a reduction of processual actions on the part of the technical and editorial staff members of the station. For instance, in the normal context, a reporter brings a story back to the station where it is written, edited, and recorded. From there it goes to the technical staff where it is refined through audio and video processing. However, during the hurricane, this step was omitted in the process of preparing the news for telecasting. In short, the responsibility for processing the news during the disaster rested largely with the station's field crews.

With respect to problems encountered by the news staff in reporting on the hurricane, the most notable difficulty reported was the lack of factual information available to field reporters. As previously noted, this was partly due to the unidirectional flow of information about the occasion between the field reporters and employees at the home office. However, this problem was partially grounded in a general tendency on the part of organizational personnel at the times of disasters to adhere to normative expectations. Reporters normally make contact from the field to provide information to the television station rather than to acquire information from it. During Hurricane Alicia, this same behavioral pattern persisted.

Of course it should be noted that a lack of good information about what is happening plagues all organizations at the height of a disaster. It is very difficult to find out what is occurring, what casualties and damages there have been, and what needs most attention in the emergency response. In this respect, the local television station in Houston was not different. However, it did have more capability to learn more of what was going on because of the six crews that had been earlier dispatched to different localities in the Houston metropolitan area. But the teams, for the reasons indicated, did not provide as much feedback to the station as potentially they could have.

Finally, in terms of the problems encountered, KBBB was affected by the massive telephone and electrical power outages which were widely experienced during the disaster. However, such technical aspects of communication were not cited as problematical by the KBBB's news staff members we interviewed. Perhaps this was because of the alternative technical equipment available to field crews for communication purposes (such as two-way radios, microwave equipment, communication vans, etc.). Perhaps the station personnel understated the problem because other difficulties were seen as relatively more important.

In general terms, by almost any criteria, less change

organizational change occurred in this television station compared to the changes which happened in the radio stations which we discussed in the previous section. Also, some of the changes which we observed were not unique in the history of this particular organization. From a perceptual viewpoint, also, members of the station somewhat understated or downplayed such modifications or alterations as had occurred. On the other hand, there were clear departures from everyday operations. There were some structural alterations, there were functional changes, and there were modifications in the everyday processing of news of this television station. Overall, then, we seem to have a situation where some changes simply represented extensions of normal normative expectations or historical precedents, and where other changes appear to have been marked and new departures from everyday operations.

The Tulsa Television Station

Everyday Operations.

KTTT (a pseudonym) was an affiliate of one of the major national television networks in the United States. According to an audience survey around the time of the disaster, it was the most watched television station in the Tulsa area. Also, it was carried by 65 cable television systems in the metropolitan area who had a total of 274,000 subscribers. KTTT also had a reputation in the local mass communication system for having timely and accurate weather related news.

From a structural viewpoint, KTTT was divided into eight major subcomponents: news, programming, production, community affairs, promotion, engineering, finance, and sales. The news department at the station was staffed with 37 full time employees. In addition to these full time workers, there were seven part time workers who supplemented the station's news staff.

During a normal week, KTTT was on the air 24 hours per day, which included a three hour network news show telecasted between 2:00 a.m. and 5:00 a.m. Inasmuch as this overnight news show was omitted from the station's programming log on Friday and Saturday nights, weekend telecasting time came to be only 21 hours per day. The total amount of time devoted to local "live" telecasting was two hours, ten minutes per day during the week and one hour per day on weekends.

Each day there were two 30 minute news shows telecast. A standardized format for these shows was as follows: 13 minutes of "hard" news, eight minutes of advertising, four minutes of weather information, three minutes of sports news, and two minutes of human interest stories. Typically, the amount of time allocated to each of these five categories was relatively stable. However, an exception existed with respect to the number of minutes devoted to

hard news and advertising. The station reserved the right to include up to eleven minutes of commercials in their 30 minute newscasts during their peak advertising periods (e.g., during national elections, sports events, etc.). In order to allocate this additional time to advertisements, time was deducted from the hard news category.

The 60 minute newscast (programmed from 5:00 to 6:00 p.m. on weekdays) was primarily formatted as a "double" 30 minute news show. Hence, the relative time allotted to each of the five categories was more or less the same for both the 30 minute and the 60 minute news shows.

The two five minute news spots, telecasted in the early morning hours of each weekday, were primarily devoted to hard news items, weather information, and reports on traffic. The amount of time allocated to these three categories varied according to weather and traffic conditions: hence, the format of these shows was rather flexible from day-to-day. However, each five minute newscast had to include a minimum of 63 seconds of advertising, and could contain up to 93 seconds of commercials.

It is interesting to note that while the staff members we interviewed at the station described their news coverage as "people oriented," "predominantly human interest," and "feature oriented," relatively little time was indicated in the human interest category in the newscast format schedule. This may be partially explained by their personal treatment of "hard" news items. KTTT reporters were expected to try to give a personal slant to their hard news stories. More specifically, they were taught to develop their news reports on the basis of the effect of each news items on the average citizen. Hence, rather than interviewing primarily officials and representatives from established institutions concerning a particular news story, KTTT reporters tended to focus the story on interviews with private citizens or representatives of special interest groups. While information was sought on the more "official" perspective or position, such information was most often used to provide background for the opinion of citizens of a "people oriented" perspective. Therefore, news items included in the "hard" news category would posses many of the characteristics more commonly attributed to feature of human interest news stories. This could account for the discrepancy between the type of news coverage that KTTT was purportedly interested in providing (i.e., people-oriented) and the amount of time allocated to the "human interest" category of their newscasts.

Under normal circumstances, the weekday work schedule was divided into three overlapping shifts. The early morning shift was staffed by two individuals who were scheduled from 6:00 a.m. to 2:30 p.m. These persons were primarily responsible for telecasting the two five minute news spots at 7:25 a.m. and at 8:25 a.m. The afternoon shift, by far the largest in terms of work load and personnel staff

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assignment, began at 9:00 a.m. and terminated at 6:00 p.m. This shift was normally staffed by about 25 employees who were responsible for preparing the 60 minute newscast scheduled from 5:00 to 6:00 p.m. The evening shift, for which eight-ten people were scheduled, spanned from 1:00 p.m. to 10:30 p.m. Personnel assigned to this time period were responsible for preparing and telecasting the 30 minute news segment beginning at 10:00 p.m.

In addition to these major work shifts, one newsroom employee was scheduled between the hours of 10:00 p.m. and 6:00 am. This individual, who was technically a news photographer, was responsible for responding to "breaking" news stories (i.e, those that develop unexpectedly). Specifically, he was expected to monitor police and fire department radio scanners for information on potential news items. In the event that a breaking news story was received, the staff member was to proceed to the location of the event and begin shooting video coverage of the more visual aspects of the occurrence. Although this person was not responsible for actually writing the narration which would accompany the video footage, he was expected to take detailed notes on the event, as well as to probe other on-the-scene individuals for information relevant to the story. Finally, prior to leaving the station, this overnight employee was expected to edit the video tape of the news items and to brief the early morning staff on the details of the happening. In this way, any story which broke overnight would have both video coverage and journalistic description for the 7:25 a.m. telecast.

The weekend work schedule differed radically from the weekday schedule described above. Specifically, it was much more compact in terms of the number of shifts, the number of employees assigned to each shift, and the amount of work involved in preparing the day's news telecasts. Due to the significant decrease in the amount of time allocated for weekend newscasts (a reduction of some 54% from that allocated during the week), only two shifts were needed for weekend operations. These shifts, which roughly corresponded to the weekday's afternoon and evening work periods, were usually staffed by no more than four-five people. These typically included one anchorperson/reporter, one producer, two-three photographers, and one reporter. As expressed by one respondent:

> Since we only do about half as much news
> broadcasting over the weekend, and weekends
> are pretty slow in regards to breaking news,
> we can get by on less than half of the staff.

For the most part, the authority structure of the news department was rather loosely defined. Although formally based on a hierarchical model of authority, a significant amount of discretionary decision making was exercised at nearly all levels. This might have been partially due to the news director's

philosophy regarding personnel management. Specifically, the news director reportedly ascribed to a team oriented approach and, consequently, had tried to introduce a model of participatory management to the **KTTT** newsroom. Input, initiative, and independence of action was encouraged at all levels.

While it was formally understood that the primary decision makers were the news director, the assignment editor, and the producers, the cope of operations over which these individuals typically exercised control was rather restricted. For instance, rather than taking responsibility for developing news ideas, assigning said news ideas to specific reporters, detailing necessary editorial changes, and formatting the resultant story into a final telecast program, these key decision makers expected the above activities to be initiated and carried out by their staff.

The news director preferred to view his role as similar to that of a <u>referee</u>. Although willing to acknowledge and advance his formal claim to authority (when necessary), he stated that he tended to perceive himself as a type of:

> mediator with the final say when things get too heated.

Given this type of managerial philosophy and authority structure, it was not surprising that the reporters at **KTTT** were highly involved in designing the form and content of their own work assignments. Working on a modified "beat" system, reporters were expected to be well informed of the events occurring in or having an effect upon their particular news area. Furthermore, **KTTT** reporters were expected to take an active role in the development of news ideas and story assignment. That is, they were expected to suggest, not simply accept, ideas for news stories on a daily basis. Involvement in this activity was apparently high among reporters, since they were rated by the majority of respondents we interviewed, as constituting the single best news source available to the television station.

On the basis of information and suggestions provided by reporters, the assignment editor was able to organize the news crews daily news gathering activities. Under normal circumstances, the assignment editor would arrive at the television station by 7:30 a.m to review reporter's input and obtain additional information from various news sources (e.g., wire services, personal calls to city governmental offices, etc.). At approximately 9:00 a.m. the assignment editor would officially distribute story assignments among the news crews (consisting of one reporter and one photographer). Typically, each crew was assigned two stories to cover and prepare for telecasting within their daily shifts.

At 11:00 a.m., the planning committee (consisting of the news director, assignment editor, and the producer of the 5:00 p.m. news

show) convened to "talk over the day." This largely entailed making decisions about changes, assigning priorities to the day's news stories, and discussing problems that could arise with respect to broadcasting the 5:00 p.m. news show. This meeting primarily benefitted the producer in that it enabled this individual to anticipate problems relevant to formatting the newscast (e.g., time lapses or overruns, incompatible news stories, etc.). Moreover, the meeting provided the official means by which centrality of leadership was passed from the assignment editor's desk to that of the producer. By 1:00 p.m., this exchange would have taken place with the key newsroom figure clearly being the producer.

Subsequent to the video editing, the reporter was assigned to the tasks of writing, editing, and recording the news narrative. Once this was accomplished, the complete news package was given to the producer for further processing. The producer typically reviewed the piece briefly, then passed it on to one of four destinations: back to a reporter for a preliminary rewrite, on to the editor for a minor grammatical edit, to the associate producer for further suggestions, or to the station's main anchorperson who also fulfilled the role of final rewrite person.

In the event that questions arose concerning the newsworthiness of a news item, the ultimate decision was made by the news director (after conferring with the producer, reporter, and photographer). However, his final decision was largely based upon what he termed "the reporter's intuition." Consequently, it was the opinion of the news reporter that was most influential in determining whether a story would be telecasted or discarded.

As is apparent from the above discussion, members of KTTT's news staff were characterized by a high degree of involvement in many of the activities constituting news processing. Not only did many staff members hold multiple role responsibilities extending across horizontal organizational lines, several also shared responsibilities which cut across vertical divisions as well. For example, the role of the field reporter in determining the fate of a story, and the daily drift of leadership responsibility from assignment editor to producer both illustrate the relative flexibility of roles in this newsroom.

Overall, the structure and functioning of this television station was perhaps a bit atypical with respect to the majority of other local television operations around the country. Nonetheless, this is what existed in this station in Tulsa at the time of the disaster. We now turn to describing the response of this station to the flooding occasion.

Emergency Time Operations.

Despite advanced storm warnings provided by the NWS for the Tulsa area, as we have already noted, few staff members of KTTT's news

department were aware of the magnitude of the threat until shortly before 11:30 p.m. on Saturday, May 26. The exception was one of the station's meteorologists, who expressed concern over weather conditions to the few workers present in the newsroom during what was expected to be an uneventful Memorial Day weekend. Based on specific details gleaned from the advanced warnings, as well as other information solicited directly from NWS, the station's meteorologist was able to discern the presence of a cold front stalled over the city of Tulsa. This front remained stationary in this position for a number of hours; first generating raindrops, then torrents and sheets of water on the city.

By 11:00 p.m., road conditions were becoming problematical, representatives from the city's police and fire departments were already mobilizing for an unusual occurrence, and community officials were assessing the need for further activation of emergency response capabilities. Unsystematic word was unevenly coming in to various agencies and groups that drainage systems were failing, catch basins were being saturated, and roadbeds were beginning to wash away. Overall, it was clear that the situation would worsen before it would get better.

However, it was not until shortly after midnight that KTTT's news department began to mobilize to cover the occasion. Several reporters, photographers and interns had arrived at the station and were equipping various vehicles of the station for their projected treks throughout the flooding city. One anchorperson, noting the conspicuous absence of members of the managerial staff in the newsroom, made several unsuccessful attempts to contact the news director at his home. Actually the director would be unavailable for the next six to seven hours because his car had stalled on an interstate highway a few miles from the center of Tulsa.

At approximately 12:30 a.m., a newsroom employee contacted the assignment editor and informed him of the station's technical problems. Unaware of the extent of severe flooding throughout most of the city, the editor attempted to drive the few miles separating his house from the station. After unsuccessfully trying several alternative routes into the low lying downtown area (where the television station is located, he returned to his home and remained in telephone contact with an anchorperson for the next few hours. This anchor staff member assumed the responsibility of the assignment editor during these early morning hours of the initial emergency period.

By 2:00 a.m., approximately 20 of KTTT's news staff members were either at the station or in the field preparing news stories for broadcasting as soon as electric power could be regained. Power for transmitting was only restored at 6:30 a.m, at which time the station began to telecast on a nearly continuous basis throughout the morning and afternoon hours, with intermittent reports being issued on the evening of that day. For the most part, all the

Sunday morning regular programming was preempted for these reports, and a significant portion of a specially scheduled sports tournament was regularly interrupted to provide news updates throughout the day. In general, these reports broke into both local and network programming at least every half hour, with each broadcast lasting from five to 20 minutes. Regular station programming was not fully resumed until the evening of Monday, May 28th.

For the remainder of the holiday weekend, all previously in place work schedules were abandoned as the news staff continued to work throughout this time period. Most of the news crews (which included several of the interns as assistant gatherers of information) remained in the field for an average of 15 hours. There, they almost continuously shot video for purposes of supplying recordings not only for KTTT, but also for its sister-station in Dallas, its network affiliate, and its associated cable news service. While the actual taping of the video recordings did not present any significant problems for the field crews, coordinating the delivery of the videotapes proved to be problematical. The crews often had difficulty in returning to KTTT because of the many flooded streets and roads around the downtown location of the television station. Similarly, staff members who had volunteered to deliver tapes to the airport frequently were delayed for hours because of flood created automotive failures and inaccessible roads.

Other difficulties encountered by field crews included a general lack of information about the overall situation, and poor communication with local emergency officials. As one reporter noted:

> It was hard to get a sense of coordination
> from the police on the total number of people
> killed, the total amount of damage, the worst
> hit areas...because they were just as confused
> as we were in trying to respond to calls.

For the most part, during the height of the disaster, the station reporters made their own decisions regrading which neighborhoods to drive to, what stories to cover, and what angles to develop. As expressed by one news staff reporter:

> We had to rely on our own judgement. In
> situations like this, you learn to depend on
> hour [radio] scanner for information on
> breaking news. You can't radio the home
> office every few minutes for directions.

With respect to the operations at the television station itself, the decision making pattern reportedly became more centralized and directive in tone. The news director felt that this was a

necessary change in operations that was well understood and accepted among his staff members. The following quotation from the interview with the news director is an illustration of the degree of control expected to be exercised over the news staff:

> We allow reporters a lot of input and participation in normal times. However, in a disaster, it becomes much more authoritative. When the assignment editor says "jump," you better get six feet into the air and then ask him how much higher he wants you to go.

Throughout the duration of the disaster, the station's news coverage was characterized by an unplanned shift in content focus. Specifically, it was noted that the flavor of newscasts changed from the usual "people oriented" perspective to a more event-specific type of coverage. According to some staff members, this change in the news orientation constituted the most significant change in the station's news operations during the flooding occasion.

Comparison of Everyday and Emergency Time Coverage.

During the emergency time period, a number of changes occurred with respect to both the structure and function of KTTT's newsroom. Structurally, we observed several differences. The most pronounced, of course, was the station's inability to telecast for hours because of power failure and outages and other technical problems at the height of the disaster. Other structural changes include the extensive preemption of both network and local programming, the abandonment of normal work schedules, the lack of managerial presence (and at time, direction) during the emergency, and the subsequent strengthening of the authority control at the station's home office. In addition to these structural changes, a number of modifications of a functional nature also occurred. One such alteration is represented by the shifting of work role responsibilities among members of the news staff. The passing of authority to the anchorperson for story assignment purposes, and the use of interns as news gatherers, exemplify this change in role function.

Another notable differences in news related activities was the increased discretion that field crews had with respect to news coverage. As previously mentioned, very few attempts were made on the part of the news crews to seek approval for their field decisions from the home office. For the most part, the crews operated rather autonomously in terms of which stories they covered, which news angles they developed, and who they contacted for information. There is an interesting contrast between how this decentralization of decision making authority for actual field operations is the opposite of the tightened centralization of authority for activities undertaken at the home office in the

station.

With respect to news processing, the overall procedure seemed to become less complex during the emergency time period. For the most part, the editing and rewriting stage of the process was substantially abbreviated during the flood occasion. Throughout the initial impact period (those hours in which telecasting was impossible due to power failures) news items brought back from the field were processed in a rather cursory manner. This usually a simple editing of video material on the part of photographers, and a quick preparation of the narrative of the story by the reporter. The entire news package was then briefly reviewed by the anchorperson (who acted as assignment editor during this time) and set aside for broadcasting when technical capabilities were finally restored. In the event that any rewriting of story material was warranted, the anchorperson would either undertake this task himself, or assign it to: "the first able body found" in the newsroom. Hence, the entire process was significantly truncated during this time period.

With respect to problems encountered by the news staff in covering the disaster, the most notable difficulty was the lack of factual information available to field reporters. As one reporter stated in an interview with us, they had no clear understanding of the specific effects of the disaster impact, the activities being undertaken by city agencies, or the logistical difficulties likely to be encountered in attempting to gather news material anywhere in Tulsa. This lack of information was partially due to the field crews infrequent attempts to contact the home office, as well as their inability to reach by phone local officials. The crews primarily relied on the use of radio scanners for flood related information. This often resulted in a lack of coordination of coverage among the field crews in that, on a number of occasions, several crews would converge on the same location to gather information on the same event. Problems engendered by this type of duplication of field activities were informally resolved by the crews themselves, with one crew remaining to cover the story, and the others going elsewhere to seek other newsworthy stories.

Overall, of all the mass communication organizations studied in depth in both Houston and Tulsa, this television station was one of those which exhibited the most changes and modifications in operations. Some of this may be attributed to the fact that this is the only mass media outlet which we studied, that for a while was unable to operate, literally going off the air for some hours. It follows that if the technological base of an organization is impaired or disrupted in some way, the operations of that entity will necessarily also be altered.

There were also some notable changes in the functioning of KTTT when it resumed telecasting. However, the alterations that appeared were less dramatic, in part, because of the rather loosely

defined nature of both the structure and the activities of the station's news department in a normal, everyday context. Nonetheless, there was a degree of ad hoc behavior during the emergency period, the appearance of what disaster researchers have called "emergent behavior" at the time of major emergencies (see Drabek, 1987). There were some consequences of this emergence in the area of news content. As noted earlier, there was a shift from a normal time, more people oriented approach to a more event-specific perspective during the disaster. In addition, more emphasis during the disastrous occasion was placed upon the official, or what has been called the "command post point of view", a tendency to use primarily official sources for disaster related news (see Quarantelli, 1981). Unlike the radio station in Tulsa which we earlier described, and which used more input from private citizens than normally was the case, the television station showed no such pattern and actually a swing in the opposite direction.

A Comparison of the Houston and the Tulsa Television Station Operations

As was the case with the radio stations we studied in the two communities, a comparison of the television stations in Houston and Tulsa also yielded far more similarities than differences. Although the Houston station is significantly larger and has a more centralized decision making structure, these two electronic mass media outlets, underwent strikingly similar changes in their organizational structures and news processing patterns.

Both stations did alter their normal telecasting operations. They each went to continuous disaster coverage and preempted both local and network programming. In both organizations, work schedules were drastically altered to allow staff members to cover the expanded news programming. Such changes, of course, are not unexpected and have been observed in many organizations that must adapt to the increased demands occasioned by a disaster impact (see Dynes, 1970).

However, some of the other alterations that occurred, are less predictable. For example, within both stations, the normal decision making structure and division of labor were altered. Decision making within the newsroom became somewhat more centralized. This observation is particularly true for Tulsa where the normal pattern of supervision by the news director was rather laissez faire in nature. In addition, in both television stations the role responsibilities and ultimate authority were vested in different staff members than normally direct the news operations. In Houston, the Director of Special Projects assumed overall authority, while in Tulsa, an anchorperson took on a number of multiple roles, including that of assignment editor, anchor and director.

However, outside of the newsroom, the decision making structure

became more decentralized in both stations. In the field, reporters exercised far greater autonomy than thus normally possessed, even in the normally relatively decentralized operation in Tulsa. They were given limited direction and not much supervision. While the reporters were strategically assigned to certain locations and areas by their newsroom, they were left to their own professional judgement with regard to such issues as story lines, the focus of their coverage, and sources used (see Friedman, 1987: 87-89 for similar findings regarding other electronic mass media operations in disasters).

But this increased autonomy was accompanied by serious problems of communication and information acquisition for reporters in both stations. Simply put, the reporters lacked information about the general consequences of the disaster. They were not receiving adequate information from the newsroom that would allow them to place their experiences in the field and their stories within a broader, community wide context, and thereby integrate their stories with other reporters covering the same occasion.

While some of this difficulty may have been the result of technological difficulties and an inability to communicate with local community officials, it was more likely the result of the continuation of normal, day-to-day patterns of organizational activity during the emergency period. Reporters are used to providing information to the newsroom where it is processed into stories; they are not used to receiving and requesting such information. The system is primarily a one way system in these organizations. However, this pattern can be detrimental for disaster coverage, particularly where the scope of impact is diffuse, as was true in both of the disasters we studied. In these stations, the normal pattern of news gathering involves having one crew dealing with one story. Only very rarely will more than one crew be covering the same even, and when that happens it is often preceded by considerable planning. However, when all available news personnel are covering the same event, the coordination of that effort and the provision of information to those in the field become problematical.

The gatekeeping process was truncated in both television stations. Although not as pronounced as in the case of the radio stations we described earlier where information from the audience was often disseminated as it was received, stories were not processed through as many staff members as usually occurs. In Houston, field crews became their own editors and producers. In Tulsa, the normally rather complex gatekeeping process was shortened to basically one staff member in the multiple role of "anchorperson-assignment editor-editor." Therefore, the pattern of gatekeeping in disasters previously observed by Waxman for radio stations (1973), also seems to apply to television, at least in these two particular stations (although as we shall discuss later, this generalization does not seem to apply to all television stations).

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Similarly, in both television stations, there was a reliance upon official sources for news. In contrast to the radio station in Tulsa, the television outlet in the same city, did not utilize audience members as a source of news.

In addition, hard news stories predominated in the coverage of the disasters in both communities. In Houston, about 90% of the items were of hard news pieces as opposed to feature or "people oriented" stories. In Tulsa, similar attention was paid to hard news. In the latter case, this pattern represented a significant shift from the station's normal emphasis upon feature stories. It might be proposed that the electronic mass media, with its technological capacity for rapid coverage of breaking news stories, must focus its attention upon "hard" news. There is suddenly a much greater amount of air time that must be filled with news stories immediately. This condition would facilitate the distribution of hard news items to fill that space, rather than feature, analytical or "people oriented" stories that often involve greater time in their production.

Certainly there were some differences between the two television stations. Clearly the level of organizational stress and structural change was greater in Tulsa than in Houston. Senior managerial staff were not available in the newsroom and many news personnel were unable to get to the station, and it was off the air for six hours. Greater organizational emergent or ad hoc behavior could be observed in the Tulsa case.

One major factor which might explain these differences between the two television station is the degree of warning provided by the two different disaster agents. The station in Houston had over three days of warning prior to the impact of the hurricane. This time was utilized to develop a hurricane response plan that included the designation of six hurricane crews, the provision of needed resources, and planning for adequate staffing. In Tulsa, there was very little warning time. Warning and impact were almost simultaneous occurrences. Even though the station had experienced disaster in the past, it proved difficult to mobilize in the middle of a disaster occasion that created widespread flooding and hindered movement and which occurred in the early hours of a Sunday morning, when the newsroom is only minimally staffed.

Finally, one last similarity between the two television stations should be noted. In both of the organizations, personnel in the newsroom normally have multiple work role responsibilities. During their day-to-day operation, staff members often perform a variety of roles including reporter, editor, and producer. This normal structure would appear to allow for greater organizational flexibility at the time of a disaster. As opposed to a highly specialized, rigid division of labor, this looser structure is likely to have facilitated these stations' responses to the disasters in their communities.

Having discussed the electronic mass media, we will now present our case studies of two of the newspapers in the affected communities. As done earlier, the Houston organization is described and analyzed before we present our observations on the Tulsa paper.

The Houston Newspaper

Everyday Operations.

The newspaper we studied, the **Globe** (a pseudonym), published two daily editions. At the time of the **DRC** study, it employed approximately 1,600 persons. The newsroom consisted of a dozen departments or sections with a total staff of 164.

The three major sections involved in the dissemination of hard or live news were what were called the "universal," the "city," and the "metro" desks or departments. From a structural standpoint, all three sections normally operated relatively autonomously. In their own spheres, the editor of each department had full authority and were at the same hierarchical level in the formal organizational chart.

The **Globe's** city desk was responsible for handling all the hard news which occurred within the city limits of Houston. The metro desk covered those metropolitan areas outside the city boundaries. The responsibilities of the universal desk were not geographically determined according to the formal structure. But in fact, although all three desk editors were at the same nominal level in the formal hierarchy, the universal desk editor was the final gatekeeper in the processing of news stories, i.e., he was the final editor and determined where the story would appear in the paper.

Each of the three departments were headed by one editor and staffed by one or more assistant editors and reporters. Overseeing the entire operation was one managing editor who served basically as a coordinator of activities involving the processing of news stories. The majority of the reporters covered specific beats. Some "free lance" news gatherers were also utilized, but not often. Normally there were two work shifts in each department, and personnel on each shift occupied the same basic positions and fulfilled the same functions.

During normal times, the process of gathering news at the **Globe** followed this basic pattern. Within each relatively autonomous department, a decision would be made by the editor or assistant editors on what items to cover and what reporters to assign. From the field, a reporter would call in a story, which could either be a "free standing" account or become blended in with other reports.

This story was called in to the proper department. At this point it was examined by an assistant editor and it then went to the

editor. From there it got passed on to the universal desk where it was customarily scanned by two editors. When that desk was satisfied with the copy, they gave it a headline and decided where to place it in the paper. Virtually every story in the **Globe** passed through four or five editors, who were gatekeepers, on its ways to being printed.

As mentioned earlier, the majority of those gathering news were beat reporters. Normally they were given relative freedom in their coverage. The criteria utilized in determining what was newsworthy seemed to be fairly vague. That is, these reporters (as well as the editors) found it very difficult, in our interviews with them, to specify exactly what they perceived as news. The phrases most frequently applied were hard news, "live" news, events which occurred that day, and events which affect the community. The types of stories most often looked for were described as "human interest," "color," and informational in nature, none of which were ever described in very specific terms.

In terms of space committed to hard or live news, the **Globe** normally printed between 50 and 60 columns. During normal times, advertising played a key role in the size of the newspaper which is produced. There was in fact a standardized relationship between the news budget and advertising.

Emergency Time Operations.

During the emergency period, the metro desk became the overseerer and coordinator of the news gathering activities. Whereas the city desk had formal equal standing with the metro one, it now became subsumed under the metro department. In other words, the editor (or assistant editor, in his absence) of the metro desk became the primary decision maker in deciding coverage and making assignments. It had in the past been determined that during such an emergency as occurred during Hurricane Alicia, both departments would coordinate their activities under the guidance and authority of the editor of the metro desk.

This change with respect to the centralization of authority had actually been formally planned. However, in practice, the decision making was not as centralized as might have been anticipated by the planning. Ultimately, the authority for deciding coverage was with the metro desk, but as all our respondents pointed out, the decision making was more of a collaborate effort between the editors and assistant editors of both desks. That is, the editors would meet and discuss assignments and coverage, but in case of dispute the metro editor had the final say. This was an attempt to avoid confusion, unnecessary duplication and delays in obtaining information. As noted by one of the news staff:

> It was just really a matter of four people, or
> five people saying why don't we do this...and

sorting it out through conversation.

However, there was some disagreement over the existence of such collaboration of effort during normal times. According to one of those we interviewed:

> During normal periods we never work together, which is bad...that's one of the problems at the paper.

On the other hand, the following was stated during another interview with us:

> Ordinarily both desks would still coordinate coverage. It's just a little more of an involved process when you're covering a major story together.

From what we could determine, it appears that any collaboration which took place during normal times was of an informal, unstructured nature; but during the emergency period the coordination was formal and planned. There also existed collaboration of a more informal nature, but this took place within the context of a new authority pattern. This was a new structure under which one department had final authority over an expanded network of personnel.

According to the managing editor, the work schedules (shifts) were not affected, i.e., there was no significant increase or decrease in the number of personnel on any given shift. Our respondents equated this with the way in which disaster impact seemed to circumvent the critical periods of printing and shift changes.

There were normally two editors of the Globe, and this was the same for the emergency period. The number of editions remained the same and all of the deadlines were met on time. The above would indicate that there was a relatively high degree of operational efficiency maintained during the time of the disaster impact.

The responses we obtained in interviews indicated an absence of major conflict due to this restructuring of the news department. According to some of the news personnel, the conflict which did arise was short lived and in their opinions was a reflection of personality as opposed to structural problems. This can be illustrated by the following quotation:

> The first day there were some tensions, but after that they were over...and tensions were at an absolute minimum, John was no longer there...you jus got different personalities in...and by Thursday everyone was involved.

During the emergency time period, all disaster related information passed through the metro desk. That is, the initial filtering stage for all such stories was now the editors working under the rubric of the metro desk. The only significant change then in the processing of news stories was the rerouting of all disaster related hard news through the metro desk. After that stop the process continued as it would during normal times.

Also during the emergency period, there was a change made in terms of the amount of discretion in story selection that was allowed reporters. Thus, during this time period the editors from the relevant departments put together a story list. What was on this list was given priority in gathering information. Once out in the field, the reporters had freedom but this was within the specific parameters determined by the story list. In normal times, there would be no such list.

There was no distinction between emergency and normal times as to the criteria employed to determine what was newsworthy, and specifically what type of stories were sought. That is, the criteria set and the set of priorities utilized in determining what was printed was unaffected by the emergency situation. Of course, these criteria remained as vague during the disaster occasion as they normally were during everyday operations.

As prior studies have indicated (Waxman, 1973), the news content of mass communication organizations may be affected as a result of communication convergence, specifically the overloading of phone lines as too many people attempt to make too many calls. However, in this case, during the emergency period, the **Globe** did not experience such convergence and thus there was no effect on the content of news stories. For comparison purposes it should be kept in mind that on an everyday basis, this newspaper did not receive many phone calls from citizens or others. At pointed out by one journalist, residents of the community were far more likely to call a local radio or television station for information, both during normal as well as emergency time.

There was a difference of opinion in the staff members we interviewed on the question of whether or not there was any type of information which the **Globe** might be reluctant to print. The majority of those interviewed did agree by a two to one margin that there could be certain information about which there might be a hesitancy in publishing. Reference was to stories which might be too negative in tone and from unverified sources.

Was there any change in the actual newspaper space committed to hard news as a result of the disaster occasion? As previously mentioned, on a normal everyday basis, approximately 50 to 60 columns are given over strictly to hard news. During this emergency period, in addition to these pages, an additional four open pages were given over to coverage of the disaster the first

day. On the second day (the time of actual impact), six additional open pages were added to the usual 50-60 columns. On the third day, six more open pages were again reserved for hard news.

The relationship between newspaper space for hard news and advertising was somewhat affected by the disaster occasion. One interesting side note is that due to the nature of advance budgeting of space in relation to advertising, the issues or editions during the actual emergency time period of the hurricane were unaffected. However, the subsequent Sunday edition was affected. This was due to the fact that many local business people at many of the local establishments were unable to call in their advertising requests during the emergency period. As a result, the budgeting for many sections of the Sunday edition (at press during impact) were affected.

Comparisons of Everyday and Emergency Time Coverage.

The most striking change which occurred at the **Globe** was the restructuring which took place between the metro and city desks. During normal times, these desks operate independently in their attempts to gather information. However, during times of disasters, such as a hurricane which affect areas other than the city itself, there was a reorganization of authority. The key explanatory factor here seems to be the focus of the disaster impact. If the impact had been completely localized, within the boundaries of Houston, such a restructuring would not have taken place. But due to the very diffuse nature of the hurricane impact of Alicia, the reorganization was implemented. The logic here is that in such a situation were the effects are very diffused, the metro desk reporters and editors would already be familiar with the bulk of the impacted area. Thus, during the emergency generated by the hurricane, an alternate system of coordination between the desks was enacted. It should be pointed out that this plan for coordination of the departments during emergency times had been in effect for approximately three years.

In terms of structure, this change in departmental autonomy was the only significant one which became manifest during the time period of the hurricane. Other than that which was discussed above, there was virtually no effect upon individual job responsibilities. From a structural viewpoint, operations at the newspaper were not severely hampered. Those in key positions of authority and decision making were able for the most part to report to work and fulfill their normal organizational functions which were not altered by the emergency. All of our respondents stated that few structural problems emerged.

The major aspects of the news processing which was changed during the emergency is related back to the structural changes discussed earlier. These changes served to allow for more efficient coordination during processing as all disaster related news was now

funneled through one department. It did not appear to alter the substantive content of the information any differently than would be the case in normal times. The following two quotations (from different respondents) highlight the lack of significant effect of this change on the overall processing of news.

> We were pretty much able to make...deadline with very few changes.

> The paper flowed just like it would normally...the flow wasn't altered...the editing process was not altered.

Not a single one of the respondents we interviewed seemed to feel that the criteria for the selection of stories had changed for the disaster. The only alteration that could be seen in relation to this was the relative importance accorded different types of stories. As might be expected, coverage and placement of disaster related reports were given priority for processing over all other hard news items during and immediately following the disaster impact.

As to a reluctance to printing certain items, this seemed to be the rationale. If the source was sketchy or unverifiable, and the information involved related to public health and safety, it was felt discretion should be used in the decision to or to not put in the **Globe**. It was thought that publishing such information might result in undo alarm. The following quotations may shed some light on these beliefs. In relation to a hypothetical situation of water contamination, one staff member stated:

> We just wouldn't print that unless we could verify it because we could cause a panic. We have a responsibility sometimes as much not to print something as we do to print.

A similar statement was made by another of our respondents:

> The only thing you would need to be very careful about would be anything that would unduly alarm the population...as long as you're factual and truthful that's the only thing.

Generally, those we interviewed at the **Globe** who felt that the newspaper should be circumspect in the reporting of certain information, seemed to hold one notion in common. As can be seen in the above quotations, there appears to be an underlying assumption that citizens might respond in an "irrational" manner to particular kinds of information. That is, it is thought that if presented with news of a potentially threatening situation, the residents of the community might respond in a non-normative and

uncoordinated fashion.

The Tulsa Newspaper

Everyday Operations.

The newspaper we studied, the **Star** (a pseudonym), published three daily editions. The first edition was mailed to subscribers living far away from the city. The second was earmarked for those subscribers who did not reside in Tulsa County, and the third and final edition was delivered to those who lived within the county as well as in some towns lying outside county limits, but still falling within the Standard Metropolitan Statistical Area.

Approximately 120 persons were employed by the newsroom. All of these individuals held full time positions. In addition, five full time interns worked for the newspaper during the summer months. These interns were college stations who were planning to pursue a career in journalism. Some free lancers were used, not as news reporters, but rather for features and special assignments. There were free lancers in almost every city around Tulsa which the newspaper hired on a part time basis. However, the **Star** employed one full time correspondent in Bartlesville, a town approximately 50 miles north of Tulsa.

Within this mass communication organization, news was processed according to a geographic criterion. Consequently, there were three subdepartments which were responsible for the production of hard news: the city, state, and national news desks. Each of these desks or sections was supervised by one editor and staffed by one or more assistant editors, in addition to reporters. The managing editor monitored the activities of these three operations, thereby serving a coordinating function. This staff member reported, in turn, to the executive director of the newspaper.

Each desk or subdepartment worked relatively independently of the others. The city desk focused upon those stories which occurred within the community and nearby towns; whereas, the state desk covered that news which pertained to the state as whole. The national desk dealt with items of national interest, including events occurring within the international sphere.

Since these editors shared mutual, although distinct, responsibilities, they were afforded equal status within the **Star** organization. In other words, no one editor had authority over the activities of the others.

Everyday at 4:30 p.m., the desk editors met with the managing and executive editors in order to discuss the articles to be published that day and the stories to be placed on the front page. Since the newsworthiness of an item was one of the major factors considered in this assessment, the percentage of space devoted to local,

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state, and national (international) news, varied daily.

In addition to attending this daily meeting, desk editors were also
expected to fulfill other responsibilities. Although the managing
and executive editors had the prerogative to select and assign
stories, the desk editor generally decided which events and topics
should be covered and made reporter assignments. Thus, they
coordinated the activities of their own desks or sections.

On occasion, reporters on the **Star** were given multiple tasks. For
example, there were instances in which reporters not only gathered
information and wrote the copy, but also photographed the pictures
accompanying their stories. Furthermore, there had been times in
the past when reporters had worked as editors, although it was not
a frequent happening.

Given the nature of their responsibilities, the staff members
worked different shifts which were staggered throughout the day.
Among the upper echelons of the organization, typical business
hours were as follows, e.g., the executive editor was in from 7:00
a.m.-5:00 p.m. However, general assignment reporters checked in
for work from 1:00-9:00 p.m. Despite this range in working hours,
almost everyone was around the newsroom at four o'clock in the
afternoon. Since the deadline for printing the newspaper was at
7:30 p.m., staff members were in the office up to that time writing
their stories.

The organizational work schedules also varied in accordance with
the day of the week. Normally, on Sunday, no one came to work
before 11:00 a.m., including the editor on duty. In addition, the
staff of nine was much smaller than on other days.

The desk editor drew upon several sources for information when
choosing subject content to be covered. They included suggestions
made by citizens calling or coming into the office, tips which
reporters had received from contacts, and ideas provided by wire
service reports. Among the latter utilized by this office were the
Associated Press, the Los Angles Times-Washington Post Service, and
the Knight Rider Service.

Basically, stories could be classified as one of two types:
deadlines and features. Deadline stories had be completed by 7:30
p.m., whereas, features were usually due by a specific date. Thus,
usually there was more time to work on a feature story.

Depending on the nature of the subject matter, the story was given
to a beat or "general assignment" reporter. Generally, only one
staff member was assigned to a story. However, there were
instances in which reporters combined their information into one
story, e.g., a police and court reporter might work together on one
story. Typically, though, reporters worked solo in the field.
This was true even when photographers were covering the same event.

Since it usually took a photographer less time to finish his/her work in the field, each traveled separately to the story site. This enabled the photographer to return to the office and start processing the film as quickly as possible.

Once in the field, reporters were supposed to use their discretion. As one of our respondents noted:

> We are expected to be able to identify and
> cover a story that is newsworthy.

This was particularly true of those working a beat. These staff members were supposed to know what was happening in their area, e.g., the police department, and to be able to judge whether or not a situation should be covered when it came up. Generally, "beat" reporters, stayed and went as they pleased and could be absent from the office for as long as seven hours. This was not necessarily true for general assignment reports, though. If one was gone for a greater time duration than originally anticipated, it was expected that the office would be called in order to update activities. It was also assumed that staff members would phone in if something unusual occurred which might merit more coverage than one reporter could provide.

Once the information for an article was gathered, reporters would return to the **Star** newsroom and type their stories on a terminal. Each story was placed within a file according to the overall subject area, e.g., the city file, and was forwarded to the appropriate desk. Then an assistant editor gave the article a page number, a location on the page, and a headline size. From there, it was sent to the copy editors. They, who were either four or five in number, would pass the story around among themselves. For example, one would read the story for factual accuracy, another would look for grammatical errors, and still another would write a headline. After this work was completed, the story was added to the list of others on the desk. The desk editor then called up the story and gave it a cursory examination. This editor usually decided if it was to be printed. Once approved, the story was set into type and then printed. After this, it was pasted on the page make-up sheet and sent to press.

Although the **Star** had not developed a written disaster plan with respect to covering a widespread emergency, it had been agreed that certain procedures should be followed in such circumstances. They are enumerated below as they were understood by those we interviewed:

> a) An employee who hears of a disaster is to
> call either the executive or managing editor.
> (Since these are never out-of-town at the same
> time, it is presumed that someone would always
> be available to respond to a crisis

situation).

   b) Once notified, the executive (or managing)
   editor is to call those staff members who are
   to work. In order to be prepared for this
   possibility, each carries a list of staff
   telephone numbers at all times.

      1) The chief photographer is to be the
      first person contacted so that on-the-
      scene pictures are taken as soon as
      possible.

      2) After this, the city editor or an
      assistant, depending on whom can be
      reached, should be called and told to
      report to the office in order to dispatch
      the staff.

At the time of our study, no measures had been devised in relation
to the **Star**'s facility itself in case of a direct disaster. Since
only six to eight of the newsroom's telephone numbers were listed,
it was believed that access to an open line would pose no problem
in an emergency. However, a loss of power would present a serious
obstacle to news production since the process has been
computerized. As one of our respondents said: "We would be dead."
Even so, the **Star** had no auxiliary power source which could be used
in an emergency. Furthermore, if the typesetting equipment shared
with the other daily newspaper in the city were damaged and
unusable, no back up system had been established. It was thought
that another newspaper in Oklahoma City might be able to publish
the **Star** in the event that such a situation might occur. However,
the possibility had not been checked out or examined in detail.

Emergency Time Operations.

The police beat reporter working Saturday night was the first
person to become aware of the heavy rains and concomitant flooding
in the community. Shortly before he went off duty at midnight, he
wrote a story for the Sunday edition of the paper which noted that
there were floods in some parts of the state. Although he left
work on schedule, he took his police scanner home and continued to
monitor the radio messages. At 3:30 a.m., he called the executive
editor and informed him of the developing emergency. (The managing
editor was out-of-town for the long Memorial Day weekend).

The executive editor contacted the chief photographer who was also
awake and listening to his police radio. After a short
conversation between them, the editor decided to dispatch four or
five photographers to different neighborhoods of Tulsa, but he did
not sent out any reporters at that time.

He then went back to bed until 5:00 a.m. at which time he rose to assist his sons with their paper routes. On the way to the pickup site for the newspapers, no signs of flooding was observed. While waiting for the papers, both he and his sons fell asleep in the car and were awakened at 6:00 a.m., only to learn that 95% of the delivery trucks were unable to get through because of the flooding. It was at this point that the executive editor of the **Star** first realized the severity of the situation.

Upon returning home, he tried to reach the circulation desk, phoning for about 30 minutes, but no one answered. Unable to find at his home a current list of staff telephone numbers and also unable to get the city editor's unlisted number, he went downtown to the office. By the time of his arrival shortly before 7:00 a.m, he knew by listening to radio reports that the city had experienced a storm of some consequence.

Since the assistant city editor was work that Sunday, he called and told him to report to the office as soon as possible. Then the executive editor called several reporters, some of whom were not at home. Later, it was learned that the staff had held a farewell party for one of the employees. When the rains came, they were trapped due to the flooding and could not get to their homes until later in the morning. Eventually, three or four reporters were reached and they came in to work.

By 7:30 a.m. the staff was in full operation. In addition, to the usual nine workers, Sunday staff members included the executive editor, two assistant city editors, one state editor, six-eight reporters, and six photographers. In addition, an artist was called in to draw a flood map and a part time receptionist was asked to man the phone since subscribers were calling in about undelivered newspapers. This was due, in great part, to the fact that the circulation department was not answering their phone but rather playing a recording which stated that the **Star** could not be delivered that day. With this staff assembled, the flood occasion could be covered adequately. In all, approximately 30 people were on hand to work.

Once the executive editor had mobilized the operation, newsroom activities were carried out in accordance with standard procedures. Two factors, in particular, were responsible for this outcome. Staff members who held different positions within the organization were able to report for work. Moreover, those workers who could be assigned to this story in a normative content, given the newspaper's division of labor, were among the individuals who did report for duty. Consequently, each person's job was basically identical to the work which the individual did during a typical workday.

The desk editors and their assistants decided which stories would be covered. In broad terms, these fell into three major

categories: fact, human interest, and readers services. The factual stories dealt with the effects of impact such as the location and extent of damage, the number of people injured, and the number of fatalities. Human interest articles focused upon "heroes," "close shaves," and dramatic rescues. Finally, reader services told community residents what health precautions should be taken, what should be done if a car is flooded, and where victims could go for help. As the week progressed, follow up stories were done on missing persons and beat reporters wrote about the disaster's effects upon different aspects of city life, for example, the local parks. At no time was any information withheld because of any concern about adverse reactions.

After story topics were selected, reporters were given their assignments in line with typical everyday procedures. As usual, only one reporter was given a particular story, and each worked alone in the field. However, as information was gathered, if different staff members ran across material that was relevant to a particular article they would pass it on to the appropriate reporter. Although this occurs in normal times, these contributions were more frequent in this situation since the articles evolved around the same theme, i.e., the disaster, which thus increased the possibility for accessing information pertinent to another story.

Since coverage actually began during the postimpact recovery period, reporters did not encounter the kinds of obstacles in getting their stories which they might have confronted if they had started working earlier. They worked during daylight. The flood waters all eventually subsided, thus there were not travel movement problems. The neighborhoods which had been impacted were already identified; thus, everyone had an idea of where to go for information. The **EOC** had already been established, and officials from emergency response organizations could be located.

Overall, reporters experienced minimal difficulty in accessing the information they needed. This was partially the result of the fact that beat reporters were asked to get the "official" story. These reporters were familiar with those community organizations involved in the disaster response and thus they knew whom should be contacted either in terms of formal positions or informal networks. These previously established relationships facilitated obtaining the information being sought.

A variety of sources were tapped in covering the flood situation. These included the emergency management agency director, representatives of the police and fire departments, and the mayor of Tulsa. Residents were also interviewed. Citizens were asked to describe what happened to them. Victims were called upon share their emergency time experiences, and "heroes" were contacted to obtain details about their deeds of bravery.

In addition, city residents phoned the newsroom telling about important events which they had witnessed. Off duty reporters also called in from their homes to pass on something they had heard or to describe the current situation in their own neighborhoods. In all, the majority of calls contributed information about the flood. However, communication lines were not tied up despite the number of people who telephoned the **Star**.

Within the newsroom, both radio and television stations were monitored along with the police scanner. There were two reasons for this action. First, these sources kept the newsroom abreast of the current status of the situation. Second, they also provided tips for possible news stories.

Since so few newspapers are normally sold on newsstands, an "extra" edition was not considered to be worth the effort. For this reason, the press deadline was as usual at 7:30 p.m. Consequently, reporters were not working within a time frame than was typical. In this instance, the converse was true since they were on-the-job at 7:30 a.m. However, the total number of hours worked were basically equivalent to those put in on a normal day, although the work schedule itself varied somewhat from the normal. Although it is possible to phone in a story from the field, such action was not necessary since there was adequate time to return to the office and write one's article. Once completed, stories were processed in accordance with everyday procedures.

However, the amount of space devoted to news was affected by the flood. Two extra pages were devoted to news stories in both the Monday and Tuesday newspapers. These pages were simply added to the usual number of pages. Consequently, no advertising was lost. Prior to the flood disaster, it had been decided that only two editions of Tuesday's paper would be run since the preceding Monday was Memorial Day. This was changed so that some pictures of the flood could be added. Therefore, there were three editions of the Tuesday paper. Furthermore, a 16 page supplement was added to the following Sunday's paper. This section contained both news and pictures pertaining to the disaster and was entirely devoid of advertisements.

Comparison of Everyday and Emergency Time Coverage.

A comparison of the **Star's** structure and operations in the normal and emergency time periods reveals one striking feature: an absence of change. Overall, this mass communication organization underwent minor alterations in order to respond rather effectively to this disaster. This was because there were several factors, which taken together, minimized the adjustments that needed to be made.

In retrospect, it can be seen that the flood did not impose severe constraints upon the **Star's** ability to function. The physical facility itself suffered no damage. Thus, operations were not

hindered; there was no inaccessibility to the building or any ruined typesetting equipment. In addition, there was no loss of electric power. News could be processed according to standardized procedures which would have been impossible had the computer been "down." Within the newsroom, telephone communication was not seriously disrupted as a result of fallen lines or jammed circuits from too many persons called in at the same time. Finally, conditions were such that almost all the staff could be easily reached and could physically get to the office to work.

Even though these situational circumstances reduced the need for organizational change, no explanation of the behavior observed can be advanced without addressing the element of time. Unlike radio and television stations, newspapers by their very form, cannot communicate information instantaneously. Papers are written, printed and circulated which, in itself, requires a certain length of time. A newspaper is published on the basis of a daily deadline; whereas, television and radio stations are expected to inform citizens of important news as it breaks, the latter often demanding on-the-spot coverage.

Additionally, newspaper find it difficult on short notice to change production operations. The personnel and machinery needed for both publication and circulation militates against such a departure from normal practices. When a story breaks after press deadline, it is unlikely that newspapers will be the first to inform citizens due to the time delay between information acquisition and dissemination.

It can be seen, then, that the very nature of the mass medium places it within a particular operational time frame. In other words, time in one sense is institutionalized since information processing and production are shaped in relation to the communication vehicle. This can be either a limitation or an advantage depending upon the social context.

Even though the executive editor did not realize that Tulsa had experienced a major disaster until several hours after impact, the newspaper had, comparatively speaking, a far greater amount of time for mobilizing than did other types of mass media simply because it did not go to press until 7:30 p.m. For this reason, there was time to make choices which minimized the amount of organizational alterations and modifications required. Although the staff scheduled to work that Sunday had to be increased in order to cover the disaster occasion, extra personnel were recruited on the basis of the jobs that needed to be filled. In other words, the executive editor had enough time to hunt down the most appropriate staff members even though he did not have their phone numbers at his home. This also points out that there was time for these workers to get to the office despite the fact that all of them did not live as close to the location of the newspaper as others who were not contacted. Since time allowed supplemental staff to be

carefully selected with respect to the existent needs of this organization, each person was assigned tasks which were in line with responsibilities during normal time periods. In this way, confusion was avoided in the newsroom and standard modes of operation were reinforced.

Since the **Star** had relatively more time in which to cover the disaster, work personnel were not pressured or overworked to the extent they might have been. Basically, each staff member put in the same number of hours as on a typical workday. In fact, there was actually more time to gather information because the staff reported in for work earlier than usual, but press deadlines remained the same. Furthermore, since coverage was initiated during the immediate postrecovery period, information was more easily accessed, and reporter mobility was greatly enhanced.

Overall, the time frame of this mass communication organization worked to its advantage in covering this disaster. Although some inconveniences were encountered in mobilizing for full scale operations, they did not force any significant alterations in the paper's structure and activities. Given the greater amount of time in which the disaster could be covered, alternatives were available which compensated for the difficulties confronted, for example, staff members being trapped by flood waters.

In addition, the modifications which occurred did not result in a disruption of normal organization and operations but, rather, were incorporated into the existent structure. Although additional space was needed for disaster related news stories, pages were simply added to the paper's standard format. Consequently, no advertising had to be dropped or daily features eliminated, even though some extra financial expenditure was involved. Similarly, a third edition of the Tuesday's newspaper was not a deviation from typical product output, since three editions are usually published. Two editions had only been planned for Tuesday because Monday had been Memorial Day. These modifications, then, were minor adaptations to the exigencies of the situation and were not indicative of a marked departure from usual practices.

A Comparison of the Houston and Tulsa Newspapers

The two newspapers in these cities responded to the hurricane and to the flood disasters with remarkably similar patterns. Simply put, in both instances they "normalized" their coverage by utilizing traditional, day-to-day structures and procedures for producing news stories. Certainly, a few alterations in the normal division of lab or and structure could be observed. For example, both mass communication organizations added "open" pages, thereby increasing the amount of space available in the "news hole." Furthermore, the traditional division of labor between the city and metro desks at the Houston paper was altered as the metro desk and editor became responsible for producing all of the coverage of the

hurricane. This alteration, however, was not an emergent, ad hoc, crisis time decision. It had been planned based upon the location of the disaster threat and the ability of the metro desk to coordinate coverage over a broader geographic area. Also, in both newspapers, greater direction was given by the editors to reporters in the field. They were given topics and asked to turn them into stories. Although the reporters had autonomy and could exercise discretion in the field, there was a somewhat greater centralization in the newsroom of the coverage of the disaster occasion.

However, the rather insignificant nature of these modifications is apparent when we consider what did not change in these newspapers. There was no alteration in the gatekeeping process. The normal stages of editing and working the story through five or six different staff positions was maintained. The division of labor with respect to work role responsibilities was not altered. Staff members did not take on non-traditional roles. Work shifts in Houston were not altered in any way. While the normal small weekend staff in Tulsa was augmented, the members still worked their normal length of time. The usual deadlines for both newspapers were maintained. Assignment of reporters to stories was based upon traditional beats and expertise. Furthermore, traditional sources for gathering information were utilized by the reporters. Finally, there was no noticeable alteration in the type of news that was produced.

Why was this pattern of normalization to a disaster occasion so strongly evident in these newspapers? We have previously discussed the issue of time. Its importance cannot be overstated. Both of these mass communication organizations produce morning newspapers. Deadlines for submission of stories on morning papers are generally in the mid to late evening hours. Both of these disasters occurred in the early morning hours. In Tulsa, the storm hit just after the Sunday paper had been "put to bed." Not facing in this situation the problems presented by the opportunity and demand for immediate coverage faced by radio and television stations, the newspaper actually had more time to cover this major story than they would if it had occurred at a different hour. In Houston, the occasion was even more advantageous for normalization. Not only did the hurricane also strike in the early morning hours, but it occurred on a weekday when staffing was at its highest level. In addition, it was preceded by three days of warning that allowed for considerable organizational preparation.

Therefore, the inherent limitation of print technology for simultaneous or immediate coverage, in combination with the timing of these disasters, helps explains the very limited changes that occurred in these newspapers. But we are not saying that the technological factor is always important. It was in the two particular cases we studied.

However, given different circumstances, it can be suggested that greater alterations would have happened. For example, if the newspapers had lost power and their computer systems were down, some modifications in the gatekeeping process could be expected to occur. Loss of physical facilities, printing capability, or distribution mechanisms could also be expected to produce more emergent or ad hoc behavior. Finally, and perhaps most importantly, if the disasters had struck unexpectedly in the afternoon or early evening hours--just prior to, or soon after the daily "huddle" or budget meetings of these papers--then the luxury of extensive time would have been nonexistent. The newspapers would have been faced with covering a major and unexpected occasion with rapidly approaching deadlines.

Summary and Discussion of the Six Case Studies

The six case studies are generally supportive of the findings and observations we drew from the data we had from the overall survey of 44 mass communication organizations, and which we reported in chapter 5. However, they do add detail to that discussion.
The most obvious conclusion is that significant different exist between the print and electronic mass media in many of their patterns of operation in covering disasters. The former media showed very few changes in their organizational structures, divisions of labor, gatekeeping pattern, decision making arrangements, and utilizations of information sources, while the latter exhibited numerous alterations in these elements. Furthermore, these differences would appear to result both from technological factors and time. However, before discussing these specific elements in more detail, let us place our observations within a broader framework.

As consistently noted in the work of many researchers such as Epstein (1973), Bagdikian (1974), Tuchman (1978), Altheide (1976), Gans (1979), and Wright (1986) mass communication organizations are organized and oriented toward the coverage of routine events. Under the influence of financial, legal, political and other social considerations, these organizations establish traditional patterns of coverage in response to expected, if not planned, events. For example, the infrastructure of news gathering is geared for covering the expected. The major sources of news are press conferences, reports of wire and syndicated services, press releases, and routinized beats with traditional sources. Furthermore, these organizations work within the rather stringent time periods of their deadlines and programming. Their organizational decision making structure, gatekeeping patterns and news production activities are all oriented toward filling with news stories an allotted amount of time or space each day. The time and/or space cannot be reduced depending on external happenings. The most efficient manner for insuring the necessary input and output is to routinize the process, eliminate surprises, and construct a news product derived from a known and controlled

social environment.

But a disaster is not routine. It is of necessity a major story in all local communities; it is a story that must be covered (at least in societies with a Western ideology about the role of the mass communication system--that was not true until recently in the Soviet bloc and is still so in some developing countries, see Sanders, 1986). However, due to the nature of dangerous occasions, they are often unpredictable in appearance and unfoldment, and almost always disrupt both the physical and social environments. As such, a crisis story does not lend itself to the traditional, routinized patterns of coverage. For organizations geared to covering planned and predictable events, disaster occasions present a challenge.

In our study, we have observed that the problems appear to be more severe for the electronic mass media than for their print counterparts. The technology of radio and television allows for the opportunity for immediate and simultaneous coverage of the disaster. That is the good part. The bad part is that some content, some news product, must be rapidly constructed to fill the air time. We have been able to observe in the kinds of disasters we studied a number of the important changes that appear to occur in the structure and news processing of electronic outlets to fill this increased demand for news. (We should note that certain other kinds of disasters such as famine, droughts and other slower evolving and diffuse disasters, however, would present a different set of conditions for the electronic and print media than we found).

As was first observed by Waxman (1973), it is evident that the gatekeeping patterns are significantly altered in the electronic mass media organizations. The story construction process is truncated and shortened. In the case of radio in particular , information received from audience members is often disseminated without the usual editing and verification procedures. To a much greater extent than during normal periods, raw information flowing into the organization soon flows out without having undergone the usual processing. Obviously this lack of "quality control" over the product can influence a community perception's of and response to the disastrous occasion.

In addition, we have been able to observe alterations in the normal structure of decision making within mass communication organizations. One pattern that is particular discernable involves the dialectical patterns of increased centralization within the newsroom and increased autonomy of journalists in the field. The former is a response to an increased need for coordination of reporter's efforts in the coverage of the disaster. Normally, only one, or at most two, reporters work on a story at a time. Problems of allocation of personnel, duplication of story lines, and coordination of activities are almost nonexistent. On "big"

stories, such as the visit of a dignitary to the community, the local election, or a major celebration, more staff members may be assigned to cover the event. However, these types of stories are often planned and predictable. Therefore, planning can be undertaken before the scheduled event to guarantee coordinated coverage.

However, disasters present a more serious challenge. The entire staff of the news department often is "working on the same story." Greater centralization and coordination in the newsroom is required, otherwise the editor's nightmare of 16 reporters filing stories on life in a public shelter may become a reality. As we have seen in our study, this increased centralization was attempted in most of these organizations.

The latter pattern of increased autonomy for reporters in the field results from the unknown nature of the environment in the aftermath of disaster. While the newsroom may assign personnel to certain locales or to cover particular activities or institutions, there is considerable lack of information about the actual conditions prevailing in the community. Particularly in the early hours after impact, very little of the effects of the disaster may be known by even the organizations most interested in such knowledge. Therefore, reporters are given more freedom than they usually have in covering stories (even if they are not "given" such autonomy, they will necessarily "take" it). Based upon their professional skill and expertise, they are to construct their stories based upon what they find "out there." As we have seen in our research, this situation can present difficulties for the reporters. They suffer from a lack of information about the overall situation insofar as the disaster occasion is concerned, and how their particular bits of information fits into the total picture. Friedman (1987) observed that this pattern of increased autonomy also occurred in other disaster settings than the ones studied for this research. It would appear that greater two way channels of communication between the newsroom land the field will facilitate coverage of the occasion.

Furthermore, we have been able to observe some support for the "command post point of view" of disasters and other community emergencies proposed by Quarantelli (1981). Certainly emergency officials can provide a ready source of information for those mass communication organizations that are trying to ascertain what has and is happening under very stressful conditions and with expanded time and space for news stories. In our study, television stations appeared to place a rather heavy reliance for information upon official sources. However, the generality of the "command post view" must be qualified somewhat. We have also seen that radio stations appear to also increase their use of citizen sources in an attempt to fill their expanded news time. Particularly in these news/talk mass media outlets, input from audience members was openly sought and frequently aired with little of the normal

gatekeeping activities taking place. However, the television stations in our study generally ignored this kind of input from citizens although it has been reported in other research.

This issue, obviously, relates to the question of news sources. During the kinds of disasters we studied, certain traditional sources for news are ignored, such as wire and syndicated services, for the simple reason that their content is not relevant to the coverage of the disaster story. However, there appears to be a reliance upon other normal traditional sources that may have informational payoff for coverage. All mass communication organizations rely upon traditional sources that are nurtured through the beat system (see Sigal, 1973). When information is at a premium and under the stress of covering a disaster, many of the traditional sources continue to be utilized. Interestingly, for news/talk radio stations, the audience is often defined as a source for content. In our study, these kinds of radio stations notably continued that pattern in their disaster coverage.

Hard news items dominated the electronic media's coverage of the disasters. For some outlets this was a simple extension of their normal definition and preference for news. However, in other stations this represented a shift from a more "feature" oriented content. It could be argued that his emphasis on hard news represents the effect of journalistic values and ethnics that emphasize presenting during disaster times, factual, informative content of immediate import. That argument may have some validity. However, it must be noted that the presentation of hard news is also a quick, easy solution to the problem of immediately filling expanded news time. Analytical and features stories require a longer time period to construct. Their nature is not consistent with the organizational demands for rapid and intensive coverage of disastrous occasions.

The two factors of time and technology must also be noted. With respect to time, there are two issues involved. First, one must consider the amount of warning and thus preparatory time that is associated with the impact of the disaster agent. In our cases, the hurricane in Houston allowed for at least three days of preparations, while the flooding in Tulsa permitted for little, if any, preparatory time. Fewer alterations and problems of coverage could be observed in those mass communication organizations that utilized the warning period to plan and coordinate their external and internal response. For example, the television station and newspaper in Houston undertook rather extensive preparations which facilitated their coverage of Hurricane Alicia. The mass media outlets in Tulsa did not have this luxury.

Second, the actual social time of impact is also important. As was previously discussed, the time of actual impact of both of the disasters was somewhat ideal for the newspapers. They had ample time before their normal deadlines to produce adequate copy.

Conversely, the social timing of the occasions for the electronic media was not ideal. In Tulsa, the disaster occurred when only a skeleton crew was on duty at both radio and television stations. Rapid mobilization and staffing was thus difficult. Similarly, the early morning time impact of the hurricane was also not an ideal occurrence; however, the negative effects of this timing were mitigated by the planning and preparations that was allowed by the three days of warning.

Technology can also be an important factor influencing the role the mass communication organizations can play in the community and the amount of organizational change the local outlets undergo. Simply put, most of our findings apply quite well to the electronic media we studied. However, they do not generalize as well for the print media. The newspapers did not undergo the alterations in gatekeeping, work schedules, organizational decision making, and role assignments to the extent that we observed for radio and television. Perhaps this may represent the influence of print technology which does not allow for immediacy of coverage. However, as we previously observed, if the timing of the disaster occurs near the deadline or press time of newspaper organizations, they are likely to experience somewhat the same kind of stressful situation experienced by the electronic media. In other words, the newspapers in these two disasters were somewhat fortunate. The extent to which these patterns would be observed in other disasters with different times and scopes of impact remains an empirical question.

Finally, we had analytical difficulty in separating the effects of warning and destructive potential upon the degree of organizational change which occurred. In general, the greater the period of warning, the greater the preparation for coverage of the occasion and the fewer emergent, ad hoc alterations that should occur. Similarly, the more destructive and disruptive the disaster agent, the greater the expected organizational alterations. However, in the two cases we studied, the one disaster that allowed for extensive warning was also the far more damaging disaster agent. These two characteristics exert opposing influences upon the structure and processing of news by mass communication organizations. Further research should be concerned with disentangling the influence of these two features upon organizational response.

In sum, we see elements of both normalization and alteration in the six case studies we put together. The degree of change in organizational structure and news processing in these major mass media outlets ranged from the extraordinarily minimal for the newspapers, to the rather extensive for some of the electronic outlets. However, none of the mass communication organizations were able to operate without altering some of their normal patterns. As we shall describe and discuss later, the research in Japan found roughly the same kind of alterations in organizational

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news gathering patterns. The similarity of observation of course raises the question not only of why the patterns changed, but equally as important why they were somewhat the same in both societies, a matter which we address in more detail at the end of Chapter 11.

Our observations about alterations and changes in particular also raise a series of questions that would seem to necessitate additional examination. Further studies of different media of varying size, under different disaster conditions, should focus upon further trying to determine what elements of organizational structure and news processing must be altered to respond to the stress brought about by covering a major unexpected occasion by an organization that is geared to expected happenings. Some possible avenues for research in the future are suggested in our later discussion in Chapter 12.

CHAPTER 7

RESULTS OF THE CONTENT ANALYSES

Introduction

We now turn to an analysis of the product or output of the local print mass media outlets in the two communities during the disasters. The contents of both the Tulsa **Star** and the Houston **Globe** were studied. However, for technical as well as logistic reasons the content analyses undertaken were not identical in both cases.

A coding scheme covering three general content topics was initially developed and applied to the output of the Tulsa **Star**. In retrospect, while the results were not unsatisfactory, we felt that a more detailed and intensive content analysis could have been undertaken. Therefore, building on what was learned in doing the analysis of the Tulsa **Star**, we developed a more elaborate and extensive classification and coding scheme for looking at what the Houston **Globe** printed during the time of Hurricane Alicia. Therefore, because two somewhat different content analyses were done, the findings for both papers are separately presented with the later results from the **Globe** being set forth after we discuss the findings from our initial examination of the content of the **Star**. (Since the classification and coding scheme used for the content analysis of the **Globe** is the one we think should be used in future studies, it is presented in detail in Appendix 3).

As a prefatory note, we should indicate that the substantive findings from the two analyses, where comparable, were not inconsistent as we shall discuss later. Relatively speaking, the observations we made are roughly the same for both newspaper, taking into account that the hurricane situation allowed a considerable warning time period whereas the flood occasion did not, and that the disaster in Houston was worst by almost all criteria than what impacted Tulsa.

In both cases the content analyses for the most part were of a quantitative nature, although some qualitative analyses were also done in each case. The general goal was to ascertain what types of stories were published, where they were placed within the paper, what sources were utilized, what types of disaster related activities (both agent and response created ones) were reported, and what general themes emerged from the content. In both cases also, we examined the degree to which the stories included reference to what in the general disaster literature is included under the label of "disaster myths." As such our, discussion has direct relevance to some other previously undertaken analyses of disaster content (including those of Scanlon, Tuukko and Morton, 1978; Scanlon, 1980; McKay, 1983; and Goltz, 1984).

The Study of the Tulsa Newspaper

The Content Analysis Methodology.

We undertook a content analysis of all issues of the Tulsa **Star**
between May 20 and June 30, 1984. These issues provided a total of
42 daily papers which could be analyzed. The analysis was
performed utilizing a specific set of guidelines which covered
three major topical areas. The first had to do with how space was
utilized or how the news hole was filled in the newspaper. The
focus of the second and third part of the content analysis was on
all the substantive stories in the **Star** which reported about
disasters in the 42 issues. Thus, the second analysis was of
stories during the time period involved relating to any natural or
technological disasters or hazards other than the Tulsa flood.
This content coding was done so that a comparison could be made
with the stories on the Tulsa flood, which were the focus of the
third content analysis undertaken.

Similar to what was later done in the instance of the Houston
paper, only stories found in section A of the Tulsa newspaper were
used. That is, only the first section of the total paper was
examined. This is justified by the fact that practically all news
stories about the local disaster in the **Star** (as well as the **Globe**)
were only carried in that part of the newspaper.

The Substantive Findings.

1. General News Space Coverage.

The total number of pages in the A section of the Tulsa **Star** ranged
from 12-26 with the following frequencies:

Table 3.

Frequency of Number   Pages in Section

Number of Pages	Number of Paper
12	6
14	9
16	12
18	3
20	4
22	4
24	3
26	1

These figures indicates that there were a total of 710 pages which
could be content analyzed, with the mean number of pages in section
A being 17. These figures as presented might initially suggest

that the occurrence of the flood did not have any major impact on the number of pages included in any issue. The largest section A with 26 pages was on a date prior to the occurrence of the flood, and the six issues with 12 pages, the fewest number of pages per issue, appeared both before and after the flood disaster. However, on the first day in which flood stories appeared, there were 22 pages in section A, a figure above average with only four other issues being larger than that. Furthermore, as indicated earlier, this included two extra pages of news stories on the flood which otherwise would not have been in a normal issue of the paper. A similar two extra pages were added for the next day or Tuesday issue. In addition, the special 16 page supplement which contained only stories and photographs about the flood and had no advertising is missing from the above totals which are drawn just from Section A of the **Star**.

The total space available in section A of the **Star** ranged from 3,354 to 7,267 square inches, with the mean being 4,752 square inches. The actual sizes of the news holes in square inches ranged from 1,307 to 3,036. The mean was 2,086 square inches. However, because this figure does not take into consideration the total space available, it may not be a good representative figure. Fortunately, the percentages can be adjusted for the total space available. Of the total space, an average of 45.78% was used for news space, while 54.22% was devoted to advertising. The lowest percentage of space devoted to news was 28.61%, while the highest percentage of space used for that purpose was 65.42%. Again, this might seem to indicate that the flood did not affect the news coverage since both the high and low percentages occurred approximately three weeks after the flood. Moreover, the percentage of space devoted to news the first day flood stories appeared in the **Star** was 46.48%, just slightly higher than the mean. But again these figures obscure the fact that non-disaster news stories of any kind were dropped in place of local flood stories, and do not take into account the special 16 page supplement. Overall, the **Star** played the flood story as a major one in part by paying less attention to other happenings even though there was relatively little increase of total news coverage in Section A of the paper.

2. General Print Coverage of Non-Tulsa Disasters (NTD)

The second part of our content analysis dealt with the news accounts concerning natural and technological hazards and disasters other than those associated with the flood in Tulsa, that is the NTD ones. There was a total of 76 stories which met this requirement. The 76 news reports were contained in 38 of the 42 daily issues of the newspaper. Thus, there were only four issues that did not have any stories in this category; on the average two stories on disasters appeared daily in the **Star**. It is interesting to note that the first day on which there were no stories in this category was also the first day on which stories about the Tulsa

flood appeared.

One analysis we did of non-Tulsa disaster stories had to do with simply the total amount of space given to such reports in the newspaper. The range, in terms of percentage of the total space given to such news items, was from 0.1% to 8.44% The mean percentage of the space given to these stories based on the 38 issues which they appear, was 3.17%. Stories about disasters were not that prominent in terms of total space they had in the **Star,** although they showed up regularly. In fact, many of the NTD accounts, especially those about disasters outside of the United States, seemed to be used primarily as fillers for small spaces.

As another part of our analysis of the NTD reports, we included a number of different dimensions for coding purposes. One was the page on which the news item appeared, its spatial placement. We also noted whether or not the story was continued on to another page and if the story had pictures or graphics associated with it. The percentage of the newshole which the article occupied in the **Star** was determined, as well as the source of the story and the location of the disaster occurrence it described. Finally, we also coded if the NTD stories were placed in one of the first five pages of section A or further back in the newspaper. These are exactly the same dimensions we later used in looking at the newspaper reporting of the flood in Tulsa.

The frequencies of NTD stories on pages one through five are given in the table below along with the cumulative number of news reports appearing on or after page six.

Table 4.

Page Placement of NTD Disaster Stories

Page Placement	Number	Percentage
1	23	30.26
2	6	7.89
3	5	6.58
4	12	15.79
5	6	7.89
6 or later	24	31.58

We found that thirteen of these stories, or 17.1% of them, were continued on to another page of the **Star.** The most frequent continuation combination started on page A-1 and was competed on page A-4. There were a total of five stories, or 6.58%, which included pictures, all of whom were in black and white. Of these five pictures, one of them was the sum total of the story, and no text accompanied it. No stories had graphics accompanying them. The total percent of the newshole which was devoted to these NTD

stories ranged from 0.1% to 6.31% with a mean of 1.49%.

There were four possible sources for the NTD stories appearing in the **Star**. Almost all, 68 of them of 93.15% were from one wire service, the AP (there were none from the UPI). Four stories were put together from local staff reports, and one was from the local paper bureau. We could not ascertain the source of three news reports; there were no stories from any syndicated service.

The location of the event reported in these NTD news stories varied considerably. A total of 16 (or 21.05%) news reports covered disasters that had happened outside of the United States. The greatest number of items was actually about disasters occurring outside of Oklahoma but within the country--this amounted to 53 stories or 69.74% of the total. There were only two reports on disasters within Oklahoma, and five earlier ones in the Tulsa area (four of these were written by local staff reporters).

The substantive content analysis which we undertook of each NTD disaster story in the **Star** examined many characteristics such as the time period covered, the disaster activities discussed, whether or not estimates of the intensity of impact were made, what authoritative sources were cited in the report, what type of story it was, the theme of the report, and whether the content covered what in the literature are known as "disaster myths". Each of these dimensions will now be separately discussed.

We divided the disaster time discussed in the news articles into five time periods, namely preimpact, impact, the emergency or crisis period, and then the short run and the long run recovery periods. Some stories covered different combinations of time periods. While some of the possible combinations were included in the analysis, others were not and have been listed under "other". The frequencies are presented in Table 5 below.

Out of this data, it is worthwhile to single out all of the NTD news accounts that dealt with the impact phase. By doing so, it can be seen that 61 reports, or 80.3% of the stories in the Tulsa **Star** covered this phase. Conversely, only 14 news items or 18.42% reported either short run or long run recovery activities.

Table 5.

Frequencies of Disaster Period Covered

Time Period	Number	Percentage
Preimpact (1)	7	9.21
Impact (2)	21	27.63
Emergency Period (3)	1	1.32
Short run Recovery (4)	0	0
Long run Recovery (5)	2	2.63
1 & 2	4	5.26
1, 2 & 3	3	3.95
1, 2, 3 & 4	1	1.32
2 & 3	23	30.26
2, 3 & 4	4	5.26
2, 3, 4 & 5	5	6.58
3 & 4	1	1.32
4 & 5	1	1.32
Other	2	2.63

In addition, we classified all reported activities during the flood into one of two categories derived from an early **DRC** analytical distinction: agent generated activities and response generated demands (see Dynes, Quarantelli and Kreps, 1981). Agent generated demands include disaster planning; mitigation; warning; evacuation; short term sheltering; impact; search and rescue; casualty care; extended sheltering; restoration of essential services; provision of food, clothing, and similar human services; restoration of housing; restoration of commerce and business; long run individual effects; long run community level effects; and future mitigation. Each NTD story in the **Star** that discussed any of these topics in any way was counted as including that topic. Also, each story could discuss any or all of the topics. Thus, frequencies and percentages are based on a total of 76 possible occurrences for each disaster activity topic. The category "other" was used for two stories that deal with prevention activities. The results of this content analysis are presented in Table 6 below, and discussed later.

The second part of the disaster activities we analyzed were the response generated demands that were reported in the news articles. These included convergence, communication, social control, coordination, assignment of responsibility and future fund raising. Again, it was possible for any given NTD story in the **Star** to have content on more than one topic. The frequencies are presented below in Table 7, and discussed later.

Table 6.

**Frequencies of Stories on Agent Generated
Disaster Activities**

Activity	Number	Percentage
Planning	7	9.21
Mitigation	12	27.63
Warning	15	19.74
Evacuation	32	42.10
Sheltering	7	9.21
Impact scope	61	80.26
Search and rescue	11	14.47
Casualty care	13	17.10
Extended sheltering	0	0
Restoration of services	5	6.58
Provision of food, clothing and services	1	1.32
Restoration of housing	8	10.53
Restoration of commerce	3	3.95
Long run individual effects	4	5.26
Long run community level effects	4	5.26
Future mitigation	1	1.32
Other	2	2.63

Table 7.

**Frequencies of Stories on Response
Generated Demands**

Response Demands	Number	Percentage
Convergence	5	6.58
Communication	1	1.32
Social control	3	3.95
Coordination	3	3.95
Assignment of responsibility	1	1.32
Fund raising	1	1.32

In this last analysis, response generated demands were treated as
primarily group related forms of behavior. The first four listed

require some clarification. Convergence was used to refer to the coming into the impacted locality of some outside groups such as extra community relief agencies. Communication and coordination refer to action between two or more groups intended to help each other or to prevent duplication or confusion of tasks. Social control was used as a category to indicate formal restrictions on individual behavior such as allowing only certain designated persons into an impacted area or imposing a curfew.

From the substantive content data we analyzed on agent generated activities and response generated demands, several conclusions can be drawn. First, the agent generated activity most frequently discussed in the NTD stories was that of impact. In fact, it was discussed almost twice as often as the next most frequent behavior, that of evacuation. The third most frequently discussed agent generated activity was mitigation. Descriptions of these three activities is far more prevalent than presentations of information on any other agent generated activities. Put another way, disaster stories about non-Tulsa disasters presented mostly information about immediate impact effects and consequences, that a disaster had hit a particular location and resulted in certain kinds of casualties and property damage.

Also, news items on agent generated activities as a whole are much more prevalent than stories on response generated demands. This is partly understandable in that over 80% of the NTD articles we examined reported on the disaster time period we classified as impact, particularly the immediate and direct consequences of agent impact. Perhaps more important is that response generated activities are less overtly visible.

The inclusion in news reports of estimates on the intensity of impact in terms of loss life, casualties, and property damage was another dimension we examined. The analysis of this NTD content was complicated by two factors. First, some of the Star stories stated that there had been no loss of life or no damage in particular contexts. Second, many news accounts itemized the destruction or damage done. However, other NTD stories discussed specific damage to one building or in one particular neighborhood. Such accounts were not necessarily included under this analytical category. For example, a story which discussed the overall damage to the city police department or city part facilities would be included under this category, but a news item giving an estimate of the cost to replace a damaged floor in a building would not be included. In general, large scale damage estimated were the focus of our analysis.

Of the Star stories on disasters other than the Tulsa flood, 45 of them, or 59.21% gave estimates of destruction, damage, loss of life and/or casualties. This may seem like a relatively low figure when it is considered that over 80% of the news accounts discussed the impact time period. However, many of the NTD stories were of a

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rather general nature (e.g., describing a storm system moving across a certain region of the United States) or they described very small, individual looses in a particular situation.

Another topic we content analyzed was whether there was an authoritative source that was attributed as the source of the NTD information provided within each news item. Thus, sources could range from national government officials to private citizens. The coding categories we used along with the frequencies we found for each is given in table 8 below. As can be seen, the most often cited sources were FEMA officials, local governmental officials, and the local police department.

A number of possible sources, which we had available as coding categories, were never cited in any NTD article we examined. For example, no story ever cited any hospital official, any person from a religious group, any miliary officer or anyone from any school or educational organization. The "other" category was used for those news stories which cited spokespersons of unique organizations such as the railroad system, AMTRAK or a union

Table 8.

Frequencies Of Authoritative Sources
Cited Within The Content

Source	Number	Percentage
National Government Officials	3	3.95
FEMA Officials	28	36.84
Regional FEMA Officials	3	3.91
Other National Officials	1	1.32
State Government Officials	11	14.47
State EMA Officials	5	6.58
Local Government Officials	21	27.63
Local Relief Officials	7	9.21
Local Business People	5	6.58
Local Utility Officials	7	9.21
Local Mass Media People	3	3.95
Local Military Personnel	1	1.32
Local Police	24	31.58
Local Fire	10	13.16
Local Civil Defense	14	18.42
Local Weather Officials	5	6.58
Local Hospital Personnel	1	1.32
Citizens	9	11.84
Others	5	6.58
None	6	7.89

We also classified news stories into both the type of story they were, as well as the theme which ran through the report (see Table 9 below). As to type, a NTD story could be basically hard news, soft news, hard analysis, soft analysis, or predominantly but not exclusively one of the four other major categories. In this particular content analysis, the hard-soft distinction was made in terms of how closely the article was printed with respect to the time of impact of the disaster or hazard being discussed. If the publication of the news item was from two days, prior to or two days after impact, our coders classified the story as hard. If

impact was three or more days prior to publication, or likely to be three or more days after publication, the story was classified as soft. The news-analysis classification refers to the subject matter being discussed. Content was coded as being news if it primarily provided descriptive facts about the disaster, and was coded as analysis if the reference was to problems and activities associated with the disastrous occasion. Our findings are presented below.

Table 9.

**Frequencies Of Various
Story Types**

Type	Number	Percentage
Hard News	39	51.32
Soft News	12	15.79
Hard Analysis	1	1.32
Soft Analysis	6	7.89
Hard News Dominant	10	13.16
Soft News Dominant	4	5.26
Hard Analysis Dominant	2	2.26
Soft Analysis Dominant	1	1.32

From these results, it can be said that NTD hard news stories (as we defined the categories in this examination of content) predominated. Likewise, there were far more articles in the **Star** which presented hard or soft news than those which were analytical in tone.

As part of our content analysis, our coders also differentiated NTD stories into whether they were instrumental, expressive, dominated by one or the other of the two, or balanced in theme. Instrumental was defined as a news item which focused on descriptive facts about a disaster, while expressive was equated with what is usually known as human interest stories. Those reports which seemed to have an equal focus on both instrumental and expressive themes, was coded as balanced. The findings from this analysis are presented in Table 10 below. The results are rather clear cut. Combining Table 9 and Table 10, we can say that by far the majority of news stories in the **Star** were of the hard news type and have an instrumental theme to them.

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Table 10.

Frequencies Of Story Themes

Theme	Number	Percentage
Instrumental	58	76.23
Expressive	3	3.95
Instrumental Dominant	7	9.21
Expressive Dominant	1	1.32
Balanced	5	6.58

The reporting of "disaster myths" was the final content analysis we undertook. In this examination, we looked at the extent to which new stories in the **Star** presented instances of or discussed panic, looting, martial law, mass evacuation, increased criminal behavior, disaster shock and mass sheltering in the disasters discussed. In addition, coders attempted to ascertain if such presentations were set forth in a factual, mythical or neutral manner. In particular, the factual versus the neutral classification proved very difficult to distinguish. As a consequence, the results obtained do not seem worthwhile being presented. The results obtained on simple discussion of instances of "disaster myths" are presented in Table 11 below.

Table 11.

Frequencies Of Disaster Myths

Myth	Number	Percentage
Panic	1	1.32
Looting	0	0
Martial Law	0	0
Mass Evacuation	20	26.32
Increased Crime	0	0
Disaster Shock	5	6.58
Mass Sheltering	0	0

Overall, with the exception of mass evacuation, the NTD stories in the **Star** did not report on the other topics normally considered under disaster myths. Also, the NTD content about evacuation was fairly straightforward and not in the mythological framework.

3. General Print Coverage of the Flood Disaster in Tulsa.

The third major part of our content analysis of the **Star** involved an examination of all its stories on the Tulsa flood. These news accounts were analyzed using exactly the same criteria as the non-Tulsa stories we have just discussed. For that reason, the classification scheme and dimensions used are not presented again.

A total of 85 stories were included in this content analysis activity. Of the 42 different issues of the **Star**, 28 contained articles on the flood in the city. The eight daily newspaper issues published prior to the flood obviously did not contain any articles on the disaster. Additionally, there were six issues following the flood which did not any contain any news items on the disaster. The first of these issues was on June 14, slightly over two weeks after the flood impact.

We specifically analyzed the page placement of flood stories in the **Star**. Of the 85 stories, 29 of them or 34.12% were placed on the front pages. Fourteen of them or 16.47% were on the second page. Third pages had three stories or 3.53%. The fourth and fifth pages each had one story. Articles began on pages six or higher 37 times for a 43.54%

Of the 85 articles, 14 of them were continued on later pages. Again, the most frequent continuation started on page A-1 and was completed on page A-4. Thirteen of the news reports or 15.29% HAD associated with them. Of these thirteen pictures, ten were in black and white, two were in color, and one was black and white pictorial essay on the flood. Graphics were present in 5.88% of the articles. All five of the graphics were in black and white. The total percentage of the newshole associated with each of these articles ranged from a low of .13 square inches to a high of 14.5 square inches, with the mean being 1.88 square inches.

The source frequencies of the stories, where there was an identifiable entity, was rather clear. A great majority of them, 38 or 80.85% of the total came from local staff reports. The local paper bureau provided an additional six stories or 12.76%. The AP wire service was the source of three other news accounts of the flood. However, it should be noted that 38 other stories of the 85 we looked at, or 44.71% of them, did not have any identifiable source. At an impressionistic level, it seems fairly clear that almost all of these accounts, if not all, were derived from local sources.

As might be expected, almost all the news stories reported on the local situation. The figure was 82 or 96.47% of the total. However, the **Star** did have two reports on disaster aspects at the state level and one at the national level.

A content analysis was also made of the disaster time periods

covered in the stories published by the **Star** on the Tulsa flood.
The results of this analysis are presented in Table 12.

Table 12.

Frequencies of Disaster Period Covered

Time Period	Number	Percentage
Preimpact (1)	2	2.35
Impact (2)	2	2.35
Emergency Period (3)	0	0
Short Run Recovery (4)	16	18.82
Long Run Recovery (5)	33	38.82
1 & 2	2	2.35
1, 2 & 3	1	1.18
1,2, 3 & 4	1	1.18
2 & 3	1	1.18
2, 3 & 4	1	1.18
3 & 4	3	3.53
3, 4 & 5	2	2.35
4 & 5	17	20.00
Other	3	3.53

By combining categories it can be seen that nine stories or 10.59%
covered the impact time period while 76 stories of 89.41% dealt
with the short run and the long run recovery time phases. It is
noticeable that extremely few news stories reported on activities
during the emergency time period in Tulsa. In fact, almost all
such information were in articles also touching on other time
phases. The impact time period of course as was noted and detailed
in earlier chapters was heavily covered in the reporting of the
local electronic mass media during the flood. Also as might be
expected there were only two stories on activities during the
preimpact period.

As was done in the instance of non-Tulsa disaster stories, an
intensive examination was made on the frequency of news accounts
about agent generated flood activities. While an effort was made
to try to categorize all stories in terms of the major topical
subject matter discussed, a great number of new reports touched on
two or more activities. The results of this content analysis is
presented in Table 13, below.

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Table 13.

**Frequencies of Stories on Agent Generated
Disaster Activities**

Activity	Number	Percentage
Planning	11	12.94
Mitigation	11	12.94
Warning	2	2.35
Evacuation	10	11.76
Sheltering	9	10.59
Impact scope	9	10.59
Search and rescue	4	4.70
Casualty care	5	5.88
Extended sheltering	3	3.53
Restoration of services	12	14.12
Food, clothing and services	17	20.00
Restoration of housing	9	10.59
Restoration of commerce	2	2.35
Long run individua effects	28	32.94
Long run community effects	26	30.59
Future mitigation	10	11.76
Other	11	12.94

On the basis of the frequencies given in Table 13, what conclusions can be drawn about the flood disaster coverage of the **Star** newspaper? Obviously, the agent generated stories in the newspaper ranged over a wide range of topics. However, more than half of the news accounts dealt with long run individual or community level effects. There were 54 such stories or 63.53% of the total. Emergency time activities, while covered, were overall not a major focus of attention. This is consistent with the relatively little concern, just noted, with the impact time period.

In addition, the agent generated activities most frequently written about was the long run individual effects. These stories dealt with such matters as the stress undergone by the population, mental health issues, and the financial burden being borne by victims. The second most frequently discussed activity appeared in only two fewer articles than the first, and concerned the long run community level effects. These dealt with such matters as the disruption of commerce and business.

The attention given to these two topics is explainable in part by the community effort to obtain federal assistance, an increase in the availability of local Red Cross funds, and a major debate which developed on what steps should be taken to prevent future flood damages as happened in this disaster by the buying out of homes in flood-prone neighborhoods.

An analysis was also made of the frequencies of stories on response generated demands in Tulsa. The findings from that content analysis is presented in Table 14 below.

Table 14.

**Frequencies of Stories on
Response Generated Demands**

Response	Number	Percentage
Convergence	5	5.88
Communication	2	2.35
Social control	2	2.35
Coordination	10	11.76
Assignment of responsibility	2	2.35
Fund raising	19	22.35

Response generated demands appeared in some of the Star stories with one category, that of raising and obtaining funds for general recovery purposes, being the third highest of all topical issues reported. The necessity of coordinating the availability of such funds, also was relatively frequently discussed in the news accounts.

What sources were cited for the information presented in the various news stories in the newspaper? A content analysis that was done about this produced the results given in Table 15, below. Only three sources made up the great bulk of those cited for the information in the news articles, namely local governmental officials, FEMA officials, and private citizens. It is noticeable that although the recovery time period is the time focus of the bulk of the news accounts, very few local relief and business people are cited in the stories.

Table 15.

**Frequencies of Authoritative Sources
Cited Within the Content**

Source	Number	Percentage
FEMA Officials	18	21.18
Regional Government Officials	1	1.18
Environmental Officials	3	3.53
Other National Officials	2	2.35
State Government Officials	6	7.06
Local Government Officials	31	36.47
Local Relief Officials	1	16.47
Local Business Officials	5	5.88
Local Utility Officials	5	5.88
Local Mass Media People	1	1.18
Local Police	7	8.24
Local Fire	4	4.70
Local Civil Defense	1	1.18
Private Weather Service	1	1.18
Local Clergy	5	5.88
Local School Officials	2	2.35
Citizens	14	16.47
Other	3	3.53
None	6	7.06

What kinds of stories predominated in the reporting? The results
are presented in Table 16 below.

Table 16.

**Frequencies of Various
Story Types**

Type	Number	Percentage
Hard News	0	0
Soft News	10	11.76
Hard Analysis	5	5.88
Soft Analysis	54	63.53
Hard News Dominant	6	7.06
Soft News Dominant	3	3.53
Hard Analysis Dominant	2	2.35
Soft Analysis Dominant	2	2.35

It is clear from the data in Table 16 that there were very few articles that could be classified as hard news; soft news clearly predominated. This is consistent with what might be expected of a newspaper especially compared with electronic media outlets whether they be radio or television.

We also examined story themes in the sense of asking whether the reports were mostly of an instrumental or expressive nature. Our findings are presented in Table 17. As can be seen, while instrumental news stories slightly predominated in the **Star**, overall the newspaper accounts were equally instrumental as they were expressive.

Table 17.

Frequencies of Story Themes

Themes	Number	Percentages
Instrumental	36	42.35
Expressive	31	36.47
Instrumental Dominant	9	10.59
Expressive Dominant	2	2.35
Balanced	6	7.06

Our last content analysis in this part of the work attempted to examine if disaster myths were expressed in the news stories. The results are presented in Table 18.

Table 18.

Frequencies of Disaster Myths

Myth	Number	Percentage
Panic	5	5.88
Looting	0	0
Martial Law	0	0
Mass Evacuation	2	2.35
Increased Crime	0	0
Disaster Shock	1	1.18
Mass Shelter	4	4.70

Overall, the topics that are typically at the heart of the mythological view of disasters were not much represented in the

stories in the **Star**. At a more impressionistic level we did find
that about half of these twelve news accounts, did present content
that was consistent with the myths that researchers have talked
about. However, no conclusion can be drawn from this last
observation in that reference is only to extremely few articles.

4. Comparison of NTD and Tulsa Flood Coverage.

In what way were the reports about the Tulsa flood similar or
different from new stories about non-Tulsa disasters in the **Star**?
There were some similarities. Information about both kinds of
disasters were given prominence in that the majority of all stories
about them appeared in the first five pages of the newspaper.
While 11.9 % more NTD disaster stories appeared in these pages
than the accounts about the Tulsa flood, the latter was more often
given front page placement. Also, while both kinds of disaster
stories had roughly the same continuation rates from one page to
another, the stories about the flood in Tulsa had more pictures and
did utilize graphics were not presented for non-Tulsa disaster news
accounts. Also, the average newshole percentages were similar
although the stories about Tulsa did comprise a slightly larger
amount of the newshole.

However, there were also some significant differences. Almost all
the NTD stories were provided by the AP wire service and of course
were about disasters elsewhere in the nation or even outside the
United States. The Tulsa flood stories were put together almost
exclusively by the local newspaper staff and of course was about
the local community disaster. The NTD stories generally focused on
impact time both in terms of time and the activity described. The
accounts about the Tulsa flood on the other hand moved beyond
impact time to focus more on post impact time periods and
activities, and particularly those related to financial
considerations. The NTD stories cited as authoritative sources for
the reports, local police and national environment officials,
whereas the news accounts about the Tulsa flood referred more often
to both community and national governmental officials in explaining
actions taken in the postimpact recovery period. The NTD stories
for the most part were of the hard news type, while the majority of
the news accounts about the Tulsa flood consisted of soft analysis.

Overall, the comparative results are not very surprising and what
might have been expected. The explanations for what the content
analysis found are also in most cases fairly obvious. However, the
particular comparisons we made were as far as we can ascertain done
for the first time in any study, although an examination of the
content of local newspapers on disasters in their communities goes
back at least as far as some of the earliest work by the pioneer
disaster researcher, Harry Moore (1958).

5. Some Qualitatively Derived Observations.

In concluding, it might be worthwhile to note some general impressionistic observations about the news reports in the **Star**. For one, there is recurring mention in a number of them about a "100 year flood." Technically this is the worst flood that an area is likely to undergo during a hundred years. The newspaper stories tended to say that while Tulsa was prepared for a 100 year flood, the Memorial Day weekend flood was a 200 year one, and there was no way that the city could have expected it or been prepared for it. Indeed, it was written repeatedly that neighborhoods which had never before been flooded in the city's history, were flooded that weekend. Implicit in the accounts was the notion that "mother nature" was at fault and that no steps could have been taken to avoid much of the damage. Put another way, the flood disaster was characterized as resulting from the play of natural physical forces.

Apart from the disaster related news stories in the **Star** were the advertisements that appeared that made a link to the flood. A number of local businesses made offers allowing flood victims to postpone required upcoming payments or to rearrange their financing agreements. A few companies even offered in advertisements to clean or to repair articles purchased from them that had been affected by flood waters. Additionally, of course, there were advertisements that offered services for cleaning furniture or replacing articles damaged or lost in the flood. Some businesses also advertised the sale of flood damaged merchandise at reduced prices.

Finally, the newspaper content was generally permeated by an overall attitude of helpfulness. This was manifested in a variety of different ways. There were stories about people picking up debris as well as reports that the city had made arrangements for dumps to be free to the public for an extended period following the flood. A number of letters to the editor were also published that were primarily expressions of thanks to anyone and everyone involved in the recovery effort. On the whole, the content of the paper indicated general satisfaction with both how citizens and the city as a whole had responded to the disaster. There was very little content expressing dissatisfaction or unhappiness with any aspects of the handling of the flood occasion.

The Study of the Houston Newspaper

We now turn to presenting the results of our content analysis of the Houston **Globe**.

The Content Analysis Methodology.

A content analysis was done of all issues of the newspaper from August 16, 1983 until August 31, 1983. This period basically covers the three days prior to impact until two weeks after impact. The analysis was limited to the first section, that is A, of each

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edition. Section A of the paper includes the major, hard news stories. In addition, it included over 98% of all the stories published about Hurricane Alicia. The only stories not included in Section A were a hurricane tracking map in Section D and a brief story in Section B. Therefore, our sample includes practically all of the newspaper's coverage of Hurricane Alicia during the preimpact, emergency time, and early recovery phases.

We developed, after considering what we had done in our examination of the Tulsa **Star**, 17 different dimensions along which we did our content analysis. These are discussed in detail in Appendix 3. Since we feel that the framework we used in looking at the Houston **Globe** should be the one used in any future content analysis, the methodology we employed is presented in some detail in the appendix.

All content was double coded by two different coders. A subsample of the material was used to measure intercoder reliability. The degree of agreement ranged from a high of 100%, for the most easily quantified material such as column inches, source, location, etc., to a low of 88% for general themes.

The Substantive Findings.

General Magnitude of Coverage of Hurricane Alicia.

How extensively did the **Globe** cover the hurricane disaster? We found that the sheer volume of its coverage was massive. During the 16 days of coverage, 160 separate stories totalling 9,646 column inches were produced. This material consisted of 28.1% of all the news included in Section A during this time. Furthermore, 34 stories, or slightly more than two a day, appeared on the front page. From the first day until the last issue we looked at, a story about Hurricane Alicia appeared on the front page. In addition, 60 photographs or graphics were included in the coverage. Heavy staff involvement in the news production was indicated in that 38 different by-lines appeared. In sum, this massive coverage averaged ten stories of approximately 600 column inches each day. The material totalled over 180,000 words.

The magnitude of this coverage can be appreciated by examining Table 19 below. During the 16 days of coverage, a total of 328 pages amounting to 34,360 column inches appeared in Section A of the **Globe**. These totals represented an average of about 20.5 pages and 2,141 inches each day of publication. The largest "news hole", that is, space devoted to news as opposed to advertisements, occurred on Thursday, August 18 and Friday, August 19. These are the editions that immediately preceded and followed the time that Hurricane Alicia reached the Texas coast. This increased space devoted to news was a direct result of the paper's covering of the disaster. Four open pages (i.e., added pages entirely composed of news without accompanying advertisements) were added on the 18th,

and six such pages were inserted on the 19th. An additional three open pages were added to the edition produced on Saturday. All of these pages were devoted to stories about the hurricane and its effects. Such an addition of pages is an expensive venture for newspapers because the size of the news hole is related to the amount of advertising that is purchased in each edition. An average 35.6% of the space in Section A was given over to news.

Of the 34,360 square inches of news, 9,646 or 28.1% were devoted to reports about the disaster. As can be noted, the coverage was particularly intense during the immediate preimpact and the crisis or emergency periods. We can almost see Alicia approach, strike, and withdraw in this data. Two days before landfall, the stories about the hurricane amount to about 30% of the news. The day after her arrival, the percentage in the **Globe** jumped to about 45. Thursday began an intense, three day coverage period in which more than half of all the stories about the disaster were published. On Friday, August 19, 2,171 column inches representing about 67% of the news in Section A were hurricane related accounts. The next day found accounts of Alicia still commanding over 60% of the news hole. Interest in the hurricane lessened somewhat over the next five days, but generally about 30% of the news hole still focused on the disaster. On Friday, August 26 (one week after landfall) interest was again halved to about 15% with interest continuing at about this level until the last day of our content analysis.

This pattern of coverage in the **Globe** is similar to that found by McKay (1983) who looked at the disaster content of Australian papers. However, the magnitude of the coverage we found is most impressive. A hurricane related story appeared on the first page of every edition, including the three issues in which only one story appeared. Except for the first and last days of the content we examined, never less than seven percent of all the news was devoted to the disaster. As we shall discuss later, this contrasts somewhat with the lesser coverage of the flood disaster in the Tulsa **Star**.

Patterns of Coverage in the Preimpact, Crisis and Early Recovery Periods.

On Tuesday morning, hundreds of thousands of Houston residents were greeted with a headline in the **Globe** on the top of Page 1 that said:

> Alicia Drifts Toward Texas: Tropical Storm
> Could Strengthen, Forecasters Say.

This wire service story was accompanied by a color map of the Gulf of Mexico which detailed the probable path of the approaching storm. This article not only heralded the beginning of the hurricane; it also signaled the beginning of another deluge--a torrent of 150 other stories about Alicia.

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It is interesting to note that the newspaper treatment that began on Wednesday, August 17, initiated a pattern that would epitomize the coverage throughout the next 15 days. Generally, each issue included one or two major stories amounting to between 100 and 200 column inches each. These tended to be "overview" articles" that set forth a broad stroked picture of the disaster. The majority of the stories were of moderate length, i.e., 40 to 100 inches and focused upon specific topics. A smaller number of additional articles were short and tightly focused in coverage.

For purposes of examining the nature of these stories, we found it useful to divide the coverage into three time periods: preimpact, crisis, and early recovery. The preimpact period covers the three days prior to the landfall of the hurricane (although Alicia impacted in the early morning hours of August 18, the edition of the Globe published that day must be considered as a preimpact issue. This is a morning newspaper, and the copy was produced prior to landfall). The crisis period includes the three issues that appeared from Friday, August 19, through Sunday, August 21. The recovery period begins on Monday, August 22, and continues until the time we ended our analysis. The arbitrary designation of Monday as the beginning of the recovery period is based upon the attempt that was made in Houston, after the weekend, to reestablish normal commercial and other social activities. We will now examine the nature of the coverage in these three time periods.

Table 20.

**Extent of Coverage of Hurricane
Alicia Stories by Time Periods**

Dimensions	Preimpact	Crisis	Recovery	Total
Pages in Section A	60	72	196	328
News Hole in A	6,398	8,300	19,662	34,360
News Hole %	36.3	39.2	34.1	35.6
Stories on Alicia	31	69	60	160
Front Page Stories	6	11	17	34
Inches on Alicia	2,134	4,292	3,220	9,646
% of News Hole	33.4	51.7	16.4	28.1
# of Pictures and Graphics	15	26	19	60

1. Extent of Coverage by Time Period.

As indicated in Table 20, there is little variation in the size of the news hole relative to the total space in the paper across the three disaster time periods. However, news does constitute a slightly higher percentage of the coverage during the crisis

period; this increased coverage is probably related to the storm.

During the preimpact period, an average of ten stories a day were published in the **Globe**, representing 33.4% of the news hole. The one front page story on Tuesday was followed by eight reports (two on the front page) on Wednesday, and 22 on Thursday (three on the front page). A total of 15 photographs or graphic displays accompanied these stories. On a daily basis, these constituted about 30% of the entire coverage of the disaster. They ranged from daily maps showing the storm's geographic movements, to detailed diagrams explaining the meteorological anatomy of a hurricane, to front page colored photos of evacuating families and households.

Coverage expanded tremendously during the crisis period. An average of 23 stories appeared in each of the three issues of the **Globe**. Eleven reports appeared on the front page, with four each on Friday and Saturday. No other stories appeared on the front page on Friday, although a report on a mass murder did get into the first page on Saturday. Thirteen photographs, three in color, took up 563 column inches on Friday, and an additional eight appeared on Saturday. All of these pictures focused upon vivid scenes of the physical destruction wrought by Hurricane Alicia. Over half of all the news during this time period was devoted to the disaster.

As noted, during the period of recovery, there was a slackening in the newspaper coverage of the hurricane. Still, over 16% of all the news continued to focus upon Alicia and her aftermath. Front page stories for these 10 days average 1.7; however, there were never fewer than two until one week after landfall. While 19 photographs did appear, they were concentrated in the early time recovery period. Only two small photos appeared in the last four issues we studied. The coverage for this period ended with the publication of a fairly brief, photoless report on Wednesday, August 31, which talked about the reissuing of clean up contracts.

2. Source of the Stories.

As can be observed in Table 21, the vast majority of the stories in all the time periods were produced by the local staff of the **Globe** newspaper. The range is from approximately 80% for the preimpact reports, to about 90% of the crisis time articles. However, there is evidence of a move on the part of the paper toward a proprietary ownership attitude about the coverage of Alicia. During the preimpact period, 16.1% of the stories were from the wire services; many concerned warning forecasts from the Hurricane Center in Miami. During the impact or crisis period, only one story came off the wires, and none during the recovery period came from this source. Wire stories on the disaster, of course, were being produced during this time period. As could be expected, given journalistic notions of domain, however, these stories were not used. Furthermore, the increasing utilization of local bureau personnel for stories also indicates this inwardness. With the

exception of two stories obtained from the Washington, D.C. bureau of the newspaper, and three from the one in Austin, the bureau reports were really local stories from the Galveston bureau. Throughout all time periods, the coverage of this ongoing story was kept "within the house."

Table 21.

Source and Location of
Hurricane Alicia Stories by Time Periods

Dimensions:	Preimpact N %		Crisis N %		Recovery N %		TOTAL N %	
Source of Stories.								
Wire Service	5	16.6	1	1.4	0	0	6	3.8
Syndicated Service	0	0	0	0	0	0	0	0
Local Bureau	1	3.2	6	8.7	11	18.3	18	11.3
Local Staff	25	80.6	62	89.9	49	81.7	136	85.8
Location of Stories.								
Local	22	71.0	60	87.	57	95.	139	86.9
State	6	19.4	6	8.7	3	5.	15	9.4
National	3	9.7	3	4.3	0	0	6	3.8

3. Location of Stories.

Table 21 also presents data concerning the location of the stories, i.e., what geographic area they focused on. Given our previous discussion of the sources of the reports, it is not surprising that the articles are overwhelmingly local in nature. Not only are they local, but they became increasingly so throughout the disaster period. During the preimpact period, three national stories focused upon warnings about the storm. The three during the crisis phase discussed the Presidential declaration of a disaster, and the adequacy of federal funds for disaster purposes. After Sunday, all national stories disappeared. Similarly, articles at the state level concerning Alicia also continually receded proportionately

Table 22.

Disaster Phases Covered by
Hurricane Alicia Stories by Time Periods

Disaster Time Period	Preimpact N %		Crisis N %		Recovery N %		TOTAL N %	
Preimpact	24	77.4	4	5.6	3	5.	31	19.4
Impact	2	6.5	25	36.2	3	5.	31	19.4
Crisis	0	0	17	25.	3	5.	20	12.5
Short Range Recovery	0	0	31	44.9	38	63.3	69	43.1
Long Range Recovery	0	0	10	14.5	27	45.	37	23.1
Other	5	16.1	2	2.9	0	0	7	4.4

N=refers to the number of stories that discuss this time
period. % may discuss more than one time period, so the
percentages do not add up to 100%.

4. Disaster Time Periods.

The disaster periods covered by the various stories are presented
in Table 22. The results are not unexpected, but they do show a
few patterns worthy of note. During the preimpact time period, the
majority of reports focused upon such activities as mitigation,
general preparatory, warning, and evacuation behaviors. Except for
retrospective analysis or warnings of secondary impacts, preimpact
stories generally disappear during the later time periods. The two
impact time articles which were published during the preimpact
period were retrospective accounts of the impact of Hurricane
Camille and Hurricane Allen in previous years. Five stories did
not fit into our classification scheme. These preimpact articles
included attempts to place the approaching hurricane within an
historical context and also included lists of previous hurricanes,
damage records, and historical accounts.

The crisis time period presents a more complicated and interesting
pattern. First, preimpact stories, which had totally dominated the
coverage by the newspaper, immediately recede. Actually, only one
article during the crisis period was focused entirely upon the
preimpact phase. This story in the Globe concerned the decision of
the Mayor of Galveston not to order an evacuation.

Second, it is noticeable that the crisis time period is relatively
ignored in this coverage. While 25% of the reports during this
period did cover such issues as search and rescue, casualty care,
and extended sheltering, this statistic is somewhat misleading.
Only eight stories (11.8%) dealt solely with crisis or emergency

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time activity. This represents only five percent of the entire coverage of the **Globe**. Why coverage of the emergency period is relatively slight cannot be determined here. However, it may be noted that the crisis phase is characterized by considerable ephemeral, emergent behavior. It is behavior that falls outside the normal "net" of sources and "beats" that reporters utilize in generating news items. This activity, in effect, escapes the normal news catching mechanism of mass communication organizations.

Third, there is rush to covering recovery in these stories. Articles focusing upon short range restoration and long range rehabilitation appear immediately after impact. In fact, 18% of the news on the day of impact concerned short range restoration, and 12.5% focused upon long range rehabilitation.

It is evident that most of the reports do focus upon restoration and recovery. Obviously, these stories dominated the recovery time period coverage. However, it should also be noted that over 51% of all the news accounts dealt solely with these time periods. Restoration and recovery actions and measures almost always are undertaken by traditional groups. Local and state government agencies, businesses, and other institutionalized organizations are heavily involved. On an everyday basis, these kinds of community entities are also traditional sources of news for reporters in their construction of reality. It may be that the emphasis given to these time periods is more a result of the routinization of news gathering processes, rather than their "objective" importance in reality. The rapidity with which they appear in the immediate postimpact period would support this general proposition.

5. Agent Generated Disaster Activities.

As opposed to broad time periods, Table 23 below presents data concerning the extent to which specific disaster behaviors were discussed in the **Globe**. Only three (1.9%) of the 160 articles did not discuss any agent generated activities. The results follow expected patterns and are consistent with the findings concerning the disaster period. Overall, restoration of essential services, the scope and intensity of the impact, and the providing of food, clothing and human services were the most discussed matters.

The activities that are relatively ignored are interesting. Search and rescue behaviors were only noted in 3.8% of the stories, with casualty care also given little attention. Once again, these are emergent phenomena that generally fall outside the traditional news gathering net. Also, the most ignored activity is that of future disaster planning and mitigation. Perhaps the time frame in which we conducted our analysis might have been too short to capture later stories that might discuss these issues. However, such behaviors oriented towards the future are often discussed within two weeks of impact. For readers of this newspaper, this issue was not made significant. (Less than 60 column inches were devoted to

this topic out of 9,646). Finally, let us simply note that the "other" stories were rather heterogeneous, ranging from the Presidential declarations that were made, to fire fighting, to questions of blood shortages, and to the restoration and salvaging of trees in the wake of the hurricane.

6. Response Generated Disaster Activities.

As also indicated in Table 23, significantly less attention was paid in this newspaper to response generated activities. During the preimpact period, these kinds of behavior, whether by individuals or organizations, were basically invisible. Only one story in the **Globe** discussed any such activities. This was a retrospective account of social control and coordination problems associated with Hurricane Allen: however, it took up only 19 of the 2,134 column inches given to the preimpact time period.

Likewise, response generated disaster activities during the crisis or emergency time period were also generally ignored. Only about 20% of the stories addressed such matters. Twelve of the reports (17.6%) did discuss social control activities. Mainly, these stories concerned the control of looting and price gouging by local firms and the imposition of a curfew in Galveston. With the massive destruction of the telephone system, five stories discussed problems of communication among responding community agencies. The news items concerning the assignment of responsibility primarily focused upon the lack of an evacuation order and the general minimizing of the storm by city officials in Galveston. Some mention was made of fund raising activities undertaken by the Red Cross to efforts being made to obtain outside funding to pay for the massive clean up effort required in the Houston area.

Response generated activities were addressed somewhat more in the coverage of the recovery period. Over 50% of the stories at least mentioned one of these problems. The general topics are similar in tone and emphasis to that found in the crisis period; however there is some variation in the themes. Thus, while the social control stories still focus upon the supposed looting, crime and the curfew imposed, the articles in the **Globe** concerning the assignment of accountability or culpability primarily consider the question of responsibility or blame for the delay in restoring power and telephone services. Stories about coordination and communication also focused upon the problems of restoring services. Finally, the issue of the public awarding of contracts to private contractors for debris removal became a story that dominated the last few days of coverage that we examined. Matters of coordination and blame were considered in the news stories discussing this controversy.

In sum, as indicated in Table 23, compared to reporting on agent generated activities, response generated behaviors were relatively ignored. Except for the issue of social control, none of the activities were reported in more than 10% of the newspaper stories.

Table 23.

**Agent and Response Disaster Activities
in News Stories by Time Periods**

Activities	Preimpact * %**		Crisis N %		Recovery N %		TOTAL N %	
Agent Generated:								
Planning	12	38.7	1	1.5	3	3.3	15	9.4
Mitigation	15	48.4	1	1.5	2	3.3	18	11.3
Warning	8	25.8	1	1.5	2	3.3	14	8.8
Evacuation	12	38.7	4	5.9	2	3.3	21	13.1
Sheltering	10	32.3	9	13.2	1	1.7	20	12.5
Impact Scope	5	16.1	26	38.2	8	13.3	39	24.4
Search and Research	1	3.2	3	4.4	2	3.3	6	3.8
Casualty Care	0	0.0	9	13.2	1	1.7	10	6.3
Extended Sheltering	0	0.0	2	3.0	7	11.7	9	5.6
Rest of Services	1	3.2	18	26.5	24	40.0	43	26.9
Food, Clothing, Shelter	0	0.0	14	20.6	19	31.7	33	20.6
Rest of Housing	0	0.0	9	13.2	14	23.3	23	14.4
Rest of Commerce	0	0.0	11	16.2	9	15.0	20	12.5
Long Run Individual Effects	2	6.5	5	7.4	8	13.3	15	9.4
Long Run Community Effects	1	3.2	4	5.9	9	15.0	14	8.8
Future Mitigation	0	0	2	3.0	2	13.3	4	2.4
Debris Clearance	0	0.0	3	4.4	12	20.0	15	9.4
Other	4	12.9	14	20.6	1	1.7	19	11.9
None	0	0.0	3	4.4	0	0.0	3	1.9
Response Generated:								
Convergence	0	0.0	2	3.0	0	0.0	2	1.3
Communication	0	0.0	5	7.4	3	5.0	8	5.0
Social Control	1	3.2	12	17.6	14	23.3	27	16.9
Coordination	1	3.2	6	8.8	10	16.7	17	10.6
Assignment of Responsibility	0	0.0	6	8.8	10	16.7	16	10.0
Fund Raising	0	0.0	6	8.8	8	13.3	14	8.5
None	30	96.8	54	79.4	27	45.0	111	69.5

7. Sources Cited in the Stories.

The sources cited in the various newspaper articles are presented below. Only 12 of the 160 stories did not cite any source. All but two of these were accounts in the preimpact period and were information pieces apparently taken from documents of emergency management agencies, but no reference to any source is made.

Table 24.

**Number of Stories Citing
Specific Sources by Time Period**

Source	Preimpact N*	Preimpact %**	Crisis N	Crisis %	Recovery N	Recovery %	TOTAL N	TOTAL %
National Government	4	12.9	5	7.4	2	3.3	11	6.9
Regional Government	1	3.2	2	3.0	0	0.0	3	1.9
NWS-National	5	16.1	2	3.0	1	1.7	8	5.0
NWS-Regional	4	12.9	3	4.4	1	1.7	8	5.0
State Governor	1	3.2	5	7.4	2	3.3	9	5.7
State Nat. G.	0	0.0	1	1.5	1	1.7	2	1.3
State CD	1	3.2	1	1.5	0	0.0	2	1.3
Other state	1	3.2	7	10.3	7	11.7	15	9.4
LOCALS:								
Government	4	12.9	22	32.4	24	40.0	50	31.4
Relief	4	12.9	7	10.3	9	15.0	20	12.6
Business	8	25.8	18	26.5	14	23.3	40	25.1
Utility	2	6.5	9	13.2	12	20.0	23	14.5
Mass media	0	0.0	2	3.0	1	1.7	3	1.9
Military	2	6.5	2	3.0	1	1.7	5	3.1
Police	4	12.8	14	20.6	1	1.7	19	11.9
Fire	0	0.0	5	7.4	2	3.3	7	4.4
CD	6	19.4	6	18.8	0	0.0	12	7.5
WB-public	5	16.1	2	3.0	0	0.0	7	4.4
WB-private	0	0.0	1	1.5	0	0.0	1	1.5
Hospital	1	3.2	8	11.8	3	5.0	12	7.5
EMO	1	3.2	1	1.5	0	0.0	2	1.3
Religious	0	0.0	0	0.0	0	0.0	0	0.0
Educational	1	3.2	2	3.0	4	6.7	7	4.4
Citizens	8	25.8	19	27.9	6	10.0	33	20.8
Other	3	9.7	7	10.3	3	5.0	13	8.2
None	10	32.3	1	1.5	1	1.7	12	7.5

* Refers to the number of stories that cited the source.
** Stories may cite more than one source, so percentages do

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not sum to 100.

As would be expected, local sources are referenced more than state, regional, or national officials or organizations. Local government and business officials were referenced in over one fourth of the articles. In fact, there is evidence of an increasing reliance through time upon such governmental sources. There is also heavy reliance upon spokespersons of the local utilities, relief organizations and police departments. Although relief agencies were cited with about equal frequency throughout the three time periods, officials from the utilities were increasingly referenced, eventually being cited in 20% of the recovery stories. Conversely, there was a lessening of citing police sources after the crisis or emergency period. Similarly, local civil defense agency sources were not cited at all during the recovery time period after having been referenced in almost 20% of the news stories in the earlier time period.

These findings are certainly consistent with Quarantelli's observation that a "command post" view of disaster occasions is presented by local mass communication systems (1981). However, as we see, there is a slight shift from emergency organizations such as police departments and civil defense agencies, to less emergency focused ones such as utility companies and city officials.

Given that the news story is primarily a local one, there are understandably fewer references or citations to state and national sources. Representatives of the Federal Emergency Management Agency were the most frequently cited source. With the emergence of relief and restoration activities, the visibility of organizations involved in such matters, steadily increased. Representatives of other federal agencies, including the **NWS**, were decreasingly cited through time. None of the sources from state groups were referenced over 10% of the time.

Mention must be made concerning the citing of "average citizens." Residents of the area were cited in about 20% of the stories. They were mentioned most frequently in reports during the preimpact and crisis periods. However, citizens were treated differently from the other established sources. First, most of the citations from them were in "expressive" or human interest articles, not in instrumental stories. Twenty one of the citations (63.7%) were in expressive articles, which, throughout the coverage of the disaster, are outnumbered by instrumental pieces four to one. Second, after the impact of the hurricane, a total of 13 "lead stories" appeared on the front page of the newspaper. These major articles totaled 1,418 column inches. There was not a single reference to any citizen in these reports on the first page of the paper. The "command post view" appears to have been presented in these articles in the **Globe.**

8. Estimates of the Intensity of the Impact.

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Fifty seven of the news reports (35.6%) presented estimates about the death, injuries, and amount of destruction occasioned by the hurricane. As Scanlon (1978) and McKay (1983) have previously found in other studies of the same matter, these figures appear to have been fairly accurate, given the knowledge that was available at the time. All of the estimates cited authoritative sources, such as the police and hospital spokespersons, city officials and insurance adjusters. The figures of the severity of the impact did escalate through time. Deaths were initially announced as six, but gradually rose to 21 over the next week. Property loss was initially estimated at five hundred millions. By the end of the period at which we stopped our analysis, a figure of one billion, 200 million to one billion, 500 million dollars was being cited in the paper. Various estimates were presented and referenced throughout this time period. At any given point in time they were very similar, even though the information came from a variety of sources.

9. Type of Story.

As can be observed in Table 25 below, timely stories or hard news items, are much more common than soft articles. Overall, 85.6% of all the reports were hard, i.g., they concerned events or issues of the previous two days or the following two days. During the preimpact time period, 29.1% of the 31 stories were soft. These were retrospective and historical accounts of previous disasters. Also, about 18% of the articles on disaster recovery could be classified as soft. In this case, these stories were future oriented discussions of recovery, with two retrospective accounts of earlier phases of Hurricane Alicia. Almost 95% of all news report items in the **Globe** during the crisis period were hard. In general, the image in these pages is one of a present time orientation.

Similarly, news items significantly outnumber analysis pieces. Approximately 86% of all the stories were news, i.e., a description of facts about specific events. Pure news stories, without any analysis, totalled 75.9% of the articles. As can be observed in Table 25, the overwhelming majority of these were hard news stories (69.4%). Only 11.9% of the articles were pure analysis pieces.

Most of these appeared during the preimpact and recovery time periods. Unlike the news articles, the analysis pieces were evenly split between hard and soft categories. Therefore, our data indicate that the content emphasizes the timely reporting of happenings, and gives less attention to the more slowly paced analysis of them.

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Table 25.

Type and Tone of Stories
on Alicia by Time Period

	Preimpact N %		Crisis N %		Recovery N %		TOTAL N %	
Type of Story:								
Hard News	17	54.8	51	75.0	43	71.7	111	69.4
Soft News	6	19.4	3	4.4	3	5.0	12	7.5
Hard Analysis	5	16.1	2	3.0	3	5.0	10	6.3
Soft Analysis	2	6.5	0	0.0	7	11.7	9	5.6
Hard News/Analysis	0	0.0	10	14.7	3	5.0	13	8.2
Soft News/Analysis	1	3.2	1	2.5	0	0.0	2	1.3
Hard Analysis/News	0	0.0	1	1.5	0	0.0	1	1.7
Soft Analysis/News	0	0.0	0	0.0	1	1.5	1	1.7
Tone of Story:								
Instrumental	22	71.0	38	55.9	39	65.0	99	62.3
Expressive	4	12.9	11	16.2	4	6.7	19	11.9
Inst/Expressive	3	9.7	12	17.6	12	20.0	27	17.0
Exp/Instrumental	2	6.5	7	10.3	5	8.3	14	8.8

10. Tone of Story.

In Table 25 we also present data about the "tone" of the articles.
Instrumental stories were those that focused upon activities that
were purposeful responses to the disaster impact. They included
discussions of the scope and intensity of the impact, warning
predictions, and other general preparatory and response actions.
Expressive stories primarily concerned "human interest" and "moral
maintenance" pieces. They touched on various topics such as the
birth of a baby named "Alicia" during the storm, the cooperative
and supportive actions of neighbors, and individual exploits of
heroism, tragedy and danger.

It is also clear from Table 25 that instrumental stories far exceed
expressive ones in the **Globe**. About 79% of all the news items were
predominantly instrumental in tone and 62.3% were purely
instrumental (that is, they did not contain any expressive
components). Though there was not an extreme pattern of variation,
expressive stories were most likely to appear during the crisis
time period, and less common during the recovery stage. A little
more than 25% of the emergency time stories were predominantly or
solely expressive in nature. Among the topics discussed in these
articles were reports on the condition of the city zoo, birds, and

the overcrowding of animal shelters. Numerous personal impact
experiences and personal accounts of loss and comparison with other
storms were published. Helpful insurance adjusters, a vacation ad
in the newspaper for a hotel in the impact area, a man who won a
court battle by showing up in the courtroom during the disaster,
and the "never say die" attitude of Houstonians were among the
expressive stories presented during the crisis period. However,
only one of these stories appeared on the front page of the
newspaper (and that was by one of the staff reporters who wrote
about the personal impact of the disaster on themselves). As we
previously noted, it was this type of story that relied most
heavily upon citizen sources.

11. Disaster Myths.

Many researchers in the past have hypothesized that the mass
communication system is the prime perpetrator of disaster myths
(see Quarantelli and Dynes, 1972; Wenger, 1980). However, Goltz
(1984) has challenged the notion that mass media outlets do present
such stories in their outputs. His analysis of the coverage of
four earthquakes by the Los Angeles Times and the Santa Monica
Evening Outlook found that little attention was given to mythical
elements, and that the overwhelming image depicted was one of
organizational and emergent adaptive actions. Does our analysis of
the newspaper content we looked at support the image of mythical
presentation, or does it support the view of Goltz? In Table 26 we
present our data on this question.

Table 26.

Disaster Myth Stories by Time Periods

Myth:	Preimpact N* %**		Crisis N %		Recovery N %		TOTAL N %	
Panic	3	9.7	0	0.0	0	0.0	3	1.7
Looting	2	6.5	10	14.7	5	8.3	17	10.7
Martial Law	0	0.0	0	0.0	0	0.0	0	0.0
Mass Evacuation	8	25.8	4	5.9	0	0.0	12	7.5
Increased Crime	2	6.5	8	11.8	5	8.3	15	9.4
Disaster Shock	0	0.0	1	1.5	0	0.0	1	.6
Mass Sheltering	1	3.2	5	7.4	4	6.7	10	6.3
None	20	64.6	46	67.6	47	78.3	113	70.6

As can be seen in the Table above we found that approximately 70%
of the stories in the **Globe** made no reference to any myth
phenomenon. Furthermore, only brief, passing references were made
to any behavior involving panic, martial law, or shock. Certainly
these were not quantatively major themes. In addition, the
treatment of these topics was not always mythical. For example,

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two of the three references to panic were mythical, but one was not. A front page story on August 17 states that the Mayor of Galveston feared he would panic residents by calling for a total evacuation. On the following day, a story on Page 22A quoted a state senator as blaming the **NWS** for creating "undue panic" by its dramatic pronouncements of the strength of the storm. However, the content of the third article was anti-mythical. It noted that there was no panic and that:

> people are calmly packing their belongings and
> pulling onto uncrowded Texas 185 (8/18: 21).

However, other topics that researchers have dubbed mythical were more frequently discussed. But were they treated in a mythical or anti-mythical fashion?

Let us consider the myth of <u>massive shelter utilization</u>. Ten stories in the paper discussed the need and demand for sheltering. Of these, two of the reports were anti-mythical. One story noted that only about 1,000 people used public shelters in Galveston. The other account basically reported that some shelters were empty of users. However, three of the stories were inherently mythical. One inferred a very heavy need for short term shelters, and another noted a similar need for "cooling centers." (8/18: 17 and 8/24: 16A). The third mythical article was an extensive human interest story on life in a public shelter and focused upon a woman who had spent many days in it (3/20: 22A). The remaining five stories were basically neutral in that they simply noted the number of people who were housed in the various public shelters. Estimates of between 20,000 and 40,000 people using the shelters were given as being presented by various agencies and organizations. While these were simply reported, they do leave the impression of rather massive sheltering, without also noting that these figures, even if correct, amount to less than one percent of the total area population.

Second, the newspaper discussion of <u>mass evacuation</u> shows a similar mixture of factual and mythical treatment. Of the dozen references to such evacuation, four were anti-mythical. A front page story in the **Globe** on August 17 noted that very few residents were leaving the coastal area. Similarly, on the next day a story on Page 20A stated that:

> no accidents were reported

from evacuation activities. On August 19, an article on Page 18A stated that:

> in Galveston, officials estimated that more
> than 50,000 residents rode out the
> storm...Thousands of residents stayed in their
> homes, which they fortified and stocked with

provisions, instead of fleeing the storm.

Finally, a story on Monday said that:

> it was clear on the drive to Galveston that
> national radio reports of a massive evacuation
> were absurd (8/21: 1A).

Conversely, five articles presented an inherently mythical image of mass evacuation and its attendant dangers. Two information pieces on August 17 discussing problems in evacuating noting that it can result in congestion when such movement was not necessary . These stories presented major maps of evacuation routes and warned people that:

> if you plan to go to a shelter, walk, if
> possible, to help alleviate traffic congestion
> (8/17: 18A).

On the following day, a story on Page 21A noted that most people had evacuated, and a companion piece on Page 22A quotes a resident as saying:

> I'd rather fight a hurricane than all those
> crazy people on the road.

Finally, another story on the same page in the **Globe** was headlined:

> Allen Evacuation Stressed Need for Preparation

described the massive traffic jams and problems that may have occurred in the response to that earlier hurricane in the area.

There stories had somewhat mixed content, offering both anti-mythical and mythical elements. One report captures the essence of these treatments and also indicates the use of myths to justify public policy. On August 19, a major story on Page 12A discusses the decision of the Mayor of Galveston not to order an evacuation of his town and area. It states:

> Mayor Manuel said ordering people to evacuate
> via highway escape routes would have been more
> dangerous than having island residents stay in
> their homes.

Therefore, while a number of articles did accurately report on evacuation, the image still does emerge that mass evacuation is a common phenomenon, and a dangerous one at that.

Third, 15 of the newspaper stories in the **Globe** discuss an increase in <u>criminal behavior</u>. In this instance, the treatment was predominately consonant with mythical images. Only one such story

was anti-mythical. This was a brief reference on August 18 that the police were reporting that crime was decreasing in the area. This story appeared on Page 21A.

But the remainder of the stories on this topic stressed criminal activity. These 14 articles were given prominence: six appeared on the front page of the newspaper and one on the second page. For example, a first page story on August 18 quoted a police captain who said that individuals impersonating Civil Defense officials were going door-to-door and urging that residents leave; later they would return to loot the homes of those who left. Other front page reports noted that a curfew was in effect and that police officers and National Guard personnel were patrolling certain areas; and that 23 persons had been charged with burglarizing storm damaged businesses (8/21). On August 21, another front page story warned that people were trying to sell the free Red Cross clean up kits.

However, the most extensive and continuing coverage on the general topic was of price gouging. A total of nine articles focused upon alleged price gouging by firms in the area. On August 19, a front page story mentioned possible price gouging and a news item on Page 15A quoted the States Attorney General that his agency was going to investigate any reported cases. Three stories appeared in the next day's paper. A front page story noted that:

> two dozen instances of price-gouging were being investigated.

On Page 23A, a **Globe** story quotes the Chief of the Attorney General's Consumer Protection Division, as saying that:

> price-gouging generally accompanies hurricanes.

On August 20, a second page article quoted a store owner as saying:

> A lot of people are price-gouging.

Stories on subsequent days reported that a toll free number that had been established by the State of Texas to handle complaints about price gouging, was being used by complaining citizens.

What was the outcome of this major price gouging episode? The final account was buried on Page 26A on August 26. It stated that:

> The Texas Attorney General is negotiating and may sue four businesses (two tree trimming companies, one ice supplier, and one glass company) for price gouging.

Of the hundreds of thousands of businesses in the Houston metropolitan area and its nearby coastal areas, only four were

being investigated. None of the firms had been charged, the names of the companies never appeared in print, and negotiations were underway for restitution. However, these contextual factors were never mentioned in the newspaper. Instead an image of crime and price gouging was instead presented.

However, compared to the discussion of looting the treatment of crime appears rather anti-mythical. There was a fascination with the topic of looting in the newspaper. About 10% of all stories mentioned it. Also, the issue was given prominent placement. Of the 17 articles which mentioned looting in the **Globe**, eight appeared on the front page. Although at least one looting story appeared every day from August 18-24, coverage was most intense in the period of August 18-20; these are the three days immediately preceding and following hurricane Alicia. Eleven stories about looting appeared during these three days.

The first reference to looting appeared on the front page of the August 18 edition of the newspaper. The Harbor Master at the Galveston Yacht Basin is quoted as saying:

> We are keeping a look-out for looters. This
> is private property and we will be carrying
> weapons.

An additional report on Page 21A quoted victims about previous looting during other hurricanes. These people say they will stay and protect their property.

On August 19, the day of impact, five stories discussed looting; two were on the front page. The lead story said that the police were patrolling to prevent looting and quoted a police spokesperson that 40 arrests for looting had been made in Houston, 19 in Galveston, and 11 in Texas City. The other front page story in the **Globe** also noted that police cars blocked off each street leading the Houston central business district to prevent looting. Two brief news items on Page 18A reported that looting was occurring in Humble and quoted a citizen who claimed his house was sacked during Hurricane Allen three years before. This year, he is quoted as saying:

> People stayed in homes to protect against
> looting. Maybe the looters will come back.

Finally, an entire 92 inch story On Page 19A was devoted to looting. Under the headline:

> Guard, Patrolmen Sent to Galveston to Prevent
> Looting

it was reported that 100 National Guard troops and 40 additional Highway Patrol troopers were sent to Galveston after several

businesses had reported looting after the height of the storm passed. Sporadic reports of looting in Houston were also noted. The Houston Chief of Police is quoted that 40 arrests had been made. Also, a Houston police dispatcher said looting was reported in:

> a tire store, at a service station, and at a
> grocery store.

On Saturday, August 20, there was even more extensive coverage on the topic. Three of the four articles that mentioned looting appeared on the front page of the **Globe** newspaper. The lead story noted that:

> Looters added to problems in Galveston, which
> has imposed a dusk to dawn curfew and is
> patrolled by rifle-toting police and National
> Guardsmen. Twenty-two people were arrested
> for looting.

It quotes a police lieutenant that:

> There were people roaming all over the
> streets, pushing grocery carts and holding
> flashlights.
>
> Almost every convenience store was hit

added a patrolman who additionally was quoted as saying that:

> if the windows weren't already broken, they
> broke them.

(This same quotation appeared in another story on Page 24A, although the phrase "every convenience store" was reported as "every 7-11 and Stop and Go." Other looting reports appeared in another front page article of the **Globe**.

However, the major front page looting story appeared under the headline:

> Looters Had Field Day Robbing Liquor Store

This was an 81 inch story describing the looting of one liquor store. It noted that:

> as many as 40 people entered the store and
> ripped liquor, cosmetics, watches and other
> goods.

The newspaper report did mention that only eight were arrested and that several cases originally thought to be looting were ordinary burglaries. Finally, on Page 24A, a 64 inch story carried the

headline:

> Looters Arrested as Efforts Being To Clear
> Debris, Restore Island Power.

It again discussed looting supposed occurring in Galveston.

> Roaming bands of looters, some of them pushing
> grocery carts, have been arrested.

The news item states that 35 arrests had been made on Wednesday and Thursday. The colorful quotations that appeared in the lead story were basically reprinted here.

During the next two days, brief mention was made of additional looting in other nearby communities. These reports were included in two stories that appeared on the front and on the second page.

What was the actual disposition of these looting problems? On August 23, a Page #A story of 42 inches discussed court cases involving looting charges. It was reported that:

> Four men received probated sentences and one
> ex-convict received a prison sentence for
> looting businesses.

The **Globe** story described a 17 year old found guilty of looting and given a suspended sentence and fine. The story does offer that:

> Most of the cases prosecutors have labeled as
> looting cases stemmed from burglaries late
> Thursday or Friday.

One court had 18 looting cases that resulted from only four separate incidents; one additional looting case went to another court.

It might be thought that this story would end the coverage of looting in the newspaper. It did not. Over the next two days, three additional stories briefly mentioned reports of looting, or that area residents feared looting.

We have gone into considerable detail about the **Globe** newspaper's reporting of criminal behavior and looting. We have done so because, although the coverage was anti-mystical or neutral with regard to certain myths, its treatment of these two issues was very extensive, prominent, and consonant with popular thought. Of course, the newspaper was simply reporting on the activities of some of its major organizational sources. Most of the news items reference and cite law enforcement authorities. Therefore, reporters and editors might argue that they are merely reporting what is out there in the world; that is, use the "mirror metaphor,"

claim objectivity, and state that they only report the news and not create it. Perhaps, but then again, perhaps not. After a deluge of news items on criminal price gouging and looting, it is eventually reported that only four firms were being investigated for the former, and that only four business were "looting cases." But these later stories were buried in the newspaper. Furthermore, it would be interesting to compare the everyday instances of price gouging and burglary that occur among the hundreds of thousands of Houston area businesses. By not placing such stories within a social content and giving them more prominent treatment, the myth of heightened criminal activity and anti social behavior in disaster occasions by way of looting, is supported.

In sum, our quantitative content analysis found that this one daily morning newspaper in the community provided massive coverage of the disaster. This was a local story predominantly produced by the local staff. While coverage of all disaster time periods was undertaken, most of the stories concerned short range restoration and long range rehabilitation; the crisis or emergency time period was relatively ignored. Similarly, while the coverage of agent generated demands was varied and extensive, such important tasks as search and rescue, and casualty care were not given much attention. The continuation of traditional newsgathering patterns during the disaster was suggested as a contributing factor to this outcome. Response generated activities were much less frequently covered. Furthermore, the sources cited in the newspaper stories do indicate a "command post" view of the disaster. Direct citation of civilian sources tends to be more often found in expressive or human interest articles. The various estimates of death and destruction included in the news reports were observed to be fairly accurate given the state of knowledge of such at the time. The overwhelming majority of the articles in the **Globe** were hard news stories with an instrumental tone. Finally, most of the news items did not discuss any disaster myths and a number of stories concerning panic, evacuation and sheltering were anti-mythical in nature. In this respect, our research data support the findings by Goltz (1984). However, the overall presentation of these topics presented an image that, at best, was not inconsistent with widespread, mythical notions. This was particularly true for the paper's treatment of heightened criminal activity and looting.

12. Themes.

What impression of the disaster might a reader develop were they to read all 160 relevant stories? In order to determine what general themes were presented in the coverage, a qualitative content analysis of each story was undertaken. Each article was examined to see if certain general perspectives, images, or issues were present in the content. Obviously, these themes were inductively derived. A number of the news items were found to have multiple themes. Overall, a large number of themes were discerned. Let us now examine the major themes we found in different time periods or

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disaster phases.

Preimpact Themes (8/16-8/18). We found a total of 13 different themes within the 31 stories published during the preimpact period. The seven major ones included the following.

1. <u>Preparedness</u>. Fifteen stories or 48.4% focused on organizational and individual preparations for the storm. Almost half of the articles included this thematic element. Organizational preparations were reported in considerable detail. The steps taken by government entities, relief agencies, local businesses and off short oil facilities were detailed. A front page article on August 17 enumerated the mobilization of local Red Cross and Civil Defense organizations. Also presented was a description of supermarkets, hardware and sporting goods stories being swamped with customers. A store owner is quoted as saying:

> We're long overdue. I don't know if this is
> the one, but any precautionary measures you
> take is a plus.

On the day before the hurricane landfall, another front page story covering over 200 inches detailed massive organizational preparations. The general theme was that;

> all that can be done is being done.

The actions being undertaken by individuals prior to the landfall of the hurricane was also heavily covered. A number of stories described what residents were doing by way of preparing as they awaited the storm. However, what was most interesting was the extensive space devoted to providing practical information to the reader concerning possible preparatory actions and measures. Hundreds of column inches of the newspaper was given over to such issues and matters as elevating homes, maximum storm surges, rainfall potential, evacuation routes, a checklist of 12 items to consider if one were to evacuate, general information on likely postimpact problems such as the preservation food and water, returning to damaged structures, health risks, and 17 steps to take if a decision were to be taken not to evacuate.

2. <u>Information Pieces</u>. There were six stories or 19.45 of the total in the **Globe** that were informational in nature. About a fifth of the articles simply presented information about preparatory activities or hurricanes in general. All of these items appeared in the August 17 edition and provided such material as a glossary of weather terms, the highest tides ever recorded in Galveston Bay back to the year 1900, and many practical suggestions on how to prepare for the storm.

3. <u>Disaster Subculture</u>. Five of the stories or 16.1%of them implicitly discussed the disaster subculture in the area as a

result of prior experiences with storms and hurricanes. On August 18, the day before landfall, five stories in the back pages of the newspaper placed Hurricane Alicia within the historical and social contexts of many storms that had previously impacted the area. Past experiences in Hurricane Allen and other earlier storms were recounted.

> We don't' even count Allen

one citizen was quoted as saying. Another was said to have noted that people going into the gulf surf prior to the storm:

> are not from here. Most of the locals knows
> not to get out there.

The major theme that emerges is that:

> We've been through this before; we know what to do.

4. Complacency. An interesting counterpoint to the theme of preparedness was that of complacency which was reflected in four stories or 12.9% of them. References are made to the fact that some residents were not taking the threat seriously and were undertaking few preparations. The front page story on August 17 quotes residents as saying:

> It's fascinating to watch hurricanes.
> It will take a big one to cause us to move.

The same **Globe** story quotes a party boat owner that fishing parties are still going to sea in that:

> there is better fishing in these conditions.

The theme was continued in the newspaper on the following day. For example, an article on Page 21A mainly focused on people who was prancing on the shore and the sea, drinking in bars, surfing, and staying put. Another entire story on the following page discussed surfers on the beach at Padre Island and their enjoyment of far greater than usual gulf waves. The "hurricane party" phenomenon was also mentioned. While this theme of complacency was clearly present in the newspaper content, it was however submerged under the far more numerous stories about preparedness activities.

5. Danger.   The destructive potential and danger inherent in hurricanes was a theme noted in four stories or 12.9% of them. The essence of this theme could be found in a 112 inch story on Page 23A on August 18.   This was a vivid, personal, retrospective description of past hurricane impacts that were experienced by the reporter. The story focused heavily on the fury of the wind and the water that was experienced.

6. Conflict. There were a few stories on conflict, three of 9.7% of them. One report discussed responsibility or blame for past hurricane problems. However, the major items about conflict involved reporting about the Mayor of Galveston. He was quoted as saying he was critical of what he considered overreaction by the NWS; the agency takes:

> extreme positions.

7. Uncertainties in Prediction. There were several articles noting that the NWS had difficulty in predicting hurricanes. Two front page stories in the Globe quoted weather service personnel as follows:

> We just don't know if it will be a hurricane
> or not.

> The more I see it, the less I like it.

The latter quotation was in reference to the new hurricane probability forecasts being issued.

Crisis Time Period Themes (8/19-8/21). We found a total of 17 different themes in the 69 stories about the crisis or emergency time period in the Globe. The five major ones included the following.

1. Destruction. The newspaper treatment of the possible impact of the storm presented an image of massive destruction. The reports detailed the destruction of property and loss of life that might occur. However, what is particularly interesting were the pictures that accompanied the text. On August 19, the impact time issue, 13 photographs appeared, three in color. They all showed scenes of destruction. Smashed homes, uprooted trees, crushed boats, flooded neighborhoods, and toppled business structures abound on the pages of the Globe. Photographic coverage the next day remained the same. There appears to be little left standing intact in the Houston area if the photographs were a true sample of what had happened. In this respect, an image of excessive damage might have been created.

2. Organizational Responsiveness. However, although there may have been massive destruction in Houston according to the pictures presented, the area's organizations are quickly and efficiently responding to the disaster. Over one fourth of the stories (16 or 26.9% of the total) during the impact time period included the theme of responsive organizational action. The initial lead story after the hurricane landfall, stressed responsive official action. The same message was often repeated. Governmental, relief, utility, law enforcement, and outside officials are all depicted as positive social actors. While a few stories (four of them) did discuss some lack of preparation by some city officials and the

utilities, the overwhelming theme is a more positive one.

3. Disruption of Commercial and Social Activities. In addition to the destruction of property and the loss of life, the hurricane was portrayed as severely disruptive of normal activities. In 17 stories (or 25% of the total) in the **Globe** it is noted that because of the massive loss of power and disruption of the telephone system, normal life came to a halt. Schools, businesses and concerts, it is noted, were closed or canceled.
A search for ice and batteries was also depicted as a dominant activity for many Houstonians during this time period.

4. Altruism. In nine of the stories (or 13.2% of them) there was a portrayal that residents, in the face of disaster, apparently pulled together and selflessly gave of themselves and their possessions to others. For example, on August 20, there were seven stories that touched on the theme of altruism. One article on Page 21A discussed an apartment complex giving 15 units for sheltering storm refugees as well as collecting food and clothing for victims. Stories on the following pages note that such corporations as DuPont, Anheuser-Busch, and Safeway are sending donations, that local citizens are collecting food for victims, and that local businesses are supplying needed commodities. It is even noted in the newspaper that the city of Dallas is sending work crews to aid the clean up effort.

5. Antisocial Behavior. However, the stories (eight of them) in the **Globe** newspaper also indicate that in the face of disaster and destruction, victims can apparently regress to a subhuman level. Like Dr. Jekyll and Mr. Hyde, they engage in antisocial and deviant acts, such as looting and price gouging such as we previously discussed. We may simply note that the essence of this theme of antisocial behavior may have been captured in a story on the front page of the August 20 issue. The article notes that looting files in the District Attorney's office have been labeled: "storm snake." The Assistant District Attorney is quoted as saying:

> In a hurricane all the snakes come out. We
> just want to be able to identify their files.

A business person was also quoted as follows:

> This is like robbing someone who has just been
> in a wreck. It is the lowest form of life
> there is. It is very unfortunate we have
> people like that.

6. Other Themes. A few stories (seven of them) imply that forces beyond human control, i.e., luck often determines whether or not someone is victimized or how severe the damage will be. On August 19, six articles touched upon this theme. It was noted in a 24 inch story on Page 16A that it was "lucky" that only eleven

tornadoes had touched down; it could have been much worse. The following page recounts the circumstances of the deaths of six victims. The deaths are almost depicted as resulting from chance or random occurrence. On the same page, another article notes that it was good luck that the rain fell on the eastern part of the county instead of the west where dams would have been likely to have overflown. Other stories mentioned that fortuitous circumstances resulted in some being hit hard by the fury of the storm, while others went unharmed.

There were a few news accounts (six of them) also on the outside assistance provided in the aftermath of the hurricane. There was a depiction that help from other than local sources was on the way in abundant amounts. These stories focused upon the Presidential Declaration of disaster, the help being provided by FEMA, and other state and regional agencies.

Early Recovery Time Themes (8/22-8/31) We found a total of 21 different themes in the 60 stories that appeared in the remaining editions of the **Globe**. The three major themes included:

1. Organizational Responsiveness. This remained, as noted of the previous time period, a dominant theme throughout the coverage of the recovery phase of the disaster. The responsiveness of organizations appeared in one third of the stories (20 of them). However, the focus of the reports initially shifted to the issues of restoration of essential services and the provisions of human services.

2. Conflict. Compared to the news reporting in the preimpact and crisis time period, there was an increasing depiction of conflict during the recovery time. There were 16 stories (or 26.7 of the total at this time) with the theme of conflict.

Several different matters were highlighted. A story on August 23 on Page 2A notes that city officials are critical of FEMA representatives for running a poorly organized meeting. On August 24, a report on Page 16A describes conflict between the Houston City Council and outdoor advertisers over the rebuilding of damaged signboards. On August 25, a front page story detailed the criticism of the Mayor of Galveston by a local radio station which claimed he was unavailable for contact during the impact of the hurricane.

On the next day, there were three more **Globe** stories that indicated conflict in the recovery period. One article on the front page noted conflict between the city of Houston and the State of Texas over plans to use the National Guard for clean up work. The other two stories described battling between the Mayor of Galveston and his City Council, and also by officials within a local subdivision. On August 27, the only story about the hurricane was a front page piece detailing conflict in Houston between the City Council and

the federal government over the awarding of debris clearance contracts to private contractors. This same story was again a front page item the following day. On August 29, the debris clearance controversy was still on the front page of the newspaper. It was joined by another story on Page 1 about conflict regarding a storm reduction project, and another one on Page 6A that had home owners and city officials at odds with one another. Finally, on August 30, a front page story notes that complaint calls by citizens to the city are now down to only 250 a day from a high of 800. On the second page of the same issue, two reports detail the complaints of striking telephone company workers that they are not receiving overtime pay, and by welfare agency workers who are still having to work in offices without electric power. Overall, a total of seven front page stories depicting conflict in the area appeared during the recovery time period.

3. Disruption. The disruption of community life created by the hurricane is depicted in a dozen stories (or 20% of the total) in the recovery time period. However, ten of the reports that included this theme appeared within the first two days of the early recovery period, i.e., they were "carry over" stories from the crisis or emergency time period.

4. Other. There were a number of other themes in the rest of the stories but no one of them involved more than 10 articles. Thus, while some muted criticism of the slowness with which certain essential services was voiced during the crisis period, this issue emerged more strongly during the recovery phase. Attention to this theme was most intense during the last four days of the newspaper content that we examined when six of the stories were published. Discussed was the city's slow effort at debris removal and the inability of the utilities to fully restore power, particularly the telephone system. There were news items that reported that it might take months to completely restore these services and clear up the streets. The city government is particularly portrayed as being especially non responsive to the problems. There was an inference in some of the news accounts that part of the problem may be that the city granted contracts, totalling 1.4 million dollars, to clean up 70% of the city to an unemployed former minister who only owned a pick up truck.

However, some altruistic behavior continued to be depicted also. On August 22, two front page stories in the Globe noted that Conoco and IBM had given substantial gifts to the local Red Cross chapter and that a grocery store owner with power was freezing and giving away ice. The altruism of Red Cross volunteers, the USDA, and other corporations was mentioned in a third story on Page 2A.

There were also a few articles on the variety of outside help being provided. Most of the stories focused on the activities of FEMA in establishing four Disaster Assistance Centers that coordinated the aid being given by various agencies. Information on the help that

was available and the procedure for applying for it was given in some of the stories.

Finally, toward the end of the recovery time period, articles started to appear indicating the situation is returning to normal. Thus, there are stories about the reopening of schools, the restoration of power and phones, and the resumption of normal economic and other social activities.

In sum, we can observe a movement in the **Globe** newspaper stories from themes of preparedness, to images of destruction and disruption but organizational effectiveness, and finally to themes highlighting conflict and organizational non responsiveness in the recovery time period.

A Comparison of the Tulsa and the Houston Newspapers

What did we see when we compared the results from the two newspapers? In general, despite the use of a somewhat different content analysis methodology, our findings were roughly the same.

There were some differences. For example, the Houston **Globe** added additional pages to some of its issues; the Tulsa **Star** did not. The coverage in the **Star** never gave a majority of the newshole to stories about the flood, whereas on certain days, more than two thirds of the newshole in the **Globe** was given over to news items about the hurricane. The major difference between the two papers was that there were rather little hard news reporting in the Tulsa paper while such news stories predominated in what was printed by the Houston newspaper.

However, there were far more similarities than differences between the two newspapers in content coverage and treatment. For example, the stories in both cases were overwhelmingly produced by local staff personnel. Similarly, they both focused on during the recovery time period on two topics: on the restoration of essential services and on the providing of food, clothing, shelter and other human services. In both newspapers, local governmental officials were cited most of all as the source of information in the news stories; conversely, many important disaster recovery groups and agencies were simply not mentioned or referenced at all in the news accounts. Instrumental rather than expressive reports predominated in both the Tulsa and the Houston papers. In both newspapers, there were relatively few explicit presentations of disaster myths.

In general, the few differences between the reporting resulted primarily from two factors. There was no real preimpact or warning period in the Tulsa situation compared to what happened in the Houston occasion. The hurricane disaster was of greater magnitude than the flood disaster.

PART II
THE STUDY IN JAPAN

Note: While the material in the following pages was edited by Quarantelli, much of it is based on four different unpublished English language Japanese sources.   These include: Okabe, Hirose, Hiro, Matsumura, and Mikami, A Comparative Study on the role of Broadcasting Media in Disseminating Disaster Warnings: Interim Report, 1982; Hiroi and Mikami, The Structure and Functions of Mass Media in Disseminating Warnings and Other Disaster-Related Information in Japan 1983 ;Mikami, Activities of Local Broadcasting Stations in Earthquake Disaster:Draft of The Interim Report, 1984 ; and particularly Hiroi and Mikami, Activities of Mass Media in the 1982 Nagasaki Flood and The Functions of the Mass Media in the 1983 Nihonkai-Chubu Earthquake, 1991. While published material is referenced in what follows, unpublished material is not.

CHAPTER 8

OBJECTIVES, BACKGROUND AND METHODOLOGY OF THE STUDY

In this chapter, we very briefly note the objectives, background and methodology of the work done in Japan by the collaborating Japanese researchers.

Objectives

In order to describe and analyze the local mass communication system coverage of mass emergencies in Japan, two different natural disasters were studied. Examined were a flood disaster in Nagasaki City and the earthquake-tsunami disaster around Noshiro City in Akita Prefecture. These two occasions were made the subject of case studies by the Japanese researchers.

The foci of this research were three-fold. First, there was an interest in ascertaining how disaster warnings (for the flood and for the tsunami) were disseminated to the general public by the local mass communication system, especially by the electronic outlets, and how much they were effective in enhancing adaptive response among citizens and mitigating damages in the affected areas. This was looked at both from the general perspective of the organizations transmitting the warnings, and as seen from the viewpoint of those persons receiving the messages.

Second, an examination was made of how the local mass communication system operated and covered news stories in the emergency time period of the disasters. This part of the research most closely paralleled the work that was done in the United States, and represents the most comparative part of the study reported in this volume.

Third, there was a focus on the emergency time information wanted by the affected residents and the functioning of the mass media organizations in fulfilling these needs after impact. Part of the analysis here involved content analyses by the collaborating Japanese researchers of radio broadcasts and newspaper stories which partly duplicated that undertaken in the work done in the United States.

Background

A considerable amount of the disaster research done by social scientists in Japan has dealt with communications--interpersonal as well as through the mass media--before, during and after natural and technological disasters. It is true that the initial work done in the middle 1960s was mostly by psychologists looking at panic and related phenomena (for a short history of the early research see Okabe and Hirose, 1985: 7-8). The research consisted mostly of narrowly focused and highly descriptive empirical studies seldom

guided by any specific theoretical ideas or models from psychology or other disciplines.

However, social science studies in Japan accelerated as a result of a Japan-United States conference at DRC in 1972, supported by the U.S. National Science Foundation and the Japan Society for the Promotion for Science on the sociobehavioral aspects of disasters (for details of the meeting see Proceedings of Organizational and Community Responses to Disasters). As the Japanese themselves reported of that conference:

> It gradually led in Japan to a recognition by social scientists of the importance of the sociobehavioral study of disaster (Okabe and Hirose, 1985:7).

In line with this, in 1977, a group of social psychologists and sociologists, primarily associated with the Institute of Journalism and Communication Studies at the University of Tokyo, initiated studies on citizen's reactions to possible earthquake predictions and warnings. This early work quickly expanded in later years to other topics related to communications and also to other disaster agents, including the work reported in this volume.

One of the recommendations of the joint meeting in 1972 had been that collaborative work be undertaken by the social scientists in both countries (see Quarantelli, 1973). As indicated earlier, the work reported herein followed from an implementation of that recommendation. Among the decisions made was that there should be some focus on the internal operations of the mass communication system itself, a research topic of little interest to disaster researchers up to that time in Japan, although attention had been given to audiences and effects of the mass media system given its importance in the country.

As in the United States, television and radio reception is almost universal in all households in Japan. The average hours of weekday daily watching of television is about the same in both countries with the Japanese having a somewhat higher rate for weekends. Proportionately newspaper circulation is somewhat higher in Japan; this may have to do with its higher literacy rate. But no matter how measured, it is safe to say that the mass communication system, both in terms of its national as well as local manifestations, plays an important role in the daily lives of citizens.

More general Japanese social science interest in mass communication has been traced back to the 1920s (see Ito, 1990). Although there has been a distinctive contribution by scholars from Japan, many of the theories advanced, especially after World War II were derived from Western sources, especially the United States; a number of the more empirical studies undertaken paralleled those done in America. However, the general operation of mass media organizations as such

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had not been a major focus, so the initiation of specific work on how radio and television stations and newspapers operate in disasters represented a pioneer effort in Japan.

In general, the mass media organizations in Japan are expected to perform two major functions at times of disasters. (Much of the material in the next five paragraphs are taken from Hiroi, Mikami and Miyata, 1985). One is the role, as news reporting groups, to provide their audiences with newsworthy information on each phase of a disaster. The other is the role, as an emergency organization, to help in preventing or mitigating the negative effects of disasters. The latter function is especially expected of the broadcast media particularly since compared to the print media they have the capability to warn of impending threats and to more promptly transmit advice to citizens.

As in the United States, the broadcast media in Japan are operated by both public and private organizations. **NHK** (Nippon Hoso Kyoukai) is a public broadcast organization which has two TV channels (general and educational) and three radio frequencies (general, educational, and FM music). A microwave network system makes both television and radio nationwide. **NHK** is legally responsible for quickly broadcasting weather forecasts and warnings. Furthermore, the national Disaster Countermeasure Basic Law designates **NHK** as one of the official emergency agencies in disasters and assigns it the role of providing the citizenry with disaster-related information.

In contrast with **NHK**, the commercial broadcasting companies are operated as free enterprises. At the time of the research reported here, there were about 240 such companies with most of them affiliated with one or two of the four major news networks (apart from **NHK**), namely Nippon News Network (**NNN**), Japan News Network (**JNN**), Fuji News Network (**FNN**), and All Nippon News Network (**ANB**). As in the United States, many local private stations have enlarged and developed since 1970 their own local news programs as well as using material from their affiliation with one of the major networks.

Starting also in the late 1970, electronic news gathering (ENG) equipment started to become widely available to local stations. This as in the United States increasingly involved the use of satellite equipment to provide real time coverage by a local television station of distant happenings.

The national law which covers the electronic media prescribes that both **NHK** and the commercial broadcasting companies have a responsibility to help to mitigate disasters. However, no other laws refer to the legal responsibility of the commercial broadcasting companies in disasters. Therefore, in principle, the commercial organizations only voluntarily render services to their audiences during major community emergencies.

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All newspapers in Japan are operated as private enterprises. Freedom of the press is guaranteed by the Constitution and there are no legal regulations covering how newspapers are to operate in normal times or emergencies. Nevertheless, newspaper companies often voluntarily serve their audiences in disasters by reporting various kinds of information, ranging from reports of damage to accounts about the restoration of lifeline utilities. It should also be noted that many nation wide newspaper companies in Japan own stock in electronic broadcasting networks.

Methodology

To obtain relevant evidence for the three study purposes indicated above, the data in Japan were gathered with different research methods by the collaborating Japanese researchers. A number of interviews were conducted with officials of local government or emergency organizations, the staff personnel of the local meteorological services, and the reporters, editors and news directors of the local mass communication systems. Such information was added to also by a mail survey of some of these informants also.

In addition, two interview surveys of residents were carried out within several months after the disasters in Nagasaki City and in Noshiro City. In both cities, a sample of 1,000 adults was drawn for the study. About three quarters of the respondents chosen provided useable data.

Finally, both quantitative and qualitative content analyses of the news outputs of local radio stations and newspapers covering the disasters were conducted. Thus, an analysis was made of the radio tapes of two stations in the Akita area as well as the content for a week of the two newspapers we studied. In Nagasaki, the content analysis was of the news reports in two local newspapers in the first week after the disaster.

We now summarize the findings of the two case studies below. All the data analyses and research observations drawn from the work in Japan were done by the Japanese researchers (additional details of the findings from this work are presented in Mikami, Hiroi, Quarantelli and Wenger, 1992, a mostly Japanese language volume; some additional information is presented in Hiroi, Mikami and Miyata, 1985 as well as the four unpublished sources we mentioned earlier).

CHAPTER 9

THE EARTHQUAKE AND TSUNAMI DISASTER IN NOSHIRO

The Community Setting

Noshiro is a city located on the coast of the Japan Sea in Akita
Prefecture which is in the northern part of the main island of
Japan. The population consisted of 60,390 residents in July, 1982.
The city has a large port and is well known as a transportation
place for high quality cedar . In recent years, some manufacturing
plants have been built and it is now developing into an industrial
city.

After World War II, Noshiro experienced two major fires that
affected the community. The fire of 1949 resulted in the loss of
1,700 homes, while the fire of 1956 burnt out 1,400 houses.
Because of these relatively recent losses, the emergency
preparedness agencies and the citizens are quite sensitive to the
hazard of fire, and the city office has developed a disaster
mitigation plan which emphasizes countermeasures against fires
which might spread widely.

There have been twelve earthquakes in recorded history which have
resulted in great damage in the prefecture. The greatest of these
was the earthquake of 1694 A.D. in which 394 persons died and 1,273
houses were destroyed. However, Noshiro itself has experienced few
earthquakes in recent years. Only a minor shock with a JMA seismic
intensity scale of 3 was felt at the time of the Niigata Earthquake
in 1964, and it resulted in no damage in the area. Also the city
has experienced no damage from tsunamis in recent years. On the
other hand, the plain upon which Noshiro is located has a soil
which includes much sand and is quite vulnerable to earthquake
shocks. The soil becomes like liquid when it is shaken by an
earthquake, and this can result in great damage to buildings and
fields.

For some time the west part of Akita Prefecture has been designated
by the national government as "an area under specified observation
for seismic activity". The reason for the designation was that in
the past, as was indicated above, there had occurred several
damaging earthquakes with magnitudes of 7 or more. Also, seismic
activities in this general area, outside of Noshiro, have become
prominent in recent years. Therefore, at least among seismological
experts, the possibility of major earthquakes in this area has been
recognized.

The Local Mass Communication System

We now separately describe the electronic and newspaper media
organizations in the local area.

<u>Electronic Mass Media</u>.

In 1983, there were three broadcasting stations in Akita Prefecture which served all localities in the area including Noshiro:

    the Akita stations of **NHK** (TV and radio);
    the Akita Broadcasting System stations (**ABS**) (TV and radio); and
    the Akita TV station (**AKT**) (TV only).

The head office of all these stations were located in Akita City. In Noshiro, there were also branch offices of the **NHK** and **ABS** systems, and a correspondent reporter was working at each office.

At the time of the disaster, the number of staff personnel for reporting news and producing programs in the **NHK** Akita station and the **ABS** one was 36 and 61 persons respectively.

The organizational charts for the two stations are presented in the next two pages. As can be seen in Figures 1 and 2, the organizational structure of the **ABS** station was somewhat more complex than that of the **NHK** station.

The **NHK** Akita station had two TV channels (general and educational) and three radio frequencies (first, second, and FM). There were two TV studios and two radio studios, which produced local programs, such as "News Wide Akita", "Today's Topics", Akita 630", and the "FM request hour".

ABS is a privately owned broadcasting system, and broadcasts both TV and radio programs to the area within Akita Prefecture. At the time of the study, **ABS** had contracts with three other private broadcasting companies in Tokyo (**NTV**, **TBS** and **ANB**) for the transmission of their network programs. As for news, the **ABS** TV station was affiliated with the **NNN** News Networks, and the **ABS** radio station was affiliated with the **JRN** and **NRN** networks. The **ABS** station had modern facilities with large studios. In addition to the programs distributed from the network companies in Tokyo, the station itself also produced several local programs, such as "**ABS** News Wide" as well as some special programs.

Figure 1.

Organizational chart of the NHK Akita Station

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                                                    ┌────────────────────┐
                                                    │  Reporting Section │
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                         ┌──────────────────────────┐
                         │ Broadcasting Department  │
                         └──────────────────────────┘
                                                    ┌────────────────────┐
                                                    │  Producing Section │
                                                    └────────────────────┘
┌─────────┐
│ Station │
│ Manager │              ┌──────────────────────────┐
└─────────┘              │ Engineering Department   │
                         └──────────────────────────┘

                         ┌──────────────────┐
                         │ Sales Department │
                         └──────────────────┘

                         ┌──────────────────────────────┐
                         │ General Affairs Department    │
                         └──────────────────────────────┘

                 ┌────────────────────────────────────────────────────────┐
                 │ Branch Office (Odate, Noshiro, Honjo, and Yokote)       │
                 └────────────────────────────────────────────────────────┘
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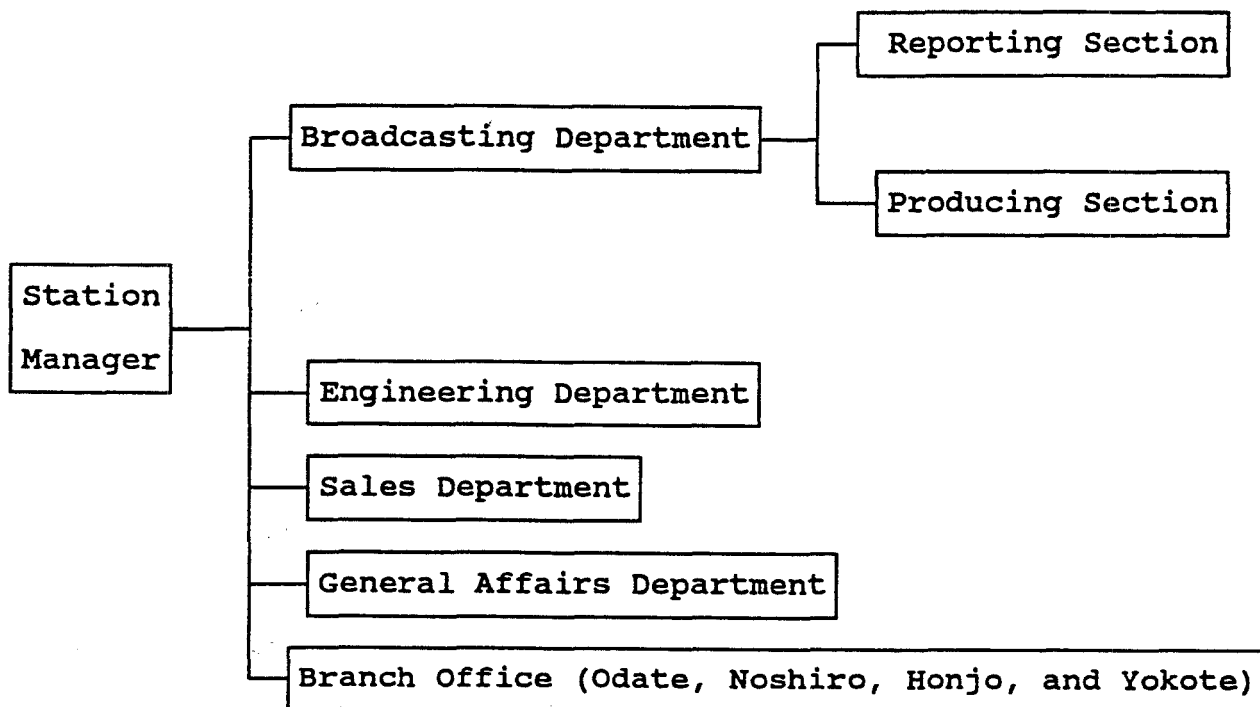
Figure 2.

Organizational chart of the ABS Station
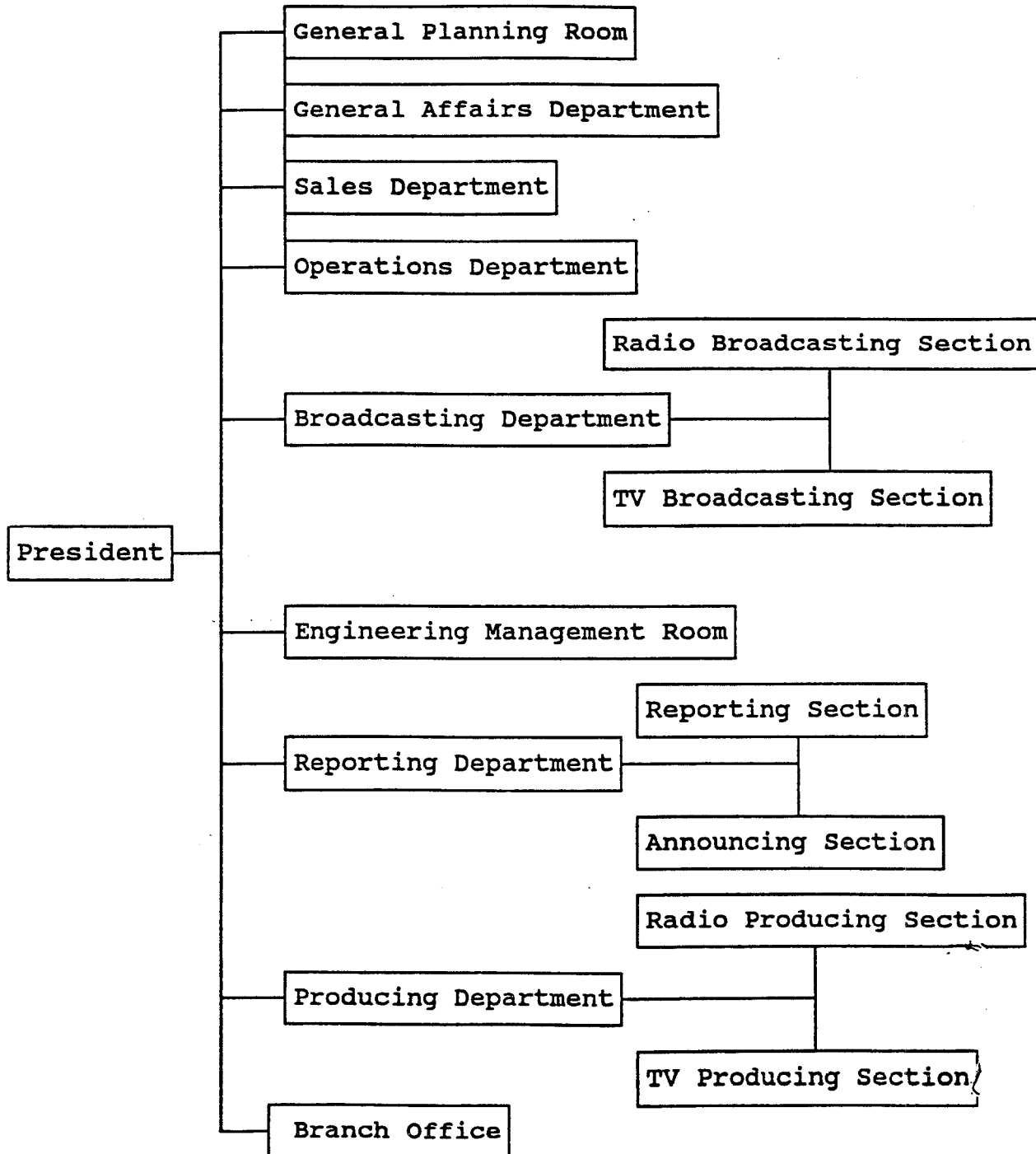
<u>Newspapers</u>.

The main newspapers which were distributed in Noshiro at the time of the study could be classified into four categories: national, regional, prefectural, and local. The **Asahi**, the **Yomiuri**, the **Mainichi**, the **Saneki**, and the **Nikkei** were national papers which were distributed all around the country. The **Kahoku Shinpo** was a regional paper which circulated widely in the Tohoku district, including Akita Prefecture. The **Akita Sakigake Shinpo** was primarily a prefectural paper which had its largest circulation in the prefecture. The **Hokuu Shinpo** was a local paper which was circulated in Noshiro City and the adjacent county. Of these, the research focused primarily on the last two mentioned newspapers because the others typically gave only one or two pages to reporting local news.

The daily **Akita Sakigake Shinpo** had much modern equipment for covering news and producing the paper, such as facsimile machines, an electronic photo transmitting system, a Kanji teletypewriter, automobiles with wireless transmitters, and airplanes. The paper at the time of our research had a circulation which reached about 40% of all the households in Akita Prefecture. It also was involved in the telecasting of news on **ABS** television every evening.

The **Hokuu Shinpo** was a daily newspaper with a circulation of about 25,000. About 90% of the subscribers or readers lived in the central part of Noshiro City. The paper particularly covered all kind of local happenings in the city, ranging from athletic games to small fires.

As can be seen in the following, Figures 3 and 4, the **Akita Sakigake Shinpo,** had a much simpler organizational structure than the **Akita Sakigake Shinpo** newspaper.

Figure 3

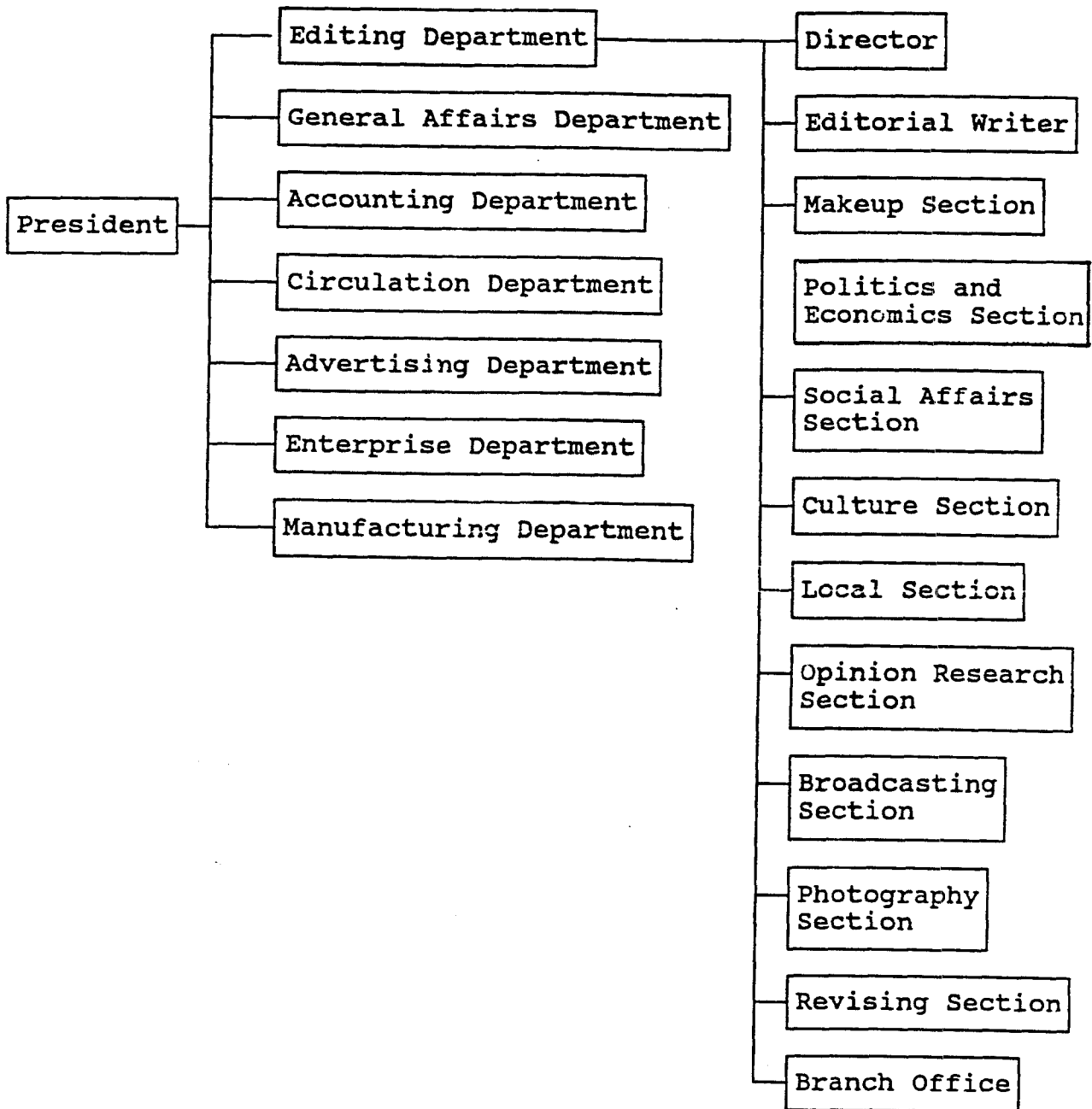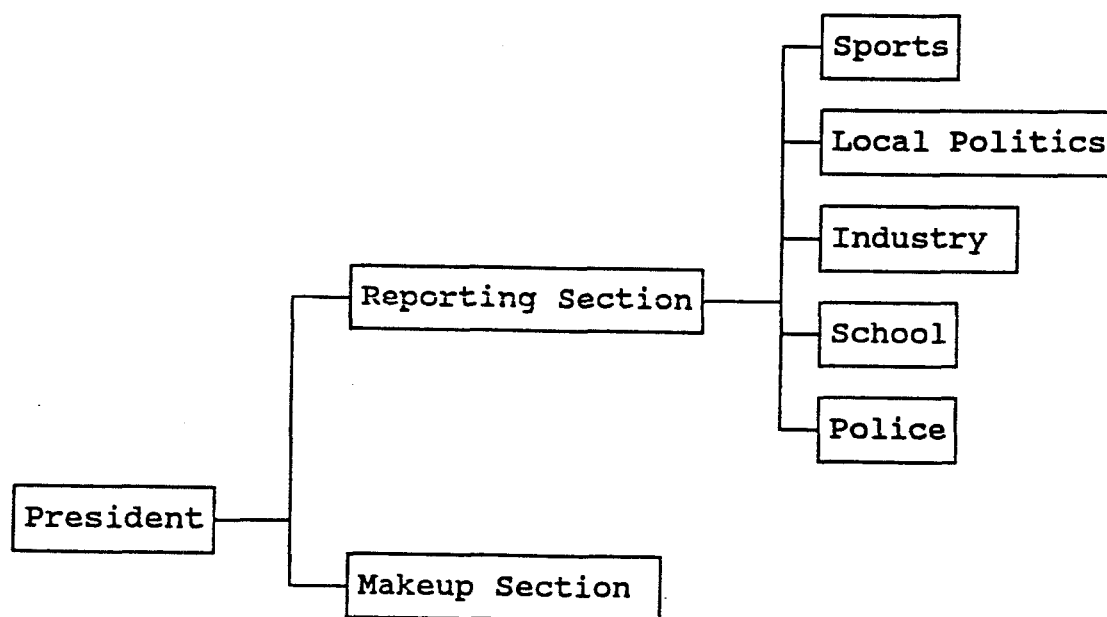**Organizational chart of the Akita Sakigake Shinpo**

Figure 4.

Organizational chart of the Hokuu Shinpo

The Impact of the Disaster

On May 26, 1983, at noon a major earthquake of magnitude 7.7 occurred in the Japan Sea about 100 km (about 63 miles) off the western coast of Akita and Aomori Prefectures. The heaviest shock of 5 on the JMA seismic intensity scale was reported for the coastal area of the prefectures, including Noshiro City. The earthquake generated a large tsunamis (in at least two different waves) which resulted in devastating damage to the west coast of Japan, all the way from Hokkaido to Shimane Prefectures. The highest waves observed were more than 6 meters high (more than 18 feet) at the coast of the Akita Prefecture.

Overall, the earthquake and the tsunami together killed a total of 104 persons and injured 324 persons. Almost all of the deaths (100) were from the tsunami waves, and most occurred in Akita Prefecture (79 of them). In that prefecture alone, 1,132 houses were totally destroyed, 2,632 houses were partially destroyed, and another 2,875 were partly damaged as well as 1,306 non-residential buildings, including 272 schools. In addition, 670 roads and 84 bridges suffered damage. Economic losses were estimated to have totaled 147,521,266,000 yens (about 615 million dollars). In addition, there was the social disruption occasioned in the community which lasted in some ways for several days. Thus, while the occasion was not a disaster of massive proportions given what impacts Japanese society over the years, it was nonetheless a major disaster.

Response to the Disaster

Issuance and Dissemination of the Tsunami Warning.

1. The tsunami warning system in Japan.

The national Japan Meteorological Agency (**JMA**) has been engaged in tsunami forecasting activity since 1952. Within the international cooperation system under which it operates, **JMA** is responsible for issuing forecast of tsunami from earthquakes with an epicenter within 600 km (or 378 miles) off the coast of Japan. The regional meteorological observatories have the authority to issue tsunami forecasts for other earthquakes which occur in Japan. The coast of Japan is divided into 18 districts for tsunami forecasting. Each of the six regional observatories has several districts where it has responsibility to issue tsunami forecast. The coast of Akita Prefecture is included in district No. 5, and the Sendai regional observatory is responsible for issuing tsunami forecasts for this district.

The formal disseminating channel for tsunami warning or watch is prescribed in the national Meteorological Service Law. Tsunami forecast is divided into "tsunami watch" and " tsunami warning", and they are further divided into several subcategories, with one

warning being for a "big tsunami", one considerably above normal.

The existing legal ordinance requires that tsunami warnings be issued within 20 minutes after the initial occurrence of an earthquake. In the time period between the years 1952 and 1975, the average time for an actual issuance was 17 minutes after the earthquake.

2. The dissemination of tsunami warning in this earthquake.

At 12:14 p.m., on May 26, 14 minutes after the earthquake, the **JMA** Sendai regional observatory issued a tsunami warning to the fifth district (in the northeastern coast of the Japan Sea), which includes Akita and Aomori Prefecture.

This warning message reached the Akita local observatory at 12:15. This observatory then using a simultaneous telephone informing system transmitted it at 12:18 to the **NHK, ABS, AKT** stations, and to the **Akita Sakigake Shinpo** newspaper. The content of the warning message was as follows:

> We inform you of a tsunami warning. Please deal with it. In the fifth district, a big tsunami. In the fourth district, no tsunami. This warning was issued at 12:14 by the Sendai regional observatory.

The citizens of Noshiro City were first issued the tsunami warning at 12:19 p.m. from the **NHK** TV, the **NHK** radio, and/or the **ABS** radio broadcasts. Our research shows that the **NHK** Akita station received the tsunami warning from the Akita local observatory at 12:18, and was preparing to telecast a quick report. However, at 12:19, the **NHK** Tokyo broadcasting center instead telecast on the nationwide wave, an immediate report of the tsunami warning, and thus was ahead of the local report. The **ABS** radio station also received the tsunami warning at 12:18, and broadcast it at 12:19. However, the telecast via TV was delayed until 12:27.

It is estimated that the first tsunami wave hit the harbor at Noshiro City at about 12:20 p.m., and that the second wave hit at about 12:25. Therefore, even those who heard the warning from the electronic media outlets would have had little time left to flee before the tsunami reached the coast.

At the time of the earthquake, more than 300 workers were engaged in construction work in the harbor of Noshiro City. The tsunami struck these workers quickly, and 35 of them were killed. Few, if any, of the workers heard the tsunami warning before they saw the tsunami wave itself.

3. Effect of the tsunami warning.

The tsunami warning was sent via TV, radio and other mass media outlets, to multiple mass media outlets. However, the warning had relatively little effect on moving people to respond and in mitigating damages. The following three reasons can be used to explain this lack of effect:

> (1) The warning did not reach many people in
>   the affected area;
> (2) The transmission of the warning was too
>   late to be effective since the tsunami
>   reached the coast before the warning was
>   broadcast; and,
> (3) There was a low level of awareness of the
>   tsunami hazard by staff personnel and
>   residents of the affected communities.

In order to examine each of these conditions, let us look at the findings from our sample survey in Noshiro City.

During the week of July 15-22, 1983, we conducted a survey of 1,000 adult citizens of Noshiro. They were randomly sampled from the whole population of the city. We selected 723 persons who were in Noshiro City at the time of the earthquake, and asked them questions about their responses both to the earthquake and the tsunami warning, their exposure to mass media reports during the impact and recovery period, and so on.

The survey results indicate that 54.2% of the citizens heard the tsunami warning sometime on the day of the earthquake. This indicates that the tsunami warning did not reach almost half of the residents of the city. Since it is known that a number of persons were at the seashore at that time of the day, it is estimated that the percentage of those who did not hear the warning was actually considerably higher than half of the threatened population.

As for those who had heard the warning, questions were asked concerning from which source and when they heard the warning. The main warning source were the electronic mass media outlets in that 57.1% heard the warning from television and 21.9% from radio. The survey results also indicate that 9.9% heard the warning within fifteen minutes after the earthquake, 47.3% heard it within thirty minutes, and 23.0% heard it within an hour. In other words, most of the population heard the tsunami warning after 12:15, only five minutes before the first tsunami wave hit the coast. This means that most of the citizens had no time for adequately responding to the warning.

Respondents were also asked whether they really felt a tsunami threat after they heard the warning, that is, did they take the warning seriously. Half or 50% of our respondents answered that they thought the tsunami would occur but would not produce much damage. Nearly two out of five or 39.5% of the respondents

answered that they did not expect any tsunami at all. Only 10% of our respondents answered that they thought a large tsunami would hit and create much damage. In other words, the majority of the respondents who heard the warning did not take it as a message that indicate there could be very serious consequences upon impact (and they reported this after knowing what the tsunami had actually done in their community).

The primary reason for this lack of awareness of tsunami hazards, may be attributable to their lack of real knowledge about the tsunami danger. To our question:

> Have you ever heard the prudent words that you should be careful about a tsunami after a major earthquake?

As much as 65% of the respondents answered that they had never heard about such a threat. Another 26% answered that they had heard, but thought it was not applicable to the coast of the Japan Sea. This finding indicates that accurate knowledge about tsunami disasters was absent in this coastal area of the Japan Sea. This is in contrast to the northeastern coast of the Pacific Ocean, where studies have shown that repeated tsunami disasters have produced well developed subcultures about the real hazards of tsunami resulting from earthquakes.

Mass Media Operations During the Disaster

In order to understand the activity of mass media organizations during the disaster, we conducted interviews of station personnel and a mail survey of the news directors of the **NHK** Akita TV/radio and **ABS** TV/ radio stations.

First, it should be noted that both stations massively increased their news reporting on the day of the earthquake. Thus, **NHK** stated that its news reporting on television increased 320% and on radio 370%. **ABS** said that the increase was 320% on television and 915% on radio. In addition, the attention given to the disaster is also illustrated by the fact that the **ABS** station, the private one, indicated that 40 commercial messages or advertisements were eliminated on television and 293 on radio on the day of the disaster.

The shift to a massive coverage of the disaster, however, was not dictated by much prior planning. As we shall describe later, there was much improvisation at both the **NHK** and the **ABS** stations.

There were both similarities and differences in the operation of the public and private sectors of the local mass communication system. The following is a comparison of the activities undertaken by the local **NHK** and **ABS** stations in reporting the earthquake and the subsequent tsunami disaster.

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Mobilization of Resources.

When we compare **NHK** and **ABS** in the process of mobilizing resources for disaster reporting on May 26, we find that the **NHK** organization was quicker, more organized, and more effective than the **ABS** one.

1. The mobilization of staff personnel.

At the time of the earthquake, 18 persons out of 20 staff members of the reporting section in the **NHK** station, and 32 persons out of 39 staff members of the reporting section in the **ABS** station were on duty at the time of impact (although some were outside the station buildings themselves). In **NHK**, all staff members in the station gathered in the room of the reporting section immediately after the earthquake. As the result of a decision by the director of the reporting section, all the regular programs of TV and radio was suspended, and replaced at 12:02 p.m. by special news report on the earthquake. In addition, all the workers in the station immediately got involved in the task of disaster reporting under the direction of the news desk. Those staff members who were off work came to the station voluntarily, and those who were working outdoors immediately started disaster covering on the spot. Thus, disaster reporting was organized and established by 12:15 p.m., about fifteen minutes after the earthquake.

On the other hand, the **ABS** station showed a rather unorganized response immediately after the earthquake. When the earthquake occurred, the president and several other top executives were away out of town at the opening ceremony of a satellite TV station. There were almost no high level official present at the head office who could take control over the whole reporting activities about the emergency. In the reporting section, when the earthquake occurred, 20 persons were working at the head office of the **ABS** station, and three persons were at the press club at the Prefectural Office and the prefectural police headquarter in Akita City. Eight staff persons were working away from the station, and seven persons were off work at that time.

Immediately after the earthquake, one of the news desk staff members went to the local meteorological observatory, and sent the tsunami warning to the **ABS** station via an exclusive line at 12:16. However, this message did not reach the reporting section because the switch was at that time connected to the other section. Some of the reporters and camerapeople went out to schools and department stores in an effort to cover the damage in Akita City. The reporters who were at the reporters' club gathered information about damage from the section on disaster mitigation in the Prefectural Office and the Prefectural Police Headquarter and sent it via telephone to the **ABS** station. These reporters and camerapeople gathered disaster news on the spot, what information was available at where they were located.

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However, the communication between the reporters in the field and the **ABS** station headquarters were often delayed by the overload of the phone system and interrupted by malfunctions of the telephone or wireless lines. Also the suggestions or directions given from the news desk at **ABS** headquarters were, according to our research findings, sometimes unclear and inadequate for the workers in the field.

In the announcing section of the **ABS** station, there were 17 staff members present, and 14 of them were working at the time of the earthquake. Immediately after the earthquake impact, all the members of the section voluntarily got engaged in disaster reporting activity. The rough division of labor that developed was as follows. Three reporters worked at the news desk. Some staff members reported from the ENG car and the TV hookup car. Other staff members gathered information in the city and reported back what they learned. Still others helped in transmitting broadcasts to the network station in Tokyo. Just after the earthquake, the electronic wave of the **ABS** radio broadcast was discontinued for 44 seconds because of a power failure. After the restoration of the wave, the announcer interrupted the regular program of popular music, and reported the occurrence of the earthquake. This was the first message on the special radio news program which continued for eleven hours on that day. A system of quick news reporting was set up at about 12:15. It consisted of two announcers and one news desk person and continued until 7:00 p.m.

2. Mobilization of equipment and facilities.

When the earthquake occurred, the newscar of the **NHK** station was covering another event. Immediately after the earthquake impact, the staff in the newscar received instructions and went to cover a fire in a thermal power station in Akita City, and then moved on to the Oga Peninsula to cover the tsunami disaster. After the tsunami warning was issued, an all purpose car was dispatched to the mouth of the Omono river, which was located at Akita and where the tsunami was expected to be observed. The TV hookup car had just returned from another location when the earthquake occurred, and it left for the Oga Peninsula to also cover the happening of the tsunami. However, on the way to that destination, it received a message that many persons were missing at the harbor in Noshiro because of the tsunami. So it changed its intended destination and went to Noshiro City instead, and undertook on the spot reporting from the harbor area.

At the time of the earthquake, the newscar of the **ABS** station was in a town outside Akita city helping in the broadcast of a variety show program. After impact, it moved on to the Oga Peninsula to aid in a FPU transmission. The radio car went to the Akita thermal power plant to cover the fire, and then on to Oogata village to cover the damage of earthquake there. The TV hookup car returned to the **ABS** headquarter office at 1:30 p.m. However, it was not

until 7:00 p.m. before it was used for disaster reporting.

The lack of coordination between the producing section and reporting section and indecision as to places for reporting on the spot, were the main reasons for the delay in utilizing the car. Although many ENG tapes and 16 mm films were sent to the reporting section of the ABS station, they were not used effectively for the newsreport because no single person was assigned as the responsible editor to deal with these tapes. As a result, the facilities of the ABS station were not always used effectively for reporting during the emergency period.

3. Mobilization of resources from outside organizations.

NHK used far more outside resources in terms of both personnel and facilities during the disaster than did ABS.

At the NHK station in Akita, 180 workers engaged in disaster reporting activity on May 26; this includes personnel from outside NHK stations. Fifty-five of these workers were senior reporters or cameramen. On the evening of May 26, as many as 95 staff members arrived at Akita from the NHK Tokyo headquarter and also from several NHK stations in neighboring prefectures. These persons worked in cooperation with the reporting staff of the NHK local Akita station until they left on May 27 and 28. As for equipment, ten ENG cameras, four editing units, two ENG cars, three helicopters, and a facsimile unit were brought in by the outside personnel.

In the ABS station, over 100 staff members participated in disaster reporting activity on May 26. Of these, only 22 persons were senior reporters. Others were workers from various sections, such as producing, engineering, and general affairs. However, there were practically no personnel from outside the local station. Similarly, only two helicopters and three cars were mobilized by the ABS station from any outside organizations. Furthermore, these resources were not effectively used for disaster reporting during the emergency period, because of insufficient coordination and poor communication between the personnel of the reporting section and the outside personnel.

Reporting of damage.

Personnel of both the NHK and the ABS stations in our interviews with them said that they had experienced considerable difficulty in obtaining accurate and detailed information on the damage done by the earthquake and tsunami during the impact period. Only fragmentary reports of damage around Akita City were available for the first twenty to thirty minutes. Thus, the announcers sometime repeated speculative and fragmentary reports about losses and damages. For an initial time period, the disaster mitigation section of the Prefectural Office and the Prefectural Police

Headquarter were the main source of information for the local mass communication systems about the damages sustained from the disaster. It was late in the evening of May 26 before overall reliable information was obtained.

It was about 12:30 before some detailed reports of damage began to get to the **NHK** Akita station, such as the report of the fire at the Akita thermal power plant and the tsunami disaster at Oga peninsula. However, for several hours much of this kind of information of damage remained unverified and there continued to be uncertainty about the number of dead or injured. Different reports on the large tsunami disasters at the Oga Peninsula and in Noshiro harbor were confounded together, and there were large differences in the reported number of death for several hours, because the **NHK** station could find no accurate and verified information anywhere.

The **ABS** station also had difficulty in collecting accurate information on the damage from the earthquake and tsunami. It was more than an hour after 45 children had been swept away by a giant tsunami at the seashore of the Oga peninsula, when some fragmentary and unverified report of the event came in via the disaster mitigation section of the Prefectural Office and the Police Headquarter. The report of the tsunami disaster at the harbor in Noshiro harbor was even more delayed. It was about 3:00 p.m. when a reporter and a cameraman of the **ABS** station arrived at the harbor and gathered information of the tsunami disaster which had occurred more than two hours before. The TV hookup car left the **ABS** headquarter for Noshiro City at 7:00 p.m. to report from on the scene.

The following example shows how inaccurate and conflicting information was reported in the first several hours, and that even emergency organizations were receiving inconsistent and incomplete accounts . The Oga fire department had a report at 12:37 from one of their branch offices that pupils from an elementary school had been caught by a tsunami at the shore. At 12:38. the **ABS** radio broadcast an unconfirmed report that 50 children had been swept away by a tsunami. At 12:39, the Oga fire department received another report that six children had been swept away. At 12:44, the **NHK** television station, broadcast a report that one child had been caught by a tsunami on the coast. At 12:49, the **ABS** radio station reported that of 50 elementary school pupils, seven or eight had been rescued but that the others were missing. The Oga fire department received a report at 1 p.m. that 10 children were missing and that only one death was confirmed. At 1:31, the **NHK** television station reported that 10 of the 50 children had been swept away and one was dead. At 1:47, the **ABS** radio station broadcast that of 43 school children, one was missing, one death was confirmed, and one was injured. In part these different reports resulted from the fact that whatever happened occurred at a place rather distant from Akita City and with which there was no direct communication.

It should be noted that:

> During this period, **NHK** did receive a number
> of "unconfirmed" reports on the disaster from
> other sources which might have been more
> accurate than those from the official sources,
> but only the reports from official sources
> such as the police department or the fire
> station were accepted as reliable or
> "confirmed" news (Hiroi, Mikami and Miyata,
> 1985: 30).

Transmission of personal messages.

Because of the severe shocks of the earthquake, many railways
tracks and roads in the area were heavily damaged and
transportation stopped in many cities and towns. Telephone lines
were overloaded everywhere for hours after the earthquake. Because
of these problems, many citizens had difficulty in contacting their
family members, and called the **NHK** or the **ABS** stations to send
personal message to their family members or friends. The month of
May is also a traditional time or season for excursions by schools
and kindergartens. Thus, many of the calls were from teachers who
asked the local mass media outlets to broadcast over radio or TV
that their pupils were all safe, and so reassure anxious parents.

In Japan, such kinds of broadcasting is usually called "safety
message broadcast" or "personal message broadcast." It appears to
have been first undertaken in the country in the Niigata earthquake
of 1964. As such it is familiar to many Japanese.

Just after the earthquake in Akita, the vice director of the
reporting section at the **NHK** station remembered that five years
before at the Miyagiken-oki Earthquake, the local **NHK** Sendai
station had broadcast many personal messages so as to give
emotional relief to audience members who were anxious about their
family members. At 1:00, he therefore decided to broadcast
personal messages from both the TV and radio stations and set up
three telephone lines in the studio to handle them. The broadcast
of such personal message started at about 1:00 p.m. In all, about
250 messages came in and about 80% of them were broadcast without
change in content until 7:00 p.m. The staff personnel of the
general affairs and sales divisions helped in receiving the
telephone calls and they handed the messages directly to the news
director, who checked and broadcast them. Only uncertain or
unverified messages were rejected. Relatively important messages
were broadcast via TV. The others were broadcast over the radio.

The **ABS** station started broadcasting personal messages around 12:55
p.m. when a call came from a kindergarten in Akita City asking the
station to tell the parents of the children that everyone was safe

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at the kindergarten. Once the **ABS** radio station broadcast this message, many other similar telephone calls came to the station, and the station continued the broadcasting of personal message until 11 p.m. that evening. Only radio was used for transmitting these personal messages. In total, 373 phone calls were received and 98% of them were broadcast without alteration. Only a few messages were withheld because the name of the caller was unclear.

In neither the **NHK** or the **ABS** stations, was any person assigned the responsibility for checking personal message exclusively. As a result, the gatekeeping of personal messages was not done as otherwise might have been the case. As a report noted:

> It was only 20 percent and 2 percent respectively which **NHK** and **ABS** checked and did not broadcast (Hiroi, Mikami and Miyata, 1985: 31).

The reporting of later disaster related activities.

By midnight of May 26, the overall picture of the damage sustained from the disaster became clear. However, many people were still missing, and the search and rescue activity continued for days at the harbor in Noshiro and at the seashore of Oga peninsula. The lifeline systems of Noshiro city were heavily damaged, especially the gas and water supplies. It took nearly a month to restore the lifeline utilities in the city. However, the **NHK** and the **ABS** stations did not put much stress on reporting the restoration of lifeline facilities. In fact, there were some differences in priority of what topics were reported by both the radio and television stations of both **NHK** and of **ABS**. This is shown in Table 26 below. The scale is from 1 to 5 with 1 being for highest priority and 5 for lowest priority.

As can be seen, there were some differences in topical coverage not only between the **NHK** and the **ABS** stations, but also between radio and television stations. Although somewhat less, there were also differences between the focus of news reports on the day of impact and the day after the disaster.

It should also be noted that the coverage of the disaster decreased day by day after May 27 in both the **NHK** and the **ABS** stations. Most of the staff personnel from outside returned to their organization by May 27 and 28.

Table 26.

Rank of Priority in Reporting
on May 26 and May 27

Topics	Date	NHK TV 26	TV 27	NHK Radio 26	Radio 27	ABS TV 26	TV 27	ABS Radio 26	Radio 27
Disaster Damages		1	1	1	1	2	2	3	2
Search & Rescue		1	1	1	1	1	1	5	1
Magnitude of Impact		2	2	3	2	3	3	2	
Prospects of Aftershocks		2	2	3	2	5	5		
Utility Restoration		3	3	4	3				3
Traffic Conditions		3	4	4	4	4		4	
Safety of Citizens		4		2				1	
Countermeasures		5	3	5	3		4		5

Audience Survey Results

What Was Wanted.

Audiences want or require a variety of different kinds of disaster
related information from the mass media outlets. This ranges from
interest in reports of damage to accounts about organizational or
citizen behaviors that provide emotional support. In our research
we found it useful to classify the information wanted into the
following seven categories:

    (1) information on the disaster agent;
    (2) information of the damages incurred;
    (3) information about recovery;
    (4) information on relief or help;
    (5) information about safety;
    (6) information that gives advice or direction; and,
    (7) information of human interest.

The information on the disaster agent refers to the physical
characteristics of the agent such as the magnitude and epicenter of
the earthquake, the mechanism of its occurrence, the prospect of
the recurrence of the agent in the future, and so on. The
reference about damages includes both direct and indirect losses
resulting from the impact of the disaster agent, such as the number
of dead or injured, the destruction of buildings, and the collapse
of lifeline facilities. The information on recovery is about the
activities of restoring urban facilities following disasters. The
reference to relief or help covers search and rescue activities,
the helping behavior of citizens, and the relief activity of local

and national government. The information about safety includes personal message reassuring their family members and personnel of firms or members of other organizations. The reference to advice or direction includes evacuation orders, and general or specific suggestions of action for protecting one's life or property.

According to our survey findings, the most needed information on May 26 was about the prospects of further or future earthquake or tsunami (29.5%). Many small aftershocks occurred following the earthquake, and the residents in the stricken area felt anxious whether another major earthquake or tsunami might occur in the near future. In addition, there were rumors in Noshiro City which indicated that a major earthquake would occur on a specific later date. These are indicators that a general concern about the future possibility of earthquake or tsunami was at a high level immediately after the May earthquake.

The second most needed information, according to our survey, was about the size and place of the earthquake and tsunami that had occurred (21.5%). In total, about half of the respondents wanted additional details about the disaster agent on May 26. A much smaller number of people also sought information about the safety of their family members or relatives (18.3%).

During the week from May 27 on, the information needs of the citizens in Noshiro City focused on the topic of the restoration in the lifeline systems. Nearly two out of five or 39% of our respondents wanted to know about the prospect of restoration of the water, gas, or electricity supplies. A need for information about the prospect of aftershocks and later tsunamis still remained strong in this period. On the other hand, the information needs about the safety of their family members or relatives dropped down drastically in this later stage, because most of the families could contact their family members or friends by the next day.

In the survey, we also asked respondents how much they had been exposed to various mass media outlets and how they evaluated the sources of the information they obtained.

Exposure to and Evaluation of Mass Media Outlets.

In the survey, we asked the respondents how long they watched television or listened to radio on the day of the earthquake (May 26) and from the next day to a week afterwards. A great majority of the respondents (88.2%) watched television longer than usual, while more than half of the respondents (58.2%) listened to radio almost as usual. As for the newspapers, we asked how much they read newspapers from the next day to a week after impact. The findings show that 86.5% read newspapers more than usual. These data indicate that most of the citizens spent much more time in watching TV than in listening to radio after the earthquake, and many people in Noshiro got information about the occasion from

newspapers on the next day.

There was almost no power failure in Noshiro City on the day of the earthquake, and most citizens stayed at home, so that TV was available and was quite a major source of news for most of the population that day. From the next day on, the local newspapers, especially the **Hokuu Shinpo**--which almost all respondents subscribed to--were widely read by citizens as a source for detailed and community-oriented information about the disaster.

We also asked our respondents which kind of mass media was most useful with respect to the above mentioned categories of disaster-related information. We found that the **NHK** television station was highly evaluated as a useful source by the majority of the respondents for both the May 26 and the following week telecasts (71.6% and 67.4% respectively). In comparing the **NHK** stations with the commercial broadcasting stations, it is clear that the former were evaluated much more highly than the latter (None of the commercial radio and television stations were rated as most useful by more than 12.65 of our respondents). However, it should be noted that the newspaper, the **Hokuu Shinpo** was ranked second as being useful for the rest of the week. In fact, 52.1% of all respondents found the newspaper a useful source of information during that week, although only 16.9% ranked it as the most useful.

The Content Analyses

We conducted a content analysis of the tapes of the radio broadcasts by the NHK and ABS stations on May 26, and of two newspapers, the **Akita Sakigake Shinpo** and the **Hokuu Shinpo** for one week from May 26, 1983 on. This was done to ascertain what kind of disaster information the local mass media provided about the earthquake, and the degree to which what was provided met the needs of the residents in the stricken community. Another intent of the analyses was to allow some comparison with the similar research effort made on the American mass media end products.

Radio Broadcasts.

A content analysis was made of the tapes of the broadcasts of the **NHK** Akita radio station and of the **ABS** radio station on May 26. The recorded broadcasts of **NHK** were about three hours long, going from 12:10 to 4:32 p.m. the day of the disaster (some minutes of a few programs were not recorded). The tapes of the **ABS** radio stations contained recordings of programs from 12:02 to 11:00 p.m. (eleven hours in total). The total number of different news stories in the broadcasts was 484 at the **NHK** station and 1,470 at the **ABS** station.

We classified each news story into 14 topics or categories. These topics correspond to the ones precoded in the survey questionnaire on information needs, so that we could compare the content of the broadcast message with the information needs of the audience.

The most frequently broadcast topic on **NHK** fell into the catch all category classified as "miscellaneous or other" (31.8%). This mostly included reports on suggestions for countermeasures or cautions about environmental hazards after the earthquake. The second most frequently broadcast category was the physical damage done by the earthquake and tsunami (22.9%). The third was on damage to human life (20.2%).

The results of the content analysis on the **ABS** radio station showed a different pattern from that of the **NHK** station. The most frequently broadcast messages were on "the personal safety of citizens" (29.6%). After that came "the physical damage done by the earthquake and tsunami" (28.5%), and "the damage to human life" (17.6%) ranked third. Most of the news stories in the "other" category in this particular instance, which is ranked fourth, were on the traffic conditions in the area.

These results indicates that the **NHK** radio station stressed information for mitigating disasters as well as reporting damage, while the **ABS** radio station tried to respond to the citizens' requests to contact their family as much as possible. As for **NHK**, the proportion of the messages on "advice or caution" and "aftershock information and tsunami warning" decreased as time passed, while stories about the losses in human life tended to increase. On the other hand, the **ABS** station broadcast messages on physical damage most frequently at 1:00, 3:59, and broadcast personal messages most heavily especially after 4:00 p.m. The result indicates that the content of broadcast varied much in accordance with the time sequence after the earthquake.

Newspapers.

We also conducted a content analysis of the two local newspapers; the **Akita Sakigake Shinpo** and the **Hokuu Shinpo**. The total number of news items relating to the disaster from May 26 to June 2 were 399 (260 in the morning edition and 134 in the evening edition) in the **Akita Sakigake Shinpo**, and 241 in the **Hokuu Shinpo**. In order to compare the results, we adopted the same categories for classifying items as the ones used in the content analysis of the radio broadcasts and the survey questionnaires. The percentage of each material was measured in terms of space size and is given in Table 27 below.

The most heavily reported topic was on the physical damage done by the earthquake and tsunami in both the **Akita Sakigake** (28.9%) and the **Hokuu Shinpo** (44.5%) newspapers. Next came the topic of the damage to human life. In the **Akita Sakigake** this amounted to 22.3%, while in the **Hokuu Shinpo** the topic on the countermeasure activities of the public administrations came in second at 17.9%. It should be noted that the percentage of topics on the restoration amounts to nearly 14% in the **Hokuu Shinpo**, almost two times that of

the **Akita Sakigake**. We also found that the latter paper reported the events at the stricken area in Akita Prefecture most of all (30.1%), while the **Hokuu Shinpo** reported the events of Noshiro City most heavily (60.6%). These results indicate that the **Akita Sakigake** stressed most in its reporting the damage from the earthquake and tsunami in Akita Prefecture, while the **Hokuu Shinpo** newspaper focused much more on the events in Noshiro city .

We found both similarities and differences between radio and newspaper in reporting the disaster. Both kinds of mass media outlets reported most heavily the damage to property and human life. However, such information as personal messages of safety, advice or caution just after the earthquake, and details about traffic condition were much more heavily reported on radio than in the newspapers. On the other hand, the newspapers reported the relief and restoration activities by the government agencies or utility companies much more heavily than did radio.

Table 27.

Topics Covered in the Akita
Sakigake Shinpo and the Hokuu
Shinpo Newspapers for the Week
of May 27 to June 2, 1983

Topic:	The Sakigate Shinpo	The Hokuu Shinpo
Physical Damage	28.9	44.5
Damage to Life	22.3	9.3
Governmental Countermeasures	11.2	17.9
Search and Rescue	11.0	13.2
Human Interest Stories	8.4	14.0
Restoration of Lifelines	7.7	13.7
Safety of Citizens	9.5	6.6
Problems in Tsunami Warning	11.6	2.0
Magnitude or Causes of the Disaster	7.8	3.1
Restoration of Other Facilities	4.5	9.4
Disaster Relief	6.1	2.6
Disaster Compensation	4.2	3.7
Changes in Schedules	4.0	0.7
Evacuation	2.1	3.1
Aftershock Information	2.2	0.3
Other	11.7	5.4

To conclude, we might note the general observations that stand out with respect to the mass communication system response in Akita. In particular we list those matters on which it was most possible to later compare the research results from both Japan and the United States. Consequently, some observations that stand out in the data are not mentioned here, for example, the usefulness of the information provided by different mass media organizations was evaluated differently with not all being found by citizens as being of equal value.

The local mass communication organizations in Akita were not especially well prepared for a disaster and had to improvise considerably to provide news coverage. The disaster was a very major news story with a massive effort being given to reporting it. The community electronic outlets played a major role in attempting to warn citizens of a developing threat, although they were not too successful. Local reporters and editors turned after impact almost exclusively to traditional organizational sources for information about the occasion. The initial information available to the press about the scope and magnitude of the disaster was quite limited and initial news reports about the situation were likewise restricted in coverage. What was covered was often dictated by situational contingencies rather than by any inherent "newsworthiness" of the specific happening. Overall, radio and television mass media outlets, as well as the newspapers, provided different kinds of information about the disaster. The longer after impact, newspapers became more important as the main source of information about the occasion. Routine gatekeeping processes were somewhat set aside especially at radio stations at the height of the emergency. Some of the radio mass media outlets were used extensively for sending personal messages. What was the substantive and topical focus of journalistic coverage changed over time. The mass media organizations in the public and the private sectors operated somewhat differently during the disaster. Outside mass media resources were important in the operation of at least one local mass communication organization.

CHAPTER 10

THE FLOOD AND LANDSLIDE DISASTER IN NAGASAKI

The Community Setting

Nagasaki City, with a population of 420 000 in 1982, is located in the south of Nagasaki Prefecture. The city is known worldwide as the place where an atomic bomb was used near the end of World War II and more than 150,000 people died or were injured in that attack. It recovered from that destruction and is now a thriving city in Japan. One of the present day main industries is ship building, which has been undertake in the area for over a hundred years. In addition because there is good fishing nearby, there are a number of fisheries and food processing factories.

Nagasaki is geographically surrounded by mountains on three sides, and fronts the sea in the southwest. As there is relatively little flat space within the city itself, many persons live on the surrounding mountainsides or hillsides, which are rather vulnerable to landslide hazards. The area has much rain every year, especially in the rainy season before summer and during the typhoon season in the fall. The precipitation levels often are very high. As a result, rainfalls have frequently resulted in floods or landslides in various part of the prefecture, and inflicted severe damages on people and property.

The most severe disaster in recent years in the general area was the "Isahaya Flood" in 1957, which struck Isahaya City adjacent to Nagasaki and killed 856 people. But unlike other districts in the prefecture, there had until 1982 been no devastating flood disasters in Nagasaki City itself. The greatest damage from heavy rainfall occurred in 1963, which killed five people and injured seven people in the city.

The Local Mass Communication System

The area as befitting a major metropolitan complex has an elaborate mass communication system. In 1982 there were three broadcasting organizations and two newspaper companies in operation in Nagasaki Prefecture. As is typically almost everywhere in Japan the electronic media were both public and private.

One of the broadcasting organizations in the city was the **NHK** Nagasaki Station. It operated two television channels (one being the general and the other being the educational one) and three radio stations (the general, the educational, and the FM music ones). However, most of the programs aired by them locally were sent from the **NHK** Fukuoka regional broadcast center. Nevertheless, the Nagasaki Station had 116 persons on its staff at the time of the disaster.

The other two broadcasting organizations in Nagasaki were privately owned, namely the Nagasaki Broadcasting Company (**NBC**), and the Television Nagasaki Company (**KTN**). **NBC** was established in 1953 and initially had only a radio station; a television station was set up in 1959. **NBC** was the largest mass media organization of the three in Nagasaki, and had 311 staff members at the time of the disaster. **KTN** was set up in 1969, and in 1982 had only a television station, which employed 124 staff persons.

At that time of the disaster, of the many papers circulating in the in the Prefecture, two were local. We confined our studies to them since those of a national or a wide regional character gave relatively little attention to local news. One of these was a daily established in 1887, **The Nagasaki Shinbun**, which had about 160,000 circulation all over Nagasaki Prefecture. It had 349 workers at the time of the earthquake. The other newspaper was **The Nishinippon Shinbun**, which was set up in 1877, and had its head office in Fukuoka City. This paper, with a circulation of about 550,000 was distributed in several prefectures in Kyushu district. It had a total of 1,409 staff members in 1982, and it had many branch offices in Kyusyu district, one of which was in Nagasaki City. Thus, while it is a somewhat regional paper, it does have a strong local focus.

The Impact of the Disaster

There occurred a very severe rainfall in Nagasaki City on July 23, 1982. It had only drizzled on and off that morning. But the staff members of the Nagasaki Marine Observatory detected thick rainy clouds moving eastward towards northern Kyusyu in the afternoon, so they announced a heavy rainfall and flood watch for the Nagasaki district at 3:25 p.m. They switched this watch to a warning at 4:50 p.m. (the terms have the same meaning as they do in American society). Around this time the rainfall became increasingly heavier, and the amount of precipitation recorded was 15mm/hr between 5:00 p.m and 6:00 p.m, and 27mm/hr between 6:00 and 7:00. A little after 7:00 p.m the rain suddenly came even heavier with a precipitation that amounted to 115mm/hr between 7:00 and 8:00 p.m., 98mm/hr between 8:00 and 9:00 p.m., and 102mm/hr between 9:00 and 10:00 p.m.

This heavy rainfall resulted in great damage in various part of Nagasaki City. Immediately after 7:00 p.m. some houses and roads in the lowest lying areas suffered from flooding. Also the Nagasaki Station of the National Railways went partly under water owing to an overflow of the Urakami River. Around 9:00 p.m. the Nakashima River, which flows right through Nagasaki City, also went over its bank. The rising water poured into many business stores on both sides of the river, swept away many cars on the streets with their drivers, and occasioned in a power failure in many parts of the city. The flood also washed away the Megane Bridge, which was one of the most important cultural assets of Nagasaki City. In

all, the flood killed 32 persons.

This heavy rainfall also produced another hazard, landslides, which destroyed many houses on the mountainsides. The damage was severe. In nearby Narutaki Town, 24 people died or were missing, and in Kawabira Town the collapse of a dam killed 33 persons. The total number of landslides induced by the heavy rainfall amounted to more than 500, and about 230 people were victims of the landslides. These landslides also damaged many trunk roads throughout Nagasaki City, and traffic was paralyzed at 20 places.

Overall, a total of 299 persons died or were reported missing and never found. About 800 residents of the area were injured. At least 1,081 houses were destroyed, and 35,958 were inundated; in addition about 1,500 automobiles were lost in the flood waters. Overall, economic losses in the Prefecture from the disaster were estimated to amount to about 315,313 361,000 yens (about 2, 275 million dollars). In addition, there was the social disruption of community life for several days.

The Response to the Disaster

Issuance and Dissemination of the Flood Warning.

In the two weeks before the flood and landslide disaster occurred, heavy rain and flood warnings had been issued four times by the Nagasaki Marine Weather Bureau, but there had been no heavy rainfall or flood around Nagasaki City. Thus, it was the fifth time within two weeks when the Bureau announced at 4:50 p.m. on July 23, another heavy rain and flood warning for the Nagasaki area. In Nagasaki it is legally prescribed that the warning be announced when the local observatory forecasts that the amount of precipitation will exceeds 50mm/hr, 100mm/3hr, or 150mm/24hr (50 mm. is about two inches). The warning statement issued at 4:50 p.m. was as follows:

> A low atmospheric depression over the Tsushima Straits is moving eastward, and the seasonal rainfront has been active. There is a possibility that in the Nagasaki district from this evening until tomorrow morning there will be a heavy rainfall accompanied by thunderbolts that may cause landslides, submersions of low grounds, and rises and overflowing of rivers.

Immediately after the Nagasaki Marine Observatory issued this warning, and following the Meteorological Service Law, staff members transmitted it to both the designated local administrative agencies, such as the Prefectural Police Headquarters and the Maritime Safety Offices, and designated public corporations, such as the National Telegram and Telephone Corporation (NTT) and the

Japan Broadcasting Corporation (**NHK**).

Mass Media Operations During the Disaster

The Electronic Mass Media.

The heavy rainfall and flood warning was transmitted to the three broadcasting stations in Nagasaki. All of them promptly disseminated it to their audiences, a standard practice.

NHK received the warning at 4:55 p.m. and telecast it with superimpositions at 4:56; it was rebroadcast for a period of time every 10 or 20 minutes. The station also telecast the warning during the local news programs at 6:30 p.m., and repeated it in the radio news at 7:10 p.m. The **NBC** station also superimposed the warning in its television transmissions just after receiving it, and rebroadcast it at 6:00 and 6:30 p.m. **KTN** received the warning at 4:50 p.m., and telecast it immediately with caption, and repeated it in local news programs at 6:30 p.m.

On the evening of the heavy rainfall, there were 54 staff members working at the **NHK** station. As soon as they received reports of damage in various places in the city, they decided to provide news coverage of the occasion although there was no particular special organizational planning in place for such an occasion. But the heavy rainfall and the flooding rivers severely restrained their movements, so they had to depend largely for information about damages from some local organizations, such as the Prefectural Police Headquarter and the Nagasaki City Office. A little after 7:00 p.m. some of the staff members anticipated that the escalating rainfall would result in much more severe damage than had occurred up to that time, so they sent additional reporters to the Police Headquarter, a traditional source for news stories.

Information about the flooding and landslides in the city began to arrive at the Headquarter after 8:00 p.m., and officials posted one written announcements after another of the damages about which they had reports. The reporters made major efforts to transmit their stories as quickly as possible back to the station, but they could not always use the telephones in the Police Headquarter because they were also being used by many other reporters of different press and broadcasting organizations. Thus, it was not until 8:50 p.m. that the **NHK** station first reported on the air the disaster in Nagasaki, and it was not until 9:00 p.m. before a news reporter could manage to describe the disaster on the nationwide news program for about three or four minutes.

By that time, many citizens began calling the station in order to have it broadcast information about their own safety to their family or to ask their family to make contact with them. As noted earlier, in Japan such kind of broadcasting is usually called "safety message broadcast" or "personal message broadcast." As an

example, one of the requests which the station received that night was as follows:

I cannot return home owing to the flood. Please tell my family on the radio that I am safe now.

As this kind of telephoned request poured into the station, the staff members decided to initiate safety message broadcasting, and from 10: 18 p.m. sent these requests over the air. **NHK** received about 2,600 such requests that night. The safety message broadcast was transmitted mainly over the radio, while television news covered the stories of the disaster in Nagasaki.

The staff members in the **NBC** and the **KTN** stations, the local commercial mass media outlets, also faced major difficulties in obtaining a quick and accurate picture of the damages created by the disaster. In the **NBC** station, few staff members at first anticipated much damage from the rainfall. It was not until 7:00 p.m. when some unconfirmed stories about landslides came into the station, that the possible seriousness of the situation stated to develop. In fact, **NBC** aired this news at 7:30 p.m. A training meeting for staff members happened to have been held on that day, and many of them will still at the station at that time. Thus, a situational contingency was that there were 109 staff members present, a greater number than otherwise would have been the case. Some of them went out to seek information about the developing crisis occasion, while many others stood by preparing for a community emergency. For instance, two reporters hurried to the Prefectural Police Headquarter and four more were dispatched to disasters sites around 8:30 p.m. At that time, the radio station totally switched its usual radio programs to transmitting only reports solely concerning the disaster. The **NBC** television station also began to cover the disaster from 8:30 p.m. on.

Just before 9:00 the Chief of the Prefectural Police Headquarter asked the **NBC** station to broadcast the following evacuation advice to residents:

We advise citizens living in the low ground to take refuge in higher places, and not to drive cars.

NBC telecast this evacuation advice with captions at 9:14, and also repeated it over the radio. Also about this time, as had the **NHK** station, **NBC** started to receive many requests and inquiries from residents. The station staff discussed them, and decided to start broadcasting safety message at 8:40 p.m. After 9:30 the staff of the radio section were almost exclusively engaged in broadcasting personal messages. In all, 1,600 requests were telephoned to the station from that night to the next morning. Thus on the night of the disaster, both **NHK** and **NBC** were mainly telecasting news reports

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such as about the damages in various places, and were radiocasting safety messages without much editing. In fact, there was even less gatekeeping in Nagasaki than had occurred in Akita; practically every personal message was broadcast.

KTN was a TV station; it did not have a radio outlet. So the telecasts of that station tended to be restricted to reports about the damages that had been incurred. At 7: 00 p.m., when the disaster was developing, 22 staff members were at work at the KTN station. It was after 8:00 p.m. when the station started to receive information on the damages resulting from the heavy rain. The station started news gathering activity at that time, and dispatched some reporters and cameramen to several places around the city. The station telecast their first news about disaster at 8:54 p.m. At about 9:00, a Chief of the Prefectural Police Headquarter requested KTN to telecast the evacuation order mentioned earlier. The station immediately broadcast it with superimpositions. At that time many requests and inquiries from citizens also started to be called into the station. The station telecast as many as possible using captions, but the staff members had to write down the requests in order to telecast them. Because of this problem and because no staff members were exclusively engaged in this activity, the safety message broadcast of the station was less numerous and took more time to transmit than those of NHK or NBC.

The Newspapers.

In the days preceding the disaster, about 20 staff members usually worked in the news section of the Nagasaki Shinbun. They normally finish working and returned home about 8:00. p.m. But on July 23, it rained so heavy after 7:00 p.m. that all of them stayed in the office and prepared to cover an emergency. At 8:00 p.m. the river near the newspaper office overflowed its banks, and flooded the nearby roads. This made clear that it was probable there would be great damage around the city. The staff thus started news gathering activity to cover the disaster. But as the offices of the newspaper were a long distance from the business district, where the Prefectural Office, the City Office, the Prefectural Police Headquarter were located, it proved impossible to reach them because of the heavy rainfall and flooding. So the staff members were obliged to gather news by telephoning these and other emergency organizations. But the telephones soon became overloaded and it became difficult to make contact with any outside organizations. However, it was possible to have some contacts and these were used to get information. It was not until about 10:00 pm. when the rain slackened before the staff of the newspaper was able to go out to gather news. Two reporters were sent to the Prefectural Police Headquarter. They went there on foot, because the roads had been damaged too severely to drive a car on them. On their way to the headquarter, the reporters also gathered information about other damages in the city that they saw while

enroute. Two reporters were also dispatched to the places which suffered severe damage, such as Hamaguchi Town and the Uragami District.

At the time of the heavy rain, there were only five reporters at the **Nishinippon Shinbun** branch office in Nagasaki. They began news gathering activity a little after 7:00 p.m. Unlike the **Nagasaki Shinbun**, the **Nishinippon Shinbun** office was located near the business quarter. Thus, some of the reporters went at once to the Prefectural Police Headquarter, and the others went to the nearby Nakashima River, which by then had overflown its bank. The main focus of the reporting activity that night was upon how many people died or were injured, and at which places.

The Mass Media Activities Past the Emergency Time Period.

The mass media organizations in the several days after the disaster mainly focused on gathering and reporting news about damages in the city and the restorations of electricity, gas, water supply, and other services.

Early next morning after the flooding, more than half of the staff members of **NHK** assembled at the station. They were in a somewhat impromptu manner divided into several teams to cover the disaster, and crews were dispatched to report from places which suffered severe damage. Some of the reporters directly broadcast on the air over the nationwide hookup. Others went to the Emergency Operation Headquarter of the city in order to get news about the restorations of roads, bridges, and the electricity, gas, and water supplies. This information was also broadcast in detail, especially over the radio. On the next day **NHK** telecast news concerning the disaster for more than seven hours, and radiocast it for more than nine hours. The station continued to provide disaster related programs after July 25th. By August 2, the total time that had been devoted to news on disaster damages amounted to 9 hours and 22 minutes on TV and 11 hours and 12 minutes on the radio. **NHK** telecasted for 21 hours and 25 minutes and radiocasted for 32 hours and 30 minutes on restoration activities.

At the **NBC** station, the heads of the staffs decided to assign different roles to the radio and TV sections. The radio section personnel was divided into seven teams, and each team was assigned to gather and report specific information such as on the restoration of roads, electricity, the gas and water supply, and so on. After this division of labor was made, it became easier to get information and to exchange information with the staffs of the station. News stories on the restoration activities were 84% of the total programs which **NBC** put on the air on July 24th, and amounted to 6,000 messages in total for a week after the disaster. The staff members of the TV section covered the news of the damages done by the heavy rainfall. For example, the next morning reporters went to the Narutaki and Kawabira districts, both of

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which suffered severe damages, and reported on the spot. Information related to the restoration activities was also covered and telecast on the NBC television station. By the end of July, NBC had telecasted news about damages for a total of 8 hours 42 minutes, and on restoration for a total of 6 hours and 30 minutes.

The KTN station focused on gathering and reporting news stories about the damages from the disaster. For instance, in the early morning of July 24th, KTN dispatched reporters to the Prefectural Police Headquarter and the Megane Bridge, and reported on the spot from both locations. The scenes were telecast through the nation wide network. KTN also broadcast with superimpositions, information about restoration activities, especially after July 26th. However, the quantity of the disaster related information provided by the KTN station was less than that transmitted by NHK and NBC, because it had no radio station.

On the day after the disaster, the Nagasaki Shinbun dispatched 15 reporters from its staffs to such local community organizations as the Prefectural Office, the City Office, and the Prefectural Police Headquarter. Others were sent to localities in Narutaki, Kawabira, Higashi-Nagasaki, Honkochi, and Iimori, where many residents had died or had been injured. In the first few days after the disaster, the staff personnel concentrated upon reporting damages, especially of those who suffered much from the disaster. But the emphasis of the news reports gradually moved to providing information about restoration activities. Two reporters took charge of gathering information on the restoration process of the electricity, gas, and water supplies. These journalists provided information in a special everyday column of the paper devoted to such information, and continued to provide the readers with such news for about a month.

The Nishinippon Shinbun newspaper also decided on the same course of action as the Nagasaki Shinbun. For a while after the disaster, their news reports mainly focused on the disruption of the lives and damages to the properties of the residents. Subsequently and gradually more attention was paid to the restoration activities. However, as the head offices of the Nishinippon Shinbun were in Fukuoka City and the number of staff personnel of the branch in Nagasaki was much smaller than those of the Nagasaki Shinbun, there appeared fewer disaster related stories in the former paper than that in the latter.

Audience Survey Results

Response to the Warning.

We conducted an interview survey in Nagasaki City in order to find out how people responded to the warnings about the heavy rainfall and floods, and how they evaluated the activities of the mass media organizations in the disaster. The survey was carried out by

interviewing 1,000 adult men and women randomly sampled from the electoral registers. Trained interviewers conducted the interviews from November 19 to 24, 1982, about four months after the disaster. Out of the 1,000 chosen respondents, interviews were completed with 770 of them (a 77% completion rate).

According to the population survey undertaken, how many people knew the warning before or in the midst of the heavy rainfall? We found that 23.5% of the respondents had heard the warning before the rainfall created damages in various places in the city, and 10.6% heard of it in the middle of the disaster. But 65.9% of the people did not hear the warning at all. The reason why the warning reached only a limited percentage of the population was that some key emergency related organizations such as the Prefectural Office, the City Office, and the Prefectural Police Headquarter which received the warning from the Nagasaki Marine Observatory, did not disseminate it to residents. Thus, the only source for the warning was whatever was broadcast by the electronic mass media organizations.

What did our survey find about the psychological responses of the respondents who had learned of the warning before and during the middle of the heavy rainfall? Upon hearing the warning, only 28.8% of them feared that it would be a heavy rainfall, while 71.2% thought it would not. These figures indicate that the warning message could not have made many people seriously accept the statement. The low reliability of the warning message can be mostly explained by the fact, as mentioned earlier, that although there is much rain every year in Nagasaki City, serious damages have seldom resulted from such rainfalls. In addition, in the ten days before the flood disaster, there had been four heavy rainfall warnings which only in one case resulted in any flooding in and around Nagasaki City.

The behavioral responses of those citizens who anticipated heavy rainfall as a result of the warning, were relatively limited. Few of the respondents in the sample took any countermeasures such as hurrying home, moving furniture or goods to upstairs rooms, preparing an emergency supply kit, and confirming evacuation routes or places for refuge. Simply put, the great majority of people did not take any kind of protective action after hearing the warning. This finding suggests that even when people hear a warning and believe in the validity of the message, they do not necessarily always take a proper countermeasures.

What Was Wanted.

In one part of the survey, we asked the respondents what kind of information they needed or wanted to get in the middle of the emergency period and also from the following day to a week after the disaster. The results shows that many respondents wanted information about where and how the electricity, gas, or water

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supply would be restored.   On the very night of the disaster, 71.8% of the respondents wanted such information, and within a week after the disaster 83.7% desired information about the restoration activities.   On the night of the disaster, the second largest information need reported (by 44.7%) was about how long the heavy rainfall would continue, third ranked (by 43.8%) was about where and how the city suffered from the disaster, and fourth was whether their family members or acquaintances were involved or not involved in the disaster.

Within a week after the disaster, the priority given to the information needed changed. Although information about restoration activities was still ranked highest, the second greatest information need was about whether food and the necessities of life were available.   Ranked third was about the range or degree of damages suffered in the community.

The following table shows what kinds of mass media sources the respondents evaluated as most useful for purposes of information.

Table 27.

**Information Sources Evaluated
as Most Useful**

	The night of the disaster	A week after the disaster
Source:	%	%
Radio	46.7	21.1
Television	15.3	47.0
Newspapers	0	7.0
Police/fire agencies	1.6	2.0
City agencies	0	.9
Family members	2.5	2.5
Neighbors	11.1	11.3
Jishubo*	1.8	4.5

*Jishubo is the self help neighborhood association which partly engages in disaster mitigation activities.

As indicated 46.7 % of those questioned evaluated radio as the most useful the night of the disaster, and 15.3% evaluated television as most useful. This corresponds to what was found in the instance of the Niigata Earthquake in 1964 and the Miyagiken-oki Earthquake in 1978, where most people evaluated radio as the most useful information source.   In the Nagasaki disaster, the electric power was cut off in many parts of the city, so many residents could not watch television.   And organizations such as the City Office and

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the Police Station provided little information to citizens. These factors we believe heightened the role of radio in the Nagasaki disaster. Within a week after the disaster, our respondents reversed their evaluation rankings. Thus, 47.0% of the respondents evaluated television as being most useful, and 21.1% ranked radio at the top. There were 7.0% of our sampled persons who stated that the newspapers were the most useful for their information needs.

We should note that personal messages were widely heard and strongly approved. For example, according to our survey, 51% heard some personal messages over radio the night of the flood, and 96% of the respondents favorably viewed the broadcasting of such messages (Hiroi, Mikami and Miyata, 1985: 31).

The Content Analyses

We also carried out a quantitative content analysis of newspaper articles from July 24 to the end of the month. Figure 6. shows the results. Within the time period indicated, there appeared 290 articles about the disaster in the **Nagasaki Shinbun**, the local newspaper, and 234 in the **Nishinippon Shinbun**, a more regional paper. Most of the articles in the local newspaper reported about the assistance and sympathies for the victims received from the whole country; second most were stories about damages to buildings and roads; and, third were those reports about the disruptions of the lives of victims. The **Nishinippon Shinbun** most reported in its articles about the assistance and sympathy provided to victims. Second were reports about the damages to buildings and roads. Third were news items about the character and magnitude of the heavy rains. Both of the papers ran relatively few articles about the status and prospects for the restorations of the electricity, gas, or water supplies, although they appeared somewhat more frequently in the **Nagasaki Shinbun**.

As noted above, most of our survey respondents wanted to know about the restoration activities especially several days after the disaster. The three broadcasting organizations we studied made effort to provide such information, but only a few relevant articles appeared in the newspapers. This might explains to some degree the reason why only a small percentage of the people evaluated newspapers as being most useful within the week after the disaster.

Of the survey respondents who wanted most to know where and how the electricity, gas, and water supplies would be restored, 51.9% ranked television as being the most useful. Radio was so evaluated by 23.3%. Only 5.3% of the people ranked the newspapers as most useful. About one fifth, or 19.5% picked other sources as the most useful information source.

Generally speaking, the electronic media are more effective than newspapers because they can transmit the information promptly, be

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this disaster warnings or disaster happenings or consequences such as damages. On the other hand, with the lapse of time after the disaster, newspapers become more important, particularly since for restoration activities, they can report such information in much more detail than can the electronic media. The **Nagasaki Shinbun** which circulated only in Nagasaki Prefecture covered restoration stories extensively, which matched the information needs of the victimized population. Newspapers have much more space to report such material than do the electronic media which have various restrictions of time for reporting news. Also people can get access to newspapers at almost any time. But in this flood and landslide disaster, the two newspapers in Nagasaki did not report such information very much, and thus could not necessarily satisfy the information needs of the impacted population.

In concluding, we want to note what general observations can be drawn from what was studied in Nagasaki. Overall, the findings about the mass communication system responses are similar to what was observed in Akita.

There was no special preparation for covering a disaster so a fair amount of organizational improvisation had to occur to allow news coverage. The disaster was treated as the major news story at the time in the community. Electronic mass media outlets played a major role in the effort to warn citizens of the developing threats. Local mass media personnel tended very strongly to go to traditional sources for information about the disaster. There was both delay and difficulty by the mass communication system in getting initial information about the effects of the impact. Situational happenstances often led to coverage of particular disaster events or happenings. The different mass media provided somewhat different topical coverage of the disaster; this also changed through time. Organizational gatekeeping was reduced especially in the handling of personal messages, which became a major activity of some of the electronic media. The disaster related behavior of the public and private mass communication organizations was somewhat different.

We now turn to a discussion and analysis of how the research findings from Japan compare with those derived from American communities.

PART III. FINDINGS AND IMPLICATIONS FROM THE CROSS
SOCIETAL COMPARISON

CHAPTER 11

SIMILARITIES AND DIFFERENCES IN THE
JAPANESE AND AMERICAN LOCAL MASS
COMMUNICATION SYSTEM RESPONSES

In the preceding two parts of this volume we have separately
described the responses to community disasters by local mass
communication systems in Japan and the United States. We now turn
to drawing some general conclusions about one of the major
objectives for which the field work was undertaken in both
societies. What were the similarities and/or differences in the
mass communication behavior in the two countries? In addition, in
each case we also draw some implications or additional questions
from our observations.

Before detailing our observations, we should as a prefatory note
state that generally our empirical data indicates that there were
far more similarities than differences in local system responses to
disasters. When we started our comparative study, we had not
expected this overall conclusion. The expectation was that
differences would predominate. Furthermore, as will be seen, given
the prior research literature, while a number of the specific
findings that were similar in both societies are not that
unexpected, a few particular observations were somewhat surprising.

Of course the generalizations we drew from our cooperative work
have to be treated with some caution. This is particularly true
with any sweeping overall generalization about the likely
similarity of the disaster news reporting of local mass
communication systems. Our work was limited in a number of ways.
Our basic focus was only on local news reporting at the emergency
time period of the disasters. Just four natural disasters, two in
each country, were studied. Furthermore, while the disasters were
major in that they disrupted the routine functioning of the local
communities they affected, none approached the status of being a
catastrophe. Also, while we undertook some content analyses of the
national radio and television network outlets, we did not directly
study the intraorganizational behavior of the networks involved, or
the national organizations per se. Moreover, there was no
examination of the activities or contents of the wire services, or
the views of the mass media held by the emergency organizations
involved. (For a variety of topics which might be studied, see
Quarantelli, 1980, 1989).

Nonetheless, our cross-societal comparative research is the first
systematic one of its kind ever undertaken. Also, our in depth and
concurrent examination of radio, television, and newspaper
organizations in reporting disaster news is the first with such a
focus. (For some later work, see Wenger and Quarantelli, 1989.)
Given this, it would appear significant that we found far more
similarities than differences in the local Japanese and American

mass media organizational responses to disasters.

The Similarities

We first discuss a dozen outstanding similarities that emerged in our comparative data analysis. The following statements are not advanced in any particular order of importance because our data did not allow such a hierarchical differentiation. They are stated in flat form as if they are reflecting what has been definitely established about the behavior local mass communication systems at times of disasters anywhere and under all circumstances. However, we actually consider the propositions advanced as tentative hypotheses that must be brought to more systematic testing, not only in Japan and the United States, but also in other societies with different social, political, and economic structures and mass communication systems.

1. Disaster Planning.

There was weak or nonexistent disaster planning by local mass media organizations.

In both Japan and the United States, planning on the part of mass communication outlets for disaster operations was scanty and poor. It was not totally absent; a few mass media groups, especially certain larger organizations, had given some prior systematic thought to the coverage of major community stories on disasters. But, on the whole, the local organizational response pattern in the emergency time period of disasters either followed established routines or more frequently was emergent and ad hoc in nature. Formal disaster planning was rare and if it existed it was mostly about covering the occasion rather than what the organization would do if it itself were directly impacted. Also, plans very seldom indicated shifting organizational response to different procedures that might be required by the new crisis situation (e.g. suggesting the use of other than traditional sources for information about the occasion).

Our particular conclusion here is consistent with what DRC has observed about mass media groups for several decades mostly from impressionistic observations in studies with rather different research foci (and an occasional study focused on these groups as was discussed and cited in Chapter 2). The more systematic research here confirms these earlier impressions. It is also in line with the more general proposition in the literature that planning for disasters is not a norm for the great majority of community groups and agencies, except for certain types of emergency oriented organizations such as police and fire departments (see Drabek, 1986: 29-67).

The general observation here raises the question of why local mass media systems generally do not undertake any planning for disaster

coverage. In very many communities, the mass communication system would have had some past experience with mass emergencies and disasters. However, experience with crises per se would seem to work in both directions. At least in American society there have been efforts on the part of mass media organizations to plan for other kinds of mass emergencies such as riots. (For the planning that occurred in the 1970s in the United States for civil disturbances, see Kueneman and Wright, 1976). But organizational planning for natural and technological disasters is rare even in those localities subject to recurrent threats. One DRC study done after the research reported in this volume found that of 59 stations in high risk communities, only 20 or 33.8% had disaster plans; of 28 television stations only 53.6% had them (see Wenger and Quarantelli, 1989: 41).

Furthermore in these places in the United States where there has been some systematic planning on the part of the local mass communication system, it is almost always focused only on one kind of disaster agent, like hurricanes in some southern communities or earthquakes in certain California cities. Additionally, as the recent Loma Prieta earthquake showed, such planning as might be in place is often very limited and not too good when it has to be implemented (see, Rogers, Berndt and Harris, 1990; see also Smith, 1992 who indicates a lack of planning by national as well as local mass media outlets not only prevailed in the earthquake but also for such other disasters as the Yellowstone forest fires and the Exxon Valdez oil spill). In fact it is a commentary on the planning that in the later DRC just cited, only 36.8% of plans in existence where actually utilized by the mass media organizations during the disaster (Wenger and Quarantelli, 1989: 42).

We would hypothesize that the lack of disaster planning is primarily because most mass media organizations see themselves primarily as observers and reporters--their everyday view--of disasters rather than as possible victims or part of the responding community actors in the emergency. This seems a reasonable supposition, but systematic supporting research for the idea does not currently exist. There is also the question of whether planning by the mass communication system is more likely in developing societies that are often subjected to catastrophic disasters, in contrast to social systems such as Japan and the United States where major disasters are common but seldom take a catastrophic form.

2. Major News Stories.

Community disasters were treated as major news stories by local mass communication systems.

In both countries, disasters were treated as the most important news stories in the communities at the time they occurred. During the emergency time period at a number of the local media outlets,

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practically nothing was reported as news that was not disaster related. For several days, almost all other aspects of community life were given quite secondary attention by the local mass communications systems. Presentation of national and international news was scanty and usually only locally disseminated through extracommunity sources, like regular on-the-hour national network news reports. Local mass media resources given to reporting the disaster were massive and extensive.

Our general statement may appear to be stating the obvious, but it is not necessarily a generalization that holds across all social systems at all times. For example, until recently in the former Soviet Union, manifestly major domestic disasters were not even mentioned in either local or national mass media news stories (see, Sanders, 1986; Shabad, 1986). This ignoring of certain crisis occasions even now prevails in some African countries especially with respect to famines and droughts. The existence of a disaster from certain perspectives does not automatically mean that it will be treated as news by the local or domestic mass communication system.

Our generalization raises a question of what mass communication systems will treat as "disasters". It might seem that this would be related to what is also seen as "news." Clearly there are all kinds of societal, political and ideological differences surrounding definitions of news. But because something is treated as a news story does not automatically lead to a definition of the subject matter being discussed as a disaster. Is the current AIDS epidemic presented as a disaster news story anywhere? Has the great number of people dying from cancer as a result of smoking ever been treated as news about a disaster? Was the very widespread reporting of the Challenger space shuttle accident treated as disaster story?

Clearly the link between treatment of something as a disaster or as another kind of news story is complex. A possible clue of the link between a definition of disaster and of news might be given in the known and marked differentiation between reporting local, domestic, and foreign disasters. (See Gans, 1980, for such differences in American national media news stories.) It is possible that the closer a negative happening is to the local scene, the more probable that it will be treated in news stories as a disaster.
In one of the few other studies that has ever quantified news coverage of a disaster, Wilkins (1984) found that a blizzard in Denver, Colorado, the worst storm in that region in 70 years, generated 1,366 separate stories--977 on television and 389 in newspapers (radio coverage was not studied). Similarly, Smith found that:

> in 1989, the New York Times, the Washington Post, and the Los Angles Times decided the northern California earthquake was more

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important than a stronger seismic even that
killed 100 times as many people in Mexico in
1985. The three newspapers published four
times as many stories about the California
disaster (1992: 27)

3. Disaster Warnings.

Local mass communication systems helped in disseminating warnings
of possible hazards and dangers.

In both Japan and the United States, in all situations where it was
possible, the local mass media system played an important role in
transmitting warnings about possible risks from relatively sudden
disaster impacts. While the transmission of official warning
messages about a future disaster impact constituted the heart of
this activity, there was also the passing on of information about
secondary threats and post impact hazards. Thus, even though the
electronic media took the lead role, it was not confined to them.

In Japan these actions of the mass communication system was partly
dictated by a legal norm, a law; in the United States it stemmed
mostly from very strong normative pressure to do so as part of the
responsibility of being a local group in community life. But
providing warnings as a result of normative codes for the media
organizations involved has also been found in practically any study
of disaster warnings anywhere. In all societies where there are
mass media the existing system plays a role in transmitting warning
messages. This is consistent with the general literature on mass
communication which overwhelmingly agrees that one of the basic and
most widespread functions of media systems is that of providing
surveillance through news stories of the social environment. As
Wright has written:

> Consider what it means to a society for its
> members to have a constant stream of public
> information about events in the world. One
> positive consequence (function) of such
> surveillance is that it provides warnings
> about imminent threats of danger--a hurricane,
> earthquake, or military attack. Forewarned,
> the population can mobilize and protect itself
> from destruction. Furthermore, insofar as the
> information is available to all, rather than
> to a select few, warnings through mass
> communication amy have the additional function
> of supporting feelings of egalitarianism
> within the society--everyone has had fair
> warning to escape from the danger. Such
> warnings also can be interpreted as functional
> for individual members of the society...
> insofar as personal (and family) safety is at

stake (1986: 14).

However, it should be noted that the local mass communication system is not always successful in its warning efforts either for individuals or organizations (for some of the research literature see Nigg, 1987), as it was not in both one of the Japanese and American communities studied. It is not clear from research to the present, if there is any mass communication organizational learning from failures in surveillance (Actually, not from the research reported in this volume but from other studies, such failures do not seem to bring about much change in group structures and functioning, see Wenger and Quarantelli, 1989). In addition, while monitoring or surveillance of immediate and focused local threats and reporting about them seems widespread in mass communication systems, the same function is not as prominent with respect to more diffuse and slower developing risks (as the environmental social movements has noted). What accounts for this difference in system operation?

4. The Command Post Point of View.

There was a tendency to view disasters from a command post point of view derived from a limited number of selected officials.

Both earlier and later studies have consistently found that mass media field workers in the United States tend to rely upon official sources for their information in constructing stories about disasters (e.g., Sood, Stockdale and Rogers, 1987; Hornig, Walters and Templin, 1991). This had also been earlier confirmed for coverage of civil disturbances (see Quarantelli, 1981). Reporters and editors in the main ignore nontraditional sources, organizational or otherwise. In addition, in the traditional sources tapped, there is also a tendency to get primarily the perspective of higher level officials. As a result, what is usually reported by the mass communication system is a "command post" view of the disaster.

This is one possible perspective; but it is only one of many different orientations possible regarding a community disaster. For example, other possible perspectives would include those of lower level on-the-line operational personnel such as police and fire officers, disaster victims (used as more than the focus of human interest stories), relief workers and agencies from outside the community, local organizations that are either not mainstream (such as led by community activists) or not typically tapped in everyday contacts such as religious groups or public works departments, the many emergent groups that surface in almost all disasters such as those that engage in search and rescue, distant relatives and friends of victims, local groupings of non mainstream racial/ethnic/lifestyle orientations, community residents who were not affected, and even researchers. Therefore, the typical disaster news coverage tends to be somewhat limited and reflects a

more formal, top-down, governmental and social control perspective than any other possible view.

Our data from Houston and Tulsa reconfirmed this general observation. Local reporters and editors turned after impact to traditional organizational sources for much of their information about the occasion. Moreover, there was also a similar reliance on everyday used official sources in Japan, such as the local police or known prefectural officials. There was almost no use of nontraditional organizational or other sources as the result of initiative by mass media personnel. In both countries, the content analyses indicated that the authoritative sources cited in most news stories tended to be only a limited number of higher level officials from only a few government agencies. Disaster victims did occasionally voice their views of what was happening (apart from sending personal messages) on radio stations which set aside the gatekeeping process, but this was relatively infrequent and generally presented as an anecdotal account. The very tone in which formal or official statements were presented indicates that they were to be taken as authoritative statements.

Smith in his much later study than ours examined local as well as national mass media reports. He found that:

> Among the 240 sources named by more than one of the seven news organizations (the four newspapers and three television networks) in six months' coverage of the earthquake, 50.1 percent were government officials, 16.3 percent were experts on seismic engineering and other issues related to the earthquake, 13.8 percent represented business affected by the earthquake, and 7.5 percent were geologists.

He then goes on to observe that:

> The remainder were representatives of various nongovernment organizations such as the American Red Cross (6.25 percent), victims of various kinds (4.6 percent), eyewitness (0.5 percent), and other individuals (0.5 percent). (1992: 135).

Not unexpectedly, he concluded that there was:

> excessive reliance on official sources (1992: 184).

Our finding of the command post perspective is not surprising. Apart from being consistent with what found in earlier disaster studies, it is in line with the general literature on mass

communication organizations that has found that the everyday work
of creating the news is through practices that routinizes gathering
information from "legitimate" formal or official sources
Similarly, why it exists is not unknown--it gives predictability to
the work and workers involved (see the earlier cited sources in
Chapter 2 as well as Sigelman, 1973; Berkowitz, 1992). However,
there are other important questions that could be asked such as
what are the consequences of the command post perspective? For
instance, does it contribute to disaster mythologies, such as
looting and antisocial behavior, that are the understandable
interests of social control agencies like the police? Does it lead
to a general downplaying of possible disaster mitigation measures
which would be the interest of certain community agencies like the
city planning or development department which are not normally
tapped by the local mass communication system? Even emergency time
behaviors may not be well covered. As a later DRC study noted:

> One result of a reliance upon traditional
> sources...is that the activities of
> nontraditional sources "slip through the news
> net." In other words, the activities of
> volunteers, emergent groups...and
> organizations that are not part of the normal
> "beat" system or regularly courted for news
> tend to be ignored in mass media accounts of
> disasters. A somewhat distorted image of the
> disaster can be created by this practice.
> Because the activities of emergent groups and
> volunteers are often not depicted because they
> are not part of the traditional news net, the
> image that is created in media content is that
> emergency response is primarily an activity of
> formal, traditional organizations (Wenger and
> Quarantelli, 1989: 46).

While this can be documented from content analysis, it would be
necessary to establish that this is what audiences actually
perceive before the presumed importance of the generalization can
be fully accepted. That the mass media depiction of a disaster
becomes the accepted picture in the community of the local disaster
is obviously an hypothesis very much worth examining.

5. Difficulties in Early Reporting.

The local mass media found itself faced with an initial lack of
accurate information about the disaster.

In both countries, local media personnel were initially confronted
with a major problem; that is they lacked information about the
magnitude and scope of disaster impacts. In Japan, the
broadcasting media personnel faced delays of hours in obtaining
details about the happenings. Similarly, reporters in the United

States complained about the difficulty of getting early and detailed information from community officials. To a considerable extent in both countries, local mass communication systems in their stories could only provide limited, selective, incomplete, and, in some cases, incorrect information in the immediate aftermath of the disaster.

This general observation has been made elsewhere. For example, it has been reported for Canadian mass media operations in disasters (Scanlon and Alldred, 1982). Smith in a much more recent study (1992) noted the same problem in the coverage of the Loma Prieta earthquake, the Yellowstone forest fires and the Exxon Valdez oil spill. Overall, however, the observation is not surprising given that a similar shortage of initial information prevails among emergency organizations and community officials (Quarantelli, 1985). Anyone attempting to operate in the immediate aftermath of a disaster impact will be plagued by a lack of knowledge about what has happened, to who, where, and to what degree.

Nevertheless, the observation raises a number of important questions. What differences does the lack of information make in what the media report? Does the lack of information contribute to media-perpetuated myths about disaster behavior? How are emergency organization officials and private citizens affected by the kind of information available? Is the emphasis on accuracy misplaced, given that relevance of information might be a more meaningful criteria in the emergency time period of disasters? (See Scanlon, Tuukko, and Morton, 1978; also for some Japanese work see Hiroi, Mikami, and Miyata, 1985).

6. Situational Contingencies.

What was initially reported about the disaster by local media during the immediate emergency period was often strongly influenced by situational contingencies.

According to common journalistic philosophy in societies with Western views of the press, events and happenings are primarily covered in news stories because of their inherent newsworthiness. Out of all that is happening in a given situation, what is covered is selected on the basis of its news value. However, in our study both in Japan and the United States, reporters often simply initially reported on the particular situation in which they physically found themselves in or could not get out of. This approach in the field was frequently created by barriers or limitations to locomotion or movement elsewhere by effects of the disaster impact (e.g., roads blocked by flood waters). Thus, reporters in the field were at times merely reporting from the scenes at which they were even though other and more important disaster happenings were occurring elsewhere.

But other situational contingencies also affected other aspects of

local news gathering and reporting. The restriction on physical movement (as well as overloaded telephone lines) sometime prevented mass media personnel from being able to contact their traditional sources of information as we have already discussed. There was also the greater use of citizen input and the diminution of the gatekeeping process in radio stations (discussed in more details in the next section). This meant that what was presented as news about the disaster, depended on the happenstance of which particular official could be reached as well as which particular citizens were motivated enough to call what station, etc. Inherent news worthiness are not the criteria of such matters.

That situational contingencies can strongly influence what is initially presented as news about a disaster, had not been explicitly set forth, as far as we can determine, in any earlier study. However, it has been noted in other later studies. For example, in one DRC study of a Canadian disaster it was stated that situational contingencies:

> influenced the content of what was produced. For example, in one community a tornado was in the vicinity for 45 minutes and inflicted massive damage over miles of territory. However, the most severe damage was inflicted at a mobile home part at the end of the twister's path. But the local newspaper sent most of its reporters to the sites initially damaged as the location of these became known through listening to the police scanner. By committing their resources to the initial, but least severely impacted areas, the coverage of the disaster was somewhat biased. For the rest of the world, the story of the tornado was one of death at the mobile home park. Within the local newspaper, however, more attention was paid to other areas of the community because of the initial assignment of reporters (Wenger and Quarantelli, 1989: 30).

The importance of our general observation is that, as just illustrated in the example given, it will be a factor in the overall and specific imagery that the mass communication system will present about a disaster. To many, those images are what they perceive and may ever know, other than their own limited personal experience, about the disaster. It will be a major input to how officials, organizations and the community itself will view and think about the occasion, but it will at best be a selective perception. To the extent that there is incomplete or inaccurate information disseminated by the mass communication system, it may create difficulties and problems in all stages from preparing for a disaster to recovering from it. As such our observation is an important one provided it is systematically confirmed by future

research.

7. The Gatekeeping Process.

There was a diminution of the gatekeeping process in the operation
of the local electronic media.

Earlier studies had noted that the normal gatekeeping process of
radio stations is altered during the emergency time period of
disasters in the United States (Waxman, 1973). Various steps in
the process are eliminated, and a condition of "open gates" becomes
operative. Information is gathered by the station, either through
its own initiative or calls from the public, and disseminated
through the media without undergoing the normal editing or
gatekeeping process (see also Sood, 1982). It is important to note
that gatekeeping is more than simple selection or rejection of
available stories. It is more properly viewed as encompassing the
activities by which news people and others transform any happening
into a news account for the purpose of reporting it, and the ways
in which a story gets formulated and presented (see Wright, 1985:
73-84). Now in its earliest use in the disaster literature, the
diminution of the gatekeeping process was generally ascribed to all
mass media outlets.

The pattern we observed in both Japan and the United States
requires a modification of that last statement. Radio stations
aired information immediately; normal validity checks were ignored
in both societies. But the pattern was more noticeable at radio
stations. The gatekeeping process was less altered in television
reporting and remained almost untouched in newspaper organizations.
This finding, grounded in our cross-societal research, has more
recently been reconfirmed and expanded in later studies of the
American local mass communication system. Thus, it has been said
that:

> our data indicate that the previous findings
> of a truncated gatekeeping process is only
> true for the electronic media. Within
> newspapers, the gatekeeping process often
> becomes elaborated or more complex during
> disasters than during routine times (Wenger
> and Quarantelli, 1989: 14; see also Sood,
> Stockdale and Rogers, 1987).

Why is the decrease in the gatekeeping process during disasters
more likely to occur in radio rather than other media? While there
are several plausible explanations having to do with the different
technologies and time frames used by different media outlets, none
have been systematically studied. (see Wenger and Quarantelli,
1989: 12-15) for a later examination). There is also a basic
question of why gatekeeping, which works well for the mass
communication system during normal times, is apparently less

functional during emergencies. Then there are questions of what difference does non-gatekeeped content make in a disaster response.

8. Personalized Media Messages.

In the disasters studied, the electronic mass media were used to send many personal messages.

In both societies, the electronic media, particularly radio, was often significantly altered in one important aspect: it often became a very elaborate mechanism for interpersonal and not just mass communication. In Japan, thousands of personal messages about safety, location, or concern were broadcast. These were directed to specific relatives and friends of the victims. People would call radio stations with messages that were frequently aired verbatim. A similar pattern was observed in the two disasters we studied in the United States, although to a lesser degree (although elsewhere DRC has observed it occurring on an even larger scale than happened in the two disasters in Japan).

The use of radio to send personal messages has long been anecdotally reported at least for American radio stations during disasters (e.g. Quarantelli in field notes reported this activity by radio stations in Anchorage after the 1964 Alaskan earthquake). However, because it usually has been difficult to obtain taped recordings of radio stations in the aftermath of disasters, the phenomena had not been systematically studied and reported in the literature. The Japanese work in our study is one of the very few who have even quantified the number of personal messages sent and in that sense have well documented the behavior.

However, it is not clear what leads broadcasters to engage in a practice that is rather deviant in normal times. In fact, personal messages by the electronic media on an everyday basis are prohibited by law in the United States, and the practice involves a relinquishing of some professional control over the operation of mass communication organizations. Has a social norm developed in some electronic mass media that sending personal messages is an informal responsibility of stations during disasters? If so, why does it not occur during other local community crises such as civil disturbances? Of interest, too, would be a content analysis of such messages, whether they reach their intended recipients, and what audiences get or receive from hearing the flow of such messages intended for others. As written as late as 1989:

> The use of mass media to deliver personal messages at emergency times, while observed both in Japan and the United States, has not been examined either in terms of functions or content (Quarantelli, 1989: 15)

9. Alterations in Organizations.

There were major alterations in the operations of mass media organizations during the community disasters studied.

Although it varied in degree and from one particular mass communication organization to another, in general, in both Japan and the United States there were alterations in news gathering and news story processing in both societies. Decision making also changed in the local organizations, both as to where and how some decisions were made. Likewise, the everyday or usual pattern of assignment of reporters in the field, the allocation of resources, and the relationships between editors and staff personnel were somewhat altered. Also, a "team" approach to news gathering emerged very strongly in both systems.

Overall, the local mass communication organizations we studied changed, at least temporarily, in the face of the disasters in their communities. This is consistent with both the general and specific research literature on organizational behavior under the stress of a disaster. Generally all organizations, if they are to function at all and especially if they are to be effective, cope with the qualitative and quantitative demands of a disaster occasion by altering their structures and/or functions. This does not mean that existing organizational systems dissolve, nor are they immediately transformed into some alternative structural form (Drabek, 1986: 158). But they do cope by modifying their behaviors in various ways, and mass communication groups do the same. As several analysts writing of the latter have said:

> it is clear that numerous...forms of organizational adaptation may occur (Drabek, 1986: 168).

> local media, like most organizations in the immediate disaster area, often improvise considerably in performing what they and others define as their disaster-related functions (Kreps, 1980: 62).

So what we found in our research confirms what had been believed. On the other hand, we were able to add qualifications and draw distinctions about mass communication behavior that earlier work had not made. For example, a study of Canadian radio stations had concluded that:

> during the emergency period, task processes and the environment contacts of media organizations will change to emphasize event-related priorities (Singer and Green, 1972: 9).

Our research supported the first part of this observation, but showed that mass media personnel primarily continued to attempt to

use traditional sources of information (what we earlier called the command post perspective) despite the changed and turbulent social environment. Similarly, our observation of the use of a "team" approach to processing the news is in line with the point in the literature that some kind of emergent behavior is a hallmark of organizational responses to disasters (for a discussion of emergent behaviors, see Drabek, 1987: 259-290). On the other hand, we observed that emergence took somewhat different forms depending on the size of the organization and the particular media (electronic or newspaper) involved, a point we shall again discuss later.

Many new research questions are generated by these findings. Why is there a curvilinear relationship between size of the mass media outlet and changes in operations (see Friedman, 1987 which tries to answer this question)? How are the alterations affected both by the media technology used and work time schedules of news organizations? In addition, it is not clear what the implications are from observations of the more centralized activities at control points such as the newsroom and the more decentralized decision making undertaken by reporters in the field. This dialectic in decision making at different levels of an organization is not peculiar to the mass media area (see Quarantelli, 1985), but the consequences for what is done and produced by way of news stories have not been traced.

10. Problem Areas.

There were problems in both socio-organizational and technical aspects.

The problems encountered in covering stories were rather similar in both societies. We have already mentioned a number of them in prior pages. For illustrative purposes, we will note again that mobilizing media personnel and resources in both Japan and the United States was problematic. There were also, for example, difficulties in both settings in finding higher level management personnel when the emergency developed. Disruption of telephone service generated similar kinds of technical problems as well as getting information necessary for media operations. Communication difficulties sometime arose in both societies due to the convergence of calls and requests for information from citizens. Altered and ad hoc decision making in media organizations occurred in both Japan and the United States, sometimes as a result of the absence of personnel and/or equipment. (Smith, 1992 in his more recent study describes similar kinds of problems in the journalistic covering of an earthquake, a major forest fire and an oil spill).

If what is known about the problem generating conditions for other organizations in disasters is applicable to mass media ones, we have a number of clues about their possible sources. When there has not been planning or poor planning for disasters, the

generation of problems is almost assured. As we earlier discussed, the mass communication sector is characterized by poor or nonexistent planning. If organizations attempt to adhere completely to operating in disasters as they do during routine times, there will be problems. To the extent that mass communication personnel attempt to continue to try to use traditional sources of information, for instance, their coverage of a disaster will suffer. If organizations assume that a disaster is no more than a larger scale everyday emergency and fail to recognize the qualitative and quantitative differences between disasters and routine crises, they will have many problems. Similarly, to the extent that the local mass communication system assumes that a disaster, even though an unscheduled occasion can be approached from a news gathering perspective viewpoint, rather than as a nonroutine unscheduled occasion, it will be faced with many problems. Thus, our finding that mass communication organizations have problems in responding is not especially surprising.

However, while the presence and large number of problems is not unexpected, their sequence of appearance and importance in consequences is yet unclear. It should be possible to establish which problematical aspects are likely to surface first or earlier and which later. Similarly, certain problems should be more difficult to handle or solve than others. For instance, there is reason to believe technical problems are more resolvable by prior planning than socio-organizational ones. A few of these issues have started to be explained in some more recent research (see Wenger and Quarantelli, 1989).

11. The Topical Content.

There were strong similarities across societal lines in the topical content output of the local mass communication systems in the two societies.

A clear comparison of the topical content produced was complicated by several factors: the use of somewhat different coding schemes for the two analyses done of the American newspapers, a still somewhat different classification framework used for the study of the Japanese newspapers, and the use of a mixture of quantitative and qualitative analytical procedures. That said, and cutting across the different analytical categories used, we can nevertheless draw some general conclusions from the different but rather extensive content data sets we generated.

For one, generally the electronic media produced different topical content than did the newspapers. The local electronic media in disasters that allowed for warning, tended to produce hard news stories in both societies. Newspaper content as a whole was more likely to be instrumental rather than expressive in tone. The topical focus of most content with respect to recovery and after the emergency period in both Japan and the United States was on the

restoration of essential services and what was being provided by way of disaster relief. Relatively few accounts set forth disaster myths, but those that did were given prominence and emphasized.

There is one common element that cuts across these various observations which especially became quite clear when we set the total media content we analyzed in the general context of what we knew from our field work about the disasters. Simply put, it is that the local mass communication systems did not simply mirror or reflect all or even necessarily the most important disaster related happenings in the involved communities. The reporting was both selective and limited (in that much of the disaster behavior that occurred was just not covered in any of the news coverage), but also varied according to the mass media involved and the time period of production.

At the very general level, this overall conclusion is not surprising. It is the picture of mass media content that at least the more sophisticated students of mass communication have argued is true of even everyday content (see Holz and Wright, 1979 as well as other general publications already cited). Happenings in the world are only partially and selectively reflected in the content of mass communication systems. To find this generally occurs in a disaster context is therefore consistent with a basic theme in the general literature.

Why the partial and selective content produced takes the particular form that it does in disasters, however requires further examination. This is particularly true because this is mostly an unexplored area; there is little disaster research literature addressing such matters. Nevertheless, there are some seeming plausible explanations for some of the observations we made. For example, the different technologies involved and the different work schedule time frames that exist between electronic media and newspapers, would seem to explain some of the different topical contents they produce. The same explanation would appear to account for why radio in particular and to some extent television will have leading roles in issuing warnings of sudden threats to a community (both of these issues have been somewhat confirmed in some of our later research, see Wenger and Quarantelli, 1989).

However, other observations still require detailed explanations. For example, disaster myths may not numerically predominate in the content produced, but why are certain mythical themes stressed when they are mentioned? Japanese researchers have struggled with this particular question. For instance, they have noted that in their country:

> most journalists...insist that people act
> irrationally and show panic in every crisis
> situation. Therefore, journalists apply the
> term "panic" to every situation where some

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persons show strong psychological or
behavioral reactions to the disaster or
warning in question, even though they may
actually adopt adaptive coping behavior...
On the basis of this image, journalists tend
to collect only confirmative information for
the image, and thus are inclined to report
it...Hence they unintentionally tend to
distort reports of the behavior in the
disaster. [In one study] our survey finding
showed that there was no panic behavior or
hysterical reactions at all...[but] the
newspapers used the term "panic" for their
headlines....a top headline [had] the phrase
"panic to the warning"...[another said]
"countermeasures for preventing panic caused
near panic"...It follows that newspapers
reported panic which had not occurred in
reality...the press exaggerated or even
invented panic, and gave the impression to the
readers that panic had occurred as a result of
the false warning. (Hiroi, Mikami and Miyata,
1985: 43-44)

This is a good description of what can occur, but still leaves
unanswered why mass media personnel believe what they do about
"panic." Similarly, there are unanswered questions about the
relative lack of expressive news articles in disaster reporting.

12. Reporting Style Differences.

There were some intramedia style differences in reporting the
community disasters.

In both Japan and the United States, differences in the nature of
the news content was observed across organizations within the same
medium. For example, television networks in the United States
covered disasters with different story lines or themes. For ABC
the story was one of danger, threat, and the helplessness of
ordinary people to control the ravages of nature. CBS, on the
other hand, painted a picture of calm, technological enlightenment.
In Japan, there was a difference in the public and private sector
mass communication organizations. The NHK radio broadcasts reported
damage and destruction, while one of the commercial networks, ABC,
tried to respond to citizens' requests for contact with their
families. At another level, there were differences in both
societies in the relative emphasis placed by the electronic media
and the newspapers on hard versus soft news and in instrumental
versus expressive stories.

Although supported by the work of Nimmo (1984; see also Nimmo and
Combs, 1985), who reported similar differences of American network

television coverage of the Three Mile Island nuclear plant accident, these observations are not inherently obvious. For the most part, little attention has been paid to style differences in reporting. Even the hard versus soft distinction, although sometime alluded to in isolated comments, has not been a focus of attention in research studies on mass communication in disasters.

It might be asked how conscious mass media organizations are of their styles, and whether there are cross-societal similarities (in public versus private mass communication organizations). Equally as important, in what way, if any, do intramedia style differences affect audience exposure to and use of mass media content? Another worthwhile question is, are there also style differences among the print media themselves? Anecdotal and impressionistic observations would seem to support the idea, but systematic empirical documentation is not currently available.

While the above are a dozen major similarities we observed, there were also others that, for various reasons, we could not document as well. For example, it seemed that in both societies the local mass media outlets were important in providing critical information wanted by the general public. However, the Japanese, who more systematically studied this matter than the Americans did in the parallel study, found that not all citizens wanted what was provided (and other studies in the United States has found the same; e.g., for a non DRC study of citizen views of warnings about Hurricane Alicia, see Ledingham and Masel-Walters, 1985; see also, the reactions of citizens to warnings about a hazardous chemical emergency and to a flood as reported by Burkhart, 1991). Also, although the mass media systems appeared to provide the bulk of the warnings people received of the impending disasters, in both societies some persons were never reached despite the massive dissemination of warning messages by the local mass communications system (see, again, Ledingham and Masel-Walters, 1984). In addition, not everyone who heard the warnings necessarily took them as serious (other unrelated studies in Japan have found in fact a plateauing of responsiveness to continuing warnings of an earthquake threat, see Hirose, 1986).

The Differences

Let us now turn to a discussion of the far fewer differences we noted in the local mass media disaster operations in the two societies. There are four we shall briefly discuss. In the process we shall also try to explain why these differences exist.

There were some differences in how local and extracommunity mass media groups, even within the same larger social organization, related to one another in the two societies. For example, in the tsunami disaster in Nagasaki, extensive assistance was given to the local NHK television station by other NHK stations from different parts of Japan. As many as 95 staff members arrived from NHK

headquarters in Tokyo, and several neighboring stations assisted the local station in its local coverage. These mass media personnel brought with them much equipment that became part of the resource base of the local station. Cooperation rather than competiveness was the predominant mood.

Although network personnel often converge upon disaster areas in the United States and sometime use the facilities of local stations (well dramatized in the recent mass media coverage of the earthquake in Sam Francisco), they are present to generate stories for their own network programs, not to help the local station in its coverage. Altruism on the part of the other units within the network is not found in the United Sates and is not likely to develop given the competitive organizational norms that exist in American society. However, it is important to note, as we found in another study, that there can be a diminution of competiveness at times of disasters between local mass media personnel (see Wenger and Quarantelli, 1989: 24-26). Even in the United States, the degree of competiveness manifested depends on the social unit being examined.

Also, the content of the disaster coverage disseminated by the national network in the two countries differed somewhat. It tended to be more homogeneous in Japan. There are four time zones within the continental United States; all of Japan is within one time zone. One consequence at the national network level is that in the United States, except for some breaking stories, there is an effort to avoid current time references in a news story. (To say that a hurricane will reach land at 10:00 A.M. is not too meaningful in the state of Florida, which cuts across two tome zones. Japanese journalists, in contrast to their American counterparts, do not need to update news stories that will be telecast three hours later on the west coast after their initial reporting on the east coast.

Another difference between the two mass communication systems has to do with the number of different local mass media outlets. There are simply more in being for comparable size communities in the United States. More important is that this affects the overall response at times of disasters. In the United States, not all local outlets, particularly radio stations but sometime even television stations, will get involved in responding to a local disaster (see Wenger and Quarantelli, 1989). They may cease operations completely or they may continue if possible their normal operations (e.g., an all music radio station may continue to broadcast music during impact or in the emergency time period). In that sense a greater proportion of the local mass communication system will get involved in community disasters in Japan than will be the case in the United States. Conversely, the fewer number of local outlets in Japan facilitates the appearance of a more homogeneous content at the time of a disaster.

Finally, there are some legal differences that influence the

operations of the mass communication systems. For example, NHK in Japan, in addition to its normal news-gathering function, has the legal responsibility of being a part of the emergency response system. The Meteorological Service Law, for instance, mandates that if the Japan Meteorological Agency issues a warning of weather conditions or of a tsunami, NHK must broadcast it promptly and exactly as the message was issued. Also, according to the Disaster Countermeasures Basic Law, NHK is identified as one of the public corporations for disaster mitigation; it is legally bound to gather and broadcast relevant information to the public at times of disaster. The commercial broadcasting companies and newspapers are not bound by these same laws. However, they voluntarily subscribe to them and attempt to play an important role in the emergency response.

Within the United States, however, there are no legal requirements that mass media outlets must participate in an emergency warning response, although obviously the majority do so. There certainly is no obligation to pass on warning messages exactly as they are issued by the U.S. National Weather Service; in fact, many radio and television stations use private weather services or even their own forecasters. Furthermore, within the United States many mass media representative do not view themselves as being part of the community emergency response effort; they see themselves as being somehow outside the social system, observing, chronicling, and evaluating its performance. In fact, disaster researchers have consistently observed that representatives of the local mass media are among the most difficult of all organizational personnel to convince and to get to participate directly in overall community disaster planning (Wenger and Quarantelli, 1989).

Accounting for the Similarities

Why are there far more similarities than differences? Can our findings be extrapolated elsewhere? Clearly, our answers are tentative.

Our general approach is that the similarities found have to do with the evolution of social institutions. Generally speaking, all the major social institutional systems fall into one of two categories. On the one hand, there are traditional institutions organized around such activities as family life, economic exchanges, religious worship, political power, and so forth. These social institutions have existed for a long time in human history. On the other hand, there are a set of social institutions that have only relatively recently evolved, such as those organized around activities like science, medicine, sports, and so forth. The mass media system is one of these newer institutions, having evolved as a distinctly identifiable entity only this century (see McQuail, 1984; Wright, 1986; DeFleur and Ball-Rokeach, 1989).

Apart from the time of their origins, the traditional and newer

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social institutions differ in how much they are specifically culturally bound. The older or traditional institutions tend to reflect the specific sociocultural settings in which they are embedded. But the newer or more recently evolved ones are less culturally bound. A heart transplant operation, chemical experiment, or soccer match will generally be undertaken in the same way, irrespective of whether it takes place in China, Chile, Iran, Libya, Romania, South Africa, or any other society in the world. On the other hand, the political institutions may be superficially similar but fundamentally different, depending on the country involved. (Almost all nations everywhere have a representative form of governmental legislative structure, but few would argue that all are real democracies.)

Our basic thesis is that the mass communication system is one of the less culturally bound of all social institutions. We are not alone in this view. The point is well made by Jacobson and Deutschmann (1962), who wrote:

> Journalism has idiosyncratic tendencies in various idiosyncratic tendencies in various countries, but these are more than outweighed by the common usages of the profession...And when a public event of world-wide importance occurs, such as the projecting of a human being in a space vehicle into orbit around the world, or the detonation of a nuclear device, there are few places where the news does not penetrate quickly.

The authors note that the similarity of patterns includes certain aspects of the audience and content, as well as the communicators.

> Not only is the basis for the network already established, but the responses to the communication media have come to assume common patterns. There are certain segments in society that have greater access to communications than others. The various mass media seem characteristically to have accepted a division of labour in the spread of information that crosses national and cultural boundaries.

> Necessarily, all of these phenomena occur in conjunction with a standardization of the content of communication so that there is neither the variety not the unique flavour in subject matter that would be expected from the immense diversity of peoples. Partly because of the history of the professional training in mass media techniques, and partly because of

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the organization and interrelationships of the
great news agencies, what is news in London
seems also to be news in Buenos Aires (1962:
151-152).

If the above is true, it is not surprising that we found far more
similarities than differences in the mass communication system
operations in disasters in Japan and the United States. There are
undoubtedly many sociocultural differences between the two
societies, but both mass media systems--as one of the more newly
evolved and culturally independent social institutions--transcend
those differences. If our study had been of the social institution
of religion, we would have expected the reverse finding.

Is our explanation, even if accepted, a full one for all the
similarities observed? As a general explanation, it could be a
guiding principle. However, it would still leave unanswered why
there were similarities along these particular lines and not along
others. Furthermore, what other social/cultural dimensions common
to the two societies influenced the commonalities in the news
processing of disasters? Finally, there is the question of how
much of what we found, would also appear in studies of other mass
communication systems in other societies.

CHAPTER 12

Policy Implications and Future Research

In this concluding chapter, we want to note some policy
implications of our research, and also to indicate what the
research agenda should be for the future.

Policy Implications

To illustrate that the study of mass communications in disasters is
a particularly worthwhile topic, we start this chapter with some
policy implications, trying to indicate why and how such knowledge
can makes a practical difference.

While a number of the implications of our work have already been
noted, we want to make explicit three major ones regarding policy
(these have already been partly discussed in Quarantelli and
Wenger, 1991). They have to do with the consequences of common
mythologies around the world about human and social behavior in
disasters, which are partly rooted in news reporting; how
institutionalized social structural and cultural arrangements make
any changes in disaster reporting very difficult; and why disaster
reporting in developing societies, as well as those in non-Western
industrialized and urbanized societies, is likely to develop in the
same direction as we found in Japan and the United States.

Researchers outside of the United States and Canada have arrived
independently at similar conclusions about popular, and to some
extent official, beliefs about disaster behavior. (Some of the
studies are reported in Drabek, 1986.) For example, in almost all
societies it is widely believed that human beings do not react well
in the face of major disasters, and that they will panic, engage in
antisocial behavior like looting, break down psychologically,
abandon work roles in favor of helping family members, and so
forth. Systematic social science research everywhere has found
these and similar beliefs to be primarily myths, that is, widely
and strongly held beliefs that have little standing in the
empirical data brought to bear on the matter by social science
disaster researchers.

From whence come the myths? Among obvious major candidates are
mass media accounts of disasters (Kreps, 1980). While the
relationship is a complex one, and disaster news reporting is far
from being totally inconsistent with research findings, it does
appear that the media do perpetuate the myths. (For disasters in
American society, see Wenger and Friedman, 1985 and Bolduc, 1987.)
This tendency stems partly from the use of a command post
perspective, the diminution of the gatekeeping process, and the
other findings reported. To the extent that mass communication
systems elsewhere are similar to those in Japan and the United
States in their reporting of disasters, they reinforce the myths.

However, it is important to note, as anthropologists have long noted, that myths are not necessarily or always dysfunctional with negative consequences. Our point is not that mass communication systems are somehow responsible for negative consequences as a result of their reporting, but only that they do reinforce mythological beliefs about disaster behavior. The question of the functionality or dysfunctionality of myths is another matter, and it is possible to suggest instances of the former as well as the latter. But, from a policy viewpoint, it is first necessary to establish whether mass communication systems do support mythological beliefs; we think this has now been done. It follows that the consequences should be examined, so the next step is to see in what ways the myths are functional or dysfunctional (Quarantelli, 1985). We might hypothesize that the consequences are more negative than positive, but this should be systematically and empirically established, as has been done partly for everyday television news by Altheide (1976; see also Fishman, 1980).

Another policy implication of our research is that it will be very difficult to quickly institute any significant changes in mass media reporting about disasters--assuming it would be desirable to do so in some degree. The reason is simple: the reporting process in disasters is mostly a reflection of the very social structure of mass media organizations and of the subculture of the world of journalism, as is also true of everyday reporting (see Epstein, 1973; Tuchman, 1978; Ettema and Whitney, 1982). The reporters, editors, and other staff members involved in news gathering have been socialized into a work world and occupational subculture. They are not operating outside of some social setting, but just the opposite. They are following the framework of their world, which they have learned as a result of being members of mass communication organizations.

Social structures and subcultures are not static, and changes can be brought about in both. But the disaster reporting of journalists in the field today will not be significantly altered just by telling them about disaster myths or the different procedures they should follow in their coverage of disasters. Journalists will change only if they are socialized or resocialized into different behavior patterns. As Smith, a former journalist, has quite recently pointed out, there are a variety of what he calls "questionable journalistic traditions" (1992: 182-188) which appear to impede good reporting of disastrous occasions. He states that:

> The root of the problem appears to be twofold:
> in the education of journalists, which deals
> primarily with routine stories; and in the
> professional culture of journalism, which
> perpetuates customs that interfere with good
> reporting and encourage the notion that any
> journalist can quickly acquire expertise in

any subject. The belief in instant expertise based on formulaic questions, coupled with a dearth of knowledge about how to acquire and understand specialized information, discourages intensive data searches and encourages standard, preconceived stories that do not get very far below the surface of events. A widespread fear of science and the emphasis of timeliness over substance exacerbate the problem (1992: 188-189).

Our view is that different news reporting of disasters will require structural alterations in mass communication organizations and journalistic subcultures (Smith, 1992: 189-193 has more recently and independently arrived at the same conclusion). For example, changes in disaster reporting could follow if, as a result of preimpact planning, there is stronger rather than weaker organizational gatekeeping during the emergency time period. Similarly, there might be alterations in emergency time reporting if, in the curricula of journalism schools, some negative consequences of disaster myths were systematically taught, such as officials failing to issue warnings about threats because of a mistaken concern about generating panic. Likewise, changes in reporting could result if journalistic norms and values stressing speed of reporting and beating the competition were downplayed for those emphasizing accuracy and gaining a reputation as a legitimate source - in more popular terms, a New York Times rather than a National Inquirer approach. Without such changes the existing institutionalized social and cultural patterns will continue to guide reporters and editors in their reporting of disasters.

Finally, to the extent that what we have seen in Japan and the United States is typical of Western ideas about mass media operations generally and disasters specifically, the future could bring a more worldwide standard. We might anticipate that disaster reporting in developing countries will more and more resemble that which we have observed in our study, based on the assumption that the mass communication systems in Western developed countries will provide the model for societies elsewhere.

The role a national mass communication system should play in the transmission of news is, of course, a highly controversial matter at the international level. It is currently the basis of considerable dispute between many developed countries, primarily Western democracies, and developing countries, and was also at the heart of sharp divisions regarding mass communications issues, as these have been dealt with by UNESCO in the last two decades (for some of the issues see McPhail, 1981). This chapter has no intention of addressing this divisive issue or forecasting how it might be resolved, but if for purposes of discussion we assume the mass communication systems of developing societies continue to develop toward a Western model, it follows their disaster news

reporting will come to resemble that of the West. This has the same implication for non-Western urbanized and industrialized societies, such as in Eastern Europe, as their mass communication system is likely to become freer of governmental control in the 1990s.

Finally, it is necessary to note that the very technology of the mass media is changing drastically. The development of cable and satellite delivered systems, their linkages with computers, and the possibility of interactive links between audiences and communicators, are but a few of the major changes that will occur as we move into the 21st Century (for discussions of the new media technologies that are coming, see Wright, 1986: 202-210 and DeFleur and Ball Rokeach, 1989: 328-352). Since they will markedly alter the operation of mass communication systems in disasters, we will further discuss them in the context of suggesting a research agenda for the area for the future.

A Research Agenda for the Future

In the previous chapter, we made allusions to possible future research activities, usually of a rather specific topical nature. The possibilities were suggested by the research findings from our comparative study. In this chapter, we continue to discuss future research but suggesting a general agenda derived in part from our cross-social study as a whole, and in part from changes that are occurring in the mass media area itself.

The twelve general hypothesis we advanced need further testing. We need to build on the handful of cross-societal studies in the disaster area done so far (many of these are summarized in Dynes, 1988). Cross-societal research is difficult and fraught with problems and difficulties (see Quarantelli, 1979), but as our study in the mass communication area has shown, it not only can be done, but the findings can be significant. However, we have to keep in mind that there are different types of mass communication systems in the world (see Wright, 1986: 28-60, for descriptions of other than Western type systems; see Cornick, 1991 for a specific discussion of the French system, and Worsching, 1991 for that in Germany), and different findings might be obtained as a result of that fact.

We would also suggest that the study of the mass media in disasters ought to be better integrated with research on other disaster topics. For example, a number of the problems of mass media groups in disasters seem to be quite similar to the problems faced by most other emergency organizations (see Dynes, De Marchi, and Pelanda, 1987). There very well may also be unique or distinctive aspects to the mass media area, and these too will have to be empirically established. These kinds of possible similarities and differences cannot be determined by speculations or popular beliefs but only by research. It is perhaps not unimportant to note that when we

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started the research reported in this paper, our speculative feeling was that we would find more differences than similarities. However, as we have indicated, the study findings strongly point in the opposite direction.

Another matter which future researchers have to attend to is the fact that there not only will there be quantatively more disasters, but also the quality of disasters is changing in some respect (see Quarantelli, 1992 for a detailed discussion of the social conditions that will create this problem). Because of social factors such as continuing population growth, greater density of residents in high risk areas, more property to be impacted, and greater interdependence of social operations, there is an increased disaster potential everywhere. Even more important, are the qualitative changes and consequences that may be anticipated in future disasters. Technological accidents of a chemical, nuclear or biological nature were all but nonexistent a few decades ago. Now possible, these are increasingly creating hazards that can have major consequences distant in time and place from the source (e.g., the Chernobyl nuclear plant accident or the Rhine River toxic spill which affected populations far from the original source of the problem). It is also possible to envision a biogenetic engineering mistake threatening the ecological life cycle of whole regions of the planet. The increasing extreme dependence of societies on the continual functioning of interrelated computers linking vital sectors of social systems also suggest the new qualitative threats we will face in the future. To be realistic, future mass communication studies will have to assume that disaster will to some degree be both quantatively and qualitative different from those of the present.

There also is a research need to establish the differences and similarities between news reporting of disasters (consensus type community emergencies) and other kinds of crises, particularly the more conflict type ones. In fact, the civil disturbances of the 1970s led to some attention on the role of the mass media (see the National Advisory Commission on Civil Disorders (1968); also Gitlin, 1980). There has also been some work on television and press coverage of demonstrations and riots in Great Britain (e.g., see Halloren, Elliott and Murdock, 1969; Potter and Reicher, 1987). However, what is needed now are some <u>comparative</u> studies of the reportage of the full range of crises affecting community life, including civil strife, riots, terrorist attacks, etc. There have been only a few studies of this kind. For instance, Quarantelli (1981) on the basis of studies of reporting in disasters and riots, concluded that the command post perspective is likely to dominate all local news reporting. However, other DRC researchers found that there was a differential and selective reporting of riots in American society in the 1970s compared to news coverage of disasters in the same time period (Kueneman and Wright, 1975).

Finally, any future research agenda has to take into account that

the mass media area, particularly the technology involved, is undergoing massive and fundamental changes. The rapid development of new electronic technologies in mass media are basically altering the whole phenomena of mass communication in disasters. As the advent of print changed communications among human beings, so did the appearance of the electronic media; but so will the many new technologies simultaneously linking computers with satellites and other high tech inventions be they cable systems, electronic mail linkages and fascilime transmissions of various kinds.

A number of questions can be asked (some of those that follow have already been discussed in Quarantelli, 1989: 17-19). What are the implications for planning and for managing disasters by the increasing reception by audiences of distant stations via cable systems? There are now recurring instances of audiences in one region of the United States being sent tornado or flood warnings meant for the area around the original transmitting station in a different part of the country. Some anecdotal observations raise even more interesting questions. In one occasion studied in the field by DRC, a fire incident commander used the on-the-scene reporting of a hazardous toxic spill by the local television station to make field decisions on how to contain it. Simultaneously, that officer was being interviewed by a reporter on what was happening. In another different incident, hotel guests trapped in their rooms were informed of a fire's spread and given instructions on what to do by on-the-scene reporting by mobile vans from local television stations. Many new technologies, from cellular telephones to direct broadcast satellites to videocassette recorders, intervene in rather nontraditional ways between the initial mass communicator and recipient audiences. These create rather different role possibilities for the mass communication system in disasters.

The new media are particularly different from the old in that the involve:

> new ways of encoding, transmitting, distributing, and displaying information mostly overtly in the form of new communication technologies. For example, digital, as compared to analog, encoding dramatically increase the speed, accuracy, and volume of information that can be exchanged. It efficiently integrates voice, data, and video. It facilitates signal processing and coding techniques. It offers greater privacy and security. But more important, humans are beginning to communicate in new ways as well. New media--from videotext to personal computer networks, from communication satellites to fiber optics--are blurring distinctions that seemed so clear and useful a generation ago

(Rice, 1984: 34).

The importance of such technological developments is that they add a direct interactive and feedback element generally absent from the one way mass media operations of the past. Instead of the information flow going primarily from communicators to audiences, the members of the latter will be able to play an increasingly active role in the process. As a consequence, what will the increasing addition of computers and interactive media technologies do to the operation of local emergency management agencies as they attempt to mobilize resources, exchange information, and coordinate activities in disasters? How will the behavior of threatened and impacted populations be affected by their ability to take a more active role in attempting to deal with potential and actual disaster occasions? Certainly the new technologies will make a difference; but scholars have few notions of how they will do so and in what ways.

Future research needs to take these new media into account as "mass communication" takes on some of the characteristics of interpersonal communications. In recent assessments of the area generally there are those who criticize current work in the field because:

> social scientists in the field of communication did not realize that with the many expansions of existing media and the many new media, the golden age of mass communication had peaked (Scheuch, 1990: 204)

In fact, it has been argued by some students of mass communication that:

> the term denotes a fading historical stage in the development of more sophisticated technologies that mediate person-to-person communication (Turow, 1992: 106).

While these might be overstatements, there is little doubt that we are entering an era of massive changes in the structures and functions of mass communication systems, and that this necessarily will affect coverage of the disaster area.

Thus, researchers will need to project likely scenarios of the future in which both the nature of disasters and of the mass communication systems involved will be generally different from the past and the present. This is likely to affect mass communication both at the local as well as national level. In fact, it might be argued that in the future there will be even more of a blurring between local and national happenings, whether we are talking of disaster occasions or mass communication systems.

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Appendix 1.

The National Electronic News Treatment of Hurricane Alicia.

Our data on the national electronic news treatment of Hurricane Alicia are somewhat selective, but nonetheless allowed three different kinds of descriptions and analyses. We first compare the initial news stories about the developing storm which appeared in each of the evening news telecasts on August 16 by the three national networks: ABC, CBS and NBC. Then we present all the news stories about the hurricane which appeared from August 16 through August 22 on the NBC television evening national news program (there was no story about the disaster on the program of August 23). We conclude with a discussion about many of the CBS radio hourly national news programs as they were broadcast in about a 40 hour period from midday, August 16 through midday, August 18 (as these were broadcast by a CBS radio affiliate in Houston). All the television descriptions and analyses are based almost exclusively on audio recordings of the telecasts: we obtained almost no film or video recordings.

a. A Descriptive Comparison of the Three National Television Networks.

All three national television networks first reported the hurricane as a news story in their telecasts of the evening of August 16. However, there were substantial differences in the placement and content of the story about the developing storm. Also, while ABC and NBC gave the story almost identical time coverage (one minute and eight seconds, and one minute and ten seconds, respectively), the news item about the approaching hurricane was only accorded 24 seconds on CBS.

However, the latter network did have the story in the early part of their telecast. Essentially, the news item consisted of a straight forward statement by the anchorman (superimposed on a composite satellite photograph of a 24 hour period) that the hurricane which had been shrinking, had exploded, was possibly threatening Texas and Louisiana, and that the leading edge of the "power packed storm" was indicated by "those pretty white clouds."

ABC had the story in the middle part of their telecast, mostly narrated by a reporter in Miami who showed photos of three other localities. After the anchorman's statement that the storm was developing "into a real hurricane threat," the reporter said the Corps of Engineers had found that a third of the residences of the Florida Keys would refuse to leave their homes in the face of a hurricane. The story then shifted to Gulf Shores, Alabama, where it was observed that while in 1979 everyone managed to evacuate when Hurricane Frederick leveled the town, inadequate building

codes had allowed rebuilding only a few hundred feet from the water--a problem said to be facing hundreds of coastal towns. The scene then shifted to New Orleans, Louisiana, which it was noted was below sea level, had an outdated evacuation plan, relied on 120 miles of levees (with quotes from a city official about "several gaps in the levees"), and had been called by disaster experts "the most vulnerable city to a major hurricane." The telecast concluded with the reporter saying "How many more of these life threatening hurricanes will strike the U.S. coast? When and where? Despite their satellites and computers, forecasters are still unable to make such predictions".

The NBC story about Alicia was late in the half hour telecast. It first noted that the National Hurricane Center (**NHC**) said the first hurricane of the 1983 season was threatening the upper Texas and western Louisiana coasts. The telecast then went to a reporter in Galveston who talked about the animated satellite pictures which showed the intensification of the storm that afternoon, and said that the winds had reached 75 miles per hour, and that companies were evacuating by helicopters their crews from oil rigs offshore. The newscast then said that while advanced forecasting techniques had helped warn of storms in the past, this year the **NWS** using computers was going to issue probabilities on where "the storm will hit the shore." The **NHC** Director was presented on film saying that "probability is a tool to help people to make those decisions more objectively. Probability is a statement of the uncertainty in the forecast threat." The telecast then stated that despite the new technology "it is still uncertain where or when Alicia will hit land." The story was then concluded by going back to Galveston, where is was pointed out that the city was a possible tragedy and the advice was given "don't panic." A city official was shown saying "start making your preliminary plans so if things change over the next 12 to 24 hours you will be ready to do whatever it is you want to do." The reporter ended the report by saying that evacuation "is a tedious and costly process. Right now the people of the Texas coast are just waiting, but if Alicia continues on her present course, they wouldn't be waiting much longer."

b. The Week Long Treatment of the Hurricane Story by the NBC National Television Evening News Program

NBC gave the following amounts of time to news about the hurricane. It was clearly treated as a very important story, as indicated by placement and amount of time coverage as shown in the following:

August 17		4 minutes, 40 seconds (lead story)
August 18		6 minutes, 30 seconds (lead story)
August 19		3 minutes, 30 seconds (lead story)
August 20	(Saturday)	2 minutes, 25 seconds
August 21	(Sunday)	1 minute, 40 seconds (tenth story)
August 22		1 minute, 25 seconds
August 23		No story on the hurricane

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August 17 telecast.

This telecast consisted of five separate segments. The first was a general statement by the anchorman that the increasingly dangerous storm was 80-85 miles southeast of Galveston, that winds were reaching 110 miles per hour, and that thousands of residents along the Texas and Louisiana coastlines were bracing for the impact of the storm. This statement was superimposed upon a weather map.

The second report was from on-the-scene at Surfside, Texas, a small resort community. It was said property owners were boarding up windows but if Alicia came ashore the: "effort may be in vain." While no order to evacuate had been given, it was noted many residents had started to leave with the first squalls (several persons were quoted, such as "I think being ready is not being here.") Scenes of an "almost endless line of shrimp boats" trying to go up an innercoastal waterway was said to be "getting in the way" of people trying to move animal stock. While tides were already four-five feet above normal, if forecasters are right, the report said there literally will be "a wall of water 10-15 feet high." This segment concluded with a statement that "today started peacefully enough proving again that the only predictable thing about a hurricane is its unpredictability" and that Alicia now "called a dangerous hurricane" may bring 10-20 inches of rain when it comes ashore.

The third segment of this telecast on Alicia was an on-the-scene report from Galveston where it was said that 60,000 residents were faced with a difficult decision about riding out the storm or going to higher grounds. It was noted "so far people have been warned, but not ordered to leave the island. Many are staying behind to protect their homes" (with quotations from residents such as this "house withstood the last storm pretty good" so "I'm not leaving."), but if the tide is high, thousands will be stranded. It was reported that those remaining are stocking up on emergency supplies while the Red Cross organization is setting up temporary shelters. This segment concluded with what was said to be rare motion pictures of the Galveston hurricane of 1900 which killed more than 6,000, "still listed as the country's worst natural disaster of the century."

The fourth segment of the telecast presented an earlier tape set of questions asked of the **NHC** Director. Is a hurricane worst when it stalls? How dangerous is this hurricane? Can an accurate prediction be made of when it will hit? Can hurricanes spawn tornadoes? Answers given were not always but in this case yes, it is approaching a three on a one to five scale, it is difficult to predict but it should cross the coast tomorrow in the central or upper Texas coast, and they do spawn tornadoes and that is very bad news.

The telecast this day concluded with the statement the President of striking communication workers in the area to the effect that they would help if needed, but would not accept pay for that work.

August 18 telecast.

This telecast also consisted of five segments. The first opened up with the statement, superimposed on a picture that this was "what the coast of Texas looked like" as Hurricane Alicia came ashore just west of Galveston and headed for Houston. It was reported that there were two dead in the Houston area and that damages were expected to exceed a billion dollars. It was also noted that the Governor of Texas had asked that at least six counties be granted federal disaster aid, and that the President had directed that federal resources be made available for the disaster.

The second segment was an on-the-scene telecast from Galveston which showed the effects of the hurricane and stated that 100 miles per hour winds had brought flooding, left residents without lights and water, had destroyed homes, and was worst during the middle of the night. It was said that many were near "panic" in a hotel when some windows exploded and some walls collapsed (a film view of this situation was presented). Using a film of search and rescue, it was then observed that firefighters in Galveston were hindered in fighting a warehouse fire and that the "weather also hindered search efforts." It was reported that despite repeated warnings, most of Galveston's 60,000 residents had decided to stay on the island (one resident was quoted as saying "I've been here all my life, no use leaving." This segment concluded with a statement that it was too early to estimate damages but it was expected to run into the millions of dollars, and "it could take months to rebuild what Alicia has destroyed."

An on-the-scene report from Houston led off the third segment. A film was shown of glass debris littered streets and it was said that was how the fifth largest city in the United States looked at down. It was also said that it had been 26 years since a major hurricane had hit the city. A voice said that "for a time every major city street was flooded" as the eye of Alicia moved across Houston, six hours after it made landfall. The report added that there had been more than 50 tornadoes and killed two people. It was also reported that a million and a half people were without electricity with the power company saying 75% of its system was knocked out, and that it "will be weeks before repairs can be completed." This was followed by pictures of boats that had been tossed about and a statement that "this is not the Gulf of Mexico; it's a city street in Baytown" (also accompanied by a quotation from a woman who said she thought that it "was not going to be that bad"). There were also pictures from several communities which had braced for being directly hit, but from which the hurricane veered away and "spared much of this coastal area" with most beachfront homes surviving, but not all of them. It was indicated that

extensive damage had been done to a marina and that a number of businesses had been destroyed. This segment concluded with a statement that "there were eight to ten feet tides here, but the water was already receding when the backside of the hurricane cleared the coast, and by late afternoon the sun had come out."

The fourth segment of this telecast observed that while there was still heavy rain squalls in Houston, "Hurricane Alicia has left but will not be soon forgotten. For one little girl it will never be. She was born last night and named Alicia."

The concluding fifth segment was about a minute and a half long and presented a previously made film about how forecasters were able to tell when and where Alicia was likely to go ashore. There was a picture of a reporter in a plane which was taking measurements by flying into the eye of the hurricane. The telecast ended with the statement that the National Weather Service still was tracking but that Alicia had now been downgraded to a low pressure system.

August 19 telecast.

This telecast consisted of three segments. The first led in with the statement that Hurricane Alicia is now rainy turbulence "but left in its violent wake, six dead, millions in dollars of damage, power outages, unsafe drinking water, smashed storefronts, and looting." It was also said that the President had declared Texas to be a major disaster area and that this would trigger federal funds to help with the recovery effort.

The second segment was broadcast from on-the-scene in Houston. The initial part was about the many windows which had been blown out in downtown business offices. There was a picture of a bank president trying to salvage family pictures from an office he had moved into just three days before (accompanied with a quotation that he had been here in Carla in 1961 but this is worst). The telecast then presented a statement from architects who said the glass was not blow in but broken by debris from the tops of buildings, and that "people returning to work could hardly believe what they saw." It was noted that there was still a major problem with electricity and that Houstonians were warned to boil their water until the purification plant could be returned to service. Besides Galveston, it was also observed that one of the hardest hit communities was Baytown where there was still major flooding today. Pictures were shown of residents struggling to get to their homes with a quotation from one that "everything's gone." This segment concluded with statements that one of Houston's most exclusive subdivisions, River Oaks, had lost many of its oaks and that "it will be months before everything is put back into order."

The third segment was from on-the-scene in Galveston and started with the statement that the "sea was calm and skies were clear, but the situation today on Galveston Island was far from normal." It

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was reported that early today police blocked off all but residents and businessmen to cross from the mainland because "last night there was more than 20 arrests for looting before the National guard was called in to restore order." The broadcast then went on to state that clean up operations were in full swing today with a quotation from a victim that "here 10 years, will get you sooner or later." It was further reported that the power is still out and "that means no light and no water, and that the longest lines for victims were for ice (accompanied by a quotation that "everyone has plenty of food but need ice to keep food from spoiling"). The report then went on to observe that in addition to millions of dollars of property damage, Galveston has another economic problem, namely that it is a tourist town that is now out of business (two quotations were given from residents about possible losses over the upcoming Labor Day weekend). It was said that the goal is to be ready for the holiday crowds in two weeks (and a quotation that "you can knock us on our knees, but you can't knock us out"). This segment concluded with the statement that the Governor of Texas has declared Galveston a disaster area and that "people here are hoping for federal and state aid, but they don't plan on waiting for it."

August 20 telecast.

This broadcast consisted of three segments and a lead in. The lead in was the statement that Hurricane Alicia will be the mostly costly storm in US history with estimates today that run from 750 million to one billion, six hundred fifty million dollars.

The first segment was from on-the-scene from Basad where it was noted that while others were patching up, "all these people can do is watch. There is nothing left to save" (pictures and quotations from a victim saying that she got "nothing left but a few clothes"). It was observed that water is resting in Basad and that most residents say they do not plan to move back.

The second segment was about Houston where it is observed that "not as many visible signs" were present but there were major problems as a result of the loss of electricity and telephones. It was stated that almost 60,000 phones were still out with "repairs crippled by a communications workers strike" and that work by skeleton crews is going slowly and that full service restoration will be "very long, very long." It was said that the Houston Power and Light company was more fortunate because it had all its employees on the job, working 18 hours shifts; however, 175,000 customers were still without electricity with full service being

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expected only next week.

The last segment of this telecast was from on-the-scene in Galveston. It was said that the hardest hit area was Galveston with "residents who paid dearly for a view of the gulf who came back to salvage what they could." It was noted that some residents vowed that they would never return and a quotation was given of one who said that they "will move over to the mainland." Although it was observed that hundreds of residents lined up for free meals today, "the massive relief effort is not reaching everyone"; one victim is shown saying that "we haven't gotten any aid here at all. There's people here with families who have no food, no clothing, no water." The segment concludes with the statement that "for many families Alicia took everything but hope and a sense of gratitude" and a quotation from a victim that they were "just grateful to be alive. We accept it. We will start over again."

August 21 telecast.

It was 22 minutes into the telecast before a story about Alicia was presented. This was led into with a statement that with the finding of victim in Houston, the death toll has risen to at least 17 with property damage along the Texas coast being estimated at one billion dollars or more. It was observed that the people of Galveston are still without electric power but thankful it was not worse. The rest of the telecast are mostly on-the-scene shots of church services in the area. This broadcast concludes with a statement that in addition to millions of property damage, Alicia crippled the tourist business and that summer profits were lost overnight, and there is a question about whether tourists will come back. The last statement is that there have been many storms in Galveston after which people picked up, and that it was a miracle Alicia took no lives on Galveston Island and "for that people are grateful."

August 22 telecast.

The hurricane story was all from on-the-scene in Galveston. It is said that the community is still without electricity, that there is no air conditioning and no refrigeration with the "big problem for Galveston now is food. If you don't have any, you wait in line for free meals. If you have, you wait for ice because it is the only way to keep food from spoiling." It is also observed that many in the area have decided to buy portable generators and make their own electricity and that sales were brisk until the police closed a location because of license violations. It is also reported that insurance officers were packed with "a confusing scene of papers and policies." It is further said that some victims wait an hour and are told to go home and wait for an adjustor. The segment concludes with the statement that "agents say most claims will be settled within six-eight weeks, but for thousands without

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insurance, will line up tomorrow for emergency disaster aid from the Red Cross."

c. The CBS National Radio News Treatment of the Hurricane.

At the time of the hurricane the CBS radio network broadcast nationwide four minutes (plus about a minute and 45 seconds of commercials) of news every hour on the hour.

We made an analysis of this program as it was recorded and broadcast at one of the radio stations in the Houston area. The analysis covered the following time periods:

> three hourly broadcasts on August 16 (the preimpact time)
> 36 hourly broadcasts on August 17-18 (the crisis time)
> three hourly broadcasts on August 19 (the postimpact time).

Our major observations were that:

1. The story about the hurricane was assigned high priority. It was the lead story 26 times in the news programs during the emergency time period, and the second lead story the other ten times in that period. The story about Alicia was the lead story, the next to last story, and not mentioned in the three preimapct time period hourly news programs. It was mentioned in all the three postimpact time period programs, although only as a one sentence news item in all cases.

2. The content of the broadcasts--in the 18 hourly news accounts during the start of the emergency time period until the hurricane made landfall, i.e., from 10 a.m., August 17 until 3 a.m.. August 18, almost always had two parts. There was a factual statement about the hurricane (usually about its location, speed, direction, etc.) and a brief description, usually from on-the-scene about human actions (almost always about evacuation or non-evacuation).

For example, the 10 a.m. broadcast said that the Texas coast was bracing for a hurricane. Winds which had reached 40-50 miles per hour could rise to 80 miles per hour. The newscast then went to the scene broadcast from Surfside, Texas, saying it was a ghost town. It was reported that the tide was already six feet above normal near an area where 6,000 had been killed in 1900, but that the police were reporting little sings of a massive evacuation yet. The broadcast concluded with the observation that surfboarders were off the Galveston coast and motorists were parked on the seawall to watch the waves.

As another example, we might cite the 9 p.m. broadcast which said that the hurricane was lashing the Texas coast with high tides, heavy rains, and strong winds, but the "worst is yet to come." It was reported that the storm was still about 70 miles from Galveston and was expected to hit with full force in about six hours and with

winds in excess of 110 miles per hour. Officials were quoted as saying "this is one dangerous storm" with people in low lying areas being told to move to higher grounds. The broadcast then went to on-the-scene in Galveston. From there it was reported that partial power had been lost in a hotel and that there were no lights in the street, but a few cars were still moving on Seawall Boulevard. While there was a fair amount of rain, it was far from torrential according to the report. The broadcast then concluded with the statement that hurricane warnings remained in effect from Corpus Christi, Texas to Morgan City, Louisiana.

3. There were some inconsistencies in the reports between those from the national news and the local news programs, as well as within the national news stories themselves. For example, the 7 a.m., the CBS radio report said that Hurricane Alicia had hit Galveston, but the city had survived well. A few minutes later, the very same station's local news report said "we do not know if the situation on Galveston is good, bad, or indifferent." Also, different images of evacuation were provided with some broadcasts saying thousands had left and that emergency shelters were filling up, to other broadcasts stating that many people are "staying where they are."

4. Dubious stories about looting were broadcast. The 4 p.m. August 17 CBS national news report said "law enforcement agencies are doubling forces to prepare for the usual increase in crime, such as looting of evacuated homes." An August 18 broadcast at 7 p.m. on the national news said there was "rapidly increasing looting in evacuated and devastated areas" (which was not totally consistent with local news reports including one at 4 p.m. that the Governor's office "had no reports of looting so far"). In fact, the national news implied that the National Guard was brought in to contain looting going on, while the local news indicated it was primarily a precautionary measure. In fact, a 6 p.m. CBS national news report on August 18 from the scene (from a local station reporter story which was not broadcast in the local news) said "martial law of sorts is being imposed on Galveston Island tonight. An 8 p.m. to 6 a.m. curfew is being implemented, with authorities requiring proof that people are residents of the island. National Guard troops are being called in, and several looters have been arrested already." Actually, there is little evidence as already discussed in the body of this report that there was much looting at all, and certainly no martial law proclamation was ever issued (in fact, martial rule, which is the correct term for the procedure, has never been declared in any disaster in the United States at any time).

5. The national CBS radio news did not use any of the probability announcements of the National Weather Service. Neither did the local radio station whose recordings we used; in fact, since this station used a private weather forecasting service, not only were probabilities not given, but the National Weather Service and the

National Hurricane Center went almost unmentioned except for what was said about them in the hourly national news programs.

Appendix 2.

Examples of Research Instruments Used in the Study in the United States.

I. Interview Guides:

MASS COMMUNICATION ORGANIZATIONAL INTERVIEW GUIDE.

INSTRUCTIONS IN CAP LETTERS ARE ONLY FOR THE INTERVIEWER.

(INTERVIEWER: FOR MOST OF THE QUESTIONS, THE PERSON BEING INTERVIEWED SHOULD BE TREATED AS AN INFORMANT ABOUT THE ORGANIZATION; ONLY IN A FEW CASES SHOULD THE PERSON BE TREATED AS A RESPONDENT. IF RESPONDENT, REMEMBER THAT THE INFORMATION BEING SOUGHT MAY HAVE ALREADY BEEN OBTAINED FROM SOMEONE PREVIOUSLY INTERVIEWED, ALTHOUGH WE SHOULD TRY TO GET AS MUCH INFORMATION FROM ANYONE AS WE CAN. IF RESPONDENT, ONLY THE PERSON BEING INTERVIEWED CAN GIVE YOU WHAT WE WANT TO KNOW. IN INTERVIEWING, MAKE CERTAIN YOU DISTINGUISH BETWEEN WHEN THE PERSON IS ANSWERING AS AN INFORMANT AND AS A RESPONDENT).

(KEEP IN MIND THE GENERAL OBJECTIVES OF OUR STUDY AND ADJUST THE QUESTIONS ACCORDINGLY GIVEN WHATEVER COMMENTS THE PERSON INTERVIEWED MAKES. DO NOT BECOME A PRISONER OF THE GUIDE. THIS IS A GUIDE TO THE TOPICS AND AREAS WE ARE INTERESTED IN AND NOT A FIXED SET OF QUESTIONS THAT HAVE TO BE RIGIDLY FOLLOWED).

(AFTER YOUR COMMENTS ABOUT THE CONFIDENTIALITY OF THE DATA).

Unless you have some questions now, let us get started.

We want to talk about some of the specific aspects of your operation, both in normal times and during this emergency (or disaster---USE WHATEVER LABEL PERSON BEING INTERVIEWED USES). But before getting into the specific aspects, I would like to simply get a general overall picture of your operations in this emergency.

Maybe we can go back to when your station (or newspaper) first got involved and what your station has been doing to the present time...sort of an overall view of what you have been doing.

Let's start with the time you first became involved in reporting about the event, and take it step by step until the present.

1) When did you first hear about the _____ (agent)?

   Probe: what was the content of what was first heard.
          (TRY TO GET WHAT WAS HEARD AS VERBATIM AS POSSIBLE).

2) How did you first hear about the_____ (agent)?

   Probe: who did you hear it from (the news source)?
          what was the medium of communication (phone, radio, or what)?

3) Indicate what your organization did after receiving the first information about the emergency?

Probe: who was involved in the decision concerning whether
                the story should be covered?
                who was sent into the field? why these people rather
                someone else?
                how many people were sent (both in field as well as
                in house)

(CONTINUE ON IN A STEP BY STEP FASHION, ASKING YOUR RESPONDENT TO
RECONSTRUCT EVERYTHING THE ORGANIZATION DID UP TO THE PRESENT TIME)

Now I would like to ask some questions about four broad categories-
--1) structure, 2) activities, 3) work product, and 4) the history
of your organization.

STRUCTURE

Let's begin with structure. By structure I mean the way in which
your television station (or radio station or newspaper) is
organized and the personnel and resources that are available.

(ASK FOR A COPY OF THE ORGANIZATIONAL CHART. You know, we might be
able to save a lot of time if I could see a copy of your
organizational chart. Would you happen to have a copy available?
(USE THIS CHART THROUGH THE INTERVIEW AND THEN ASK IF YOU COULD
MAKE A COPY OF IT WHEN THE INTERVIEW IS COMPLETED).

4. What are the major parts of your organization?   (IF
ORGANIZATIONAL CHART IS NOT IMMEDIATELY AVAILABLE, ASK INFORMANT TO
DRAW ONE FOR YOU EXPLAINING HOW THE VARIOUS PARTS INTERFACE).

5. How many people are employed in each of the major parts, as well
as within the organization as a whole?

6. Does your organization have a formally structured news
department (for newspaper say I assume there is a formal news
department in your organization).

7. Would you tell me the number and type of personnel that work
within your news department (or who have the responsibility for
news gathering and/or dissemination).

         Probe: number of positions
                titles of positions
                responsibilities of positions
                full time versus part time positions

8. Do any of the staff you have just told me about have additional
duties or responsibilities outside the news department (or multiple
responsibilities within the department)?
(FOR EXAMPLE, A PERSON WHO IS A D. J. AS WELL AS A NEWS ANNOUNCER
AT THE STATION).

9. Does your organization employ any "free lance" (or "stringers") news gatherers?

      Probe: if so, how many and in what capacity?

10. Has the number of your personnel involved in news gathering changed at all since the emergency began?

      Probe: if so, how has it changed?

(PULL OUT THE DRC LIST OF RESOURCES)
11. Could you take a look at this list of resources and tell me which, if any, are available to your organization?

      Probe: are there any resources for news gathering not included
            in the list which your organization uses?

12. (FOR RADIO AND TELEVISION STATIONS ONLY) How much time does your organization normally commit to news broadcasting (use 24 hour basis)?
      (NEWSPAPERS ONLY) About how much of your paper (in terms of percentage) is devoted to news stories in normal times?

      Probe: how many different editions do you usually publish
            in a 24 hour period?

13. (WITH REFERENCE TO QUESTION 12). Did this change during the emergency?

      Probe: if so, how did it change?
            who makes the decision concerning what comprises an
            emergency and how much extra coverage it merits?

14. (IF ORGANIZATION DEVOTED MORE TIME THAN USUAL TO NEWS DURING THE DISASTER)

What, if anything, had to be set aside to make the necessary space/time for this increase in news?

      Probe: was any advertising lost as a result?
            was any advertising gained?

15. Now, I'd like to learn a little bit about the work schedule of your organization.
    Are there work shifts? If so, what are they?
    What are the responsibilities of the different shifts?
    How many people normally work during each shift?

16. Has this work schedule changed since your organization became involved in reporting about the emergency?

      If so, how?

ACTIVITIES

We now want to cover activities. By activities I mean the way in which your organization operates in both normal and emergency time periods. I hope by learning this to understand how news stories are processed within your organization.

Although I am interested in getting the general, overall picture of how news is processed, it might initially be easier if we use a concrete example...say, the last major news story that was processed by your organization. Keeping that last news story in mind, let's go through this list of questions.

17. How do you normally hear about news stories (or how did you hear about this last news story we are using as our example)?

18. Once you hear about a potential story, what happens next?

    Probe: who decides if it is worth covering?

19. Who normally assigns stories to reporters?

    Probe: get exact relationship.

20. Who and how many people are normally sent into the field to cover a story?

    Probe: what, if anything, influences this?

21. Who is responsible for making decisions in the field?

    (INTERVIEWER: this is a question concerning discretion. Ask if reporters act on their own, or if they must clear their decisions with the main office before taking any action).

22. What happens to the story after it is brought in from the field?

    Probe: who is the first person the reporter gives it to?
           what does the person do with it (decisions,
           recommendations)?
           where does it go from there?

(INTERVIEWER:TRY TO GET A RUNNING ACCOUNT OF HOW A STORY IS PROCESSED. PAY SPECIAL ATTENTION TO "DECISIONS POINTS" WITHIN THE ORGANIZATION. TAKE NOT OF WHO HAS THE AUTHORITY TO MAKE FIRM DECISIONS CONCERNING THE FATE OF THE STORY AS OPPOSED TO WHO HAS AUTHORITY TO MERELY MAKE RECOMMENDATIONS CONCERNING THE FATE OF THE STORY).

23. Who makes the final decision concerning what is ultimately broadcast or printed?

24. Does the process you have just described, does it change during emergencies?

WORK PRODUCT

The next set of questions I would like to ask you refers to what we call work product. I hope to learn something about the content of the news stories your organization produces in both normal and emergency time periods.

25. Let us begin with a rather broad question. How does your organization define "news"?

    Probe: what criteria is employed?

26. Does this definition (or do these criteria) change at all in times of disasters?

    If so, how do they change?

(TRY TO DETERMINE HOW THE ORGANIZATION DEFINES A DISASTER AND/OR EMERGENCY. ALSO, TRY TO DETERMINE THE NATURE AND DEGREE OF CHANGE IN THE CRITERIA USED TO DEFINE "NEWS" IN THE EMERGENCY TIME PERIOD).

27. Some research into disasters indicates that at times that the news content may be affected in various ways as a result of a disaster. For example, during a disaster the normal lines of communication are frequently disrupted or tied up (e.g., telephones). Have you experienced this, and if so, how has this affected your organization's ability to function or operate?

        Probe: has this affected your organization's ability to
               contact your usual sources of information?
               if so, what alternative news gathering techniques have
               you employed?
               has this affected your organization's ability to verify
               stories? how? What have you done to deal with this?

28. Has your organization experienced any telephone overload in this disaster?

        Probe: what have the calls been about?
               from who are the calls?
               how are you handling these calls?
               do you ever get requests for information that
               influences what your organization will broadcast (or
               print)?

29. Now, I'd like to compare what you have just told me with what happens during normal time periods. Could you tell me about how many calls from citizens you normally receive on a daily basis?

Probe: how many letters do you receive normally?
how many personal visits from citizens do you
normally get?
what is the usual nature of these contacts (complaints,
suggestions, questions, etc.). (INTERVIEWER: WHAT WE
WANT IS THE TYPICAL CONTENT OF THESE CITIZEN CONTACTS).

30. What types of stories are you particularly interested in
covering during disasters?

Probe: human interest/soft or hard news stories?

31. Is there any information your organization is reluctant to
disseminate to the public during mass emergencies?

Probe: beliefs about disaster behavior.
(INTERVIEWER: WHAT WE WANT IS WHETHER OR NOT DISASTER MYTHS
ARE BELIEVED AND/OR IF IT IS BELIEVED THAT CERTAIN KINDS OF
INFORMATION MIGHT INCITE ADVERSE OR DESTRUCTIVE BEHAVIOR ON
THE PART OF CITIZENS)

ORGANIZATIONAL HISTORY AND PREPAREDNESS

Now, I would like to ask you just a few questions about your
organization's experience with disasters and any planning with
respect to such happenings.

32. Is this community (USE NAME) especially prone to certain kinds
of disasters?

Probe: get as full listing as possible.

33. Has your organization had any prior experience with disasters,
say in the last five years or so?

Probe: nature of threat or impact?
agent involved?
when?
nature of organizational involvement?

34. (IF PREVIOUS QUESTION IS ANSWERED YES) As a result of your
organization's previous experience, were any changes instituted in
your organization?

Probe: operational changes?
policy changes?
mechanical or logistic changes?
other changes?

35. Have you personally had any prior disaster experience?

Probe: agent?

nature?
when?

36. Does your organization presently have a disaster plan?

   (TRY TO OBTAIN COPY OF THE PLAN)
   Probe: If no copy is available, nature of the plan,
           what it covers, etc/

37. (IF ANSWER TO #36 IS YES) Does the plan indicate tasks or activities which should be undertaken in the event that your facility or building is damaged or destroyed by a disaster?

   Probe: If there is no plan, is there an informal agreement
          of some kind?

38. As a result of your experience with this disaster, what advice would you offer to someone in a position similar to yours who has not had any prior disaster experience?

   Probe: difference what might be suggested for the organization
          as over against for someone occupying a similar work
          position.

BACKGROUND INFORMATION

To wrap up the interview, I would like to ask you a few factual questions about the background of your organization.

39. Is your organization a part of any larger entity?

   (CONFIRM THE OFFICIAL AND COMPLETE NAME OF THE ORGANIZATION
    AND PARTICULARLY ITS RELATIONSHIP TO LARGER ENTITIES--E.G. IS
    IT SIMPLY ONE ORGANIZATION WITHIN A LARGER CORPORATE
    ENTITY).

39. How long has your organization existed?

40. (SOME OF THE FOLLOWING INFORMATION YOU MAY ALREADY HAVE OBTAINED EITHER IN INTERVIEWS OR IN DOCUMENTS YOU HAVE COLLECTED).

   (FOR RADIO/TV STATION)
   a. power (kw) and directionality of beam?
   b. hours of broadcast?
   c. network affiliation(s)?
   d. programming format?
   e. time devoted to: advertising,
                       news,
                       talk programs?
                       network programming?
                       other local programming (specify)?

(FOR NEWSPAPER)
a. latest circulation figures (daily and Sunday) ?
b. if a number of daily editions, times they are issued?
c. number, if any, of suburban or regional editions?
d. space devoted to: advertising,
                     entertainment information?
                     sports?
                     local news?
                     state news?
                     national news?
                     international news?
                     features?

(THANK PERSON INTERVIEWED FOR COOPERATION, INDICATE WE MIGHT
RECONTACT IN FOLLOW UP STUDY, AND OBTAIN WHATEVER DOCUMENTS THIS
PARTICULAR PERSON MIGHT BE ABLE TO PROVIDE YOU).

TELEPHONE INTERVIEW GUIDE.

(KEEP IN MIND THE OBJECTIVES OF THIS SURVEY AND THE NECESSITY OF GETTING AS MUCH INFORMATION AS POSSIBLE FROM EACH RADIO AND TELEVISION STATION).

We want to talk about some of the specifics of your operation, both in normal times and during this emergency (OR DISASTER DEPENDING ON THE LANGUAGE USED BY YOUR RESPONDENT). But before getting into the specifics, I would like to get a general, overall picture of y our operation in this situation.

1. When did your organization first hear about the -----(agent)?

2. Who did you hear it from (news source)?

3. What was the information they gave you? (TRY TO GET INFORMATION THEY WERE PROVIDED AS VERBATIM AS POSSIBLE).

4. What was the medium of communication?

5. Who in the organization decided the story should be covered?

   Probe: whether a clear decision or general consensus?

6. What did the organization do once the decision to cover the situation was made?

   (TRY TO GET A RANKING OF THE FOLLOWING HAPPENINGS IN TERMS OF TIME WHEN THEY OCCURRED).

   a. Personnel were called in_____ (Probe: how they were called)
   b. Activation of EBS_____ (Probe: their knowledge of EBS)
   c. Sent a team into the field_____.
   d. Tapped other sources of information_____. (Probe: which?)
   e. Called meeting of editors for determing actions_____.
   f. Other (detail).

7. How has the normal operations in your organization changed or been altered since the emergency began?

   (WRITE DOWN VERBATIM REPLIES BUT ALSO CODE BELOW)

   a. Personnel increased_____.
   b. Personnel decreased_____.
   c. Time/space devoted to news increased_____.
   d. Time/space devoted to news decreased_____.
   e. Normal work schedule rearranged_____.
   f. Other (detail).

8. Was anything put aside to make space/time available for extra news coverage? If so, what?

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9. Who was responsible for those changes indicated in the previous answer?

10. Previous studies indicate that during a disaster, the phone lines into stations are frequently disrupted or tied up.

   Did you or are you experiencing this type of telephone overload?
       If yes,
       Could you briefly describe the types of calls received?
       (OBTAIN VERBATIM REMARKS BUT ALSO CODE BELOW)
       a. Requests for information_____.
       b. Contributions of disaster-related information_____.
       c. Requests for personal information_____.
       d. Other (detail)_____.

11.   a. How many telephones does your organization have?
      b. How many telephone lines?
      c. How many "hot lines" or unlisted numbers?

      If yes to a:
      Is this or did this affect your organization's ability to contact usual sources of news information?

      Is this or did this affect your ability to verify stories?

12. Did the telephone calls affect what you broadcast during the emergency? If so, how?

13. How are you dealing with the problems just mentioned?

14. Are there any particular types of stories on the disaster that you are particularly interested in covering?

      Probe: has this changed through time?

15. Is there any kind of information that you have about the emergency that you are not handling in the normal way?

      Probe: what is the nature of that information?
             what is the reason for handling it in a different way?
             is anything completely held back?

To conclude, what, if anything, has your organization learned about operating in a disaster?

(THANK INFORMANT FOR INFORMATION, MAKE SURE ANY DOCUMENTS REQUESTED WILL BE MAILED TO DRC, AND INDICATE THAT THERE MAY BE A FOLLOW UP INQUIRY).

III. INTERVIEW GUIDE FOR EOC.

1. Would you give me some information on what has been happening at the EOC since the emergency began?

2. When was the EOC officially activated?

3. Who made the official decision regarding the activation of the EOC?

4. How has the EOC been handling the press or media relations?

> Probe: was this handled in an ad hoc manner, or
>   is this formally specified in a disaster plan?

5. On a scale of 1 to 5 (with 1 being the lowest and 5 being the highest), how would you describe the overall relationship between the emergency/disaster agencies and organizations in this community and the local mass media representatives?

> (OBTAIN NOT ONLY NUMBER BUT SOME SENSE OF WHY THE NUMBER
> IS WHAT IT IS).

6. Most organizations have problems of one kind or another in responding to a disaster. That is to be expected. What kinds of problems did your organization (and the EOC generally) have in responding?

7. Were any of these problems related to the mass media activities or the press?

8. In your opinion, which radio station, which television station, and which newspaper has been the most active in reporting on the disaster?

> Probe: for each, what criteria is being used.
>   of the three, which have you personally had the
>   most contact with?

9. To finish up, are there any lessons you learned about dealing with the mass media as a result of this disaster?

(THANK OFFICIAL AND TERMINATE INTERVIEW IN STANDARD DRC MANNER).

II. Media Resources List (Distinguish Between Pre and Post Impact)

A. Vehicles:
   a. helicopters
   b. planes
   c. boats
   d. 4 wheel drive vehicles
   e. station wagon/vans
   f. pickup trucks
   g. automobiles

B. Modes of Communication:
   a. telephones
   b. telephones lines
   c. unlisted numbers (hot lines)
   d. CB/shortwave radios

C. Wire Services:
   a. UPI
   b. AP
   c. Reuters
   d. Other (who?)

D. Emergency Equipment:
   a. generators
   b. spare transmitters and/or parts
   c. spare antennas/dishes
   d. spare parts in general
   e. first aid kits, etc.
   f. blankets
   g. food, water

III. Documents Checklist:

An effort should be made to obtain each of the following from the major organization studied in depth in the different media.

Local radio station.
1. Organizational chart.
2. Disaster plan.
3. Program log.
4. Map of marketing/broadcast area.
5. Tapes of relevant broadcasts if available.
6. Written broadcast messages including editorials.
7. Discarded personal messages (used or unused).
8. Descriptive promotional material.
9. Audience rating data.
10. Relevant scripts.

Local television station.
1. Organizational chart.
2. Disaster plan.
3. Program log.
4. Map of marketing/televising area.
5. Tapes of relevant telecasts if available.
6. Out-takes.
7. Written televised messages including editorials.
8. Discarded personal messages (used or unused).
9. Descriptive promotional material.
10. Audience rating data.
11. Relevant scripts.

Local newspaper.
1. Subscriptions (2 weeks prior to disaster, two weeks after disaster, two weeks during the same time period in the previous year).
2. Organizational chart.
3. Disaster plan.
4. Circulation data.
5. All issues (editions) during the emergency period.
6. Letters to editor relative to disaster (published or unpublished).
7. Relevant photos.

In addition, the following should be obtained from the indicated source:

The EOC.

1. Press releases.
2. Log.
3. Handouts of any kind.
4. Discarded personal messages.
5. Diagram of organizational locations in the EOC.

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The wire services in the community.

1. Descriptive material relative to services provided.
2. List of subscription customers in affected area.

Finally, there should be the gathering of the following for purposes of getting information on general community data.

1. Local phone book(s).
2. Maps of local community.
3. Local demographic data (Chamber of Commerce and others).
4. Disaster plans of any key emergency offices.

Appendix 3.
Content Analysis Coding Scheme Used for the Houston Newspaper.

Headline---
The headline over the story was recorded.

Placement---
The page on which the story appeared was recorded.

Column Inches
The total column inches, the column inches in copy,
and the column inches in graphics were recorded. All
measurements were in square column inches.

Photographs and Graphics---
The accompanying photographs and graphics were
described.

Percentage of the News Hole---
The percent of the total news in Section A included
in the story was recorded.

Source---
The source of the story was classified into the
following categories: wire service; syndicated service;
local paper bureau; local staff report; others; and
and not discernible.

Dateline---
Any deadline associated with the story was noted.

Location---
The location of the story was classified as: local
(within the six counties designated as the disaster
area): state; national; and international.

Disaster Period---
The disaster period discussed in the story
was classified into the following categories: preimpact;
impact; crisis or emergency; short range restoration;
long range rehabilitation; and various combinations.

Disaster Agent Generated Activities---
Stories were analyzed in order to determine if they
included a discussion of any of the following agent
generated activities: disaster planning; structural
mitigation measures; warning; evacuation; short term
sheltering; scope and intensity of impact; search and
rescue; casualty care; extended sheltering; restoration
of essential services; provision of food, clothing and
human services; restoration of housing; restoration of
business and commerce; long range individual effects;

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long range community consequences or effects; debris clearance; future mitigation and planning activities; and other. None, one, or any number could be discussed in each story.

Response Generated Activities---
Stories were analyzed in order to determine if they included a discussion of any or all of the following response generated activities: convergence, communication social control, coordination, assignment of responsibility; and fund raising.

Estimates of Impact---
Estimates of loss of life, casualties, and property destruction were noted.

Authoritative Sources---
Stories were analyzed to determine if they cited any of the following sources: national government; FEMA; other national officials; regional officials; National Weather Service; regional office of NWS; state governor; state National Guard; State Civil Defense Agency; other state officials; local government; local relief organizations; local business; local utility; local mass media; local military units; local police; local fire department; local Civil Defense; local weather service (public) local weather service (private); local hospital; local emergency medical; local religious groups; local educational units; citizens; other; and none.

Type of Story---
Each story was classified as being: hard news, i.e., story focusing upon the description of facts about an empirical event that occurred within the past two days of coverage; soft news, i.e., a story focusing upon the description of facts about an empirical event that occurred prior to two days before publication, or that is likely to occur two days after publication; hard analysis, i.e., a story involving the analysis of events, problems, activities, etc., of the current disaster occasion; and soft analysis, i.e., a story involving the analysis of events, problems, activities, etc., occurring prior to two days before publication, or likely to occur at some time in the future but after two days. Combinations of the above were also recorded.

Tone of Story---
The tone of each story was classified as being: instrumental or a story primarily concerned with "facts" about the scope and intensity of impact, magnitude of relief and restoration activities, warning predictions, and other general preparatory and response activities;

or expressive, or a story primarily concerned with human interest, morale maintenance, etc. Combination of these elements were also noted.

Disaster Myths---
Stories were analyzed to determine if they discussed the following disaster myths: panic; looting; martial law; mass evacuation; heightened criminal behavior; disaster shock; shelter utilization; and/or other. A single story could discuss none, one, or more than one of the topics.

General Themes---
A qualitative, inductive content analysis was made of each story by focusing upon the various themes inherent in the material. The categories in this analysis are discussed in more detail in the text.