

A SELECTED ANNOTATED BIBLIOGRAPHY AND GUIDE TO SOURCES OF INFORMATION ON PLANNING FOR AND RESPONSES TO CHEMICAL EMERGENCIES.

ELIZABETH WILSON

Department of Sociology, Disaster Research Center, The Ohio State University,
Columbus, Ohio, 43210, USA

The following readings and sources were compiled in an attempt to provide interested parties with current information relevant to preparations for and responses to acute chemical emergencies. However, in line with the theme of this special issue, this material is only representative of work done in the social and behavioral sciences. Since a sudden chemical emergency has the potential of developing into a disastrous situation, insights into and principles of overall disaster preparedness and appropriate recovery measures can contribute significantly to more effective planning for and management of hazardous incidents. Consequently, the annotated references in this article include sources which address general and nonchemical types of disasters. The material which follows is divided into nine major categories:

- I. Books, Monographs and Reports
- II. Articles and Papers
- III. Collections of Articles
- IV. Bibliographies
- V. Newsletters
- VI. Continuing Series
- VII. Operational Guides, Manuals and Other Sources of Information
- VIII. Social and Behavioral Science Disaster Research Centers and Groups
- IX. Popular Discussions of Technological Disasters

I. BOOKS, MONOGRAPHS AND REPORTS

Albert, Michael and Segaloff, Louis. Task Silence: the Post-midnight Alarm and Evacuation of Four Communities Affected by an Ammonia Gas Release. Philadelphia: Project Summitt, the Institute for Cooperative Research, University of Pennsylvania, 1962.

This case study is based on interview and documentary data from officials, rescue workers and evacuees involved in a 1961 incident near Peoria, Illinois which required extensive warning activity so that all residents could be awakened and transported quickly. The authors determined the patterns of individual and community response and attempted to relate these patterns to the social and political patterns of the communities.

Anderson, William A. Military-Civilian Relations During Disaster Operations. Columbus: Disaster Research Center Report Series No. 5, 1968.

Discusses the involvement of the military in disaster operations and the character of military-civilian relations when such involvement occurs. Data are drawn from the United States, Italy, Chile and other societies. The questions of authority in these relationships and coordination are discussed.

Anderson, William A. Local Civil Defense in Natural Disaster: From Office to Organization. Columbus: Disaster Research Center Report Series No. 7, 1969.

Considers the function of civil defense in American disasters, focusing on the actual operations of these units within the local community. In discussing the mobilization and expansion of civil defense, the author distinguishes between civil defense "office" and civil defense "organization", the latter referring to the expanded post-emergency structure.

Barton, Allen H. Communities in Disasters: A Sociological Analysis of Collective Stress Situations. Garden City, New York: Doubleday Anchor Books, 1970.

A theoretical discussion and abstract summary of much of the disaster literature. The author discusses individual behavior in emergencies, the coordination of organizational behavior and the altruistic responses that develop in disasters. Some attention is also given to factors influencing long-run recovery.

Beach, H. D. Management of Human Behavior in Disaster. Ottawa, Canada: Department of National Health and Welfare, 1967.

In this manual on the management of human behavior in various disaster situations, Beach examines the chief characteristics of disaster, the individual and social problems in disasters, responses to warning and evacuation, rescue, and living in shelters. The conclusion considers the preparations and training needed for disasters.

Bignell, Victor; Peters, Geoff; and Rym, Christopher. Catastrophic Failures. London, England: Open University Press, 1977.

Prepared for teaching purposes, this volume presents a series of case studies which points out the immediate causes of seven manmade disasters and focuses on errors of design, planning oversights, and the communication failures that, in turn, contributed to each systemic failure.

Bourque, Linda Bookover; Reeder, Leo G.; Cherlin, Andrew; Raven, Berton H.; and Walton, D. Michael. The Unpredictable Disaster in a Metropolis: Public Response to the Los Angeles Earthquake of February, 1971. Los Angeles: Survey Research Center, University of California at Los Angeles, 1973.

Reports on surveys conducted after the 1971 Los Angeles earthquake. Focuses primarily on public expectations for such a disaster, the role communication played in people's responses, and general public satisfaction with community agencies.

Brouillette, John R. The Department of Public Works: A Community Emergency Organization. Columbus: Disaster Research Center Report Series No. 3, 1968.

The predisaster structure and functions of an American metropolitan public works department are reviewed. The emergency structure and responsibilities of this department in each phase of disaster, from warning to rehabilitation, are explained. Interorganizational relationships and the role of public works in community response to disaster are discussed.

Brunn, Stanley; Johnson, James; and Zeigler, Donald. Final Report on a Social Survey of Three Mile Island Residents. East Lansing, Michigan: Department of Geography, Michigan State University, 1979.

A study of 150 residents living within 30 miles of the nuclear plant. Topics examined include initial awareness of the accident, numbers evacuated, residents degree of confidence in reports from federal and utility company officials, and extent of perceived personal and environmental impact.

Disasters and the Mass Media. Washington, D.C.: National Academy of Sciences, 1980.

This publication consists of sixteen chapters which report the proceedings of the Disasters and Mass Media Workshop, as well as the original papers prepared for the meeting. An introduction to the role of the mass media in disaster reporting is included. This volume also contains the following sections: the state of the art in disaster reporting; international perspectives; national and local perspectives; disaster warning, relief and the mass media; positive and negative consequences of media disaster reporting; and research needs and applications.

Drabek, Thomas E. Disaster in Aisle 13: A Case Study of the Coliseum Explosion at the Indiana State Fairgrounds, October 31, 1963. Columbus: Disaster Research Center Book and Monograph Series No. 1, The Ohio State University Press, 1968.

This is a study of 12 community organizations heavily involved in the emergency response to the coliseum explosion in which 81 persons were killed and nearly 400 injured. A description and analysis of the structure, disaster activity, and operational problems of each organization are included. Major inter- and intraorganizational changes occurring in the year after the disaster are also discussed.

Drabek, Thomas E. Laboratory Simulation of a Police Communications System Under Stress. Columbus: Disaster Research Center Book and Monograph Series No. 2, The Ohio State University Press, 1969.

This monograph reports the results of a simulation study of organizational stress caused by a community disaster. A laboratory simulation of the dispatching room and communication system of a metropolitan police department was constructed. The author explores the utility of realistic simulation as a methodological technique for the analysis of complex organizations.

Drabek, Thomas E.; Brodie, Donald Q.; Edgerton, Jessica; and Munson, Paul. The Flood Breakers: Citizen Band Radio Use During the 1978 Flood in the Grand Forks Region of North Dakota and Minnesota. Boulder, Colorado: Natural Hazards Research and Applications Information Center, 1979.

Citizens band (CB) radio use during the 1978 flood in the Grand Forks region of North Dakota and Minnesota is examined. The study reports the first in-depth analysis of CB use in disasters and includes discussions of actual CB use patterns, problems encountered, perception of benefits, and views on policy recommendations for CB use in future disasters.

Dynes, Russell R. The Functioning of Expanding Organizations in Community Disasters. Columbus: Disaster Research Center Report Series No. 2, 1968.

Expanding organizations are those which have latent disaster responsibilities but require a new group structure be developed in order to fulfill these responsibilities. Case studies are presented of three kinds of expanding organizations in American society--Red Cross, Salvation Army, and local civil defense.

Dynes, Russell R. Organized Behavior in Disaster. Columbus: Disaster Research

Center Book and Monograph Series No. 3, 1976 (new paperback printing).

This book focuses on a theoretical discussion of community organizations and their activities in meeting problems created by disaster. The author draws on the existing literature and the work of the Disaster Research Center. He discusses the different meanings of "disaster" and the social implications of various types of disaster agents. Four types of organized behavior are isolated and discussed.

Dynes, Russell R., and Quarantelli, E.L. Organizational Communications and Decision Making in Crises. Columbus: Disaster Research Center Report Series No. 17, 1977.

Sets forth 294 propositions on organizational decision-making and communication. This propositional inventory is derived from an examination of three kinds of published literature: case studies of disaster events, theoretical discussions of organized behavior in disasters, and theoretical discussions of organizational behavior in crises.

Dynes, Russell R. and Quarantelli, E.L. The Role of Local Civil Defense in Disaster Planning. Columbus: Disaster Research Center Report Series No. 16, 1977.

Field studies of the factors affecting the tasks, saliency and legitimacy of local civil defense organizations in disaster planning at the community level were conducted in 12 American communities. Successful involvement in planning was associated with experience in community emergencies, acceptance and legitimization by the local governmental structure, predisaster relationships developed by the civil defense director, and the provision to the community of emergency-relevant resources such as EOCs.

Dynes, Russell R.; Quarantelli, E.L.; and Kreps, Gary A. A Perspective on Disaster Planning. Columbus: Disaster Research Center Report Series No. 11, 1972.

This report discusses the characteristics of disaster agents and the kinds of demands they generate. Misconceptions of human and group behavior in disastrous situations are examined. Community activities in normal times as opposed to those during emergencies are contrasted. The basic elements involved in organized community response to disaster are set forth. The report concludes with a systematic discussion of disaster planning, including weaknesses in typical disaster plans and strategies for planning.

Erikson, Kai T. Everything in Its Path. New York: Simon and Shuster, 1976.

A very detailed case study of the dam-flood disaster in the mining area of Buffalo Creek, West Virginia. The short- and long-term psychological effects of this incident upon the victims is emphasized. The consequences of this event upon health are explained primarily in terms of the destruction of the social fabric of the community.

Flynn, C.B. and Chalmers, J.A. The Social and Economic Effects of the Accident at Three Mile Island: Findings to Date. Tempe, Arizona: Mountain West Research, Inc. with Social Impact Research, Inc., 1979.

Reports on the findings to date which are grouped according to the effects of the accident upon 1) the regional economy, 2) institutions and 3) individuals. Data sources include published documents and statistics, telephone survey of 1,500 households, newspaper files and interviews of key informants and other research. Focuses on the two week emergency period and on continuing effects through September 1979. A two volume case study is forthcoming.

Forrest, Thomas R. Structural Differentiation in Emergent Groups. Columbus:

Disaster Research Center Report Series No. 15, 1974.

Forrest examines the characteristics and conditions associated with emergent groups in disasters, paying particular attention to the ways in which such groups develop operating structures.

Fritz, Charles and Mathewson, J.H. Convergency Behavior in Disasters: A Problem in Social Control. Washington, D.C.: National Academy of Sciences, Publication 476, 1957.

This report looks at the informal, spontaneous movement of people, messages and supplies toward the disaster area. Methods and techniques for controlling such convergence behavior are detailed.

Hans, Joseph M., Jr. and Sell, Thomas C. Evacuation Risks--An Evaluation. Las Vegas, Nevada: U.S. Environmental Protection Agency. Office of Radiation Programs, 1974.

Secondary analysis of 64 selected cases of evacuation, occurring between 1960 and 1973, which closely approximate the situation presented by a nuclear plant accident. Seeks to determine the risk of death and injury, costs of evacuation, the parameters affecting risk, and the ways in which they can potentially be used for predicting risk. Concludes that large or small populations can be effectively evacuated with minimal risk of death and injury, and that, in most cases, such populations can take care of themselves provided adequate plans are developed to minimize potential problems which may occur in the particular impact areas involved.

Hesbacher, Peter and Segaloff, Louis. Task Stagger: The Bayview Gas Scare. Philadelphia: Institute of Cooperative Research, 1961.

A description and analysis of the response of a small southern town's residents to toxic gas exposure. Both individual and official communities tended to follow traditional channels rather than use more formal ones.

Hewitt, Kenneth and Burton, Ian. The Hazardousness of a Place. Toronto, Canada: University of Toronto, 1971.

An examination of what constitutes a hazard, where they are likely to be found, how humans respond to them, and how hazards can be classified. Illustrations primarily drawn from Canadian society.

Kennedy, Will C., with Brooks, J. Michael, and Vargo, Stephen. The Police Department in Disaster Operations. Columbus: Disaster Research Center Report Series No. 6, 1969.

This report describes the involvement of the police department in disaster operations. The organization of such departments in terms of time, function and authority is discussed as well as the effect which these factors have upon the departments involvement in disaster tasks.

Kreps, Gary A. Decision Making Under Conditions of Uncertainty: Civil Disturbance and Organizational Change in Urban Police and Fire Departments. Columbus: Disaster Research Center Report Series No. 13, 1973.

The author, using data from 16 police and 15 fire departments, conceptualizes and examines the process of organizational change as an adaptive response to an uncertain and threatening environment, i.e., civil disturbances. Quantitative data are used to advance and test a series of interrelated propositions about long-run organizational response to stress.

McLuckie, Benjamin F. The Warning System in Disaster Situations: A Selective

Analysis. Columbus: Disaster Research Center Report Series No. 9, 1970.

Examines the warning process: the compilation of threat data, evaluation and decision to warn, dissemination of the message, and response.

McLuckie, Benjamin F. Italy, Japan, and the United States: Effects of Centralization on Disaster Response 1964-1969. Columbus: Disaster Research Center Historical and Comparative Disasters Series No. 1, 1977.

Three disasters (two floods and one earthquake) are studied in each of three countries, Italy, Japan, and the United States, in an attempt to understand the affect which societal context has upon disaster response functions. Particular attention is given to the effect of political centralization. Three dozen explicit propositions are advanced as a result of analyzing the data.

Marks, Eli S. and Fritz, Charles. Human Reactions in Disaster Situations. National Opinion Research Center, University of Chicago, 1954; available on microfile AD #107-594 from the Clearinghouse for Federal Scientific and Technical Information, National Bureau of Standards, Springfield, VA.

This report summarizes a series of field studies conducted by the National Opinion Research Center in the early 1950s. The major study in the set discusses a series of tornadoes in Arkansas but mine explosions, plane crashes, and gas explosions are also examined.

Mileti, Dennis S. Natural Hazards Warning Systems in the U.S.: A Research Assessment. Boulder, Colorado: Institute of Behavioral Science, The University of Colorado, 1975.

Assesses the social utility and heuristic value of research on hazard warning systems. Employs an integrative perspective, which includes every stage of the process from just cues through public response and relates information from hazard-specific research to cross-hazard warning. Notes that public response is the ultimate reason for having warning systems, and the lack of serious attention paid to them in both preparedness planning and research is puzzling.

Mileti, Dennis; Drabek, Thomas; and Haas, J. Eugene. Human Systems in Extreme Environments: A Sociological Perspective. Boulder, Colorado: Institute of Behavioral Sciences, University of Colorado, 1975.

An attempt to codify findings which the social scientific literature reveals about individual and collective adaptation and response to hazards and disasters. The volume is divided into sections dealing with the anticipation of disaster, response to the unlikely, immediate responses following impact, and restoration and reconstruction. Propositions at the individual, group, organizational, community and societal levels are presented.

Oliver, John, ed. Response to Disaster. Queensland, Australia: James Cook University, 1980.

A collection of articles on preparations for and management of disasters and mass emergencies in Australia.

Proceedings of the Japan-United States Disaster Research Seminar: Organizational and Community Responses to Disasters, September 11-15, 1972. Columbus: Disaster Research Center Book and Monograph Series No. 8, 1972.

This book includes the 20 papers presented and summarizes much of the discussion that occurred during the week-long conference of Japanese and American social science disaster researchers. Papers and discussions are divided into three major parts: research and

theoretical work on disasters in the United States, research and theoretical work on disasters in Japan, and cross-cultural studies of disasters and problems in cross-cultural research.

Quarantelli, E.L., ed. Disasters: Theory and Research. Beverly Hills, CA: Sage Publications, 1978.

A collection of 14 original articles. Using a primarily sociological orientation, such theoretical matters as community responses to disasters, interorganizational relations in communities under stress, the overall organization of disaster response and group emergence in crises are examined. Empirical studies deal with Canadian flood disaster subculture, Japanese responses to earthquakes, organizational prestige and innovation in American disasters, and a cross-cultural examination of American and Nicaraguan family responses to disasters. Suggestions for future study are given.

Quarantelli, E.L. with Baisden, Barbara and Bourdess, Timothy. Evacuation Behavior and Problems: Findings and Implications from the Research Literature. Columbus: Disaster Research Center Miscellaneous Report No. 27, 1980.

From an examination of 150 literature sources as well as field data, an analytical model of evacuation behavior is developed. The model of community preparedness for evacuation posits relationships among community context, threat conditions, social processes, patterns of behavior including the withdrawal movement, and their consequences. Suggestions are advanced for future policies, planning and operational activities, and research studies. An annotated bibliography of 90 items is included.

Rosow, Irving. Authority in Emergencies: Four Tornado Communities in 1953. Columbus: Disaster Research Center Historical and Comparative Disaster Series No. 2, 1977.

This is a study of the emergency authority systems that crystallized in four tornado-stricken communities. Two basic questions are addressed: (1) who spontaneously assumes what authority? and (2) how is that authority established and legitimized?

Ross, James L. The Salvation Army: Its Structure, Operations, and Problems in Disasters. Columbus: Disaster Research Center Report Series No. 8, 1969.

This report deals with the disaster relief operations of the Salvation Army and looks specifically at the general conditions influencing the participation of the organization in contemporary major community emergencies in America. Assets and problems are discussed, and an illustration of the Salvation Army operations in a hurricane emergency is included.

Segalof, Louis. Task Sirocco: Community Reaction to an Accidental Chlorine Exposure. Philadelphia, PA: The Institute for Cooperative Research, University of Pennsylvania, 1961.

A descriptive case study discussing the reaction of two rural Louisiana communities to a train wreck which occurred at 8:15 a.m. on January 31, 1961 and produced a cloud of chlorine gas. Focuses on the formation of the perception of the threat, the immediate rescue activities, the evacuation of two schools in addition to the village, and the mobilization and utilization of local resources.

Stallings, Robert. Communications in Natural Disasters. Columbus: Disaster Research Center Report Series No. 10, 1971.

Field data collected on 24 U.S. disasters are analyzed and are used to summarize communication processes and problems in disasters. Three kinds of communication structures are examined: internal, interorganizational, and public-to-organizational

communication. Typical problems encountered in disasters and their solutions are discussed.

Taylor, James B.; Zurcher, Louis; Key, William H. Tornado: A Community Responds to Disaster. Seattle: University of Washington, 1970.

This is an examination of how Topeka, Kansas responded to a major tornado disaster. The bulk of the study deals with the emergence of new behavior roles and groups in the aftermath of disaster. Considerable emphasis is given to informal and unplanned responses.

Tierney, Kathleen J. and Baisden, Barbara. Crisis Intervention Programs for Disaster Victims: A Source Book and Manual for Small Communities. Washington, D.C.: U.S. Government Printing Office, 1979.

A guide to problems involved in the delivery of mental health services in disasters, presenting a survey of what is known about mental health needs in mass emergencies and an annotated bibliography on the relevant applied and theoretical literature.

Treadwell, Mattie E. Hurricane Carla. Denton, Texas: Region 5 Office of Civil Defense, published by U.S. Government Printing Office, 1961.

A detailed and descriptive examination of responses to Hurricane Carla. Among the topics examined are warning, evacuation, reception and shelter of evacuees, rehabilitation, and the activities of emergency organizations and use of emergency facilities.

Tubbesing, Susan K., ed. Natural Hazards Data Resources: Uses and Needs. Boulder, Colorado: Natural Hazards Research and Applications Information Center, 1979.

At a workshop sponsored jointly by the National Oceanic and Atmospheric Administration and the U.S. Geological Survey, a group of producers and users of natural hazards data resources met to consider the adequacy of present data collection and storage. This monograph contains a number of papers prepared for the workshop as well as additional materials which were discussed by participants. Recommendations developed during the workshop for action which can be taken to improve accessibility to users of hazards data and to avoid duplication of effort in collection and storage are presented.

Turner, Barry. Man-Made Disasters. London, England: Wykeham Publications, 1978.

Examines the causes of a wide-range disaster and provides a theoretical basis for studying the origins of manmade disasters. Brings together British data from the fields of medicine, engineering, safety systems and social science.

Warheit, George and Dynes, Russell R. The Functioning of Established Organizations in Community Disasters. Columbus: Disaster Research Center Report Series No. 1, 1968.

Established organizations are defined as those which respond to disasters with their regular personnel engaged in familiar tasks. A theoretical framework is presented viewing established organizations' predisaster operations as situations in which capabilities exceed demands. Operational problems in disasters and adaptations to these are discussed.

Warheit, George and Quarantelli, E.L. An Analysis of the Los Angeles Fire Department Operations During Watts. Columbus: Disaster Research Center Book and Monograph Series No. 7, 1969.

This monograph examines from a sociological perspective the operations of the Los Angeles Fire Department during the Watts riot in August, 1965. It focuses on three major components of

the department and the ways in which the structure and function of the organization was altered during the disturbance. Attention is given to decision-making, tasks, and patterns of communication. The organizational response is viewed in terms of the larger community context and within the framework of interorganizational relationships.

Waxman, Jerry J. Changes in Response Patterns of Fire Departments in Civil Disturbances. Columbus: Disaster Research Center Report Series No. 12, 1972.

Everyday activities of fire departments and four specific fire department sections and their tasks are discussed. The response of six actual departments is used to contrast responses to and actions in everyday situations with those taken in two different types of civil disturbances. Instead of presenting six individual case studies, the author has synthesized his findings on organizational responses.

Weller, Jack M. Organizational Innovation in Anticipation of Crisis. Columbus: Disaster Research Center Report Series No. 14, 1973.

This study focuses upon both short- and long-run organizational innovations in expectation of disaster and/or civil disturbances. Data from 73 organizations in four cities following disasters and from 16 fire and 14 police departments involved in civil disturbances were used to examine the conditions associated with 574 organizational innovations found.

Wenger, Dennis and Parr, Arnold. Community Functions Under Disaster Conditions. Columbus: Disaster Research Center Report Series No. 4, 1969.

This report examines disaster-activated tasks at the community level. After theoretically describing the community in pre-disaster periods, the authors undertake an in-depth analysis of community tasks and activities corresponding to the various disaster stages ranging from warning to rehabilitation. Specific inter- and intraorganizational problems are described.

Wenger, Dennis; James, Thomas F.; and Faupel, Charles. Disaster Beliefs and Emergency Planning. Newark, DE: Disaster Research Project, University of Delaware, 1980.

A detailed study of the general public and in particular community public officials' beliefs about human and group behavior in disasters. When compared with social scientific findings, it is clear many major beliefs are mythological and incorrect. A content analysis of more than 70 local disaster plans is also used to evaluate preparedness planning.

Wettenhall, R.L. Bushfire Disaster: An Australian Community in Crisis. Sydney, Australia: Angus and Robertson, 1975.

A very detailed account of both the short- and long-run problems of and responses to massive bushfires which affected Hobart, Australia and surrounding areas. Political aspects of the situation are particularly discussed.

White, Gilbert and Haas, J. Eugene. Assessment of Research on Natural Hazards. Cambridge, MA: Massachusetts Institute of Technology Press, 1975.

A sweeping overview and evaluation of all research ever conducted in regard to natural disasters in the United States. Specifically recommends the direction which future natural hazards research work should take. This summary volume is accompanied by a series of more specific publications on particular natural hazards.

Worth, Marti F., and McLuckie, Benjamin F. Get to High Ground! The Warning Process in the Colorado Floods: June 1965. Columbus: Disaster Research Center Historical

and Comparative Disaster Series No. 3, 1977.

Field studies on warnings in connection with floods in ten different Colorado communities during June 1965 are presented and comparatively analyzed. General conclusions are drawn about the forecasting, alerting and confirming phases of the warning process. Implications for planning are noted.

II. ARTICLES AND PAPERS

Abe, Kitao. "The Behavior of Survivors and Victims in a Japanese Nightclub Fire: A Descriptive Research Note." Mass Emergencies 1 (1976): 119-124.

The differential behavior of survivors and victims are described and analyzed. An explanation is also advanced regarding the behaviors that appeared.

Anderson, William A. "Disaster Warning and Communication Processes in Two Communities." Journal of Communication 19 (June, 1969): 92-104.

Disaster warning is viewed as a process of interrelated activities and procedures in which a variety of organizations and individuals become involved. The results of a warning study on tsunami threats in Crescent City, California and Hilo, Hawaii are presented.

Bardo, John. "Organizational Response to Disaster: A Typology of Adaptation and Change." Mass Emergencies 3 (1978): 87-104.

An attempt to develop a typology of organized responses in disasters using the structure and functions of the organizations involved. The typology is applied in a study of the responses to a major flood situation resulting from Hurricane Agnes. Suggestions for future modifications and testing of the typology are presented.

Battisti, Francesco. "Some Conditions for the Social Perception of Pollution in Environmental Disasters." Mass Emergencies 3 (December, 1978): 201-208.

This article notes two kinds of pollution disasters. There are incidents which people can obviously perceive and are, thus, sensitive to. This results in a social and political response. However, in other instances of pollution, the public's attitude is characterized by low sensitivity, self-deception, and apathy toward the polluting agents. Conditions which may determine the public's perception as well as those which hinder its awareness are identified.

Brouillette, John R. and Quarantelli, E.L. "Types of Patterned Variation in Bureaucratic Adaptations to Organizational Stress." Sociological Inquiry 41 (Winter, 1971) 39-46.

The authors present a typology of possible patterned variations in bureaucratic adaptations to stress and indicate some factors internal and external to the organization which influence the direction and kind of changes made.

Brown, J.B. "Probing the Law and Beyond: A Quest for Public Protection from Hazard Product Catastrophes." George Washington Law Review 38, No. 3 (1970): 431-462.

The complicated legal issues involved in accidents and disasters resulting from chemical agents is discussed.

Drabek, Thomas E. and Quarantelli, E.L. "Scapegoats, Villains, and Disasters." Trans-action (March, 1967): 12-17.

There is a tendency to seek scapegoats after a disaster in order to blame some person/s for the death and destruction that have occurred. Three explanations for personalizing blame are discussed, based on studies of the Cocoanut Grove fire of 1942; three airplane

crashes at Elizabeth, New Jersey in 1951-52; and the Indianapolis Coliseum explosion of 1963.

Dynes, Russell R. "The Comparative Study of Disaster: A Social Organizational Approach." Mass Emergencies 1 (October, 1975): 21-31.

Ways in which disasters can be comparatively studied, especially at the cross-cultural level, are presented. Advances a typology of societies and indicates the central organizational and structural problems which each type has to cope with subsequent to a relatively sudden disastrous event.

Dynes, Russell R. and Quarantelli, E.L. "The Absence of Community Conflict in the Early Phases of Natural Disaster." The Social Science of Conflict Resolution, edited by Claggett Smith. Notre Dame, IN: University of Notre Dame Press, 1971: 200-204.

Community conflict is usually absent in the emergency period following disasters. Some reasons for this lack of conflict are set forth.

Dynes, Russell R. and Quarantelli, E.L. "Emergency Disaster Plans for Vocational Schools." Developing the Leadership Potential of Urban Vocational Education Administrators: 1976 National Leadership Seminar, edited by Daniel E. Koble, Jr. and Mark Newton. Columbus: The Center for Vocational Education, The Ohio State University, 1976: 151-161.

Discusses how different disaster contexts affect planning, the dimensions of school activities which are important for emergency preparations and operations, problems which schools with significant disaster damage have experienced, and actions which an educational system can take in disaster planning.

Dynes, Russell R. and Quarantelli, E.L. "The Family and Community Context of Individual Reactions to Disaster." Emergency and Disaster Management: A Mental Health Sourcebook, edited by Howard Parad, H.L.F. Resnik and Libbie G. Parad. Bowie, Maryland: The Charles Press Publishers, Inc., 1976: 231-245.

A general discussion of the characteristics of and conditions associated with four kinds of individual reactions to disasters. Examined are responses to warnings, imminent dangers, possible role conflicts, and the handling of personal or property losses.

Fitzpatrick, John S. and Waxman, Jerry J. "The March 1972 Louisville, Kentucky Chlorine Leak Threat and Evacuation: Observations on Community Coordination." Columbus: Disaster Research Center Working Paper No. 44, 1972.

Provides a brief descriptive chronology which highlights the major decisions and activities connected with the evacuation of thousands of people. The analysis focuses on the activities and problems of two major coordinating agencies: the federal office of emergency preparedness and local civil defense. Special attention is paid to issues arising out of the fact that community evacuation decisions---a primarily local responsibility---are contingent on technical and engineering decisions made by federal agencies.

Gabor, Thomas and Griffith, Terri K. "The Assessment of Community Vulnerability to Acute Hazardous Materials." Journal of Hazardous Materials 3 (June, 1980): 323-333.

In this paper, a rationale is provided for the performance of community vulnerability analyses. The components of vulnerability are defined and their implications for disaster planning discussed. Subsequently, the different forms and functions of current site assessment techniques are reviewed. Also examined are transportation route and community assessment techniques. In addition, a new function of such assessments is identified---the application of vulnerability analyses in a large geographic area. The paper concludes with the development of a preliminary regional rating scheme.

Hershiser, Marvin and Quarantelli, E.L. "The Handling of the Dead in a Disaster." Omega 7 (1976): 196-208.

This case study focuses upon the treatment of 237 bodies from a flash flood disaster. The descriptive analysis incorporates two levels of behavior: individual modes of adjustment and the organized response of the community. An examination is also made of the factors affecting the respect accorded the "prerogatives" of the dead and the living and the effective carrying out of this generally noninstrumental disaster task.

Kueneman, Rodney M. and Wright, Joseph E. "News Policies of Broadcast Stations for Civil Disturbances and Disasters." Journalism Quarterly 53 (Winter, 1976): 670-677.

Radio and television stations misperceive that news of civil disturbances and disasters will lead to public excitability if not panic. Stations, therefore, very carefully check reports of such events before broadcasting them and, in some cases, actually withhold information, especially about civil disturbances. Planning tends to be more specific for natural disasters than civil disturbances with experiences in mass emergencies more likely to lead to mechanical rather than operational changes.

Lindell, Michael and Perry, Ronald. "Evaluation Criteria for Emergency Response Plans in Radiological Transportation." Journal of Hazardous Materials 3 (1980): 335-348.

This paper identifies a set of general criteria which can be used as guides for evaluating emergency response plans prepared in connection with the transportation of radiological materials. The development of criteria takes the form of examining the meaning and role of emergency plans in general, reviewing the process as it is used in connection with natural disasters and other nonnuclear disasters, and explicitly considering unique aspects of the radiological transportation setting. Eight areas of critical importance for such response plans are isolated: notification procedures; accident assessment; public information; protection of the public at risk; other protective responses; radiological exposure control; responsibility for planning and operations; and emergency response training and exercises.

Quarantelli, E.L. "Organization under Stress" Symposium on Emergency Operations. Santa Monica, CA: System Development Corporation, 1966: 3-19.

Four different types of collective or group efforts to cope with community emergencies, especially disasters, are described. The author suggests ways in which the presence or absence of each of these might indicate the degree of crisis in a community.

Quarantelli, E.L. "Human Behavior in Disaster." Proceedings of the Conference to Survive Disaster. Chicago: ITT Research Institute, 1973: 53-74.

This paper sets forth the more widespread misconceptions about human behavior in disasters; the policy implications of such misconceptions; the actual typical response of people in extreme stress situations; some implications of such actual behavior for disaster planning; and certain relatively unknown aspects of human behavior in disasters.

Quarantelli, E.L. "Human Response in Stress Situations," Proceedings of the First Conference and Workshop on Fire Casualties, edited by B.M. Halpin. Laurel, Maryland: Applied Physics Laboratory, John Hopkins University, 1976: 99-112.

The notion that people behave badly under the extreme stress of disasters is challenged. It is noted such a view results in inappropriate operational and planning activities. Human behavior in disaster tends to be generally controlled, organized, and adaptive. Panic behavior is discussed in detail.

Quarantelli, E.L. "Draft Outline of Report on Implementing Community Disaster Planning." Columbus: Disaster Research Center Preliminary Paper No. 51, 1978.

This outline touches on the role of civil defense in community disaster planning, key assumptions in implementing planning, the part the public plays in such implementation, the context of undertaking planning, the ways in which planning in community organizations is carried out, and the meaning of total community planning. Utilizing extracommunity resources in initiating disaster planning and taking advantage of opportunities for implementing disaster planning are also discussed.

Quarantelli, E.L. "Uses and Problems of Local EOCs in Disasters." Columbus: Disaster Research Center Preliminary Paper No. 53, 1978.

The first section examines the location of emergency operation centers (EOCs), both those that are preplanned and those that emerge at times of disasters. In the next section, there is a discussion of when EOCs are operative and when they are primarily activated. Some attention is also given to the duration of their active existence and the question of their closing down after an emergency. The following section considers who is involved in EOCs and looks at how participants get involved. The conclusion touches on the functions or tasks carried out by EOCs.

Quarantelli, E.L. "Some Needed Cross-cultural Studies of Emergency Time Disaster Behavior: A First Step." Disasters 3 (1979): 307-314.

A discussion of problems which would be involved in undertaking cross-cultural research with recommendations on alternative ways to proceed as well as first steps which might be taken.

Quarantelli, E.L. and Dynes, Russell R. "Operational Problems of Organizations in Disasters." Emergency Operations Symposium. Santa Monica, CA: System Development Corporation, 1967: 151-175.

Some consequences of a disastrous event for established organizations--- those having predisaster existence and performing regular tasks--- and expanding organizations are delineated. Included are the problems of uncertainty, urgency, and lost autonomy. Problems of task assignment, communication, authority and decision-making are reviewed.

Quarantelli, E.L. and Dynes, Russell R. "Property Norms and Looting: Their Patterns in Community Crises." Phylon 31 (Summer, 1970): 168-182.

The individual and group perspective on massive looting behavior are contrasted. The authors note differences in patterns of looting in dissensus and consensus situations. Looting is explained in terms of the emergence of new group norms in times of crisis. The failure of contemporary social scientists to see looting as normative rather than deviant behavior is discussed.

Quarantelli, E.L. and Dynes, Russell R. "When Disaster Strikes." Psychology Today 5 (February, 1972): 66-70.

The authors discuss various inaccuracies and myths about disaster response in affected communities; e.g., people neither panic nor flee; victims respond with self-reliance and mutual help.

Quarantelli, E.L. and Dynes, Russell R. "Community Conflict: Its Absence and Its Presence in Natural Disasters." Mass Emergencies 1 (February, 1976): 139-152.

The article points out the considerable variation in the presence or absence of community conflict following disasters. To the extent that there is any pattern, it is one of relative absence of conflict in the emergency period and its relative presence in the post-emergency period. The presence or absence of conflict is functional or dys-

functional depending upon a series of other conditions.

Quarantelli, E.L. and Dynes, Russell K. "Response to Social Crisis and Disaster." Annual Review of Sociology 2 (1977): 23-49.

The paper selectively summarizes and highlights basic substantive and structural trends in the disaster research area. Substantive trends include efforts at codifying, emphasizing a social organizational rather than social psychological approach, using groups rather than individuals as basic units of analysis, increasing usage of the concept of system, combining collective behavioral and complex organizational perspectives, increasing emphasis on the pre-impact period as a source of postimpact changes, focusing on functional and dysfunctional long-run consequences, and developing models. Structural trends include the linkage of public policy questions and disaster research, the institutionalization of disaster studies in academic settings, and the emergence of a critical mass of social and behavioral disaster research. Directions for the future are provided in a discussion of past problems of disaster research.

Quarantelli, E.L. and Tierney, Kathleen. "Disaster Preparedness Planning." Fire Safety and Disaster Preparedness Washington, D.C.: Office of Public Sector Programs, American Association for the Advancement of Science, 1979: 263-313.

An initial discussion of the necessity of disaster preparedness and the differences it makes is followed by an overview of the state of present day disaster preparedness at the federal, state and local levels in American society. There is a discussion of the two major conditions affecting the problem; namely, policy differences as to the nature and goals of disaster planning preparedness, and an inadequate application in disaster planning and training of the basic and applied knowledge already established by social and behavioral scientists looking at disaster phenomena. Different ways in which research can be used are discussed. Also, examined are evaluative research and the development of mechanisms for better technology transfer. The paper concludes with a series of recommendations on how to improve disaster research and how research findings can be applied at the operational and planning levels of organizations by officials interested in disaster preparedness.

Quarantelli, E.L. and Tierney, Kathleen. "Social Climate and Preparations for Sudden Chemical Disasters." Columbus: Disaster Research Center Preliminary Paper No. 55, 1979.

Presents an overall community model for looking at preparedness for chemical disasters. The bulk of the paper discusses research findings in regard to the dimensions of social climate; namely, the belief assumptions, the value priorities, and the norm expectations which affect planning.

Quarantelli, E.L.; Lawrence, Clark; Tierney, Kathleen; and Johnson, Ted. "Initial Findings from a Study of Socio-Behavioral Preparations and Planning for Acute Chemical Hazard Disasters." Journal of Hazardous Materials 3 (February, 1979): 79-90.

Preliminary results are discussed from a Disaster Research Center study of chemical disaster preparedness in 14 American communities and as manifested in 6 actual incidents. A model and some implications for planning are presented as well as findings about community and organizational perceptions of chemical threats, resources to deal with such threats, and the social climate in which emergency groups operate.

Quarantelli, E.L.; Tierney, Kathleen J.; Johnson, Quinten T.; and Lawrence, Clark. "Outline of a Model for Studying Community Preparedness for Acute Chemical Disasters."

Columbus: Disaster Research Center Preliminary Paper No. 57, 1979.

The first part of the paper presents the general background of a field study of chemical disaster preparedness in 19 American communities. In the second part, some specific information about the research design used and the data obtained in the first year of the work is given. In the next section, the overall model being used to analyze the preparedness data is presented. The final part of the paper focuses on the local community and indicates some of the kinds of questions which are addressed in the study. Examples are drawn from the field data to illustrate general findings and observations.

Strope, Walmer; Devaney, John; and Nehnevajsa, Jiri. "Importance of Preparatory Measures in Disaster Evacuations." Mass Emergencies 2 (1977): 1-17.

Analyzes scholarly studies, official reports, and other documentary information from 56 evacuations with respect to the existence of emergency plans, pre-disaster public information, and testing procedures. Findings include the following: evacuations have been routinely successful even without advance planning; familiarity with and involvement in the planning is highly correlated with the use of a plan; public participation in practice drills is difficult to achieve and probably counter-productive; and efforts spent on intensive public pre-education on evacuation might better be spent on advance preparations of message content and means of disseminating authoritative, unambiguous information during emergency.

Waxman, Jerry. "Local Broadcast Gatekeeping During Natural Disasters." Journalism Quarterly 50 (Winter, 1973): 751-758.

This report focuses on structural variables providing parameters to news flow. The gatekeeping process is analyzed in terms of the situational context within which the radio station operates. A comparison of gatekeeping during normal operations and flood disaster operations is presented.

Westgate, K. "Flixborough, The Human Response." Bradford, Great Britain: Disaster Research Unit Occasional Paper No. 7. University of Bradford, 1975.

A descriptive account of an explosion in a chemical plant in England.

Yutzy, Daniel. "Some Organizational and Community Activities After an Explosion at the Thompson Chemical Company, Attleboro, Massachusetts." Columbus: Disaster Research Center Research Note No. 2, 1964.

This research note describes organizational problems involved in response to fixed-site chemical incidents and fires and their implications. Topics include coordination and control, communication, alerting and mobilization, and public versus organizational perception of tasks. Evacuation activities are briefly discussed. The need for and lack of a central information processing facility are noted.

III. COLLECTIONS OF ARTICLES

Chapman, Dwight, ed. "Human Behavior in Disaster: A New Field of Social Research." Special Issue, Journal of Social Issues 10 (1954).

This collection of articles describes the activities of the Committee on Disaster Studies of the National Academy of Sciences, some of the National Opinion Research Council (NORC) studies on disasters, as well as other work in the disaster area. The articles included in

this special issue are listed below.

Williams, Harry B. "Fewer Disasters, Better Studied."

Janis, Irving L. "Problems of Theory in the Analysis of Stress Behavior."

Fritz, Charles E. and Marks, Eli S. "The NORC Studies of Human Behavior in Disaster."

Schwartz, Shepard and Winograd, Berton. "Preparation of Soldiers for Atomic Maneuvers."

Hudson, Bradford B. "Anxiety in Response to the Unfamiliar."

Powell, John W. "Gaps and Goals in Disaster Research."

Killian, Lewis M. "Some Accomplishments and Some Needs in Disaster Study."

Demerath, Nicholas and Wallace, Anthony, eds. "Human Adaptation to Disaster." Special Issue, Human Organization 16 (Summer, 1957).

The following papers are presented in this issue.

Spiegel, John P. "The English Flood of 1953."

Fritz, Charles E. "Disasters Compared in Six American Communities."

Schneider, David. "Typhoons on Yap."

Williams, Harry. "Some Functions of Communication in Crisis Behavior."

Kilpatrick, F.P. "Problems of Perception in Extreme Situations."

Wallace, Anthony. "Mazeway Disintegration: The Individual's Perception of Socio-cultural Disorganization."

Demerath, Nicholas. "Some General Propositions: An Interpretive Summary."

Raynor, Jeannette. "Studies of Disasters and Other Extreme Situations: An Annotated Selected Bibliography."

Finniston, H.M., ed. "Disasters: Their Prevention, Control and Social Effects." Special Issue, Advancement of Science 25 (June, 1969).

This issue reprints papers given to a symposium in August, 1968 at the British Association meetings in Dundee. This special issue includes the following papers.

Finniston, H.M. "Disasters-Their Prevention, Control and Social Effects."

Ayers, K.N. "Maritime Disasters."

Tye, W. "Air Transport Disasters."

Latter, J.H. "Natural Disasters."

Black, H.K. "The Conveyance of Dangerous Substances by Road."

Shirley-Smith, H. "Disasters in Bridges and Dams."

Robens, Lord of Woldingham. "Mine Disasters."

Adams, C.A. "Nuclear Hazards."

Dainty, J. "Fundamentals of Water Movement."

Quarantelli, E.L. and Dynes, Russell R., eds. "Organizational and Group Behavior in Disasters." Special Issue, American Behavioral Scientist 13 (January-February, 1970)

This issue focuses on disaster as a social disruption within communities.

The pattern of social disruption is closely related to the various characteristics of the disaster agent since they determine the nature of disaster tasks to which emergency organizations have to respond.

This special issue is composed of the articles which follow.

Quarantelli, E.L. and Dynes, Russell R. "Editors' Introduction."

Drabek, Thomas E. "Methodology of Studying Disasters: Past Patterns and Future Possibilities."

Yutzy, Daniel. "Priorities in Community Response."

Kennedy, Will C. "Police Departments: Organization and Tasks in Disaster."

Warheit, George J. "Fire Departments: Operations During Major Community Emergencies."

Brouillette, John R. "The Department of Public Works: Adaptation to Disaster Demands."

- Quarantelli, E.L. "The Community General Hospital: Its Immediate Problems in Disasters."
- Adams, David. "The Red Cross: Organizational Sources of Operational Problems."
- Ross, James L. "The Salvation Army: Emergency Operations."
- Anderson, William A. "Military Organizations in Natural Disaster: Established and Emergent Norms."
- Parr, Arnold R. "Organizational Response to Community Crisis and Group Emergence."
- Dynes, Russell R. "Organizational Involvement and Changes in Community Structure in Disaster."
- Roth, Robert. "Cross Cultural Perspectives on Disaster Response."
- Quarantelli, E.L. "A Selected Annotated Bibliography of Social Science Studies on Disasters."

Taylor, Verta, ed. "The Delivery of Emergency Medical Services in Disasters." Special Issue, Mass Emergencies 2 (1977): 135-204.

This special issue discusses the delivery of emergency medical services (EMS) in mass casualty producing situations. Most of the articles deal with the findings from field studies focused on planning and operational problems in disaster EMS. Articles in this issue are listed below.

- Taylor, Verta. "Editorial: Delivery of Emergency Medical Services in Disasters."
- Dynes, Russell R. "A Background Note on the Preliminary Findings and Impressions of the DRC Studies."
- Holloway, Ronald. "Operations and Planning in Multiple Casualty Incidents."
- Tierney, Kathleen and Taylor, Verta. "EMS Delivery in Mass Emergencies: Preliminary Findings."
- Worth, Marti and Stroup, Janet. "Some Observations on the Effects of the EMS law on Disaster Related Delivery Systems."
- Golec, Judith and Gurney, Patrick. "The Problems of Needs Assessment in the Delivery of EMS."
- Neff, Joan. "Responsibility for the Delivery of Emergency Medical Services in a Mass Casualty Situation: The Problem of Overlapping Jurisdictions."
- Wright, Joseph. "The Prevalence and Effectiveness of Centralized Medical Responses to Mass Casualty Disasters."
- Gibson, Geoffrey. "Disasters and Emergency Medical Care: Methods, Theories, and a Research Agenda."

Torry, W.I., ed. "Natural Disasters and Economic Development." Special Issue, Mass Emergencies 4 (November, 1979).

This issue contains articles on major natural disasters in Third World countries and the effects which these have upon economic growth and development. This issue includes articles on famine administration in India, relocation of earthquake victims in Peru, post-earthquake housing changes in Guatemala, and effects of droughts and famines in Senegal. The following articles constitute this special issue.

- Torry, W.I. "Natural Disasters and Economic Development: Introduction."
- Torry, W.I. "Intelligence, Resilience and Change in Complex Social Systems: Famine Administration in India."
- Copans, Jean. "Droughts, Famines and the Evolution of Senegal (1966-1978)."
- Watts, Michael J. "The Etiology of Hunger: The Evolution of Famine in a Sudano-Sahelian Region."
- Tonkinson, Robert. "The Paradox of Permanency in a Resettled New Hebridean Community."
- Osterling, Jorge P. "The 1970 Peruvian Disaster and the Spontaneous

- Relocation of Some of Its Victims: Ancashino Peasant Migrants in Huayopampa."
- Bates, Frederick L.; Farrell, W. Timothy; and Glittenberg, JoAnn K. "Some Changes in Housing Characteristics in Guatemala Following the February 1976 Earthquake and Their Implications for Future Earthquake Vulnerability."
- Margolis, Maxine. "Green Gold and Ice: The Impact of Frosts on the Coffee Growing Region of Northern Parana, Brazil."
- Barbina, Guido. "The Friuli Earthquake as an Agent of Social Change in a Rural Area."

IV. BIBLIOGRAPHIES

- Cochran, Anita. A Selected, Annotated Bibliography on Natural Hazards. Toronto: University of Toronto Natural Hazards Research Working Papers, 1972.
- Federal Disaster Assistance Administration, United States Department of Housing and Urban Development. Directory of Disaster-Related Technology. Washington, D.C.: U.S. Government Printing Office, 1975.
- Manning, Diana. Disaster Technology: An Annotated Bibliography. London: Pergamon Press, 1976.
- Morton, David. A Selected, Partially Annotated Bibliography of Recent (1978-1979) Natural Hazards Publications. Boulder, Colorado: University of Colorado, Natural Hazards Research and Applications Information Center, 1980.
- Quarantelli, E.L. A 100 Item Bibliography on Disaster and Disaster Planning. Columbus: Disaster Research Center Miscellaneous Report No. 25, 1980.
- Westgate, Kenneth. A Bibliography of Disaster Reference Material. Bradford, Great Britain: University of Bradford, Disaster Research Unit, 1974.

V. NEWSLETTERS

- Disaster Information (1979 to present) from Federal Emergency Management Agency, Washington, D.C. 20472.
- Disaster Preparedness in the Americas (1979 to present) from the Emergency Preparedness and Disaster Relief Coordination Unit of the Pan American Health Organization, 525 23rd Street, Washington, D.C. 20037.
- Exposure (1980 to present) from Environmental Action Foundation, 724 DuPont Circle Building, Washington, D.C. 20036.
- Hazard Monthly (1980 to present) from Research Alternatives, 10221 Arizona Circle, Bethesda, Maryland 20034.
- Hazardous Materials Intelligence Reports (1980 to present) from World Information Systems, P.O. Box 535, Harvard Square Station, Cambridge, MA 02238.
- Hazardous Materials Newsletter (1980 to present) from Box 204, Barre, Vermont 05641.
- Hazardous Materials Transportation Newsletter (1980 to present) from Cahners Publishing Company, P.O. Box 716, Back Bay Annex, Boston, MA 02117.
- International Civil Defense (1955 to present) from International Civil Defense Organization 10-12 ch. de Surville, 1213 Petit-Lancy, Geneva, Switzerland.
- Natural Hazards Observer (1976 to present) from Natural Hazards Research and Application Information Center, Institute of Behavioral Science #6, University of Colorado,

Boulder, Colorado 80309.

UNDRO NEWSLETTER (1976 to present) from Office of the United Nations Disaster Relief Coordinator, Palais des Nations, 1211 Geneva 10, Switzerland.

Waste Alert (1980 to present) from League of Women Voters of the United States, 1730 M Street NW, Washington, D.C. 20036.

VI. CONTINUING SERIES

Disaster Research Center, Ohio State University, Columbus, Ohio 43210.
Produces a Book and Monograph Series, a Report Series, and a Historical and Comparative Disasters Series.

Disaster Study Group, Uppsala University, S-751 20 Uppsala, Sweden.
Publishes a series of disaster studies. Volume I deals with family and shelters, Volume II with evacuation, etc. (Those volumes in Swedish have an English abstract.)

Institute of International Sociology, 34170 Gorizia, Italy.
Issues a series of multidisciplinary disaster studies and reports.

Natural Hazards Research and Applications Information Center, University of Colorado, Boulder, Colorado 80309.
Has developed a Technology, Environment and Man Monograph Series.

Office of the United Nations Disaster Relief Coordinator. Geneva, Switzerland.
Has initiated a continuing series of volumes on disaster prevention and mitigation. Volume I on guidelines for disaster prevention deals with predisaster physical planning of human settlements, etc.

VII. OPERATIONAL GUIDES, MANUALS AND OTHER SOURCES OF INFORMATION

Bahme, Charles. Fire Officer's Guide to Disaster Control. Boston: National Fire Protection Association, 1978.

Benner, Ludwig. Hazardous Materials Emergencies. Oakton, VA: Lufred Industries, Inc., 1976.

Bureau of Explosives of the Association of American Railroads. Emergency Handling of Hazardous Materials in Surface Transportation. Washington, D.C.: Association of American Railroads, 1973.

Chemical Manufacturer's Association (formerly Manufacturing Chemists' Association). CMA produces numerous manuals and aids, e.g., CHEMCARDS and cargo information cards, in the chemical hazards area. These may be obtained by writing to the organization at the following address:

1823 Connecticut Avenue
Washington, D.C. 20009

McRae, A. and Whelchel, L. Toxic Substances Control Sourcebook. Aspen System Corporation, Center for Compliance Information, 1978.

Meidl, J.H. Hazardous Materials Handbook. Beverly Hills: Glencoe, 1972.

National Fire Protection Association. Handling Hazardous Materials Transportation Emergencies. Boston: NFPA Publication No. SL-29WB.

This publication is a training course which includes instructional materials and a student manual. The National Fire Protection Association has produced a large number of publications in this area. They can be requested from:

National Fire Protection Association
 Publications Department
 470 Atlantic Avenue
 Boston, MA 02210

National Transportation Safety Board. Onscene Coordination Among Agencies at Hazardous Materials Accidents. Washington, D.C.: National Transportation Safety Board, 1979.

The National Transportation Safety Board issues a variety of special investigative reports and special studies. Anyone can be placed on the mailing list by writing to:

National Transportation Safety Board
 Washington, D.C. 20594

Simmons, J.A.; Erdmann, R.C.; and Naft, B.N. The Risk of Catastrophic Spills of Toxic Chemicals. Los Angeles: School of Engineering and Applied Science of the University of California at Los Angeles, 1974.

U.S. Coast Guard. CHRIS--A Condensed Guide to Chemical Hazards. Washington, D.C.: Coast Guard Report CG 446-1, 1974.

U.S. Department of Transportation. Hazardous Materials--Emergency Action Guide. Washington, D.C.: National Highway Traffic Safety Administration and Materials Transportation Bureau, 1977.

Other DOT publications on handling hazardous materials emergencies may be ordered from:

Chief, Operations Division
 Office of Hazardous Materials Operations
 Materials Transportation Bureau
 Department of Transportation
 Washington, D.C. 20590

A partial listing of films on packaging and handling hazardous materials may be obtained from:

Materials Transportation Board
 Department of Transportation
 Office of Hazardous Materials Operations
 Operation Division MTH-30
 Washington, D.C. 20590

VIII. SOCIAL AND BEHAVIORAL SCIENCE DISASTER RESEARCH CENTERS AND GROUPS

Australia: Ian G. Murray
 Center for Information and Research on Disasters and Natural Hazards
 Caulfield Institute of Technology
 P.O. Box 197
 Caulfield East
 Victoria 3145 Australia

John Oliver
 Center for Disaster Studies
 James Cook University of North Queensland
 QLD 4811, Australia

Belgium: Michael Lechat
 Centre De Recherche Sur L'Epidemiologie Des Desatres
 Universite Catholique De Louvain
 Clos Chapelli-Aux-Champs 4
 B-1200 Burxelles, Belgium

- Canada: T. Joseph Scanlon
Emergency Communications Research Unit
Carleton University
Ottawa, K1S 5B6 Canada
- Great Britain: Ian Davis
Disasters and Human Settlements Group
Oxford Polytechnic
Headington, Oxford OX3 0BP Great Britain
- James Lewis
Center for Development Studies
University of Bath
Claverton Down
Bath BA2 7AY Great Britain
- John Seaman
International Disaster Institute
85 Marylebone High Street
London W1M 3DE Great Britain
- Italy: Francesco Battisti
Studie Ricerche Calamita Naturali
Universita di Calabria
87030 Arcavacata de Rende, Italy
- Bernardo Cattarinussi
Istituto di Sociologia Internazionale
Via Malta 2
34170 Gorizia, Italy
- Japan: Kitao Abe
Disaster Behavioristic Society
Tokyo University of Foreign Studies
51-21 Nishigahara 4-chome
Kita-ku, Tokyo, Japan
- Jyuji Misumi
Institute for Group Dynamics
Nishinippon Shinbun Kaikan 15F
4-1 1 Chome
Tenzin, chuo-ku, Fukuoka,
810 Japan
- Keizo Okabe
Institute of Journalism and
Communication Research
University of Tokyo
Hongo, Bunkyo-ku
Tokyo, Japan
- Netherlands: Uriel Rosenthal
Department of Political Science
Erasmus University Rotterdam
Burg, Oudlaan 50
3062 PA Rotterdam, The Netherlands
- New Zealand: Arnold Parr
Department of Psychology and Sociology
University of Canterbury
Christchurch 1 New Zealand

- Sweden: Orjan Hultaker
Disaster Study Group
Uppsala Universitet
Kykrogardsgatan 10
PA Box 513
751 20, Uppsala, Sweden
- United States: Charles E. Fritz
Committee on Emergency Preparedness
National Academy of Sciences
2101 Constitution Avenue
Washington, D.C. 20418 USA
- E.L. Quarantelli
Disaster Research Center
128 Derby Hall
Ohio State University
Columbus, Ohio 43210 USA
- Gilbert White
Hazards Information Center
Institute of Behavioral Science #6
University of Colorado
Boulder, Colorado 80309 USA
- West Germany: Stephen Metreveli
SIFKU-Institut
Holtenauer Strasse 82
2300 Kiel 1 West Germany

IX. POPULAR DISCUSSIONS OF TECHNOLOGICAL DISASTERS

- Brown, Michael H. Laying Waste: The Poisoning of America by Toxic Chemicals. Westminster, MD: Pantheon Books, 1980.
- Cowan, Edward. Oil and Water. The Torrey Canyon Disaster. Philadelphia: Lippincott, 1968.
- Ennis, John. The Great Bombay Explosion. New York: Duell, Sloan and Pearce, 1959.
- Fuller, John. The Poison That Fell from the Sky. New York: Random House, 1977.
- Randall, Willard S. and Soloman, Stephen. Building 6 The Tragedy at Bridesburg. Boston: Little Brown, 1977.
- van der Linde, Peter. Time Bomb: LNG. Garden City, New York: Doubleday, 1978.
- Wise, William. Killer Smog: The World's Worst Air Pollution Disaster. New York: Rand McNally, 1968.

ACKNOWLEDGEMENT

Work in compiling the information reported in this article was partly funded through National Science Foundation Grant Number PFR 7714445 to the Disaster Research Center, The Ohio State University. However, any opinions, findings, conclusions or recommendations are those of the author and do not necessarily reflect the views of the National Science Foundation.