Volume III
1955-0819 to 1962-0900
ABSTRACTS FROM THE DISASTER LITERATURE

Volume III

compiled by
The DRC Staff

January, 1967
I. BASIC INFORMATION

A. Characteristics of Disaster
1. Event: Flood
2. Date-Time: August 19, 1955
3. Location: Port Jervis, New York
4. Damage:
   a. Number killed: Not stated.
   b. Number injured: Not stated.
   c. Physical damage: Not stated.
5. Cause: Heavy rains from Hurricane Diane

B. Methodology
2. Source of Data:
   a. Number of interviewees: "...thirty-one key individuals..." plus "a dozen informal interviews..." (P. 11) 107 general residents. (P. 112)
   b. Number of questionnaires: None.
   c. Time lapse between disaster and data collection: First contact with officials was made 5 days after rumor. (P. 81)
   d. Other: Nothing.
3. Sample Plan: Selected a 1% sample (N=110) plus replacements and 40 "known group" respondents known to be in the previously flooded area. (P. 93)
4. Other Comments: Interviewers were social scientists (with an M.A. or more) and were given a half-day of training prior to interviewing. Each conducted a trial interview and subsequent interviews were checked over. The interviewers recorded answers verbatim with the aid of a twice pre-tested unstructured sequence of questions. (P. 82-83)

C. List of Organizations and Activities
1. Fire Department of Port Jervis: Was alerted and called out at 10:30 p.m. on Thursday, August 18, 1955. Volunteers carried people out of their homes in uninundated regions. Had its radio on for 96 continuous hours with 3 operators. Used 1,000 firemen, 34 engine companies, a ladder company, 2 rescue vehicles, 2 ambulances and 65 portable pumps (P. 6) "...with loudspeakers blaring, went about the city attempting to calm the populace and telling them the report (rumor) was untrue..." (P. 10) Received calls asking about a rumor that a dam had broken and delayed action by calling the dam for verification. (P. 11-12) Disseminated denial information about the dam being broken. (P. 21)
2. Civil Defense: Had the city turned over to it at 2:05 a.m. on August 19 after the Mayor declared a state of emergency. (P. 6) Allowed 2 army dukws and 3 helicopters to be brought to the area. "Was active during the flood and cleanup." (P. 7) Received calls that sought verification of a rumor that the dam had broken and called the dam for information. (P. 11-12)
3. Mutual Aid Society: Was called in by Governor Harriman. (P. 6)
4. Police Department: "At 8:00 p.m. on Saturday, 6 auxiliary Police patrolled on Riverside section till daylight." (P. 9) Received calls that sought verification of a rumor that the dam had broken and called the dam for information. (P. 11-12) Disseminated denial messages that the dam was broken. (P. 21)

5. Associated Press: "...carried a story at 2:30 a.m. Friday to the effect that at Howley people saw water coming over the Dam, and that there was fear that the Dam had broken." The report was not published and the AP denied the story. (P. 9)

6. WDLC Radio Station: Went on the air after midnight Saturday and repeated the story that the rumor was untrue that the dam had broken. (P. 10)

7. Erie Railroad: Took calls asking about the condition of the dam and reported it may be true but the Police think it is a rumor. (P. 18)

D. Brief Description of the Emergency Social System
In the Port Jervis flood of August 19, 1955, the Mayor turned control of operations over to Civil Defense after declaring a state-of-emergency. No further discussion of an emergent system of organization occurred besides 1) the enactment of a Mutual Aid Society program which brought in equipment from other Fire, Police and government organizations. (P. 6-7) and 2) a detailed discussion of the communication pattern of a rumor with its origination, spread, confirmation, and denial by various organizations. This communication system is graphically represented by the following diagram: (See Insert)

E. Community Context
"Port Jervis has a population of approximately 9,000 persons. The population is predominantly lower-middle and middle socio-economic class. Most residents are white Protestants. There are three sizeable minority groups: Italian, Jewish, and Negro." (P. 5)

"The major source of income for Port Jervis is the tourist trade." (P. 5)
II. GENERALIZATIONS AND HYPOTHESES

A. "People who have roles of responsibility for others are more likely to check for confirmation than those who do not have such roles." (P. 53) When those who had disaster jobs were compared with those not having a job, the latter category were less likely to seek confirmation of the rumor ($X^2$ between the .05 and .10 level of confidence). However, when those with and without family responsibilities were compared, no differences were found. Conclusion: Weak support for hypothesis. (P. 54)

B. "Persons in disaster-struck areas tend to show more solidarity than those in non disaster-struck areas." (P. 54) Disaster-struck residents did not assist community members more than non disaster-struck residents. Conclusion: No support for hypothesis. (P. 54)

C. "People are more likely to believe and act on reports communicated by official sources than those communicated by unofficial sources." (P. 55) The nature of the data did not permit a valid test. The people seemed just as likely to act on a threatening rumor from an unofficial source as they were to believe official reports that the message was, in fact, a rumor. (P. 55-56)

D. "The probability of seeking and accepting information from authorities increases with education and with age." (P. 57) No relationship was found. Conclusion: No support from the data for the hypothesis. (P. 57)

E. "Those who heard previous rumors concerning a dam-break during the time which immediately preceded this false report are more likely to accept and act on it than others." (P. 57) Data were not found amenable to testing this hypothesis. (P. 58)

F. "People who think that the threat is immediate to them or to their families are less likely to seek confirmation than those who feel that there is adequate time to escape." (P. 58) Those who felt they had at least an hour till flooding were not more likely to seek confirmation than those who felt that the flood was immediate. Conclusion: Either the people's estimates (of the time period before flooding) were not valid or the people felt that confirmation would seriously delay their escape regardless of their perceived length of time till flooding. (P. 58)

G. "Among those who accept the report as true, those who are doubtful about the potential danger to their property are more likely to seek confirmation than those who are certain of such danger." (P. 59) Those doubtful of damage to their property were more likely to seek confirmation. (P. 60) Conclusion: "...ambiguity about the range of destruction increases the probability of the use of confirmation channels." (P. 59)

H. "People who are integrated into the community are more likely to seek confirmation through their own personal sources of communication than through official sources." No data were available for testing this hypothesis. (P. 61)
I. "People who get the report while they are part of an intimate group are more likely to behave in a group-oriented manner than are those who are not part of an intimate group." (P. 61) No data.

J. "People who are separated from family members at the time of the report are more likely to act with relation to the absent family member than with relation to the community, and in general are more likely to manifest greater agitation than others." No data. (P. 61)

K. "We hypothesize that if the forewarning is long, the ambiguity minimal (doubt about the extent and range of destruction), and the prior information maximal, the population will react in 1) a rational and 2) a fairly homogeneous fashion." (P. 66)

L. "Quarantelli has pointed out that experience in a previous crisis situation may sensitize individuals to any sign which indicate a possible recurrence." (P. 79)

M. "...it is more sensible to conclude that geographic proximity to the threat, rather than previous sensitization, was the factor which determined flight." (P. 79)

N. "...reluctance to accept denial was a function of having fled, rather than a function of stronger initial belief in danger." (P. 79)

O. "An examination of demographic variables and of differing roles in the community show that these too seem relatively unrelated to flight." (P. 79)

P. "...individuals can be expected to act simply and directly to remove themselves from the danger situation, provided they are sufficiently informed in advance concerning the nature and consequences of a specific catastrophe. On the other hand, where the threat is ambiguous, confused and hurried thinking is likely to lead to inappropriate decisions for action." (P. 80)

Q. "...confusion (panic) may be a result of the lack of adequate information provided before, during, and after the disaster takes place." (P. 80)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Insufficient data.
I. EMERGENCY INFORMATION

1. Characteristics of Disaster
   1. Event: Hurricane Diane
   2. Date-time: Early morning, Tuesday, August 19, 1955
   4. Damage:
      a. Number killed: 1 (77 in Connecticut)
      b. Number injured: 3,186 (4,887 in Connecticut)
      c. Physical damage: $323,000,000 (more than half of this in Connecticut alone)
   5. Cause: Not applicable
   6. Unique aspects: Hurricane Diane did little wind damage but caused heavy rains which in turn caused the damaging floods.

I. Methodology 1955-0819 A
   No data

I. Methodology 1955-0819 B
   1. Connecticut State Department of Health
      2. 3,4. No data

I. Methodology 1955-0819 C
   No data

I. Methodology 1955-0819 D
   1. The Southern New England Telephone Company
      2. 3,4. No data

I. Methodology 1955-0819 E
   1. John Murdoch
      2. Source of data:
         a. Number of interviews - 1 (p. 1E)
         b. Number of questionnaires - 0
         c. Time lapses - no data
         d. Other - none
      3. 4. No data

I. Methodology 1955-0819 F
   1. Small Business Administration
      2. 3,4. No data

I. Methodology 1955-0819 G
   1. Various U.S. Military Organizations
      2. Source:
         a. No data
         b. No data
Methodology 1955-0619 M

- Samuel E. Klamer and Harry V. Kincaid

Source of data:
- a. number of interviewees - 414 (p. 9H)
- b. number of questionnaires - none
- c. time lapse - 3 months (p. 9H)
- d. other: none

Sample plan: "It was decided to interview the flood evacuees and the boats who afforded them emergency accommodations." (p. 9E)

"Interviews were confined to evacuate families from flooded homes located within the boundaries of the Township of Formington. Only those who had been out of their homes for seven days or more were interviewed." (p. 9H)

"A 'host' was defined as a family which had shared its home with one or more evacuated family as a part of an evacuated family." (p. 9I)

Other: none

Methodology 1955-0619 X

- John Hersey
  - 3,4: no data

Methodology 1955-0619 J
- no data

Methodology 1955-0619 K

- L.M. Rosenstock

Source of data:
- a. number of interviewees: 48
- b. number of questionnaires: none
- c. time lapse: about 7 weeks (p. 1K)
- d. other: none

Sample plan: "The town was divided into quarters, each interviewer restricting himself to some one quarter. Each of the four interviewers agreed to obtain 10-12 individual interviews from individuals who could be found at home on a first call." (p. 2K)

Methodology 1955-0619 F

- American National Red Cross
  - no other data

Methodology 1955-0619 AA

- David Bumpass

-
2. Source of data
   a. number of interviewees: no data - author gives the impression that there were over 20 at least (p. 17 AA)
   b. number of questionnaires: none
   c. time spent: no data

f. List of all organizations involved
   1. Department of Defense (sent equipment and supplies)
   2. First Army (sent equipment and supplies)
   3. Tobyhanna signal depot in the Poconos in Pennsylvania (turned the parking lot into a heliport, distributed 25 tons of signal corps equipment - 9 power generators, radios, batteries and gasoline - to flood-hit communities and sent personnel to operate it, p. 79AA)
   4. Arnold Bakers (sent 20,000 loaves of bread to Torrington on August 24, for free distribution, p. 107AA)
   5. Joint Operations Center, Connecticut (established by the State of Connecticut and comprised of the Governor, Air National Guard, National Guard, Civil Defense, State Police, State Highway Department, and the American Red Cross at emergency disaster headquarters in Hartford. The center evaluated request and established an assistance priority system which greatly increased the efficiency of rescue operations. (p. 11A)
   6. 43rd Infantry Division
      a. Co. H, 169th Infantry Regiment (Received a call from the mayor of Torrington who said he had checked with the Governor and requested the Guard units to report with troops and vehicles to help evacuate people. Trucks were sent out to evacuate low areas. South School was opened to receive displaced persons. Three boats were located and put to work. (p. 46-47 G)
      b. Two Co's. of the 2nd Battalion, 102 Infantry were ordered to move from Waterbury to Torrington to furnish assistance. They carried out evacuation mainly in the East Main and Center St. area. They removed an estimated 200 to 300 persons. Security guards had been posted and other soldiers were detailed to assist in emergency work. (p. 47-48G)
      c. 2nd Battalion, 102nd Infantry. (Reported to Waterbury. From there they sent helicopters to assist in evacuation work. Six were sent to the area. It is estimated that they saved some 600 people. In addition, troops on the ground were evacuating hundreds. One company received three boats from a civilian to assist in evacuation work. The units set up and
Traffic and guard posts. There were problems of feeding troops and refugees.

Three men set up field messes at the Armory, but not enough to handle the demands of the guard, Civil Defense, and others working there. The regiment supplied water trailers for use until a water point could be established.

With rescue missions eliminated, the battalion commander and Supt., of Police worked out traffic and guard problems. The 2nd Battalion would guard devastated areas. The traffic problems proved insurmountable for the police and and the mayor asked the battalion commander to take this over. The commander put into effect a pre-planned traffic control plan, began broadcasting pleas for tourists to stay away, a pass system was established.

The commander also worked with the State Police in working out a traffic control plan for the week end. (p. 48-51G)

d. Medical Company, 102nd Infantry ("First handled patients being brought in by helicopters. Then it sent detachments to Torrington and Winsted where it handled inoculations, against typhoid. An aid station at Highland Lake met needs of a community that contained more than 1,000 youngsters." (p. 50G)

e. 143rd Tank Battalion (Most of the work done was in security work establishing guards over destroyed areas preventing looting, recovering bodies, and keeping people out of homes that had been declared unsafe. Service Company elements brought supplies into the Naugatuck area. (p. 51G)

f. First Battalion (From New Haven moved by way of Shelton and Sandy Hook to help the area. Companies were assigned from there to duty East and West Seymour, Beacon Falls, and Union City. (p. 51G)

g. Third Battalion, 102nd Infantry Regiment (the Amenia Police Chief made an official request for aid in evacuating people on lower Main Street. By 7:30 a.m. trucks were taking displaced persons from the area and bringing them to the Armory. Some 400 civilians were billeted in the Armory, where officials organized medical services as well as the care and feeding of the rescued. The guard units established two separate kitchens in a garage in the rear of the Armory." Guard, post and patrols were set up in the stricken areas. (p. 52G)

h. Second Battalion, 169th Infantry (The commander of this unit in an amphibious truck rescued 20 people in the Farmington area. (p. 52G)
i. 43rd Division Air Unit (a helicopter aided 12 persons to safety. p. 53G)

j. Third Battalion, 169th Infantry (This unit helped to gather up civilian from flooded houses in the Bristol area and helped police in Thomaston. They set up an evacuation center at Lake Gardo Clubhouse in Farmington which was placed in full charge by local officials. Aid men were sent into the Farmington Valley area and they organized an aid station at Union School. It ran rescue missions, handled the shuttling of personnel to the displaced persons center and carried a pass system worked out with civil authorities. It turned over its guard duties to civil officials and State Police as soon as the latter were ready to assume them. Two experienced NCO's used an 81 millimeter mortar to fire a telephone line across the river and established communications. (p. 52-54G)

k. 2nd Battalion, 169th Infantry Regiment (Winsted officials requested the 2nd Battalion to establish military control over the destroyed area and seal it off. Guard posts were immediately set up. Working closely with city officials, the military commander set in on a meeting of the Mayor, police commissioner, Civil Defense Director and local health officer to fix responsibilities and assignments. The area under military rule was fixed as that portion of the business district that had been ruined. A tight security program was developed to regulate traffic flow, clear authority personnel into restricted areas and to control food supplies and other critical items. A field kitchen was brought in by battalion to meet the needs. To eliminate the water shortage, immediate action was taken by the 2nd Battalion to have a water purification until erected. (p. 54-56G)

l. 192nd Field Artillery Battalion, 169th Infantry (arrived in Winsted on Sunday to assist in guard duty. A detachment was sent to New Hartford to assist civil authorities. (p. 56G)

m. Heavy Mortar Company, 169th Infantry (Men were dispatched to aid in sandbagging operations. Guards were stationed at washouts on highway at the request of the Police Department of Thompsonville. The downtown area was roped off to prevent spectators from harming themselves and hampering work. The unit evacuated civilians from their homes. Many cars, stalled in rising waters, were hauled out by military personnel. During the hours of darkness, guard
post were established at danger points in the town. (p. 56-57G)

n. First Battalion, 169th Infantry (in Putnam, evacuation was the first operation undertaken by the unit. Guard post both on traffic duty and in moving patrols against looting were maintained. Men were used to control traffic in streets of pedestrians and guard danger points. (p. 57-59G)

o. 963rd Field Artillery Battalion (moved into the Washington area at 1:30 Sunday to work under State Police direction. The artillerymen performed a multitude of tasks, from police post to helping clean up areas that presented a health hazard. Pure water was supplied in trailers. The artillery air section flew a number of missions, including one that brought serum from Hartford to Washington. (p. 59G)

7. 103rd Fighter - Interceptor Wing, Connecticut Air National Guard (the first three days of the operation were devoted basically to rescue and the logistical support of public health problems. The second phase centered upon the transportation of the Governor and other key state and federal officials concerned with the problem of reestablishing communications in isolated communities, or in the required. Helicopters from many military and private sources were used for survey work. Over 40,000 pounds of supplies and cargo were airlift to Bradley Field, p. 65G)

8. 103rd AAA Brigade (Four officers acted as liaison officers at the Hartford armory on August 20, p. 70G)

a. Battery, 211th AAA (Four officers and 47 enlisted men were on duty in Winsted on August 21, in security and control of traffic capacities. (p. 70G)

b. Battery B, 745th, AAA Battalion (on August 21, four officers and 45 enlisted men were on duty in Winsted, in security and control of traffic capacities. p. 70G)

c. Headquarters battery, 103rd, AAA Brigade (provided security guard for President Eisenhower's visit on August 23, p. 70G)

d. Battery D, 233rd, AAA Battalion (were to help provide security guard for President Eisenhower's visit, but were quarantined because of a polio threat, then released. p. 70G)

8. Naval Militia - Naval Reserve Volunteers (militia were not ordered out as an organized unit, so they worked with naval Reserve personnel volunteers. The volunteers from Waterbury training center engaged in rescue evacuation and clean up duty in Waterbury four days. Supplied Thomaston Health Officer vaccine from the station supply, and ordered more vaccine when it was needed. On August 24
and 25, the training center was used as an inoculation center for civilians, and military medical corps personnel helped administer the shots. (p. 74G)

In New Haven Center a Navy rescue team made up of nine men, a carry-all and pickup truck loaded with rescue and damage control equipment was sent to Waterbury on August 19, by the Civil Defense. The team evacuated 125 people from a factory. Loaned a generator and medical supplies to a relief agency. On August 21, Civil Defense requested and were given a Navy communications team with damage control equipment. On August 24, medical Corps personnel aided in administering vaccine in Waterbury. pp. 74-75G

Hartford training center - August 19 - sent one rescue team to Underwood factory at request of local authorities. Loaned life saving equipment to Fire Department. August 24, sent medical personnel to Waterbury to aid in administration of vaccine. p. 75G

Cromwell Training Center - sent emergency supplies to local relief agencies. August 19. P. 75G.

10. Third Coast Guard District, New London (Arrived in Waterbury on August 19, used boats for rescue, evacuation delivering food and transporting civil officials to survey the situation where water currents permitted. When currents were too strong, helicopters were used. Communication truck arrived later on the 19th.

On August 20, several additional boats, both DUKW's and 25 NGB's, arrived and were transferred to other flooded areas later in the day. At 7:00 a.m., all coast guard forces returned to Hartford, where a control center was set up. pp. 77-78 C)

First Coast Guard District, Newport (On August 19, a group from the Coast Guard station was sent to Putnam, Connecticut. Equipment taken included two DUKW's, one dory, one stake body truck, fire equipment, pumps, life jacket, raft, line and lighting equipment. The boats were used for rescue and evacuation. pp. 80-81G)

11. U.S. P & FO (for: Connecticut clothing, gasoline, food, medical supplies, clean-up equipment and small rescue supplies such as flashlights were issued to various civilian agencies and service company, 102nd Infantry Regiment pp. 83-83G)

12. 46th Air Rescue Squadron, U.S. Air Force (On August 19, from 4:00 to 5:00 a.m., the Air Rescue Squad was alerted and established contact with civilian law enforcement agencies and other services bases to check on the
The weather began to clear somewhat at 12:00 a.m., permitting some helicopters to begin rescue operations out of Westover Air Force Base. Additional helicopters were requested from military bases on the east coast. p. 886

The Air Rescue Squad was put in charge of coordinating rescue air work for Connecticut from the Bradley field base in Connecticut. Massachusetts operations were coordinated by Air Rescue from Westover Air Force Base in Massachusetts. In Massachusetts, "All early flights on the 19th of August 1955 were dispatched to rescue and evacuation of people who would lose their lives if not rescued. People in immediate danger were evacuated to an area of high ground. During the late part of the day, the operation changed to evacuating people who were marooned but not in immediate danger of death. All missions flown from Westover and Bradley Field, except the first few, carried and distributed emergency rations supplied from Air Force stocks. Operation from both fields ceased at nightfall."

On August 20, helicopter operations included mission for evacuation of sick and injured, resupply of food and rations, transportation for Civil Defense personnel, transportation of National Guard for martial law purposes, medical resupply and transportation of doctors and nurses to isolated areas. Two helicopters from Westover picked up several persons in the Yardley, Pennsylvania area on request from disaster headquarters in Harrisburg. (pp. 90-91)

On August 21, missions included evacuation of sick and injured, resupply of food and medical supplies to isolated areas, transportation of Civil Defense personnel, Army Engineers, State Highway Engineers, and other disaster officials.... On August 22-25, the nature of the mission changed to the rehabilitation phase. p. 936

The Air Rescue Squad was released from disaster service on August 26, p. 946

Civil Air Patrol, National Headquarters (directed Civil Air Patrol units in the six states suffering flood damage to render all possible aid, p. 916 and 11A)

The Southern New England Telephone Company (During and after the flood, company generators provided needed current and a large supply of material for repairs was on hand. Regular operators and volunteers with I-3
previous experience worked long hours to handle the flood of calls. (p. 4D) All departments suspended routine work where possible to cope with emergency work. (p. 6D)

Much repair work went on while flood conditions prevailed in the various areas, making repairs difficult, hazardous, and ingenuity - taxing. (p. 14D)

15. Western Electric (speeded shipments of vital parts to Southern New England Telephone Company, p. 8D)

16. New York Telephone Company (sent a mobile radio unit, p. 8D)

17. AT&T (sent specialists in flood damage restoration work to help counsel Southern New England Telephone men, p. 8D)

18. Farmington Police Department (cared some of the potential flood victims, p. 24H)

19. American Red Cross
   a. Farmington spent $10,000,000 in Connecticut for disaster relief, mostly in outright grants to individuals to rebuild or in business people to aid them in reestablishing flooded stores and factories, p. 31H
   b. Winsted Red Cross (distributed food, p. 3H)
   c. Putnam Red Cross (established a food distribution center for workers and refugees after notification of flooding at 2 a.m. on the 19th, p. 37AA.
      The center moved twice because of increasing demand for services and lack of space, p. 62AA.
      Clothing from other towns arrived and an attempt was made to distribute it. Sixteen disaster workers arrived from National headquarters. The extra clothing, food supplies and people made a third and fourth move a larger quarters necessary. After a few days, placement in homes was affected for the homeless, pp. 98-99AA
   d. Southington, area Red Cross (workers helped, p. 102AA)
   e. Waterbury Red Cross (worker acted as guide for distribution of milk, p. 107AA)
   f. American National Red Cross (the appeal for $10,000,000 was oversubscribed. In Connecticut towns not previously mentioned, the Red Cross supplied money for a new house, false teeth and furniture, p. 108AA)

20. Farmington Disaster Relief Headquarters (local citizens set up headquarters, provided medical examination, typhoid shots, dry clothing, emergency shelter and food. Also, set up a card index for each evacuated family, giving name, pre-flood address and post-flood address, when known, p. 158H)

21. Unionville Disaster Center (volunteer worker made up card for each evacuated family giving pre-flood and post-flood address, where known, p. 158H)

22. Insurance executive (made up list of damaged dwellings for insurance purposes in Farmington, p. 158H)
Local Health Personnel, Winsted (set up first aid station at several points, and a headquarters at the Central School, several blocks from Main Street. Recommended sanitary precautions for mass food preparation, p. 38. Ordered typhoid vaccine and gave inoculations, p. 48. Gave health information, p. 48.)

Winsted's Hospital (was prepared to receive all cases requiring more than first aid treatment, p. 38)

Civil Service Commission (contributed equipment and services, p. 97 AA)

National Guard in Winsted (distributed food, p. 38)

State sanitarians (recommended sanitary precautions for mass food handling in Winsted, p. 38)

State Health Department, Connecticut (supplied typhoid vaccine, p. 48)

August 19 - Mobilized on a 24-hour duty basis at 5:40 a.m. Department advised all public water supply officials to increase the amount of chlorine, gave news media information on disinfecting water, on food precautions and on cleaning dwellings.

"Department sanitary engineers were immediately assigned to the areas concerned and the department coordinated the activities with those of the State Office of Civil Defense. Physician - nurse teams were organized for consultation service on public health problems to the stricken areas. One team succeeded in making a preliminary survey of Putnam. A physician was sent to Farmington. Typhoid vaccine for 300,000 people was ordered to supplement the supply on hand. The department advised persons exposed to contaminated water to take the shots. (pp. 239-241 B)

August 20 - "An organized canvas of all towns in the state was initiated. Seven survey and consultant teams were sent to areas where public health problems were known or suspected. The remainder of the state was checked by phone. In cooperation with the Federal Food and Drug Administration and agencies concerned with health matters, the department assisted in drawing up a Proclamation for the Governor which was issued placing an embargo on food, drugs, and cosmetics damaged by flood water. Emergency requests for medical supplies for local health directors were filled, typhoid and tetanus shots continued to be given, and immunization teams were sent to areas on request. p. 241 B

August 21 - Survey of towns continued - 33 had health hazards. Aid continued to stricken areas. p. 242.

August 22 - Temporary health districts with local headquarters were established on severely stricken
Aid continued and chloride of lime was distributed.

August 23 - Special consultation services were instituted: assistance to hospitals, consultation for beauty parlors on clean up procedures and special information on nutrition practices under adverse conditions for families and chronic and convalescent hospitals, etc. The division of mosquito control worked in an area where a malaria case appeared. The departments dental trailer was converted to an mobile immunization center; a laboratory trailer was converted to a bacteriological laboratory. Sanitary engineers helped inspect evacuated swellings. pp. 243-244B.

August 24-25 - Cleanup was in full swing. More immunization clinics were set up. In the six emergency health districts (one had been opened on Aug. 23) there still was a great demand for the services of the public health staff of physicians, sanitary engineers, public health nurses, medical social workers and health educators. p. 248B

29. President Eisenhower (declared Connecticut a major disaster area, eligible for funds under Public Law 875, p. J)

30. Winsted Disaster Fund (received funds for disaster rehabilitation, p. Lj)

31. Winsted Bearing Company (contributed $1,500 to Disaster Fund, p. LJ)

32. Hartford Ely Manufacturing Company (contributed $100 to disaster fund of Winsted, p. LJ)

33. Remington Rand Company (offered typewriters of needed, p. LJ)

34. Great Manufacturing Company (gave food and money to Winsted disaster fund, p. LJ)

35. Metropolitan Water District, Winsted (sent 11 men to help Winsted, water works, p. J)

36. Winsted Water Works (repaired water lines, ran temporary lines to some buildings, p. J)

37. Connecticut Light and Power Company (worked to shut off gas meters in homes, then repaired gas lines. Repaired electric lines, p. LJ)

38. Connecticut Public Works Department (helped check the damage to buildings in Winsted, p. LJ)

39. Winsted Evening Citizen (published special disaster addition in another printing plant while awaiting repair of its facilities, p. LJ. For weeks distributed the paper without charge as a public service, p. 112AA.)

40. Hartford police (ten policemen helped Winsted force with duties, p. LJ)

41. West Hartford police (several men came to help Winsted police, p. LJ)
42. Bridgeport Police (helped Winsted police, p. 13)
43. New Haven police (helped Winsted police, p. 13)
44. Danbury police (helped Winsted police, p. 13)
45. Winsted Emergency Business and Industry Committee
(worked with officials of the small business
Administration to secure loans for reestablishing local
business, p. 13)
46. Small Business Administration (made loans available
for business in Winsted, p. 13, and Pennsylvania,
p. 66,

"When the hurricanes of August struck the northeastern
states, the administrator of SBA immediately declared the
affected sections as disaster areas for the purpose
of making disaster loans. The agency opened 19 disaster
loan offices in these states within a few days, and
staffed them with loan specialists from Washington and
other field offices of SBA. The banks in the areas
effected greatly aided this agency in offering their
assistance and providing the services of their experienced
credit men at no expense to the Federal Government.
In addition, state and local officials provided certain
clerical personnel necessary to man the 19 disaster
offices. The office space and much of the equipment
was also made available at no cost to the Federal
Government."

"The disaster loan offices were authorized to approve
loans up to $20,000 without referral to the SBA Washington
or regional office. The Regional offices concerned
were authorized to make loans up to $50,000 without
referral to Washington. The SBA had approved,
on November 21, 1955, 1,730 disaster loans in the amount
of $25,036,452, 191 loans had been declined, and 176
were pending." p. 14.
47. Technical Planning Associates (aided Winsted planning
commission in deciding on building; removal policies,
p. 13)
48. Winsted City officials (Mayor set up temporary head-
quartes at central school, declared that all water
should be boiled, p. 13)
49. Winsted Volunteer Fire company (did rescue work, p. 13)
50. Pennsylvania State Health Department (worked closely
with other government agencies. Set up temporary
headquarters in the State Council of Civil Defense in
Harrisburg, p. 13. Emergency field offices offices were
set up in Easton and Strawdsburg. Representatives
of the Health department were part of the jointly-staffed
command posts, in Blakely, Strawdsburg, Bethlehem,
Fairless Hills and Milford. The command posts were
under the direction of National Guard personnel, p. 3E.

I-12
Provided material for continuous radio warnings and distributed leaflets on health measures, pp. 1-2E.

a. Bureau of Sanitation (78 sanitarymen, moved into lower Delaware River area, where they exercised direction over the technical phases of private sewage disposal, private water supplies, disinfection of homes, restaurants, bakeries, cooperated with Department of Agriculture in disposal of spoiled meats and dead animals, with the Food and Drug Administration representatives from the Philadelphia office and cooperated with Sanitary engineers in insect and rodent control. Lime for disinfecting was moved into the area under the bureau's direction. p. 3E.

b. Director of Preventive Services toured disaster area, checked on sanitary measures. p. 4E.

c. Bureau of Public Health Nursing (director toured disaster area to check on public health facilities, p. 4E. Nurses worked long hours, p. 6E.)

d. Bureau of Communicable Diseases (Director investigated reports of disease outbreaks in disaster area, met with men from the Department of Agriculture and Food and Drug Administration on spoiled food problems, p. 4E.)

e. Bureau of Sanitary Engineering (investigated damage to public water supplies, p. 4E. Twenty men from non-disaster areas went to work in the disaster field offices, p. 5E.

f. Department Laboratories (handled testing of thousands of water samples for purity, p. 5E.)

g. Bureau of Statistics and Records (director discussed identification and burial of flood victims with all affected county coroners, p. 7E)

h. Environmental Health Services (director visited Stroudsburg area to aid officials regarding environmental sanitation and insect and rodent control, p. 7E)

i. Bureau of Nutrition (personnel toured all emergency feeding stations to check on food, p. 8E)

j. Division of Biologica's and Supplies (supplied biologicals and other items required for health purposes and expedited delivery, p. 9E)

k. Bureau of Chronic Disease (director helped stop the indiscriminate dumping of flood contaminated pills, p. 9E)

51. State Council of Civil Defense, Pennsylvania (had representative in each of five command posts run by the National Guard, p. 4E. Supplied pumps, pipelines and other essentials for repair of water works, p. 5E)

e. Medical coordinator was in charge of public health measures for the State department of Public Health, p. 1E.
b. Pennsylvania Civil Defense Organization for Public Water Works was credited with the speedy resumption of pumping operations and repair of water mains, p. 5E. Furnished helicopter and call to span Brodheads, p. 103AA)

52. Pennsylvania Medical Society (through individual County medical Societies worked with State Public Health to assure that all needed medical facilities were available where and when needed, p. 7E)

53. County Health Departments in Pennsylvania (many worked closely with State Department of Health, p. 7E)
   a. Bucks County - provided first aid and typhoid shots, gave health information to public, p. 7E.
   b. Butler County - volunteered services, although it was at the opposite end of the state, p. 7E.

54. Pennsylvania Motor Truck Association (member companies provided free transportation for needed goods, p. 7E)

55. International Ladies Garment Workers Union in Hazleton (donated a mobile diagnostic medical unit which toured the flood area, p. 7E)

56. Pennsylvania State Government (Governor provided helicopters for State Public Health Department use, p. 8E)

57. Department of Agriculture (State of Pennsylvania?) (veterinarians worked with Department of Health to supervise disposal of spoiled and contaminated food, p. 8E)

58. Jaycees (350 members worked in various disaster areas to aid State Department of Health, p. 8E)

59. Pennsylvania State Police (lent the services of police cars and helicopters to the health department for transportation of supplies, and people from other organizations, p. 7E)

60. Army Corps of Engineers
   a. Pennsylvania (restored facilities in areas where health hazards existed, p. 9E, especially waterworks, p. 6E)
   b. Connecticut (FCA)

61. U.S. Army General Depot in Cumberland (provided chloride of lime for use in Pennsylvania disaster areas, p. 2E)

62. Food and Drug Administration (reported representatives from Philadelphia office worked with Pennsylvania Dept. of Health, p. 2E, worked on food problems, p. 4E, helped draw up embargo on food, drugs and cosmetics that were flood damaged, p. 241A)

63. Federal Civil Defense Administration (supplied leaflets on home sanitation, p. 3E, coordinated work in Pennsylvania under public law 875, p. 6E. All P.L. 875 expenditures had to be approved by FCDA, p. 120AA)

64. Red Cross in Pennsylvania (gave relief aid to victims, worked in five command posts, p. 4E)
65. U.S. Public Health Service (representatives toured disaster area, investigated reports of disease outbreaks, p. 46E)

66. Pennsylvania Department of Agriculture (worked on flood-caused food problems, p. 46E)

67. Seabees (helped clear debris in Brodheads, Pa., p. 102AA)

68. Connecticut State Office of Civil Defense (coordinated activities with the Connecticut State Department of Health, p. 240B. The man in charge of food and disaster planning coordinated the request for supplies that poured into Bradley field, p. 82AA)

69. State Food and Drug Commission - Connecticut (administered the embargo on flood-damaged food, drugs and cosmetics in cooperation with local directors of health, p. 241B)

70. Sekarsky Aircraft (supplied helicopters and crews for rescue work, especially in Connecticut, p. 69AA)

71. The Kansas Aircraft Corp. (sent planes to aid in rescue work, p. 79AA)

72. State Highway Department - Connecticut (rushed 500 highway maps to Air Rescue Service for helicopter pilots unfamiliar with Connecticut, p. 80AA)

73. U.S. Weather Bureau (failed to predict the hurricane's path, had withdrawn the hurricane warnings, had "lost" the hurricane as it moved over the Appalachians, thus had issued no warning of the deluge of rain from the hurricane, pp. 17-19AA.)
   a. Airborne Early Warning - tracked the hurricanes, both Connie and Diane, while they were at sea, p. 17AA.
   b. Weather station at Windsor Locks, Connecticut the hurricane warnings had been withdrawn. When a flood was starting the Locks station was to rescue advance warning by telephone from farmers near the headquarters of rivers. However, power was out in some sections, and farmers were too busy getting their own families to safety to call. Thus, no warning was given by the weather station, pp. 32-33AA)

74. Dominican Republic (gave $200,000 in local products to help flood victims, p. 108AA)

75. General Motors (gave $100,000 to help flood victims, p. 108AA)

76. Ford Foundation (gave $175,000 to help flood victims, p. 108AA)

77. Mennonite Disaster Committee in Eastern Pennsylvania (flew transports and helicopters, moved in heavy equipment and supplies. Others volunteered to help victims get their houses in shape, pp. 109-110AA)

78. Kinreads - Eastern Pennsylvania (helped clean up homes, p. 113AA)
79. Junior Chamber of Commerce - Eastern Pennsylvania (helped clean up homes, p. 110AA)
80. Quakers (helped clean up homes, p. 110AA)
81. Committee of Hartford Businessmen (helped Winsted merchants recover by supplying stock inventory, p. 111AA)
82. Radio Station WESO in Southbridge, Mass. (operated on portable generators, broadcast 10,000 private messages for residents who wanted to inform others of their whereabouts, p. 113AA)
83. Salvation Army in Connecticut (distributed clothing, p. 98AA)
84. Connecticut State Police (called for help from Air Rescue Service for towns in trouble, p. 50AA)
85. Massachusetts State Police (called for help from Air Rescue Service when Russell was flooded, p. 50AA)
86. Otis Reservoir in Connecticut (finally had to release flashboards holding back several feet of water in order to protect the dam. This caused flooding in several down stream towns, but not as badly as if the dam had broken, p. 42AA)
87. Winsted Police (passed along messages, p. 67AA)
88. Enfield Prison Farm, Mass. (prisoners hauled bags of lime into trucks, p. 97AA)
89. American Relay League (members helped relay messages in Connecticut, p. 68AA)
   a. Other ham operators, related messages, some staying on their sets for long hours. Others moved their transmitters, there possibly to fill a gap in the flow of information. Some came into stricken areas to help relieve those who had been on the air for 16 hours, pp. 66-68AA)
90. St. Hedwig's church in Union City (served 2,000 meals in the week after the flood, p. 113AA)
91. Winsted Civil Defense
   a. Bob Stewart, assistant Director for communications, used his ham radio to relay messages. He had a portable generator, p. 64AA. The director of Civil Defense organized disaster work, p. 65AA. Stewart ordered typhoid serum from Civil Defense in Hartford, p. 67AA.
92. State Tuberculosis Commission - Connecticut (The staff helped the state Department of Health give immunization shots, p. 241B)
93. Winsted Volunteer Fire Company No. 3 (alerted people to leave houses, helped save stranded people, pp. 1521)
94. Winsted Police (helped rescue people, p. 11)
95. Connecticut Joint Operations Center (The state of Connecticut established a Joint Operations Center comprised of the governor Air National Guard, National
Guard, Civil Defense, and other disaster officials at emergency disaster headquarters in Hartford. The Joint Operation Center evaluated requests and established an assistance priority system which greatly increased the efficiency of rescue operations, p. 11A)

D. Brief Description of Emergency Social System

1. "Connecticut was first warned of Hurricane Diane four days in advance of its estimated arrival. Two days later word was relayed from State Civil Defense Headquarters that the storm was passing to the west of Connecticut and that no further serious effects were anticipated by the U.S. weather bureau within the state." Thursday, rain warnings were given, and by that evening several towns were flooded.

"Flood waters rising in Massachusetts accumulated speed and force, carrying houses, trailers, trucks, freight cars at thirty to fifty miles an hour to jam up behind low bridges and finally break through, p. 1A."

The military - 46th Air Force Rescue Squad was alerted and did rescue work mainly with helicopters for the duration of the emergency. The first Army assisted the stricken communities with food, helicopters sanitary supplies such as lime and DDT, tents, blankets and some manpower. The Navy and Air Force also supplied equipment such as boats and generators, plus manpower to operate equipment. The Coast Guard's main task was rescue and distribution of needed supplies requests for assistance from federal, state and local officials. pp. 1-11A

The Southern New England Telephone Company employees attempted to keep the undamaged lines open while repairing the damaged lines in Connecticut towns as quickly as they were able to get to the flooded equipment. Former employees, including switchboard operators, were recruited to help during the emergency. Men and equipment from other telephone companies aided the company in restoring service, pp. 4, 653D.

The Connecticut State Department of Health began a survey of flood - struck towns to determine health needs. The department cooperated with the Federal Food and Drug Administration and other state agencies concerned with health matters to draw upon embargo on flood-damaged foods, drugs, and cosmetics. On the state level this aspect was handled by the State Food and Drug Commission in cooperation with local public health departments.

The state public health department helped check health hazards in flooded towns by setting up emergency health districts,
offices. Immunization shots, water testing and other sanitary supplies and services were provided in conjunction with local health departments. PP. 240-243B

In Winsted, local police were assisted in patrol duties by police from many cities. This Connecticut Light and Power Company shut off gas in homes, then commenced repairs. It was several days after the flood struck before service was restored. Electricity was the first utility restored. A committee to receive disaster funds, p. 1J.

2. Pennsylvania - The Pennsylvania Department of Health worked with the State Council of Civil Defense and other state agencies to put together a smooth functioning organization to cope with the disaster. Almost every bureau and division of the Department as well as field personnel aided in some manner in the emergency, p. 1E.

E. Community Context
   1. Connecticut:
      a. Farmington
         Farmington has a neat clean appearance. "Through its center runs Main Street with its stately old homes and equally stately old families." A half hour's drive from Hartford, Farmington serves as a residential area for commuters to the city. The population, according to the 1950 census, was 4,829. The town was settled in 1639 and by 1645 was incorporated. In addition to agriculture the township of Farmington had developed some small industries, although the town of Farmington is residential.

         "The nineteenth century history of Farmington records unprecedented floods and droughts. The people had come to expect and accept a yearly rising of the Farmington River." (pp. 6-8H)

      b. Unionville
         According to the 1950 census, Unionville had a population of 2,197. Unlike other communities in the vicinity, it chose to remain within the Township of Farmington and was incorporated as a borough in 1839. Throughout the nineteenth century Unionville became more and more a center of manufacturing industry... Toward the end of the eighteenth and during the beginning of the nineteenth century
Unionville began to attract new immigrant labor to its industries and so acquired a proletarian population of immigrants from Italy, Poland, and Czechoslovakia.

Like Farmington, Unionville was accustomed to yearly river risings. (pp. 6-8K)

c. Winsted -

"The Mad River flows south of Main Street and parallel to it. In the business district the river and street are generally no more than 50 feet apart. Direct flood damage was confined to Main Street, due to the topography of the town. The residential areas are located on hills north and south of the river with Main Street constituting a valley. (pp. 2-3K)

d. In Connecticut generally, from the Canaan to Putnam across the entire state, all streams and brooks fed into larger waterways brought death and destruction to all in their way. Other hard hit towns in the state were Torrington, Waterbury, Naugatuck, Ansonia, Putnam, Wethersfield and Hartford, plus many smaller and rural areas.

e. Naugatuck - Has a population of 17,000 and plants which produce rubber boots and candy. The city straddles the Naugatuck River a few miles south of Waterbury. It is an industrial city in an industrial valley. It is in a "sharp" valley with bluffs on each side of the valley floor which varies from half a mile to a mile wide. (pp. 98-99AA)

f. Union City - a borough of Naugatuck. It is a working class district. "Houses are large, accommodating two and three families; yards are small but neatly kept up." (pp. 94A)

2. Other states hit by floods were Massachusetts, New York, Pennsylvania, New Jersey and Rhode Island, mostly along major waterways. (p. 11H)
II. Generalizations and Hypotheses

A. Orientational Hypotheses

1. The greater the deprivation, (in disaster) the less likely an individual is to be concerned with matters of health.

2. People are unconcerned about threat of an epidemic until their attention is focused on it by the mass media.

3. People of higher social status are more likely to seek medical reassurance than those with lower social status.

4. When the disease of a current epidemic is viewed as very serious, a disease viewed as less serious, will not be perceived as a threat.

5. Individuals who have accurate information about symptomatology and modes of transmission of a particular disease, feel less threatened than in individuals whose information is inaccurate or vague.

6. Individuals who have experienced the threat of a previous epidemic are more likely to comply with health authorities' requests, than those without such knowledge.

7. Individuals with medical knowledge of the particular disease which threatens, are more likely to comply with health authorities' requests, than those without such knowledge.

8. Individuals, (e.g., parents) who have responsibility for the health of others are more likely to comply with the requests of the health authorities.

9. Individuals who have a strong identification (feeling of belonging) with their community are more likely to accept directives from health authorities.

10. Individuals who have had previous personal experience with serious illness (non-epidemic), are more likely to comply with directives of health authorities.

11. Individuals are more likely to comply with preventative measures when the community exerts social pressure to do so.

12. When health directives are descriptive and specific, they are more likely to be complied with and acted upon than when they are not.

13. When preventative measures for a particular disease threat are easily accessible there is greater compliance with the requests of the health authorities.

14. When people believe that a particular disease is preventable, there is greater compliance with the health authorities.

15. When a source of possible disease, (atmosphere of organic deterioration, known case of typhoid in town, etc.) can be directly perceived by a population, more people are likely to comply with the directives of the health authorities.

16. When preventative measures are perceived as a community-shared experience, there is more likely to be compliance with the health authorities.
B. Behavioral Hypotheses

We can begin by stating a generally accepted point of view that behavior is a function of the person and the environment. This statement, so seemingly patent and obvious, has great meaning when the definition of environment in the equation is given. For environment in this definition refers not to the physical environment but rather to the psychological environment. The psychological environment represents the meaning of the physical environment for us, that is, our interpretation of it. No two people understand the physical environment in precisely the same way; their psychological environments differ.

The other part of the equation - the person - refers to the total state of the individual, his needs, experiences, and available modes of behaving.

Thus, behavior is controlled and directed both by internal (person) forces and by external (environment) forces as interpreted by the person.

It seems reasonable to describe the behavioral act in this way: The individual under the influence of some need or needs, with a given repertory of available actions and with a particular interpretation of the environment, chooses some action calculated to satisfy the need. When the particular action chosen appears inadequate, another is substituted if an alternative is available.

What does the individual do when no effective alternative action is momentarily available? He may try the ineffective behavior again; he may deny the existence of the need; he may decide to postpone action and need gratification temporarily; he may become fearful or anxious and behave in inappropriate ways. In any case, he will welcome any opportunities that arise to permit him to satisfy his need.

1. When drastic changes in the psychological environment of an individual occur, his typical patterns of behavior will undergo changes. One way of characterizing the changed behavior is by its adaptiveness. Three behavioral points along the dimension of adaptiveness may be noted by the way of example:
   a. behavior based on full acceptance of the environmental changes and desire to find acceptable patterns for satisfying needs.
   b. behavior which minimized the extent of the change; such behavior is likely to contain a large element of fantasy or symbolicism.
   c. behavior which denies the facts of the environmental change; obviously such behavior is likely to have an unreal quality.
2. The amount and kind of behavioral change (exemplified in la - c above) will depend on:
   a. the extent to which the individual identifies external changes as having special significance for himself. For example, while all people are concerned with 1) material objects; 2) social relationships; and 3) personal strengths, they are concerned with each to different degrees. When the external changes are seen as relevant to the area of particular concern, behavioral changes will be more profound.
   b. the general level of adjustment, especially as related to: 1) the number of different responses normally available to the person for satisfying his needs. Quite possible, the individual who has available many ways of satisfying his needs will in the course of trying them out in the changed world, hit upon a response which leads to goal achievement. 2) the ability to develop new ways of coping with problems; and 3) the ability to tolerate need frustration for given periods of time.
   c. the role the individuals see for himself in the changed situation. The town official whose job calls for the execution of specific duties under changed environmental conditions is more likely to behave adaptively than the individual who is largely without a role. Or, some individuals whose roles are not clearly defined before the disaster may identify new, sharply defined roles for themselves after the disaster.

3. When part of the repertoire of behavioral responses is blocked by environmental changes, the individual places greater importance on other behaviors in his repertoire.

4. When opportunities for normal patterns of behavior are blocked, the individual affected will seek ways of resuming such opportunities.

5. To what extent are typical patterns of behavior prevented? (Breakdown of a means of transportation, communication, means of livelihood, utilities, etc.)

6. What is the official definition of the problems in the situation as seen by members of the public?

7. Can individuals be distinguished on the basis of the relative strengths of their orientations to material objects, social relationships, and personal resources? Can their post-disaster behavior be in part explained by such relative differences?

8. How many alternative courses of action are communicated to the public? (In Winsted, there was only one — prescribed by the health officer.)

9. What is the timing of the action proposed? (In Winsted, it came just during the period when nearly all other courses of action were useless or impossible.)
C. "Social Problems of Sheltering Flood Evacuees," in Farmington

1. "Warning was especially deficient. Only slightly over half of the victims had been warned at all. Most of the warning was unsystematic and sporadic and, by and large, given by neighbors or relatives who personally went to or telephoned the victims to be. No social system for warning developed among the population in the manner that the spontaneous rescue organization evolved.

...the sounding of a siren was abortive because it was misinterpreted by the affected population. However, even that part of the population which did receive warning did not behave any differently from the non-warned during the evacuation." (p. 125)

Recommendation - "There is a need for a more general warning system in advance of predictable natural disasters. Such a warning system would require that the roles of the warning and "warming" be defined and that there be an agreed upon warning signal. The warning would require access to channels by which they could efficiently disseminate this information. The signal would have to be such that it would be transmitted with maximum speed to the people and amenable to correct interpretation. The target population require channels to communication from which to receive the message." (p. 133)

2. Evacuation Behavior - most evacuees lament that they had not had more foresight to save their belongings.

Some looked at the loss philosophically or fatalistically or derived a spiritual lesson. A few blamed the authorities for lack of action. (pp. 125-126)

3. Emergency Housing - Most evacuees found shelter with another family. Accessibility was the criteria for the first move but convenience became important for victim who could not return to their own homes. During the crisis, social relations became informal. Later, more formality returned and more evacuees - host sharing situations were established on the basis of invitation. (p. 126)

Most families shared homes with relatives, especially brothers and sisters. Two-thirds of the hosts sheltered one family and one-third sheltered two or more. (p. 127)

"All the social statuses that ordinarily act as structural divisions in New England communities tended to disappear during the crisis. Thus, community integration appears to take place during a period of crisis." (pp. 127-128)

4. Tension in the Sharing Situation

Hypotheses - "Where there is the greatest similarity between evacuee and host we would expect the greatest degree of tension." (p. 69)
Findings: "Both evacuees and hosts were about evenly divided between those who complained about the sharing situation and those who had positive things to say about the arrangement....evacuees tended to blame themselves...while hosts focused their aggression on objects external to themselves...."

"The existence of tension, it was suggested, is related to the lack of clarity in norms defining and regulating the host-evacuee relationship. These norms were most clearly defined when there was a great status or cultural difference unequivocally defining the place of each family vis-à-vis the other. Families in close primary relationships would experience the most tension. There was greater tension when the sharers were related by kinship than when they were not. Low status evacuees experienced more tension in staying with low status hosts than with high status. However, the results were not always clear cut. Lower status evacuees in general experienced more tension than did higher status evacuees."

"It was also assumed that when some special arrangements were installed in the sharing situation there was more likelihood of norms having been established defining the relationship between the two families than when these were allowed to go along without any special arrangements. There was less tension when a host was displaced from his sleeping quarters than when he did not make this move to accommodate his evacuee guest and less tension when separate special eating arrangements were established, rather than just having the evacuees join the hosts at the same table. However, here also, the results were not always clear." (pp. 128-129H)

Recommendations: "The concern of the administrator charged with assigning evacuee families to share homes is to distribute them in such a way that he has to make the minimum number of reassignments during the evacuation period." (p. 125H)

"The administrator would make different assignments for a short term evacuation period than he would for one of over three weeks. In all cases he would allow those evacuees who had accessible relatives or friends who were able to receive them, to find shelter with them. If he did not expect the sharing situation to extend beyond approximately three weeks he would be best advised to assign evacuees to host of similar status, and cultural background. If he expected the sharing situation to last beyond approximately three weeks, it would be better to assign evacuees to host of higher, but at least not lower, status than themselves. In these cases, he should make it difficult for them to receive a
reassignment during the first three weeks, for these groups make the best long range adjustment, despite the fact that there are prone to terminate more often than the others during the cultural period. (p. 136H)

Crowding should be kept to a minimum, if possible. (p. 137H)

Arrangements for Sharing and Tension:
Findings: "In uncrowded shelters there was an attempt to integrate the activities of the two families. When crowding exceeded about 1.5 persons per room there seemed to be a tendency to set up rules separating the family by giving them separate eating and sleeping quarters or even having part of them eat or sleep elsewhere. Where crowding was over about 2.5 persons per room the trend again was to integrate the families...by setting up mass eating and sleeping arrangements. The tension around the points in the curve representing 1.5 and 2.5 persons per room - the points at which the form of social organization changed - and least tension midway between them." (p. 123-130)

"The length of time that an evacuee - host pair remained together was not always directly related to the tension between them. Although tensions were highest when the pair was related, it appeared that, nevertheless, evacuees remained for a longer period with their relatives than they did with others. When the host was not displaced and where the families were not communal also seemed to last longer. There was no relation between the way in which an evacuee perceived his host's attitude toward him, whether positive or negative, and the length of time they remained with the host."

"The time during which two families remained together could be divided into an initial and a terminal period. The division was established on the basis of rather consistent changes in the rate at which sharing relationships were terminated at about the end of the third week of sharing."

"...allowing that tension was a rather common experience, it would be disruptive of the relationship only where there was no legitimate way for the evacuee and host to express it. Where they could express their tension, perhaps in the form of legitimate aggression or hostility toward each other, to terminate. This factor was important in both the initial and terminal phase."

"Second, during the initial phase there would have to be an adjustment, principally on the part of the evacuee, toward accepting his status as subordinate to that of"
the host. Where this was difficult, the relationship would terminate in the initial phase; conversely, where this was accomplished, the relationship could continue through the terminal phase. There was more likelihood of this occurring where the broader social rank of the evacuee was lower, or at least not higher, than that of the host. Fairly good confirmation of this hypothesis was found."

Hosts' Recommendations: "In general, their recommendations correlated with what their own experience, had been. Recommendation were correlated with the degree of crowding experience, which in turn, was related to the tendency to integrate or separate the evacuee family. The desire to make clear arrangements at the outset was also more characteristic of Protestants than of Catholics, of higher socio-economic levels than of lower and of those of urban rather than rural origins. We therefore infer that opinions on how to share a household are in part a manifestation of general attitudes toward the coordination and rationalization of behavior." (pp. 131-132H)

Attitudes toward Future Sharing - "When asked about the advisability of bringing evacuated city people into the country, almost all of the hosts approved. They were more likely to approve if they had not experienced tension in their own sharing situations." (p. 132H)

Recommendation: "The administrator should emphasize the importance of clearly defining the division of responsibility and work at the outset. Families should be encouraged to share costs throughout and to defining the division of responsibility and work at the outset. The relation should be one of hospitality warmly but explicitly offered."

"According to the degree of crowding, the administrator may want to make different types of arrangements." Up to 1.5 people per room, hosts should accept evacuees as members of the same household; 1.5 - 3 people per room, separate arrangements, and over 3 people per room, bordering on a mass basis." (pp. 137-138H)

"Following the assignment of evacuees to hosts the responsible administrators may want to maintain an educational program designed to keep tensions at a minimum. The administrator will find it worthwhile to retain the services of social workers trained in dealing with family relationship 'problems.' Additional education of evacuees and host, could take the form of pamphlets on the common pitfalls of housing. (pp. 138-139H)
III. Specific Organizational Analysis

A. Organizational Information
   1. Name of Organization: Air Force's Air Rescue Service, 46th Air Rescue Squadron at Westover Air Force Base, Massachusetts
   2. Type of Organization: Manifest

B. Organizational Description
   1-5. No data
   6. History of Organization: "Organized in Florida following World War II to protect aircraft flying in the Caribbean, it had been expanded to cover major air routes, civil and military throughout the world. The squadron at Westover (Air Force Base) is responsible for covering all of the North Atlantic Stalls. (p. 50AA)
   7. Public Image of Organization: No data

C. Organizational Activities During Disaster
   1. Resources of organization during disaster
      a. Equipment: two helicopters, five rafes (Grimman Albatross) and one "gooney bird" - a C-47 cargo plane. "(p. 50AA) Major Diatrich ordered what men he had to assemble all available rafts, dinghies, rations and other emergency equipment for pararescue to attended survivors," while he waited for weather to clear and pilots and aircraft to arrive the morning of August 19. (p. 51AA)
      b. The operation was played "by ear" because of the lack of disaster plans. (p. 50AA)
      c. August 19 - "All missions flown from Westover AFB and Bradley Field, except the first few, carried and distributed emergency rations supplied from Air Force stocks." (p. 90c)

   2. Special Problems to organization
      a. Towns in Connecticut were calling for help but the squadron had a priority mission in Massachusetts. (p. 50AA)
      b. "Most of the squadron personnel lived off the base. Alerted by telephone they were having trouble getting through the flooded roads to the field. Besides, for flying purposes, the weather was about as bad as it could be - heavy rain, visibility a quarter of a mile, winds at 45 knots." (p. 50AA) This was early on August 19.
      c. Major Diatrich, operations officer for the 46th AFRS Squadron, called Rescue Coordination Centers in Roslyn and Syracuse, N.Y. asking how many helicopters could be sent to Westover, and four minutes later all outgoing telephone communications failed. (pp. 50-51AA)
d. There were many more called for rescue than there were helicopters on the morning of August 19.
   (p. 51AA) The result was overburdening of communications and duplications of many requests. (p. 11A)

e. Major Dietrich of Westover had the responsibility of coordinating rescue flights. After being promised helicopters from other bases on the morning of August 19, "it was a fantastic responsibility complicated by the fact that most of his pilots had not yet arrived, that it was still raining; that General Quinn had asked for a separate mission to operate out of Bradley Field; that none of the promised aircraft could reasonably be expected to show up until the weather improved and that even when they did their pilots would be completely unfamiliar with the locations of towns, rivers, and terrain features in southern New England. (p. 51AA) Aerial maps gave altitude and terrain features, but skimmed the towns and highways." Road maps were used. (p. 80AA)

f. There were a lot of disaster plans for the state of Connecticut, Lt. Col. John Hoar, the operations officer, said ruefully, but none for the flooding of the Housatuck valley.

g. The base had the two-seater Guard planes to "spot" for the helicopters. Thus, the helicopters had to find their own rescue targets. (p. 80AA)

3. Organizational change during disaster

s. Normally the 46th Air Rescue Squadron operates out of Westover Air Force Base in Massachusetts. Because of flood conditions in both Massachusetts and Connecticut, an additional base of operations was established at Bradley Field in Connecticut. (p. 11A)

4. Evaluation of disaster activity

a. Air Force Evaluation: "There were two major deficiencies. First, there was a failure on the part of all concerned to recognize the seriousness of the situation in the very early stages of its development and to take effective preparatory action. Second, there was no central agency through which requests for assistance were channeled. This resulted in a burdensome of vital communications systems and a duplication of effort in some cases. Both of these deficiencies were corrected prior to the occurrence of emergency conditions in October and the assistance program in the latter case operated very smoothly." (p. 11A)

b. "A well-known doctor in the Hartford area who made a survey of the disaster area estimated that the death toll would have 200,000 people had the helicopter operation not been effective. Deaths would have been due to disease, starvation, drowning and etc., as a result of the flood." (p. 96G)
c. "The overall execution of the mission involving helicopter rescue operation was a successful accomplishment. The operation involved Air Force, Army, Marine, and Navy equipment and personnel operating as a combined unit for a common cause. There were practically no discrepancies in operation at the operating level. Every individual cooperated to the fullest extent possible in accomplishment of his assigned duties which resulted in a successful mission." (p. 96G)

d. One woman called them (the helicopters) "those lovable donkeys of the air. The women who thus described them could think of no higher tribute." (p. 82AA)

D. Organizational Activities in Emergency Social System

1. Existing plans for cooperation with other organization
   a. There appeared to be a predisaster plan for cooperation among other Air Rescue Service bases and among other branches of the armed services, although this was not spelled out. (p. 114A)
   b. The first Army has the responsibility of coordinating the disaster relief activities of the Air Force and the Navy. (It is not known whether this includes the Air Rescue Service of the Air Force.) (p. 7A)

2. Communications networks, existing and emergent
   a. Flight Service is a radio hook up between military bases. In spite of other communication failures, this network remained in tact. (p. 51AA)
   b. "At 0400 L (Aug. 19), the squadron was notified through Westover Afb officer of the Day by the Massachusetts State Police from Northampton, completely flooded. From this time on communications were established directly between the Squadron Duty Control Center and the Massachusetts State Police." (p. 87G)
   c. At 0505L, (Aug. 19), the 46th received word from Stewart Air Force Base, New York that flooding was occurring near Monroe, New York. "The 46th ABS also passed this information to the New York Coast Guard via direct landline interphone drop." (p. 87G)
   d. At 0515 L (Aug. 19) all cut going telephone communications failed, only occasional incoming calls were received. At 0550L (Aug. 19) the Flight Service interphone line was restored." (p. 88G)

3. Competition and conflict with other organizations: none
   see C4.

4. Use of non-organization numbers for work of the organization
   a. Personnel and plans from the Army, Navy, Marine, Coast Guard and Civilian units participated in rescue work at the request of the 46th Air Rescue Squadron.
      Cooperation of the commanders was excellent. (p. 114A)

5. Effect of the emergency on informal organization on
organizational activity. When the Connecticut Joint Operations Center was established on the second day of the disaster, the center assisted in screening requests which facilitated rescue. (p. 11A)

6. Effect of role conflict on organizational activity: no data

7. Relation of organization to governmental units active in disaster
   a. At Bradley Field, the task of getting supplies needed for air drops to stricken towns was handled by Oscar Gesselin, the state Civil Defense chief in charge of food and disaster planning. (p. 32AA)
   b. Planes from other branches of the armed services and other Air Force bases, especially in the northeastern section of the country, were sent to Bradley Field to where the 46th Air Rescue squadron had changed its base of operations. (p. 79AA)
   c. "Twenty government agencies from the armed forces to the Civil Service Commission, contributed equipment and services—-with an unbelievable lack of red tape. Air Rescue transported much of the material. (p. 97AA)
   d. National Guardsmen worked at Bradley Field in one case helping to bed down several hundred children who had stranded in a camp and had been flown to the field. (p. 98AA)
   e. After the first day of the rescue operation, when confusion and packed communications facilities caused duplication of efforts the state of Connecticut set up a Joint Operations Center. This center was comprised of the Governor, Air National Guard, National Guard, Civil Defense, and other disaster officials who worked in an emergency disaster headquarters in Hartford. "The Joint operation center evaluated requests and established a priority system which greatly increased the efficiency of rescue operations. (p. 11A)
   f. "At 0610L (Aug. 19) the State Police of Massachusetts were contacted and a thorough briefing of the situation was received. At 0500L, the Connecticut State Police requested the assistance in the evacuation of Torrington and Winfield, Connecticut." (p. 87G)
   g. "The State of Massachusetts did not establish a similar system (like Connecticut's Joint Operation Center), therefore, local newspapers radio and TV stations were requested to announce that anyone having knowledge of where assistance was needed, notify the 46th Air Rescue Squadron directly by telephone. The numbers for such requests were announced at the same time and resulted in many requests coming directly from the Red Cross, Civil Defense, Police, and civilians. These requests were evaluated and
priorities were established at the 46th Air Rescue Squadron." (p. 90G)

E. Other: none
III. Specific Organizational Analysis

A. Organizational Information
   1. Name of Organization: Connecticut Joint Operation Center
   2. Type of Organization: manifest

B. Organizational Description
   1. Organizational Goals and Activities: There was no organization prior to the disaster. (p. 2G)
   2. Organizational character: no data
   3. Organizational Complexity: Headquarters for the Center was in the Governor's headquarters. Brigadier General James M. Quinn, the Assistant Adjutant General for Connecticut was chief coordinator. "The military operational staff section operated under the direction of the Chief of Staff (Army) Colonel Wallace A. Moyle..." (p. 2G)
   4. Organizational control: no data
   5. Membership recruitment and orientation: After the center was established and General Quinn was named chief coordinator, the general "formed a staff consisting of a representative from the Department of Civil Defense, State Police, a State Highway Engineering expert, a representative of the American Red Cross, and the chief of Staff of the Connecticut Air National Guard." Colonel Moyle, director of Military operations for the center, augmented the G-1, G-2, G-3, and G-4 sections by special staff officers from both the administrative and selective service sections and enlisted men from Headquarters Detachment Connecticut National Guard. (p. 2G)

   6. History of the Organization
      Governor Ribicoff established a disaster headquarters at the State Armory in Hartford. A flood of telegrams, telephone calls and messages poured in, both requesting aid and offering assistance. To effectively cope with the requests and offers the incoming messages had to be evaluated and immediately dispatched to the agency that could furnish help or use the offered service. Late on Aug. 19 or early on Aug. 20, the Governor announced the establishment of the Joint Operation Center, which was staffed with representatives of the agencies involved. (p. 42G)

   7. Public Image: no data

C. Organizational Activities During Disaster
   1. Resources of organization during disaster
      a. When the Center was established, "it permitted rapid servicing of all requests for assistance, and enabled prompt channeling of all offers of help to the proper agencies." (p. 26G)
      b. Headquarters was in the State Armory in Hartford. (p. 43G)
2. Special Problems to the Organization: no data

3. Organizational change during disaster: The organization changed from a disaster headquarters for the Governor and his staff to a headquarters for the Governor and representatives of relief agencies. (p. 2G)

The Connecticut National Guard expects the Governor and staff to move into the State Armory whenever a future disaster occurs. (p. 3G) "It is recommended that such a staff become standing operating procedure in the Governor's Disaster Headquarters in future operations of this nature." Gen. Quinn, Assistant Adjutant General. (p. 43G)

4. Evaluation of disaster activity:
"As a result of this organization all requests for aid and offers of assistance were immediately directed to the proper agency and were expeditiously handled, without duplication of effort." Gen. Quinn. (p. 43G)

D. Organizational Activities in Emergency Social System

1. Existing plans for cooperation with other organizations - no data

2. Communications networks - existing and emergent
   a. "Telephones and radio communications were installed on an hour's notice (when it was decided to establish the Joint Operation Center) and these activities were continued during the period of the emergency on a around - the - clock basis."

   b. "In an interval of one 24-hour period more than 2700 telephone calls were serviced by this group. More than 1000 telegrams were acted upon during the period 19-23 August and the State Police radio network serviced approximately 1500 messages for this coordinating agency." (p. 43G)

3-6. no data

7. Relation of organization to governmental units active in disaster
The center served as a coordinating unit for messages and supply dispersal. (p. 42G)

F. Other: none
III. Specific Organizational Analysis

A. Organizational Information

1. Name of organization: Connecticut National Guard - Army and Air

2. Type of organization: manifest

B. Organizational Description

1-2. No data

3. Organizational complexity:

The Connecticut National Guard has both an Army and an Air division. Active in the emergency field situation were:

a. Headquarters and Headquarters Detachment, (p. 35G)

b. 712th Ordnance Co. (p. 35G)

c. 43rd Infantry Division - headquarters, headquarters company; medical detachment and MP company. (p. 35G)

d. 102d Infantry Regiment - headquarters and Headquarters company, medical company, Service company, tank company, heavy morta r company, headquarters and headquarters company for the first, second, and third Battalion and the Battalions' companies A through M. (p. 35G)

e. 159th Infantry Regiment - Headquarters and Headquarters company, Service company, Medical company, Tank company, Heavy Mortar Company, headquarters and Headquarters companies for the First, Second and Third Battalion and the Battalions' companies A through M. (p. 35G)

f. 192d Field Artillery Battalion - headquarters and headquarters Battery, Service Battery and Batteries A through C. (p. 36G)

g. 963d Field Artillery Battalion - headquarters and headquarters Battery, Medical detachment, Service Battery and Batteries A, B and C. (p. 36G)

h. 143d Tank Battalion - Headquarters, Headquarters and Service company, Medical Detachment and companies A, B, and C. (p. 36G)

i. AAA Brigade - headquarters and headquarters battery. (p. 37G)

j. 172d Operations Detachment. (p. 37G)

k. AAA Battalions - headquarters and headquarters Batteries and medical detachments for the 211th, 283rd, 745th and 236th and companies A through D for each. (p. 37G)

l. Headquarters, Connecticut Air National Guard. (p. 37G)

m. 103d Fighter - Interceptor Wing - various units. (p. 38G)

a. Connecticut State Guard; Service Detachment, headquarters and Headquarters detachment. (p. 38G)

There units are stationed in various locations throughout Connecticut. (p. 36)
C. Organizational Activities During Disaster

1. Resources of organization during disaster
   a. "At the height of the emergency better than 3,200 Connecticut Guardsmen were on duty in the disaster areas within the State, or in reserve in their armories." This included the Air National Guard as well as the Army National Guard. (p. 36G)
   b. "More than 4400 troops were on duty at the height of the emergency in some 25 cities and towns.
...the Connecticut National Guard called up two infantry regiments, a tank battalion, two field artillery battalions, an antiaircraft brigade, the fighter interceptor wing of the Air National Guard and numerous service detachments." (p. 101AA)

2. Special problems to organization
   a. "Lack of adequate and proper communication facilities was forceably brought out during this operation accurate and up to the minute information and reports are mandatory when making decisions. The Commanding General, 43rd Infantry Division could have used to excellent advantage the 43rd Signal company, located in Rhode Island."

   "The need for a separate and central internal message center, with adequate facilities, was pronounced." (p. 33G)
   b. Wednesday - Aug. 20 or 21. "Looting became a problem but didn't compete with the confusion brought about by the invasion of sightseers who began streaming into town as soon as highways were passable. Finally, an Anti-aircraft company of the National Guard set up 16 outposts within a 5 mile radius to check the flow." (p. 100-101 AA)
   c. Gen. Quinn, Asst. Adjutant General, alerted the Air Rescue Service at Westover Air Force Base by phone on Aug. 19 at 5:10 a.m. (p. 49AA)

3. Organizational change during disaster
   a. At the Armory in Hartford, some problems arose for the National Guard when the Joint Operation Center moved in - "At this headquarters level the situation became a bit complicated with the movement of the Governor, his staff, and supporting agencies plus the press, into the normal operating space of the military Department. This headquarters must in the future anticipate that the Governor may be expected to move into, and operate from, the Armory in any serious situation in which the military is involved."

After the disaster - "Planning now already under way takes such a move into consideration with d
definite space outlined for agencies involved, necessary for telephones, extensions, etc."

"The need for a separate and central internal message center, with adequate facilities, was pronounced. In this respect, the chief of Staff has already caused a change in the Training Program of Headquarters Detachment, Connecticut National Guards which includes training in the manning and operation of a self contained message center.

"To properly coordinate, and expedite the utilization of necessary material and equipment required in such an emergency, it is believed that in addition to such information Civil Defense agencies may have on file or in their possession, this same information should also be available and in file in the Pertinent Staff Section of this Headquarters. Such records should be kept up-to-date for ready reference, should be indexed, and broken down by classes with complete information and data to indicate where it is, and in what quantity." (p. 336)

4. Evaluation of Disaster Activity
   a. The Guard's report "in general the military operation followed the procedure outlined and prescribed in SOPED-MD-53. The time, effort and practical application previously put into this plan by the staff of Headquarters Detachment, Connecticut National Guard, was fully justified. All Connecticut National Guard units - Army and Air - performed commendably wherever committed during this emergency, and there were many missions performed by units and individuals that will never be known in detail."

"The overall execution of Helicopter rescue operations was successfully accomplished. This operation involved National Guard - Army and Air - U.S. Army, Air Force, Navy, Marine, Coast Guard and civilian equipment and personnel operating as a combined unit for a common cause. Reports to date indicate this operation as the largest of its kind ever attempted in the United States. (p. 336)

b. "In conclusion from the standpoint of both staff and combat units, the operation proved the value of prior planning and a continual follow up. Assembly and commitment of troops was effected in an orderly manner in spite of local conditions and the seriousness of the situation. It is evident that the objectives of the Emergency Disaster Plan (SOPED-MD-53) of the military department of the State of Connecticut were achieved and accomplished in every instance." (p. 346)
D. Organizational Activities in Emergency Social System

1. no data

2. Communications networks - existing and emergent:
   a. In Winsted, the National Guard got a radio car into town at 5 a.m. and used it to call for emergency supplies such as milk, lister bags, and water purification tablets. (p. 96AA)

3. Competition and conflict with other organizations: no data

4. Use of non-organizational members for work of the organization:
   a. Amateur radio operators arriving in Winsted acted as liaison with the National Guard and the police. (p. 100AA)

5. Effect of the emergence of informal organization on organizational activity: The establishment of the Joint Operation Center helped coordination of activities. (p. 42G)

6. no data

7. Relation of organization to governmental units active in disaster:
   a. "As for the record the cooperation of all services, and agencies federal and state, materially assisted the Connecticut National Guard on duty in the performance of its mission." Connecticut National Guard. (p. 4G)
   b. The Guard was activated on a piecemeal basis at first, upon the request of officials in various cities, then the entire guard was activated. However, the Governor did not at any time declare martial law. (pp. 46-47G)
   c. The Guard assisted local and Civil Defense officials. (p. 8G) Police both local and state in guard and traffic duties. (p. 8G) Plus rescue and evacuation. (p. 51G)

E. Other: none
Specific Organizational Analysis

A. Organizational Information

1. Name of Organization: U.S. Coast Guard - First District and third District
2. Type of Organization: Latent

B. Organizational Description: no data

C. Organizational Activities During Disaster:

a. A force from the Third District was sent to Waterbury. Boats for rescue work were sent to the area. Later, a DUKW arrived and was put to work. On Aug. 20, three DUKW's and two 25x28's arrived but were sent to the Farmington area. Four helicopters were provided for rescue and other work. (pp. 77-79G)

b. First Coast Guard district unit at Putnam. Equipment included two DUKW's, one dory, one stake body truck, necessary fire equipment pumps, life jacket raft, line and lighting equipment. (p. 80G)

c. Other equipment used by the Coast Guard - breaches, buoys, amphibious aircraft, amphibious trucks, and life boats. (p. 9A)

2. Special Problems to the Organization

a. 3rd District - In Waterbury "operations center was scene of gross confusion with a continual stream of people wandering in and out. Though being in Uniform Coast Guard personnel were not recognized as such and spent much time answering questions which should have been directed at Civil Defense personnel. Naval personnel, regular and reserve kept reporting to Coast Guard control requesting instructions. Phone, would ring as soon as the head set was replaced on the stand." (p. 77G)

b. First District in Putnam - The force of the current made rescue by boat difficult and complicated. Debris, silt and sand bogged down some of the DUKWs. "Communications were all in regards to this, it is recommended that in the future in work of this nature, hand walkie-talkies could be the ideal equipment. This would enable all units to keep in contact with all local rescuing units, which use this equipment, and could enable the Coast Guard to be in communications with the coordinating center at all times. Also, other equipment that would be used to a greater advantage in work of this kind would be a 16 ft. Dory with a 25 hp outboard motor." (pp. 80-81G)

3. Organizational change during disaster: no data

4. Evaluation of disaster activity:

a. First District - "The outstanding efforts in rescue work that were accomplished, namely, swimming, seamanship, boat and DUKW handling, were accomplished..."
in conditions beyond the call of duty. All hands were complimented by the Mayor and leading citizens of the town of Putnam. The name of the Coast Guard will long be remembered in that area." - from the Coast Guard report. (p. 81G)

D. Organizational activities in Emergency Social System
1. Existing plans: no data
2. Communications networks - existing and emergent
   a. 3rd District - In Waterbury, when the unit reported to the Civil Defense headquarters in the state Armory building, it was noted that there were poor communications facilities available. "Only two phones in operations center and one short wave transceiver working. Civil Defense frequencies, TRC 21 set up but due to faulty operation unable to communicate with any units. Utilized runners to deliver messages to helicopters landing at railroad station parking lot several blocks away."

   "A communication truck arrived at 1940 hours on Aug. 19." (pp. 77-78G)

3-6. no data
7. Relation of Organization to governmental units active in disaster
   a. The Third District unit in Waterbury established headquarters in the State Armory where Civil Defense was located. Worked with Civil Defense in sending out boats on rescue missions. (p. 77G)
   b. First Coast Guard District unit at Putnam reported to the police chief. (p. 80)

E. Other: none
III. Specific Organizational Analysis

A. Organizational Information:
   1. Name of organization: Connecticut State Department of Health
   2. Type of organization: manifest

B. Organizational Description
   1-2. no data
   3. Organizational complexity:
      a. Public Health Council - consists of seven men from various cities in Connecticut who are either medical doctors or have special training in public health. (p. 238B)
      b. The executive staff consists of the commissioner of Health and the Deputy of Commissioner of Health. The Commissioner is in charge of administrative services - accounts and supplies, hospitals, licensure and registration, local health administration including the division of Nutrition, and personnel. (p. 238B)
      c. Community Health Service bureaus: Maternal and child hygiene, including division of crippled children, mental hygiene, public health information, and public health nursing. (p. 238B)
      d. Sanitary engineering services includes the divisions and/or bureaus of: water supplies, sewage and refuse, housing, food and shellfish, mosquito control and air pollution. (p. 238B)
      e. Laboratory Services - includes diagnostic, water, milk, toxicology and sewage. (p. 238B)
      f. Medical Services - includes division of dental hygiene, health services for state employees, bureau of industrial hygiene, bureau of preventable diseases and division of cancer and other chronic diseases, venereal diseases, and bureau of vital statistics. (p. 238B)

4-7. no data

C. Organizational Activities During Disaster
   1. Resources of organization during disaster
      a. "Plans for emergencies prepared earlier were applied with common sense and flexibility and many agencies, organizations and individuals cooperated." (p. 239B)
      b. The entire departmental staff was mobilized for 24 hour duty on an emergency basis on Aug. 19. (p. 239B)
      c. typhoid vaccine for 300,000 shots to supplement the supply on hand. Immunization kits were assembled and sterilized. (p. 240B)
      d. Aug. 20 - The department sent tetanus and typhoid immunization teams to towns upon request. (p. 241B)
      e. Aug. 22 - emergency health districts were set up in badly flooded areas. (p. 243B)
      f. The text of news releases as on pp. 250-255B.

III-CG-3
2. Special problems to organization  
   a. Aug. 19 - The department attempted to survey towns for health needs. Road conditions hampered some of the survey work. (p. 240B)
   b. Aug. 20 - Some health survey work was done by telephone but broken lines prevented a complete job. (p. 241B)
   c. In Winnetka, "a number of potential sanitation problems were encountered due to the necessity to feed large groups of people. However, sanitary techniques for accomplishing this safety were followed upon recommendations of State sanitarians as well as the public health Service." (p. 241B)

3. Organizational change during disaster
   a. A total of six emergency health districts were set up and staffed by August 23. These headquarters permitted the state health workers to operate out of headquarters close to or in the flooded towns. (p. 243B)
   b. Many clinics were set up for distribution of immunization shots. (p. 243B)

4. Evaluation of disaster activity
   a. "These illustrations of ability, foresight, initiative, judgment, tireless energy and good professional and technical training mean much in human values to Connecticut for the future health, happiness and prosperity of the people who live and work there." (p. 239B)

B. Organizational Activities in Emergency Social System
1. Existing plans: no data
2. Communications networks - existing and emergent
   a. "Health education releases for the press and news rooms of radio and television stations concerning emergency protection of drinking water and clean-up activities were issued by telephone, messenger and mail." The media disseminated this information. Aug. 19. (p. 240B)

3. Competition and conflict: no data
4. Use of non-organizational members for work of the organizations:
   a. State Tuberculosis Commission helped with the immunization program. (p. 241B)
   b. The department assisted the Federal Food and Drug Administration in drawing up a food, drug and cosmetic embargo. The department was aided by other state health agencies. (p. 241B)
   c. "Local directors of health and the Connecticut State Department of Health teamed up for the common good." (p. 249B)

5-6. no data
7. Relation of organization to gov't. units: The dept. cooperated with local, state and federal agencies active in disaster

III-G5-4
on health problems, and assisted local officials upon request.
(p, 241B)

E. Other: none
III. Specific Organizations: Analysis

A. Organizational Information
2. Type of organization: manifest

B. Organizational Description
1-2. no data
3. Organizational Complexity
Organizational levels
a. State Secretary of Health - supervises the Penna. State Health Dept.
   b. Divisions of General Sanitation (p. 2E)
      1. Bureau of Sanitation (p. 2E)
      2. Sanitary Engineering Bureau. (p. 2E)
   c. Regional Medical Directors. (p. 2E)
   d. Director of Public Nurses - Bureau of Public Nurses. (p. 3E)
   e. Director of Local Health Services. (p. 3E)
   f. Director of Bureau of Communicable Disease Control. (p. 4E)
   g. Preventive Services - Director. (p. 4E)
   h. Laboratories. (p. 5E)
   i. Bureau of Chronic Diseases. (p. 9E)
   j. Bureau of Nutrition. (p. 8E)
   k. Bureau of Statistics and Records. (p. 7E)
4-7. no data

C. Organizational Activity during the Disaster
1. Resources of the organization:
   Practically every bureau and division of the Dept. as well as the field personnel aided in some manner in the emergency. (p. 1E) The State Secretary of Health and several other directors of the Health Dept.'s Bureaus toured the disaster area to inspect the sanitary conditions and the public health facilities. (p. 4E)
2. no data
3. Organizational change during disaster
   a. "Dr. Arthur D. Walsh medical coordinator for Civil Defense, was placed in general charge of public health measures for the State Dept. of Health and set up temporary headquarters in the State Council of Civil Defense in the main Capitol Building, Harrisburg." (p. 1E)
   b. "Five jointly - staffed command posts were designated by Gov. Leader on August 20, and were set up in the disaster area each under general administration control of a field officer of the Pennsylvania National Guard. Each had representatives of the Dept. of Health, Highways, Public Assistance and Welfare as well as the Red Cross and Civil Defense." (pp. 3-6E)
c. "An emergency office of the Dept. was opened in Easton with Dr. Reeder in charge (Medical Director of the Region VII), assisted by chief of the Dept. Divisions of General Sanitation and a corps of sanitary engineers, medical Director of Region VI, (Director of Public Health Nurses) and other public health nurses, public health educators, and public health service and Food and Drug Association consultants. Director of Local Health Services was instrumental in expediting the early establishment of the Easton office and in closing that office and restoring administrative operations to normal channels on the 31st of August." A second headquarters was established in Stroudsburg. The offices were open about two weeks. (p. 3E)

4. no data

D. Organizational Activities in Emergency Social System
1. Existing plans: no data
2. Communications networks - existing and emergent: "More than 30,000 Dept. of Health leaflets on post-flood sanitation procedure and 1,500 copies of FCDA publication H-11-I were disseminated throughout the flood sections commencing Aug. 19." (p. 3E)

3-6. no data
7. Relation of organization to governmental units active in disaster
   a. State Police helped transport vaccine into flood areas for the Dept. (p. 3E)
   b. Dept. worked with the Food and Drug administration on health problems, also with the Public Health Service. (p. 3E)
   c. Distributed 1,500 copies of the Federal Civil Defense Administration bulletin on "What to do now about Emergency Sanitation in the Home." (p. 3E)
   d. Worked with Civil Defense on Health Problems. (p. 3E) Cooperated with state departments of Health, Highways, public assistance and Civil Defense in the five command posts. (pp. 3-4E)
   e. Worked with Public Health Service on disease outbreak investigation. (p. 4E)
   f. A team from Penna. Civil Defense Or. for Public Water works worked on water problems. This organization is sponsored by the Penna. Dept. of Health, the Penna. section of the American Water Works Association and the State Council of Civil Defense. The organization worked under the direction of the Health dept. vice chairman. (p. 3E)
   g. Director of the Bureau for Chronic Disease of the Health Dept. worked with and through the State Pharmaceutical Association to stop dumping of
contaminated medicine where youngsters might find it. (p. 98)

E. Other: none
III. Specific Organizational Analysis

A. Organizational Information
   1. Name of organization: The Southern New England Telephone Company
   2. Type of organization: Latent

B. Organizational Description
   1-2. No data
   3. Organizational complexity
      There are offices in the towns served by the company.
      Departments of the company are:
      a. Telephone crew, engineers and other specialists.
      b. Commercial. (p. 8A)
      c. Sales and Service. (p. 8A)
      d. Accounting. (p. 8A)
      e. Directory. (p. 8A)
      f. Traffic Department. (p. 8A)
      g. Garage, mail and house service. (p. 8A)
      h. Personnel. (p. 8A)
      i. Public Relation. (p. 8A)

C. Organizational Activities during disaster
   1. Resources of organization during disaster
      a. Water is the arch enemy of telephone service. To meet this old
         foe, ten thousand men and women of Southern New England
         Telephone were well armed. Where electric current was needed
         there were generators to carry the load - big diesel engines
         in the larger cities, small portable units for outlying places.
         Stocked against needs were all the things it takes to build a
         line - poles, wire, cable, and all the tools to work with. Ready to
         roll where needed was a fleet of 1,600 cars and trucks. At the
         switchboards, in the offices and out on the highways and by
         ways were the most important women who knew their jobs." (p. 4D)
      b. "By Sunday noon, tow days after the rain stopped, the
         number of telephones out was down to less than six percent
         from ten percent of the state total." (p. 4D)
      c. Office forces checked hospitals, Civil Defense agencies
         and other emergency offices to make sure they had enough
         lines. "Thev arranged booths located where the public could
         place vital calls in areas where no other service was available." (p. 6D)
      d. "With the first signs of flood, every dept.
         put emergency plans into operation." (p. 8D)

III-SNET-1
2. Special Problems to the Organization
   a. "An early count showed less than ten percent of the
      company's 970,000 telephones out of service. Though
      smaller than the total disabled by some previous
      storms, this was a different sort of trouble -
      knockout blows at a few targets, instead of an over-
      all beating. Where it hit, it hit hard. In terms of
      individual exchanges (several of which were completely
      out of service), difficulty of restoring manpower
      involved, and expected costs, the flood ranked at
      or near the top of all disaster we've experienced."  
      (p. 4D)
   b. The heavy usage of telephone service after the storm
      was a problem to operators. "Operators filled every
      usable switchboard position, seeking round-about
      routes to put calls through when they found normal
      channels blocked.  (p. 4D)
   c. Block roads hampered line repairmen.  (p. 6D)
   d. Repairmen found new ways to solve new problems.
      "A borrowed coast guard gun 'shot' lines across
      seven streams that couldn't be crossed otherwise.
      In Collinsville, a helicopter helped span the
      Farmington River. Commercial forces kept office
      hours throughout the weekend following the storm to
      meet community needs."  (p. 6D)
   e. "Accounting people started computing refunds for
      customers whose service was interrupted, reproduced
      lost business office records, and made sure relocated
      employees got full pay when due, wherever they were.
      Engineers planned the rebuilding job, devising short-
      cuts to speed restoration of lines."  (p. 6D)
   f. "The New York Telephone Company sent a mobile radio
      unit which was manned by our people in Torrington.
      AT&T specialists, experienced in flood damage
      restoration work, made their counsel available
      to our plant and engineering forces in Putnam."  
      Western Electric quickly supplied hard-to-get
      parts.  (p. 8D)
   g. In the Waterbury, Naugatuck, Seymour and Ansonia-Derby
      area, water-damaged underground cables put 18,000
      phones out of order. Along the Naugatuck River,
      poles lines were undermined and cables strung
      across bridges were ripped as the bridges collapsed.
      (p. 11E)
   h. When roads were opened, they were clogged with sightseers
      making movement of telephone company vehicles
      difficult.
   i. The floods caused difficulty for employees attempting
      to go to work in offices which were not flooded.
      Some went by boat.  (p. 21D)
   j. If the telephone company office was not flooded,
      often the basements, which held cables, were under
      water causing service to be interrupted. In Winsted,
the tangled network of wires had to be straightened out. (p. 23D)

3. Organizational change during disaster
Normal jobs were postponed where possible so that personnel could be used on emergency jobs. (p. 6E)
"Commercial people manned emergency phones located strategically for the convenience of the public.
Crews were rushed to flooded areas. Sales and servicing men from all parts of the state surveyed the damage to PBX's and arranged for emergency communications for industries and business. The Traffic dept. summoned all available operators. These included operators who formerly worked for the company and 150 ex-operators now employed in other dept. (pp. 6-8D)

4. Evaluation: "We have no way of knowing how many telephone men and women were heroes - we're sure there were many." (p. 2D) Like an army, SNERT swiftly moved well organized forces to the all-important job of restoring complete telephone service in the state." (p. 8D)

D. Organizational activities in emergency social system
1. Existing plans: no data
2. Communications networks, existing and emergent
- Public Relations men in stricken cities and at headquarters provided news and photos to papers, radio, and TV stations. (p. 8D)
- Mobile communications units both owned by the company and borrowed supplied communications needs for the company while lines were down. (p. 16D)

3. Competition: none
4. Use of non-organizational members of work of the organization
During the heavy usage period after the storm, the regular operators had, "working along side them, scores of former operators..." (p. 4D)

5-7. no data

E. Other: none
III. Specific Organizational Analysis

A. Organizational Information
   1. Name of organization: American Red Cross
   2. Type of organization: manifest

B. Organizational Description
   1-2. no data
   3. Organizational complexity: National Headquarters -
      Washington Chapters are under the direction of four
      regional offices Eastern, Southeastern, Midwestern and
      Pacific. (p. 28F)
   4-7. no data

C. Organizational Activities During Disaster
   1. Resources of organization during disaster
      a. Operated 131 shelters in six states. (p. 9F)
      b. "Feeding centers at shelters and other strategic
         community points provided meals a day plus
         in between pick-up refreshments to victims and
         emergency workers. For those too far from centers or
         too busy to go to them, mobile canteens toured hard-
         hit areas on regular schedules. (p. 6F)
      c. Helped other volunteer groups feed victims by paying
         for the food. (p. 6A)
      d. Red Cross paid for many hospital and medical bills.
         (p. 6F)
      e. "Each shelter had volunteers on duty 24 hours a day.
         Some were volunteers who had served their chapters for
         years; others had scarcely been acquainted with
         their Red Cross before the flood. (p. 6F)
      f. Stations and canteens for feeding victims and workers
         were manned by volunteers from the stricken towns
         and near-by chapters." (p. 6A)
      g. Outfitted children for school, pets and other animals
         fed and cared for. (p. 10F)
      h. Rushed on immunization supplies. (p. 10F)
      i. Received $16,000,000 in appeal for $10,000,000 for
         relief funds.
      j. Red Cross disaster workers came from all parts of the
         country to help. (p. 11F)
      k. Supplied funds for rebuilding homes and businesses,
         new furnishings and other aid to victims. (p. 14F)
      L. Caseworkers needs. (p. 15) For food, clothing
         and temporary rent - $1,294,000. For household
         furnishings, $4,305,000. For building and repair,
         $7,043,000. For medical care, $132,000. For small
         businesses, $11,875,000 - a total of $16,969,500.

2. Special problems to the organization

III-RC-1
a. Volunteer Red Cross workers were deluged with welfare inquiries, (p. 2F) In Stroudsburg, Pa. they handled over 10,000 inquiries. (p. 8F)
b. Water in some areas was unsafe. The Red Cross aided by getting spring water companies, tank truck fleets, and military authorities who supplied tanks, lister bags and water purification units. (p. 9F)

3. Organizational change: no data
4. Evaluation: Red Cross did a good job. (pp. 4-26F)

D. Organizational Activities in emergency social system
1. no data
2. Communications networks - existing and emergent
   a. Welfare inquiries were handled while communications were scatty in many sections. "Chapters had every possible assistance - state police, Civil Defense workers, rescue squads, boy scouts, rural mail carriers and volunteer runners searched devastated areas on foot." (p. 3F)

3. no data
4. Use of non-organizational members for work of the organization
   "Red Cross shelters had infirmaries staffed around the clock by nurses and doctors, virtually everyone a volunteer. Over 100 nurses volunteered their off-duty hours to help." (p. 6F)

5-7. no data

E. Other: none
I. Basic Information
A. Characteristics of Disaster
1. Event: False report that a large dam had broken and partial evacuation of a city.
2. Date-time: August 19, 1955 at 10:30 p.m.
4. Damage:
   a. Number killed: none
   b. Number injured: none
   c. Physical Damage: none
5. Cause: False report circulated through the city.
6. Unique aspect: Approximately one-third of the residents of Port Jervis evacuated the city upon the false report that a large dam had broken.

B. Methodology
2. Source of data:
   a. Number of interviews: no data
   b. Number of questionnaires: no data
   c. Time lapse: 5 days (p. 1)
   d. Other: Key officials and 107 residents were "studied" (p. 1 and 4)
3. Sample plan: "Key officials of the city were interviewed, including the chief of police, fire chief and the Civil Defense director." (p. 1) "The Institute obtained 107 persons for the sample study. Of this group 53 lived in the flooded area and 54 in the nonflooded area." (p. 4)
   e. Other: none

C. List of All Organizations
1. Sparrowbrush Fire Department (The captain radioed to the fire station at Port Jervis reporting that he had been stopped by a fireman from Lumberland and was told that the Wallenpaupack Dam was out.) (p. 3)
2. Port Jervis Fire Department (Pumping out cellars and helping to clean up flooded area. One fire truck was driving through town and persons on the truck were sounding sirens and shooting for people to get out because the dam had broken. Attempted to check the authenticity of the report. After receipt of the denial message, they attempted to disseminate the denial to the population.) (p. 3-4)
3. Port Jervis Police (Attempted to check the authenticity of the report through the Middletown mutual aid system. They also got in touch with the Port Jervis Civil Defense headquarters by telephone and asked for verification. The police were successful in contacting the dam and receiving information that the rumor was false. They...
4. Civil Defense (Verification was attempted through dam superintendent and the Scranton Electric Power Company. Attempted to disseminate the denial to the population. (p. 3-1)

5. Local Radio Station (Had gone off the air at 11:00 p.m., but began to broadcast again to aid in the dissemination of the denial of the rumor. (p. 3-1)

D. Description of Emergency Social System

About 10:30 p.m., August 8, 1955, a stranger ran into a restaurant and told the owner, a volunteer fireman, that the Walleypack Dam had broken, and that firemen in the community up the river were evacuating everyone. The restaurant owner’s telephone was out of commission. He went with the three men to the highway to stop cars and warn them. The second car was that of the Sparrowbrush fire captain who went to the fire house and radioed the fire base radio at Port Jervis reporting that the dam was out.

The Port Jervis fire chief told his radio operator to check with the dam. One of the fire trucks which had received the Sparrowbrush message was driving through town sounding sirens and shouting for people to get out because the dam had broken.

By this time the rumor had gathered momentum. Cars were in the streets and people were shouting for everyone to get out of town.

The police, Civil Defense, and fire department were trying to get verification of the report from the dam itself. Finally the police received a message from the dam that the rumor was false. After receipt of this denial message, all agencies actively attempted to disseminate the denial to the population through various media such as loudspeaker, radio, and in person. (p. 3-1)

E. Community Context

"Port Jervis is located in the Tri-state area where Pennsylvania, New Jersey and New York intersect. There are reservoirs in the area and a brook in the northern section of town. The Delaware River is the southern boundary and the Neversink River running along the eastern boundary at one point separates one section of the city from the rest."

"Port Jervis has a population of approximately 9,000 persons, predominately middle and lower middle class. The primary source of income in Port Jervis is the tourist trade and many summer resort camps are located in the area. A silver plant,
a textile mill, and a few similar industries are located there, with the Erie Railroad employing a large number of persons."

"On several occasions (1901, 1903, and 1904) this area was flooded or threatened with floods. In 1922 the reservoir dam above the city appeared about to burst so that splashboards were pulled and certain areas were washed out. In 1938, water deluged one section of town. In 1942, a flood occurred at nearby Sullerville and bodies were washed down from Hawley and picked up in Port Jervis. Almost annually there is some possibility of flood damage." (p. 2)
II. Generalizations

A. "Variables such as age, length of residence, family responsibilities, and education proved to be relatively unrelated to flight from the expected catastrophe." (p. 6)

B. "Variables in the source and channel of the threat messages caused no difference in the reactions." (p. 6)

C. "Two important factors related to flight were previous evacuation and residence in low lying areas of the city. Geographic proximity to the river appeared to be the most important factor." (p. 6)

D. "Uncertainty about the range of the impending danger increased attempts to confirm and delay flight. Those who fled estimated that they were in serious danger, that the threat was immediate and that others were fleeing. Few were likely to attempt to confirm the report and were slow to accept the denial." (p. 6)

E. "The study illustrated the importance of full control of communication channels." (p. 6)
III. Specific Organizational Analysis
Insufficient data on any organization.
I. BASIC INFORMATION

A. Characteristics of Disaster
1. Event: Flood
2. Date: 11:00 p.m., October 15, 1955
3. Location: Norwalk, Connecticut
4. Damage:
a. Number killed: Four persons. (P. 23)
b. Number injured: Not stated.
c. Physical Damage: $8 million total. (P. 46)
5. Cause: Heavy rain and breakage of 2 dams
6. Unique aspects: None.

B. Methodology
1. Research Agency or Personnel: Seymour S. Weisner for the Norwalk Chamber of Commerce, Jewish War Veterans, New York University, and Norwalk City Administra- tion. (P. 4 & 5)
2. Source of data:
a. Number of interviewees: "Interviews were conducted with city officials." (P. 6)
b. Number of questionnaire respondents: Sent to all the civic and private welfare agencies and businesses. (P. 7)
c. Time lapse between disaster and data collection: About four months. (P. 5)
d. Other: Writer of the monograph was a resident of Norwalk during the flood. (P. 7)
3. Sample plan: None stated.
4. Other Comments: Study was initiated by the Norwalk Post of the Jewish War Veterans and the Norwalk Chamber of Commerce. Publicity for the study came from the mayor, governor, and New York University. (P. 4 & 5)

C. Organizations Involved and Their Activities During Disaster
2. Norwalk Civil Defense: Director inspected the shoreline situation to determine if CB defense was necessary at 10:00 a.m. on October 14, 1955. (P. 16) October 16, 12:30 p.m.: State CB Area Coordinator phoned CB director and reported a storm. (P. 16) Local CB director claimed he contacted all local CB chiefs and the Red Cross (which Red Cross denies) by 3:15 p.m. on 16th. (P. 16) Allected 165 trained men on October 16. Maintained close contact with state civil defense. (P. 20) Subordinated itself to the Police Department. (P. 26) Maintained communication with utility companies. (P. 27) Operated headquarters around the clock for 3 days. Volunteers assisted in clean up details. Issued passes and provided signs for official vehicles. Spent $250 for cleanup equipment. (P. 34) Aided other agencies in cleanup. (P. 42) CB auxiliary Police were assigned to assist the city in getting esemant from property owners. (P. 107)
3. Town of Westport, Connecticut: "Declared a state of emergency at 4:30 p.m. of the 16th of October and requisitioned weather-proofed National Guard trucks. (P. 15)
4. State Civil Defense: Got the Coast Guard to send 2 helicopters and 5 amphibious ducks to Norwalk. (P. 20)
5. Norwalk Police Department: Had beach patrols at assigned stations. (P. 17) Enacted its Emergency Mobilization Plan at 10:00 p.m., October 15. Alerted
CD units and emergency agencies. Used loudspeakers to urge residents to take higher ground. Received weather messages direct from weather bureau. Alerted school officials to prepare for sheltering evacuated families. Called owners of businesses in danger. (P. 18) Diverted traffic from a collapsed bridge. Directed traffic concerned with a derailed train. (P. 19) Operated with emergency generators and responded to requests for aid. Used portable radios when generators failed. (P. 20) Assumed control of evacuation procedures. (P. 22) Provided escorts for shuttle buses. (P. 25) Established emergency headquarters in the Main and Wall Streets areas and began to issue passes to merchants and tenants. Established a curfew at dark, received 40 auxiliary policemen from New London, Connecticut. Arrested sightseers in restricted areas. (P. 32) Made arrangements to have homes supplied with water. (P. 33)

6. Connecticut Power and Light Company: Had a substation blow up due to the flood at 11:00 p.m. on October 15. (P. 19) Made extensive repairs that cost shareholders 9 cents per share. (P. 78)

7. South Norwalk Fire Department: Answered calls for the Norwalk Police. (P. 20)

8. WMKA Radio Station: Forced off the air at 11:00 p.m. on October 15 until utilities made repairs. Answered phone calls seeking flood information. (P. 20)

9. Norwalk National Guard: Although not activated yet at 11:00 p.m. on October 15, forty percent of its personnel had reported for duty. Established a shelter for evacuees at the Armory. Placed trucks on duty and met requests for personnel and supplies. Assisted police in evacuating residents and patrolling to prevent looting. (P. 20) Was officially activated by the Governor at 5:00 a.m. October 16. (P. 22) Remained in charge of anti-rioting patrols. (P. 25) Formed patrols at washed-out bridges. Operated on emergency basis till Oct. 22. (P. 36)

10. U. S. Coast Guard: Contributed 2 helicopters and five ducks to State Civil Defense and some boats for evacuation. (P. 20)

11. Civil Air Patrol Groups: Volunteered their services and were assigned to traffic and guard duty. (P. 21)

12. Sea Scouts: Volunteered their services and were assigned to traffic and guard duty. (P. 21)

13. Norwalk Fire Department: Called in off-duty men. Engaged in rescue work. Received aid in rescuing from the National Guard. (P. 21) Off-duty firemen were on call at their homes. (P. 24) Furnished the dept. of Public Works with hose lines to wash away silt and debris. Helped burn the rubbish, brush and lumber. Pumped out stores and homes including the use of 17 out-of-town pumps. Supplied gas and oil. (P. 33)

14. Norwalk-Wilton Red Cross Chapter: Opened emergency shelters at 6:00 p.m. and 10:00 p.m. on October 15 with full staff and 700 volunteers. Organized and manned evacuation centers. Fed and housed 200 evacuees on October 15. Maintained a 24-hour switchboard and dispatched messages through Western Union office. (P. 22) Requested a small supply of medical materials from the Norwalk Hospital. (P. 21) Shipped its shelter operations on morning of October 16 to the Norwalk Jewish Center. (P. 22) Coordinated activities with other Red Cross units through its Link Disaster PLAN. (P. 28) Spent $100,000 on emergency relief. (P. 78) Announced over WMKA what provisions could be made for disaster victims. Established a rehabilitation office staffed by RC workers from Washington D. C. to disburse emergency grants. Removed and located evacuees from shelters to homes or new accommodations. (P. 77) Grants were made to family businesses. Was aided by contributions from individuals and businesses. (P. 77-78) Took advice on grants from a local committee. (P. 61) Sent letters to clergyman to locate needy families. 110 grants were given for rehabilitation. (P. 82)
Salvation Army of Norwalk: Worked with the Fire Department. Prepared food for rescue workers. Admitted evacuees to Salvation Army building. (P. 22) Mobile units arrived from Pennsylvania to provide food. (P. 26) Helped flood victims with shelter, food, clothing. (p. 28) Distributed disinfectants. Distributed cleanup supplies, furniture and clothing. Received monetary donations. (P. 39)

Young Men's Christian Association: Solved leakage problems in own building. (P. 22) Housed 30 people overnight. Were in contact with the Police Dept. (P. 23) Heat and electricity restored on October 19. Cancelled programs for one week and took three weeks to get back to normal. (P. 39)

Norwalk Hospital: Treated 17 people in the emergency room. Sheltered 30 people for the night. (P. 23)

Maukhu Council of the Boys Scouts: "Contacted the Police Department and was assigned traffic duty..." and offered their Scout Camp as a shelter. (P. 23) Collected clothing and conducted a paper drive for the Salvation Army. (P. 40)

Fire Departments near Norwalk: Provided 25 pumping units. (P. 24)

Norwalk Jewish Center: Let Red Cross use its building and facilities. 10 to 20 people were housed and fed for a week and activities of the Center were cancelled for a week. (P. 26)

Norwalk Chamber of Commerce: Helped representatives of federal and state agencies set up their relief operations. Offered offices and secretarial help. Underwrote $1,000 of phone calls. (P. 25) Undertook activities to hasten reopening of plants. (P. 38) Allowed Small Business Administration to use office and sponsored a meeting publicizing loans. (P. 74) Cooperated with the Connecticut Development Commission to help local industries resume operations.

Norwalk Post Office: Had to resort to truck service since floods washed out railroad tracks. (P. 31)

Department of Public Works, Norwalk: Supplied 250 gallons of gasoline. (P. 33) Bore the major responsibility for the removal of debris during restoration. Had chemicals delivered to it by CD. Aided the State Health Department and State Commission on Food and Drugs by carting away contaminated food. Repaired sewers and roads and examined dams. (P. 34) Rely on state and federal agencies for funds, equipment, and personnel. Depended on the Corps of Engineers for erection of Bailey bridges. (P. 41-42) Responsible for investigating drainage failures and approval of applications for new sewers. (P. 52)

Norwalk Health Department: Inspected buildings, food stores, eating and drinking places. Informed people how to proceed with damaged food. Were aided by inspectors from the State Food and Drug Commission. Gave 2,766 typhoid shots. Gave instructions over the phone on how to cope with specific health problems. Distributed information and bulletins on sanitary care and cleanup. Bought $75 of commercial for rat poison. (P. 35)

Connecticut State Department of Health: Printed and distributed instruction sheets. Sent personnel to work on Norwalk's water supply. Supplied rat poison. Coordinated activities with the Department of Public Works. (P. 35)

Bridge Consulting Company - D. E. Steinman: Made recommendations on 11 local bridges in need of repair. (P. 36)

26. Connecticut State Employment Service: Were told to expect a lot of applications and that a lot of manpower was needed. Additional CASES staff from Hartford were used. Reported that at major plants were affected by the storm. Received 450 extra applications for unemployment insurance. Used WPA to announce employment conditions. (P. 37) Returned to normal operations one month after flood. (P. 38)

29. Norwalk Girl Scouts: Lent assistance to various agencies. (P. 60)

30. Norwalk Chapter of Hadassah: Operated a housing information bureau with the cooperation of the Connecticut Light and Power Company, Norwalk Real Estate Board, Norwalk-Elmwood Red Cross Chapter, and the Norwalk Housing Authority.

31. Norwalk American Legion Post: Made funds available to affected veterans. Distributed foodstuffs contributed by Red Bank (New Jersey) Post. (P. 60)

32. Jewish War Veterans Post, Norwalk: Received $1,000 from state and national headquarters to assist flooded veterans. (P. 60)

33. Fairfield County Veterans of Foreign Wars: Distributed clothing and canned foods to flood victims. (P. 60)

34. Norwalk B'nai B'rith Lodge: Presented a show, the proceeds of which went for flood relief. (P. 42)

35. Norwalk Kiwanis: Donated money to the Red Cross and Salvation Army. (P. 41)

36. Ancient Order of Hibernians: Held a dance to collect money for Red Cross flood relief. (P. 41)

37. Norwalk City Common Council (Including the Mayor's Office): Convened a special meeting for taking action on emergency matters. Decided to engage an engineer. Approved money for rehabilitation. (P. 61) Mayor's Office: Alerted the local civic defense, Police and Fire Departments, and other public agencies as well as state and Federal disaster agencies after 10:00 P.M. on October 15. (P. 18) Hammered during evacuation by communications difficulties. (P. 26) Heard petitions for improving drainage systems. (P. 62)

38. Norwalk Board of Estimate and Taxation: Appropriated $15,000 for demolition of buildings. (P. 61)

39. Building Inspector's Office: Posted 45 buildings as being unsafe. (P. 61)

40. Norwalk Commission on Streets and Highways: Made responsible for investigation of drainage failures and for approval of applications for new sewers. (P. 62)

41. Small Business Administration (SBA): Sent staff to Norwalk to aid businessmen and homeowners who desired loans. Outlined procedure in getting a loan at a meeting set up by the Chamber of Commerce and publicized by radio and TV. (P. 74) Relied on a committee for advice and determined who would get loans. (P. 75) Worked with Red Cross on helping people get money. (P. 75)

42. New Haven Railroad: Incurred heavy losses from flood and had to suspend New England operations for 36 hours. Used buses for passengers. Sought a loan due to flood. (P. 73)

43. Silvermine Community Association: Took an active interest in redevelopment and future flood prevention. (P. 85)

44. Norwalk City Planning Commission: Directed all its attention after flood to one certain district. Received complaints and worked in other districts. (P. 85)

45. Norwalk Redevelopment Agency: Changed its plan of development in view of flood. (P. 92) Applied to the Urban Renewal Administration for funds for their change in plan. (P. 95) Met with the Norwalk Flood Control and Erosion Commission and the Connecticut Flood Control Board to discuss a flood control project in Norwalk. Announced plans for a $10 million redevelopment program on year after the flood. (P. 97)

47. Norwalk Flood Control and Erosion Commission: Created by the Common Council on February 14, 1956, in order to qualify for state financial aid and technical assistance. This organization was permitted by legislation of a special session of the Connecticut Legislature in November, 1955. (P. 101) Has full jurisdiction over all rivers and streams in the city. Could assess property owners for flood improvements. First task was to study the October, 1955 floods and determine factors for prevention. (P. 102) Decided to establish a public information center and library of flood control materials to educate Norwalk residents. (P. 103) Cooperated with the Redevelopment Agency. Approved plans for a new dam. (P. 104)

48. Connecticut Flood Control and Water Policy Commission: Conducted a study of the Norwalk River to determine flood control lines. Recommended that Norwalk's Flood Control and Erosion Commission devise a master plan. (P. 102)
D. Brief Description of the Emergency Social System

The Norwalk Flood was not expected by local officials and residents—they were not forewarned. (P. 25) The mayor of Norwalk could not assume control of city agencies because of communication difficulties. "The Police Department undertook the major responsibility of meeting the emergency situation." Most city and private organizations subordinated themselves to the Police Department whose rescue work was hampered by people who refused to leave their homes. A power failure further complicated pumping out basements and disengaged communications networks. (P. 26) The Red Cross set up a communications center and opened up evacuation shelters. (P. 22) The National Guard rescued quite a number of residents. (P. 27) The Salvation Army reported to the Civil Defense and distributed food and clothing. (P. 26)

During clean-up operations in Norwalk, city agencies were most actively concerned with the mayor urging immediate clean-up. The Police were faced with an extreme amount of traffic flow which hindered clean-up operation as did inexperienced volunteers. Premature pumping-out of many homes resulted in the Fire Department redoing the job. The Department of Public Works was responsible to coordinate state and national funds for restoration, relying on the Army's Corps of Engineers for heavy work. (P. 41) Civil Defense workers assisted agencies until the CD volunteers had to return to work. (P. 42) The major activity of the Red Cross was not only sheltering the evacuees, but in giving rehabilitation grants to families. In contrast, the Salvation Army's activities were limited to aiding people immediately after the flood and worked with the Fire Department. (P. 43)

Norwalk relied heavily on federal and state agencies in flood rehabilitation. (P. 71) The Norwalk Common Council assumed responsibility for bridge reconstruction and road building. (P. 72) "Bureaucratic delays...stymied the initiation or conclusion of projects upon which there was agreement." (P. 73)

Governmental and civic agencies combined efforts to recover the city from destruction. The Norwalk Chamber of Commerce acted as an information center for local businesses on what government assistance was available to them and cooperated with the Small Business Association which provided loans. The Red Cross helped 116 families with food, shelter, and clothing. (P. 86) "One year after the flood, economic life in Norwalk was restored to normalcy." (P. 87)

The flood had significant implications for redevelopment plans. The Norwalk Redevelopment Agency, the Norwalk Common Council, the Norwalk Parking Authority, the Norwalk Flood Control and Erosion Commission, the Norwalk Housing Authority, and the City Planning Commission cooperated to devise individual plans for development in light of the flood. As a result of the flood, the Norwalk Flood Control and Erosion Commission was established to prevent future floods and was made possible by new legislation that came about due to the widespread flooding in Connecticut. (P. 110)

E. Community Context

Norwalk is a growing city of over 50,000 population, many of which commute to New York for work (middle class). (P. 8) However, there are 200 industrial concerns in Norwalk. (P. 9) A local Socialist Party has elected the mayor for a number of years. (P. 15)
II. GENERALIZATIONS AND HYPOTHESES

None.
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
1. Name: Norwalk Fire Department
2. Type: Manifest

B. Organizational Description
1. - 3. No data.
4. Control: Was under direction of Police Department. (P. 26)
5. - 7. No data.

C. Organizational Activities During Disaster
1. Resources: Aerial fire trucks proved valuable in rescue. (P. 21) 17 out-of-town fire departments came to aid in Norwalk. Local Fire Department used 1,000 truck hours and 4,000 man-hours.
2. Special Problems: People jammed Fire Depts.' three trunk lines on evening of October 15. Rescue operations were hampered since two bridges were out. (P. 21) 60 percent of pumping out homes had to be redone since people clamored for pumping before flood receded. This lowered firemen's morale. (P. 33, 34)
3. Organization change: No change was contemplated. (P. 26)
4. Evaluation: The fire Chief felt their facilities and plan were adequate for the flood. The report writer felt "The structure and operations of the department should be reevaluated." (P. 26)

D. Activities in Emergency Social System
1. Plans for Cooperation: Worked in conjunction with Police and their plan. (P. 21) Fire Department in South Norwalk answered calls for Police. (P. 20)
2. Communication Networks: Was alerted by Mayor worked closely with Police. (P. 21)
3. - 6. No data.
7. Relation to Government Units: Received aid from the National Guard. (P. 21)

E. Other: Fire was a negligible factor during flood. (P. 21)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
   1. Name: Police Department - Norwalk
   2. Type: Manifest

B. Organizational Description
   1. Goals and Activities: Received thrice-daily weather reports as standard procedure. When a situation is beyond control of its staff it is considered an emergency. (P. 17)
   2. Character: Immediately responded to Mayor's alert. The police had various techniques for communication in case one method was unavailable. Had its entire force on duty 2 hours after alert. Maintained a list of and keys for all local business establishments. (P. 18) A system of passes set up by the Police restricted sightseers. (P. 32) Above information seems to indicate efficiency and flexibility.
   4. Control: The Police assumed leadership in all operations immediately after the flood with all other groups under their control. (P. 26)
   5. Recruitment and Orientation: Volunteers restricted emergency activity at times. (P. 33)
   6. - 7. No data.

C. Organizational Activities During Disaster
   1. Resources: Had a "Police Emergency Mobilization Plan." (P. 18) State police and neighboring Police sent trained men with emergency equipment. (P. 19) Employed emergency power equipment. Used water-proof trucks for rescue. (P. 20) 40 auxiliary policemen arrived on October 23 from one town to assist police. (P. 32)
   2. Special Problems: Untrained volunteers hampered work. (P. 33) Strangled traffic hindered clean-up operation. (P. 30) Greatest difficulty during clean-up was curbing sightseers. (P. 32) A few people refused to leave their homes. (P. 26)
   3. Organizational Change: Had to adapt to auxiliary and volunteer workers. (P. 19 & 32)
   4. Evaluation: Police felt that their disaster plan was adequate. (P. 26) Writer of monograph felt their disaster plan was inadequate. (P. 26) Some people censored Police for late warning. (P. 30)

D. Organizational Activities in Emergency Social System
   1. Plans for Cooperation: Regularly received reports from Weather Bureau. (P. 17) The Police Mobilization Plan presumably included cooperative arrangements but was not explicitly stated in the report. (P. 21)
   2. Communication Networks: Received reports from Weather Bureau regularly the number of which were increased during disaster and prior to it. (P. 17 & 18) Police were alerted by the Mayor. Police's plan called for alerting CD and neighboring Police. (P. 16) The Fire Department answered calls for the Police in South Norwalk. (P. 20)
   3. Competition and Conflict: No data.
   4. Non-organization members: Auxiliary and neighboring police were used as well as volunteers. (PP. 32,33)
   5. - 6. No data.
   7. Relation to Governmental Units: National Guardsmen assisted the Police. (P. 20)

E. Other: None.
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
   1. Name: Norwalk-Wilton Red Cross Chapter.
   2. Type: Manifest

B. Organizational Description
   1. Goals and Activities: "Following any disaster, long-term assistance
      appears to be the major job of the Red Cross." (P. 82)
   2. Character: RC alluded to local influence in letting a local Citizens
      Advisory Committee review applications for grants. The Red Cross
      absolved indebtedness of a few family businesses so that Small Business
      loans could be obtained by them. (P. 81) "The Red Cross worker and the
      family developed a suitable (rehabilitation) plan together." RC was
      given wide publicity in the press. (P. 81) "All who indicated a need
      were taken care of." (P. 83) Case workers verified losses. (P. 81)
      Quickly handled all grants. (P. 82)
   3. Complexity: Hierarchy of RC includes a local executive secretary,
      committee chairman, and volunteers (of which there were 700 in Norwalk).
      (P. 22) RC work in Norwalk was linked to neighboring and state agencies
      of the Red Cross. (P. 28) Workers from American RC were also present.
      (P. 38)
   4. Control: No data.
   5. Recruitment and Orientation: Volunteers were used. (P. 22) Workers
      had "excellent disaster training." (P. 28)
   6. - 7. No data.

C. Organizational Activities During Disaster
   1. Resources: Workers had "excellent disaster training." (P. 28) Em-
      ployed its Link Disaster Plan which involves using other RC agencies.
      (P. 38) Could rely on CR and other RC agencies for supplies. (P. 39)
      $162,000 was spent on families. National RC drive collected $15 million.
      (P. 82) RC was on duty for 6 weeks. (P. 81)
   2. - 3. No data.
   4. Evaluation: "It capably assumed responsibility." Alert workers had
      excellent training. (P. 28) "Governor Ribicoff praised the work of
      the Red Cross." (P. 81)

D. Organizational Activities in Emergency Social System
   1. Plans for Cooperation: Got some medical supplies from the Norwalk
      Hospital. (P. 23) Used the Norwalk Jewish Center as a shelter. (P. 38)
      Worked with Dept. of Public Welfare. (P. 43)
   2. Communication Networks: Short wave and radio cars kept RC in touch
      with CR. (P. 22) WNPK radio gave time to RC, public could be informed
      of services. (P. 38) Sent letters to clergymen for rehabilitation leads
      on needy families. (P. 82)
   3. - 7. No data.

E. Other: None.
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
   1. Name: Civil Defense - Norwalk, Connecticut
   2. Type: Manifest

B. Organizational Description
   1. Goals and Activities: The State CD warned the local CD of an approaching storm as was customary. (P. 16)
   2. Character: No data.
   3. Complexity: CD has auxiliary police. (P. 107) Mobilized 165 trained men. (P. 20)
   4. Control: Local CD maintained close contact with State CD. (P. 20)
   5. Recruitment and Orientation: CD volunteers left work to return to their own jobs and created a manpower shortage. (P. 42) CD took volunteers which aided other government agencies. (P. 34)
   6. – 7. No data.

C. Organizational Activities During Disaster
   1. Resources: Had 165 trained men. (P. 20) Used facilities of State CD. (P. 20) Had a Table of Operation and Equipment. (P. 27)
   2. Special Problems: Volunteers went back to former job before work was completed. (P. 42)
   3. Organizational Change: Changed plan to cooperate more with Red Cross. (P. 27)
   4. Evaluation: The merging of CD and Dept. of Public Works proved successful. (P. 26) Maintained good communications. Had poor liaison with Red Cross. (P. 27) Ran out of replacements for workers. (P. 42) Some indicated CD was "excessively destructive." (P. 80)

D. Organizational Activities in Emergency Social System
   1. Plans for Cooperation: CD and Dept. of Public Works were merged. (P. 26) CD subordinated itself to the Police Department. (P. 26)
   2. Communication Networks: Supposed to have alerted the Red Cross. Red Cross claims it got no word. (P. 16) Received storm warning from State CD. (P. 16) Were alerted by Mayor of Norwalk, also. (P. 16) Short wave radio cars kept CD in touch with Red Cross. (P. 22)
   3. Competition and Conflict: CD says it alerted Red Cross. Red Cross says CD didn't. (P. 42)
   4. Use of non-organization members: Had to rely on volunteers. (P. 42)

E. Other: None.

III-CD-1
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
   1. Name: Salvation Army, Norwalk.
   2. Type: Manifest

B. Organizational Description
   1. Goals and Activities: No data.
   2. Character: Mobile food units were flexible. (P. 39)
   3. Complexity: Salvation Army has state and national levels of organ.
   (P. 39)
   4. Control: Salvation Army's policy as verbalized by local "General"
   was to remain distinct from the Red Cross. (P. 43) Reported to CD
   in emergency. (P. 28)
   5. Recruitment and Orientation: Used volunteers. (P. 22) Salvation Army
   had no funds to previously train their volunteers. (P. 28)
   6. - 7. No data.

C. Organizational Activities During Disaster
   1. Resources: Little volunteer training. (P. 28) Received aid from
   Salvation Army units in Pennsylvania. (P. 24) Maintains a central
   fund for any branch in the state - Norwalk used $6,000. (P. 39)
   2. Special Problems: Expected orders from CD but got none. (P. 22)
   Major of Salvation Army was besieged with untrained volunteers and
   work was hampered by curious onlookers. (P. 26)
   3. No data.
   4. Evaluation: "Its policy of no coordination with the Red Cross is
   questionable." (P. 28)

D. Activities in Emergency Social System
   1. Cooperation: Always works with the Fire Department. (P. 23)
   2. Communication Networks: Works with Fire Department. (P. 22) Also
   reports to CD. (P. 28)
   3. No data.
   4. Non-organization members: Used volunteers. (P. 22)
   5. - 6. No data.
   7. Relation to Government: Helped Health Department distribute disin-
   fectants to homes. (P. 39)

E. Other: None.
I. BASIC INFORMATION

A. Characteristics of Disaster

1. Event: threat of flood (P. 1)
2. Date-Time: afternoon and evening, October 16, 1955
3. Location: Schenectady, New York
4. Damage: none
5. Causes: heavy rainfall in the Mohawk River watershed (P. 1)
6. Unique aspects: "The water did not go high enough to cover the floors of many houses and not much damage occurred." (P. 3)

B. Methodology

1. Research agency and/or principle research personnel: New York State Department of Health; Walter E. Roek and Jean R. Roek
2. Source of data
   a. Number of interviews: 12 families (P. 4)
   b. Number of questionnaire respondents: none
   c. Time lapse between disaster and data collection: data collection preceded most of the flooding (P. 3)
3. Sample plan: "The interviewing was to start in the households living closest to the water and continue up the street away from the river." (P. 3)
4. Other methodological comments: The interviews were largely unstructured. (P. 3)

C. List of All Organizations Involved and Their Activities During Disaster

1. Schenectady Police: (went from door to door urging people to evacuate the endangered areas, set up road blocks, P. 2)
2. Schenectady Firemen: (went from door to door urging people to evacuate the endangered areas, P. 2)
3. Civil Defense: (went from door to door urging people to evacuate the endangered areas, P. 2)
4. City officials: (unspecified, P. 2)
5. Candidates for high city offices: ("appeared at the scene showing concern for the citizens and their property"; took coffee, in the name of the candidate to officers and others at their stations, P. 2)

D. Emergency Social System

"The city of Schenectady had mobilized to meet this threat for which they had advance notice. Policemen, firemen, Civil Defense workers and officials of the city and their equipment were evident in the area as the rain continued. Road blocks, which police guards kept, attempted to keep out all except property owners, residents, and people on official business. A watch was kept on the water's edge at various points to keep people away and for reporting purposes. During the day, policemen, firemen and Civil Defense workers had gone from door to door with the use of semi-official orders, trying to get people to leave their houses. Loudspeakers were used in the streets, and radio and television..."
announcements for the same purpose were directed to the people." (P. 2)

"It appeared that candidates for high city offices were utilizing the situation for political gain since it was near election time. They appeared at the scene showing concern for the citizens and their property. One technique used was hot coffee delivered in the name of the candidate to officers and others at their stations." (P. 2)

E. Community Context

"The citizens threatened by the rising water lived on streets that were inclined from a ridge running parallel to the river down to the bank of the river. Many houses on these streets were old, but most were fairly well taken care of.

"Rain had fallen for several days on the watershed of the Mohawk, particularly in the southeastern part drained by creeks such as Schoharie, causing severe flooding in many valleys. Even more serious than the widespread rainfall was the possibility that the dam holding back Duane Lake on Schoharie Creek would go out, freeing a wall of water down its path into the Mohawk and then on to Schenectady.

"It was expected that the crest of the flood would occur at 3:00 a.m. Monday morning. On Sunday, estimates of the possible depth of the water at 3:00 a.m. were in the form of rumors varying from house destruction to just below the floors of the houses. Many of the houses were built on extra high walls because flooding every few years was planned for by the builders. Previous floods had varied from water that reached the second floor of some houses over 20 years ago to water in the cellars which occurred every few years. The last flood had occurred the previous Spring when ice jammed up in the river below Schenectady holding back the water, but this was prevented from reaching the floors of the houses when large amounts of dynamite were used to break up the ice. Part of the area along the river had been taken over by the city for a park and one piece was used as a parking lot." (Pp. 1-2)

"The people living in the area were a mixture of immigrant and first generation with some old American. Both young couples and old couples made up the population with young children in some homes and older siblings, parents, or roomers in others." (P. 4) "The people living in this area of Schenectady for the most part were not new residents. Only a few had lived there for under one year." (P. 6)
GENERALIZATIONS AND HYPOTHESES

A. "The most frequent ways people recalled they first learned about the flood was either by noticing the rain and the level of the river themselves or being told by neighbors, friends, or relatives." (P. 4)

B. "It was felt that the reactions of the families to the flood would be more meaningful if they were grouped into six types rather than to present observations on each family. These six categories were derived:
1. Family moved out of home
2. Family is moving out of home
3. Possessions stored above expected high water level
4. Wait and see
5. Family remaining in house because personal security is tied to home
6. Family remaining in house to protect property against looters." (Pp. 10-11)

C. "It was quite evident that families' reactions to the threat of water entering their homes varied considerably. Officials planning for disasters might find the suggestion of some use from this exploratory interviewing that some people will not leave their homes even when they have advance warning of an impending disaster." (P. 21)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

Insufficient data.
I. BASIC INFORMATION

A. Characteristics of Disaster

1. Event: Flood
2. Date-Time: December 22, 1955 (P. 160)
3. Location: Sutter and Yuba Counties, California (P. 160)
4. Damage:
   a. Number killed: 80 (P. 160)
   b. Number injured: 4,338 (P. 160)
   c. Physical damage: $15,500,000 (P. 167)
5. Cause: Breaks in levees as river reached flood stage. (P. 162)
6. Unique Aspects: Levees rising 30-40 feet above level of surrounding land (P. 160) gave way under pressure of unprecedented flood conditions. (P. 162) Advance warnings permitted mobilization of emergency system. (P. 161)

B. Methodology

Report is written as an historical account, with no information concerning methods of data collection.

C. List of All Organizations Involved and Their Activities During Disaster

1. State Division of Water Resources (with the various levee commissions "and others" patrolled 200 miles of levees; participated in a communications network of "various agencies and personnel in the field, collecting and transmitting hydrologic data."
   (P. 161)
2. Office of Civil Defense, State level: Supplied nine portable hypochlorinators for use in purifying water. (P. 165)
3. State Health Department: Sent mobile water-testing laboratory to fringe area of Yuba City "to aid in the restoration of water services from private wells." (P. 165)
4. State Reclamation Board: Gave "top priority" to task of rebuilding the levees, 4,000 men worked round the clock to seal the gaps. (P. 165)
5. State Division of Highways: "...estimated that damage to the roads in the area...would approximate...1 million dollars." (P. 165)
6. National Guard: "Ordered in to prevent looting, to keep out...sightseers, and to assist in other operat’ons." (P. 164)
7. Levee Commission (unspecified): With State Division of Water Resources "and others," patrolled levees; participated in communications network collecting and transmitting hydrologic data. (P. 161) Organized about 2,000 troops from Beale Air Force Base and "an equal number of civilians...into the levee battle." (P. 161) Noted waterspouts along base of levee on West side of Feather River, unsuccessful attempt made to seal them off with sandbags. (P. 162)
   a. Marysville Levee Commission "...requested one hundred men from Beale Air Force Base." (P. 161)
8. "Local Officials": "Ordered evacuation of low-lying areas south of Marysville," (P. 161) following first break in levee on East side of Feather, "the decision was made to evacuate Marysville." (P. 162)
a. Marysville City Council on advice of the Levee Commission issued warning of impending dangers. (P. 162) Announced permission to return to homes on Christmas Eve. (P. 164)

9. Yuba City Council: "Ordered evacuation of the lower portion of the city." (P. 162) Established headquarters in plant on higher ground; when water receded permitting access to city hall, set up a control center "and chiefs of the various emergency services were appointed and each assigned to a desk." (P. 164) Permitted residents to return home between 7:00 a.m. and 5:00 p.m. daily to salvage what they could. (P. 164) Lifted curfew January 2. (P. 164) Contracted construction companies to handle hauling and disposal of filth and debris after the emergency phase. (P. 165)

10. Sutter County Sheriff: "Took the initiative of evacuating residents of the outlying areas in jeopardy." (P. 162)

11. Yuba City Police: Received information of break in levee below Yuba City; spread alarm by means of loudspeaker on one police car and "by sounding the city's fire horn." (P. 165)

12. Sutter-Yuba Health Dept.: Issued warnings to boil all drinking water. (P. 164) Chlorinated community water supply wells and flushed out supply lines. (P. 165) With "personnel from other local, state, and federal health agencies" sent inspectors to "all food establishments and drugstores" to order discarding of supplies which might be contaminated from flood waters or other causes. (P. 165) "Sanitarians inspected the emergency cafeteria and mobile canteens but recorded no outbreaks of food poisoning or food-borne infections." (P. 165)

13. Radio and TV Stations: One radio station announced levee break but left impression "danger was limited to the southern outskirts of the city." (P. 163) Another radio station, in issuing reports of evacuation of Marysville, continued to give assurances "that these activities did not apply to Yuba City." (P. 163) Radio and TV broadcast "news of general interest and concern and provided entertainment for many" during evacuation period. (P. 164)

14. "The Armed Forces": Supplied helicopters which rescued over 40 persons marooned by the flood. (P. 163) Handled "early cleanup operations." (P. 165)

a. Beale Air Force Base: Furnished 2,000 troops for "levee battle. (P. 161) Furnished complete accommodations for evacuees. (P. 161) Sent two soldiers to "operates field ranges" in connection with Red Cross mobile canteens in Yuba City area. (P. 164)

b. The Sixth Army: Furnished 60,000 sandbags from Martinez and 50,000 from Brentwood. (P. 161)

15. Rideout and Yuba County Hospitals, Marysville: Emptied of patients upon warning of Marysville City Council; patients transferred to homes or "multistoried buildings" (P. 162); Rideout used as screening center for victims. (P. 163)

16. "Other Hospitals": "Nineteen other hospitals, including one as far away as San Francisco, became havens for the Yuba City area sick and injured." (P. 163)

17. Red Cross: (Level unspecified) "Established 38 shelters in 13 towns located in five different counties." (P. 163) Provided care for evacuees beginning December 24 (9,260 persons) through
New Year's Day (565 persons) and January 6 (less than 100), a partial evacuation on January 15 (1,007 persons) and into mid-February. (P. 163) "Food, clothing, cots, bedding, and medical were provided to meet the physical needs...while registration, entertainment, and recreation were undertaken to relieve their anxieties." (P. 163) During the period of rehabilitation: Furnished supplies for cleaning; issued purchase orders for food, clothing, cots and bedding; assigned case workers to aid in making out applications for rehabilitation of property; granted assistance on basis of need; kept account of all monies spent, (P. 168), for applications received and funds appropriated for Yuba City flood (See Chart, P. 168); aided other organizations in "administering their own programs equitably." (P. 168)

a. Sacramento Chapter: Handled mass feeding operations in Yuba City from December 26 until mid-February, setting up canteens at their headquarters and at plant cafeteria and using as many as sixteen motor vehicles as mobile canteens. (P.164) During second threat to levee, included levee workers and patrols in canteen routes. (P. 164)

18. Salvation Army: Furnished gifts of money, goods, and services, along with various other groups. (P. 166)

19. Amateur Radio Operators: Relied upon by both disaster and relief agencies to provide communication with "outside world." Those equipped with emergency power generators "were especially valuable." (P. 163)

20. Newspapers: "...disseminated information and pictures to keep people aware of the situation and to aid them in restoring their possessions." (P. 164)

21. Churches in Marysville: Converted facilities into relief centers; two conducted Christmas services. (P. 164)

22. "Other Local, State, and Federal Health Agencies": With the Sutter Yuba Health Dept. inspected food establishments and drugstores. (P. 165)

23. Food stores, drugstores, restaurants: Put out of business during emergency and condemnation of supplies, but "were back in operation within five to fourteen days after the flood." (P. 165)

24. Local Construction Companies: After emergency phase, were contracted by the city to remove "filth and debris"; removed "fifty to sixty truckloads of material each day," (P. 165) bulldozed great pits to bury animal carcasses when they began to decay. (P. 165)

25. Rendering Plants: Utilized many of the carcasses of dead animals. (P. 165)

26. Pacific Gas and Electric Company: Suffered property damages of $540,000, but utility service continued during and after evacuation: services restored to individual customers "almost as soon as the owners were ready." (P. 166)

27. Pacific Telephone and Telegraph Company: Sent "nearly a hundred pieces of mobile equipment and repair crews into the area"; flew in 25,000 telephone sets from the East. (P. 166)

28. University of California: Converted facilities at Davis into a shelter for refugees. (P. 167)
a. Agricultural Extension Services: "...produced and distributed thousands of a series of eighteen leaflets containing recommendations, policy statements...and other current information of help in dealing directly with flood problems and aiding people in personal or financial distress." (P. 167)

30. Federal Government: Declared most of Northern California "major disaster areas," (P. 166) set up field office of federal agencies in Yuba City. (P. 167)
a. Federal Civil Defense Administration: Official served as coordinator of federal agencies. (P. 167) Provided 1.61 million dollars for rehabilitation of public property in area. (P. 167)
b. U. S. Public Health Service: Active in problems of sanitation and narcotics control. (P. 167)
c. Food and Drug Administration: Active in problems of sanitation and narcotics control. (P. 167)
d. Internal Revenue Bureau: Active in problems of sanitation and narcotics control. (P. 167) Granted delays in filing income taxes. (P. 167)
e. Housing and Home Finance Agency: Gave community 200 trailers for emergency housing. Made interest-free loans for planning road building and repair and restoration of utilities. "Provided technical assistance for urban renewal project." Offered families special financial assistance. (P. 167)
f. Small Business Administration: Loans totalling in the millions of dollars. (P. 167)
g. Veterans Administration: Granted 30 day grace period on insurance payments. (P. 167)

31. California Packing Co.: Cafeteria used as Red Cross canteen. (P. 164)

D. Brief Description of Emergency Social System

A nine-day, 20-30 inch rainfall was recorded in Northern California, beginning December 18, 1955. (P. 160) As the rivers rose the "State Division of Water Resources and the various levee commissions and others" began a patrol of the levees. On December 22, "the Marysville Levee Commission requested one hundred men from Beale Air Force Base." In the next 24 hours, 2,000 troops worked with an equal number of citizens to strengthen the levees with sandbags. Bags intended for packing rice, gunny sacks from Beale "and elsewhere" and 110,000 sandbags furnished by the Sixth Army were used. A fleet of trucks hauled fill "from diggings at the old Chico airport in Marysville." (P. 161)

Local officials ordered the evacuation of low-lying areas south of Marysville about 3:00 a.m. December 25. The resulting movement "established a record of the largest and speediest escape from disaster ever staged in the West." Most of the 9,000 evacuees were housed at Beale Air Force Base, "where complete accommodations were provided for several days." (P. 161) Registration was attempted but was "cumbersome and incomplete" due to movement of evacuees.
Baby food and old sheets for diapers were provided; "and medical and nursing care were given the sick." Beale also furnished equipment to "relief agencies outside the base." (P. 162)

The Marysville City Council adjourned at midnight December 22, and met again at 5:00 a.m., December 23. "Later in the morning, on the advice of the Levee Commission, they issued a warning of the impending dangers. The city's two hospitals (Rideout Memorial and Yuba County) were emptied of their patients. Patients not able to be cared for at home were housed in improvised facilities in multistoried buildings. At 11:40 a.m. a section of levee 18 miles below Marysville gave way, the water spreading over 24,000 acres of farm land, including the hamlets of Nicolaus and Verona. Following this break, the decision was made to evacuate Marysville." Of the 6,000 who "took off westward across the bridge, some 1,500 stopped in Yuba City, the rest continuing to Colusa and points further west." (P. 162)

Attempts to seal off waterspouts on the east side of the levee failed and "Yuba City officials ordered evacuation of the lower portion of the city and the Sutter County Sheriff and his eight men took the initiative of evacuating residents of the outlying areas in jeopardy." (P. 162)

At midnight December 23, a portion of levee about one mile below Yuba City gave way and a wall of water swept northward into Yuba City. Telephone service had been interrupted since mid-afternoon, (P. 162) but "a dozen walkie-talkies and the two-way radios in police cars were still operating." Police spread the alarm "by means of a loudspeaker mounted on one of the police cars" and by sounding the fire horn." Radio announcements of the levee break and the continuing evacuation of Marysville failed to inform Yuba City residents of their own danger. Lack of communication caused about an hour's delay in evacuation procedures. About "25,000 of the 30,000 residents of Sutter County were finally driven from their homes" and the water inundated "about 90 per cent of the city and 100,000 acres of land..." (P. 163)

"About 5,000 persons in the Yuba City area were marooned...and had to be rescued by boats and amphibious vehicles." Over 400 "were rescued by helicopters furnished by the Armed Forces." "...2,884 (persons) were sick or injured." Ten babies were born. "Rideout Memorial Hospital was used as a screening center for victims of the flood, while nineteen other hospitals, including one as far away as San Francisco, became havens for the Yuba City area sick and injured." (P. 163)

"During the early morning hours of December 24, ...refugees began pouring into the nearby towns." The Red Cross "established thirty-eight shelters in thirteen towns located in five different counties, caring for a total of 9,280 persons." Care of varying numbers of refugees continued until mid-February. Besides meeting the physical needs of these people, "registration, entertainment and recreation
were undertaken to relieve their anxieties." Both disaster and relief agencies relied upon amateur radio operators for communication with the outside world. Commercial radio and TV stations still on the air broadcast news and provided entertainment. (P. 163) Newspapers disseminated information "to keep people aware of the situation and aid them in restoring their possessions. (P. 164)

Marysville city officials announced that residents might return on Christmas Eve. Churches had converted their facilities into relief centers, but two managed to hold Christmas Day services. In Yuba City, 300 National Guardsmen arrived to aid local police and civil defense deputies prevent looting, control sightseeing and otherwise assist. The Yuba City Council set up headquarters in an office building on higher ground, "the city clerk acting director until the city administrator returned from a trip..." The following day a control center was established at the now-accessible city hall; "chiefs of the var'ous emergency services were appointed and each assigned to a desk." In a few days, residents were allowed to return to their homes from 8:00 - 5:00 daily and this curfew was lifted January 2. (P. 164)

The Sacramento Chapter of the Red Cross handled a mass feeding in Yuba City proper. A canteen at their headquarters was supplemented by a cafeteria at the California Packing Co.; hired cooks were assisted by 15-30 volunteers, including five school-lunch program supervisors. Sixteen motor vehicles were used as mobile canteens, with two soldiers from Scale operating field ranges and "5-15 volunteers handled all the driving and serving." (P. 164)

The Sutter-Yuba Health Department issued warnings to boil all water and the wells supplying water to the area were heavily chlorinated, (P. 164) and supply lines flushed out, including individual faucets in each home. Nine portable chlorinators were supplied by the state office of Civil Defense for this purpose. The State Health Dept. sent a mobile water-testing laboratory "to the fringe area to aid in restoration of water services from private wells." Outdoor toilets were "strategically placed" as substitutes for a sewage system while the pumps were repaired. Popular demand for mass inoculations for typhoid fever resulted in 6,000 receiving "shots." "Inspectors from the Sutter-Yuba Health Department, in addition to personnel from other local, state, and federal health agencies, made the rounds of all food establishments and drugstores." All foods, drugs, and beverages suspected of being contaminated were "condemned and then hauled off to the dump." Sanitarians inspected the emergency canteens. Although "put out of business temporarily, the town's food stores, drugstores, and restaurants were back in operation within 5 to 14 days." (P. 165)

"Early cleanup operations were handled by military units, but after the emergency phase, local construction companies were contracted by the city..." to remove the filth and debris. Rendering plants used many of the 6,000 animal carcasses, the rest being "buried in great pits bulldozed out for the purpose." (P. 165)
The State Reclamation Board gave top priority to the task of rebuilding the levees; 4,000 men labored around the clock to "until the gaps were sealed." (P. 165) On January 17, 1956, the threat of flooding was renewed and "one third of Yuba City and the surrounding countryside was again evacuated." The repaired levee on the west side of the river held; with the help of "countless tarpaulins, hauled from as far away as Stockton...stretched out to form a canvas skirt "to save the soft earth underneath." To put a "rin-rapping of stone over the earth fill," 160 trucks, operating around the clock moved from a nearby quarry "through Yuba City by a special, patrolled route." (P. 166)

"The State Division of Highways estimated that damage to the roads in the area...would approximate...1 million dollars but would take much longer to repair. Destruction of streets and other public property in Yuba City itself was estimated at more than 2 million dollars." Gravel was dumped to make the streets passable and signs to regulate unnecessary travel were posted. The Pacific Gas and Electric Company continued service despite extensive damage to its property: "when repairs of individual customer's facilities were needed, services were restored almost as soon as the owners were ready." "Nearly a hundred pieces of mobile equipment and repair crews" moved in to repair damage to the facilities of the Pacific Telephone and Telegraph Co.; 25,000 telephone sets were flown in from the East. (P. 166)

"Damages to homes and personal possessions in the Yuba City area were estimated to be in excess of 13 million dollars," virtually none of which was covered by flood insurance. Little physical evidence of the disaster remained after 4 months, but "it was thought that at least two years would be required to rehabilitate the community completely." (P. 166)

"...Both Governor Knight and President Eisenhower declared most of Northern California 'major disaster areas', clearing the way for more extensive use of state and federal resources..." (P. 166) Numerous state agencies responded, "including the National Guard, Office of Civil Defense, Dept. of Agriculture, Health Dept. and Department of Veterans Affairs." The University of California facilities at Davis were converted to a shelter and "its Agricultural Extension Service produced and distributed thousands of a series of eighteen leaflets containing information necessary to those in the area. "During the long period of rehabilitation...advisers and officials of the Farm Bureau Federation assisted families" to locate replacement stock and supplies and plan the restoration of their farms. (P. 167)

"Federal agencies also played an important role in almost every phase of these disaster operations, co-operation between military and civilian authorities being noteworthy. The Weather Bureau, Corps of Engineers, Army, Navy, Air Force, and Coast Guard deserve special commendation." "On Christmas Day, a field office of federal agencies was established in the Chamber of Commerce building in
Yuba City, an official of the Federal Civil Defense Administration serving as coordinator. Representatives of the United States Public Health Service, Food and Drug Administration, and Internal Revenue Bureau were active in dealing with problems of sanitation and narcotics control." The Housing and Home Finance Agency furnished two hundred family trailers for emergency housing and made interest-free loans for planning of reconstruction of public facilities and "technical assistance for urban renewal projects." Special financial assistance was offered to home owners; the Small Business Administration granted a thirty day grace period on insurance premiums for veterans in the area; "the Bureau of Internal Revenue granted appropriate delays in filing income taxes." Through the Federal Civil Defense Administration, 1.61 million dollars was provided "for rehabilitation of public property in the area..." (P. 167)

During the period of rehabilitation, the Red Cross issued all sorts of cleaning equipment. Disaster victims living in homes of friends "were given purchase orders for food, clothing, cot, and bedding." Families and owners of small businesses suffering losses were advised to make application for rehabilitation of their property, "and an experienced caseworker helped the individual assess his needs." Assistance was granted on the basis of need rather than loss, and awards were "reviewed by a local committee of citizens representing the various segments of the community. Purchasing or disbursing orders were used so that an accurate accounting was possible for all monies spent." (P. 168) Gifts of money, goods, and services came also "from the Salvation Army, relief societies, and religious, veteran, fraternal, labor, and youth groups," a few of which turned to the Red Cross for help in assuring equitable distribution. "Some 160 Red Cross staff members...from various chapters and offices." furnished leadership for thousands of volunteers. (p. 168)

E. Community Context

"One center of tragedy was Yuba City, the seat of Sutter County, situated on the west bank of the Feather River about 120 miles northeast of San Francisco. On the opposite bank is the twin city of Marysville, the seat of Yuba County. Both are fast-growing communities of about 10,000 population. Both are centers of prosperous fruit and dairy farms. Both are at an elevation of only 45 to 55 feet above sea level, while the height of the nearby levees is 82.5 feet." The levees are "great earthen dikes...constructed along both sides of the Feather (River)." (P. 160 & 161)

"...the danger (of flooding) was considered much greater in Marysville...which lies in a bowl-shaped area completely surrounded by a separate levee 18 feet high and 7 miles in circumference." "...Yuba City appeared to be safe...simply because of the broad expanse of lowlands extending miles to the south and west." (P. 161)

"...the levee systems in California are the primary responsibility of local levee districts, comparable to water or fire districts; each has its board of directors, its engineer, its levee patrol, and other employees. Of the 120 such quasi-independent bodies in the state, nine are in the Yuba City area." (P. 161)

I-8
After the disaster criticism seemed to center on failure to build a "long-authorized 400 million-dollar dam...proposed eight years ago and delayed by government and private agencies while alternate sites were considered." "A safety levee known as the 'Bow' that protected Yuba City was removed only two years ago, allegedly because of selfish interests." (P. 169) "To all of this was added the criticism of outsiders who contended that the whole community suffered from a strange forgetfulness of the dangers that existed in living behind the earthen banks of a potentially rampant and murderous river." (P. 169)
II. GENERALIZATIONS AND HYPOTHESES

1. Of those who were sick or injured due to the flood, "most of the sick suffered respiratory infections, while the injuries included fractures, contusions, hernias, puncture wounds, abrasions, and lacerations." (P. 163)

2. "In the midst of all these (rescue) activities, Christmas festivities could not be neglected." (P. 164)

3. With regard to the control center established at Yuba City city hall for the appointed chiefs of emergency services: "At first there was uncertainty and confusion in their operations, but these soon fell into an orderly pattern." (P. 164)

4. "Fear of typhoid fever, traditionally linked with polluted waters, led to a popular demand for mass inoculations, consequently, more than 6,000 were given 'shots.'" (P. 165)

5. "Health services in the wake of the disaster were of paramount concern." (P. 164)

6. With regard to "gifts of money, goods, and services...from the Salvation Army, relief societies, and religious, veteran, fraternal, labor, and youth groups:" some of these had "difficulty in administering their own programs equitably and turned to the Red Cross for assistance." (P. 168)

7. Outsiders "contended that the whole community suffered from a strange forgetfulness of the dangers that existed in living behind the earthen banks of a potentially rampaging and murderous river." (P. 169)

8. "In the wake of this disaster, as in every other, human nature became manifested in fault finding." (P. 168)

9. "There was certainly a need to overcome the misconception that a disaster always occurs to some other community..." (P. 169)

10. "It was learned that there is no substitute for a carefully conceived disaster plan, for thorough training..., for periodic trials of disaster operations, and for critical evaluation of the entire program." (P. 169)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

Insufficient data to analyze any organization.
I. BASIC INFORMATION

A. Characteristics of Disaster

1. Event: Flood
2. Date-Time: December, 1955
3. Location: California, Oregon, Nevada, Idaho, Washington (R, P. 3)
4. Damage
   a. Number killed: 80 (R, P. 3); 38 in Yuba City (R, P. 5)
   b. Number injured: none
   c. Physical damage: "Whole communities were cut off from the normal lines of supply, and in some of them virtually all businesses were destroyed along with homes. Bridges were out: highways and lesser roads were choked by landslides." (R, p. 9) "With a mighty roar, a wall of water 35 feet high and 2,200 feet wide charged across Yuba City and the Sutter County farmlands. Toading many houses off their foundations, pulverizing others and hurling their remains ahead of it, and uprooting entire fruit orchards, the water did not stop until some 100,000 acres had inundated." (R, P. 5). Vague reference to the loss of thousands of livestock. (A, P. 130)
5. Cause: Bank levees on rivers and streams gave way to excessive water pressures. "The Western States Floods resulted from two violent sub-tropical storms, one upon the heels of the other, which battered northern California and south-western Oregon and carried over into parts of Nevada, Idaho and Washington. Accompanied by high winds ranging from 40 to 110 miles an hour, the warm rains fell in torrential amounts over the entire area. Temperatures in the high mountains rose to more than 65 degrees as the driving rains melted the snow to levels above 8,000 feet." (R, P. 3)
6. Unique Aspects: Although the flood caused extensive damage in several states, detailed accounts were given only for Yuba City and Marysville, California and Palo Alto - situated on San Francisquito Creek in the Santa Clara Valley. (R, P. 4-6; A, P. 11)

B. Methodology

1955-1222B
1. Research Agency and/or Principal Research Personnel: The American National Red Cross, Pacific Area, San Francisco, California.
2. Source of Data: no data
3. Sample Plan: none
4. Other: none

1955-1222C
1. Research Agency and/or Principal Research Personnel: Richard W. Blum and Bertrand Klass, Study of Public Response to Disaster Warnings, Stanford Research Institute, Menlo Park, California.
2. Source of Data
   a. Number of interviewees: 135 persons in Yuba City, 112 in Marysville and 50 in Palo Alto (C, P. 27)
   b. Number of questionnaire respondents: same as above
   c. Time lapse between disaster and data collection: "C" collected data about three weeks after the disaster. There was no lapse in time for collection of data by the Red Cross. (C, P. 1)
   d. Other: "Fourteen written descriptions of reactions during the flood period were also collected. (C, P. 2)

3. Sample Plan: no data

4. Other Methodological Comments: "The procedures employed included quota sample survey research, the analysis of written weather records and reports, content analysis of daily newspapers, radio and news agencies releases, and the solicitation of subjective information written accounts by selected individuals in the flood area." (C, P. 2)

D. List of All Organizations Involved and Their Activities During Disaster

1. The American Red Cross, Pacific Area: (cooperating with other community groups, provided mass feeding, shelter and clothing for the refugees. "Red Cross chapter volunteers staffed shelters, canteens, registration and inquiry desks set up to locate missing persons and reunite families separated in the confusion of evacuation." B, P. 6)

2. Civil Defense and Municipal Authorities: (ordered evacuation of Marysville to Yuba City - which was later flooded, B, P. 4)(later joined the police and volunteers in Yuba City for evacuation purposes, P. 5, B)

3. Amateur Radio Operators: ("Gave outstanding service, and in some cases these seemingly tireless HAMs provided the only means of communication of the stricken areas with the outside world," B, P. 9)

4. Weather Bureau: (issued flood warnings as early as December 19 in Yuba City, warning that every precaution should be taken against these dangerously high (river) stages. In contrast to this, no flood warnings were issued in the Palo Alto area, B, P. 3)

5. U.S. Army Corps of Engineers: (worked around the clock directing levee workers in an attempt to prevent a second flood. "In mid January, 1955, Yuba City was again threatened by flood. The new levee, which had been pushed into the breach opened by the December floods, was composed of fresh earth and was only 68 feet high. River peaks of 67 feet were forecast on January 14 for the Marysville-Yuba City area. By the 18th a high river stage of 68 feet was expected and, in fact, did occur; but a special round-the-clock effort by levee workers, under the direction of the U.S. Army Corps of Engineers, prevented a second breach," C, P. 53)

6. Sutter County Grand Jury: ("It is apparent from the analysis of content that the weather bureau warnings were often accompanied by conflicting denials of danger from local sources." The Grand Jury investigated these contradictory reports issued by local agencies, C, P. 22)
7. Helicopters and Army Ducks: (helped to remove residents from
stricken areas, C, p. 62)
8. National Guard: (ordered to help with flood evacuation and
to work on levees, C, p. 62)

D. Description of Emergency Social System

On December 23, the levees of the Feather and Yuba Rivers gave
way, flooding cities in Marysville, Yuba City and Palo Alto.
(B, P. 4)

Marysville, flooded in 1950, by a break on the Feather River,
faced the same problem in 1955. On December 23, 1955 evacuation
orders were issued by the civil defense and municipal authorities.
The citizens followed orders and moved into "safe" Yuba City,
which later flooded. (B, P. 4)

"Yuba Citizens had only minutes of warning, broadcast by their
local radio station, and by courageous police and Civil Defense
volunteers at automobile loudspeakers." (B, P. 5)

The local chapter of the Red Cross responded by providing the
refugees with food, clothing and shelter. "Through long-standing
agreement with military authorities, the Red Cross had secured,
on loan, thousands of cots and blankets from nearby military
installations. Feeding stations were set up in or near the
shelters. Townspeople hospitably threw open their homes." (B, P. 6)

Manpower, equipment and supplies of all kinds from many military
bases were thrown into the flood battle by all branches of the
armed services. (B, p. 10)

Residents of unharmed neighboring communities hastened to the
aid of their fellow Californians. Red Cross chapter volunteers
staffed shelters, canteens, registration and inquiry desks set
up to locate missing persons and reunite families separated in
the confusion of evacuation. (B, P. 6)

"They were joined by hundreds of their neighbors not previously
identified with Red Cross work - members of business and civic
clubs, church societies, veterans' organizations, labor unions,
and youth groups." (B, P. 7)

The Junior Red Cross provided the refugees with gifts and Christmas
programs. "The toys, along with trees, wreaths, decorations,
and turkey and other fixings for Christmas dinner, were trucked
to the shelters." The refugee's Christmas was brightened after
all. (B, P. 7)

The areas were declared a "major disaster" by Governor Knight and
President Eisenhower, "clearing the way for use of state and
federal resources for relief. Additional help came from numerous
local and state agencies." (B, P. 10)
E. Community Context

The twin California Cities of Marysville and Yuba City are situated forty miles north of Sacramento and only three miles from the Feather and Yuba Rivers. (R, p. 4) The City of Marysville has 9,700 residents and Yuba City has 10,294. (C, p. 3) South of the twin cities was Palo Alto (population 43,153), not normally threatened by surrounding streams or rivers, was partially flooded when debris in the San Francisquito Creek accumulated and caused heavy overflow of rain waters. (C, p. 3)

Below Marysville the combined flow of the Feather and Yuba rivers flooded extensive low lying areas adjacent to the left (Marysville) bank of the Feather River. However, the greatest discharge of surplus waters from the Feather River occurred along the Yuba City area. The greatest recorded flooding of these areas occurred in 1907. Since that time protective levee systems have been built. The urban area of Yuba City – Marysville is protected by high Sacramento River Flood Control Project levees. The confined flood channel is two miles wide at this point. (C, p. 11)

The residents of Marysville, Yuba City and Palo Alto responded in different ways when the word of the impending flood was issued. Marysville expected flood and evacuated immediately after the flood warnings were issued. Its residents were told to expect floods and consequently were earlier both upset and prepared. Yuba City residents, reassured by some communications and warned by others, initially expected no flood and then when it did occur, were extremely upset by it and totally unprepared. (C, p. 43)

The Palo Alto residents' behavior was very much like that of the Yuba Citizens. (C, p. 44)
II. GENERALIZATIONS AND HYPOTHESES

A. The order to evacuate a community is usually received with mixed emotions by the residents. (C, p. 4)

B. The radio is the preferred news source during a prolonged danger period. "This is probably a reflection of the immediacy of radio response to changing conditions as opposed to the time lag in printing characteristics of newspaper production." (C, p. 22)

C. "It is clear that the receipt of weather forecasts of flood danger is not associated by most people with consideration of evacuation." (C, p. 5)

D. Flood warnings are accepted by groups only when some of its members have seen the high waters. (C, p. 28)

E. It is clear that interest in weather news increases as the gravity of the situation increases, as mass communication coverage intensifies. (C, p. 43)

F. Individuals tend to seek the companionship of their family members under the impact of flood threats (C, p. 51)

G. Race barriers are lowered and mixed groups work side by side in the clean-up operation after a disaster. (C, pp. 52, 141)

H. There is a tendency to blame city officials for flood disasters. "There are a lot of things that I am mad about and one is the City Council at Yuba City. Also the mayor for telling everybody that it was safe on the side of the levee." (C, p. 143)
SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
   1. Name of Organization: American Red Cross (local level)
   2. Type of Organization: Manifest

B. Organizational Description
   1. Organizational Goals and Activities: "Official emergency organization. "Capable with experience of 75 years, and forewarned that a crisis impending, the Red Cross was ready for the Yuba City emergency." (B, p. 6)
   2. Organizational Character: "The Red Cross made it known that help would be given to everyone in need. "Underlying idea of Red Cross help is that no family member be burdened beyond its ability to recover." (B, p. 18)
   3. Organizational Complexity: "Several units were operative in the disaster areas: "medical and nursing units," "building advisory unit," etc.
   4. Organizational Control: "local chapters in Yuba City and Marysville organized, before the flood, with neighboring communities as a mutual aid preparedness group. The group was alerted to prepare for evacuees. The chapters at Yuba City and Marysville controlled the activities of these chapters." (B, p. 6)
   5. Member Recruitment and Orientation: "Red Cross chapter volunteers staffed shelters, canteens, registration and inquiry desks set up to locate missing persons and reunite families separated in the confusion of evacuation." (B, p. 6)
      "They were joined by hundreds of their neighbors not previously identified with Red Cross work - members of business and civic clubs, church societies, veterans' organizations, labor unions and youth groups." (B, p. 7)
   6. History of Organization: no data
   7. Public Image of Organization: no data

C. Organizational Activities during Disaster
   1. Resources of Organization During Disaster: "Putting small farms and business back on their feet" the Red Cross worked with Small Business Administration, the Farmers Home Administration or local banks to develop a plan for the recovery of the business or farm. (B, p. 12)
   2. Special Problems to Organization: "The Red Cross sent workers to mountainous Humboldt, Del Norte, Siskiyou, and Trinity Counties in California to assist flood victims. This group encountered a number of problems - bridges were out; highways and lesser roads were choked by landslides, etc. "Whole communities were cut off from the normal lines of supply, and in some of them virtually all businesses were destroyed along with homes." (B, p. 9)
"Travel by plane, helicopter, tugboat, rowboat, 4 wheel-drive jeeps, horseback, and even on foot over muddy, impassable roads and log jamps became commonplace for Red Cross workers seeking out and taking food and medical supplies to flood-isolated families." (B, P. 9)

3. Organization Change During Disaster: no data

4. Evaluation of Disaster Activity: no data

D. Organizational Activities in Emergency Social System

1. Existing Plans for Cooperation with Other Organizations: The Red Cross avoided "friction" by cooperating with other local agencies. The "latent" needs of the victims were evaluated carefully by a committee of local citizens representative of the various segments of the community. (B, p. 12)

2.-7. No data

E. Other

None
I. BASIC INFORMATION

A. Characteristics of Disaster
   1. Event: Blizzard (P. 2)
   2. Date-Time: 1956 (cover)
   3. Location: Sierra Mountains near Reno, Nevada (P. 1, 16)
   4. Damage
      a. Number killed: 0 (P. 2)
      b. Number injured: 7 (P. 2)
      c. Physical damage: none (P. 2)
   5. Cause: not applicable
   6. Unique Aspect: the disaster occurred while 26 USAF personnel were on a survival training exercise. (P. 2)

B. Methodology
   2. Source of Data
      a. Number of interviews: 26 (P. 3)
      b. Number of questionnaires: none
      c. Time lapse between disaster and data collection: no data
      d. Other: none
   3. Sample plan: Interviews were with all persons involved in the blizzard. (P. 3)
   4. Other methodological comments: none

C. List of All Organizations Involved and Their Activities During The Disaster
   1. Stead Air Force Base, Reno, Nevada (26 USAF personnel affected by the blizzard during field training in Arctic survival, P. 2).

D. Brief Description of Emergency Social System
   Twenty trainees and six instructors divided into three groups were involved in a blizzard at 7,000 feet altitude (P. 2). The official groups broke down and those best able to lead grouped with other best able to lead (P. 7). The unofficial groups formed were classified as either adapted or non-adapted. All the members of a particular unofficial group adapted in a similar manner (that is, built adequate shelters, made fires, prepared hot food and drinks, dried out footgear and clothing, etc., or failed to do these things, P. 4) Only the first five days of their training exercise were studied intensively, this included one day before the blizzard and four days after. (P. 2)

E. Community Context
   "The subjects included 20 airmen under Exercise Long Walk (ten days of field training in Arctic survival). Trainees had been divided alphabetically into groups and were supervised by six instructors. One member of each group had been
designated as leader but had been delegated little responsibility or power. The whole group was a very heterogeneous one in personality and background, but the members were all between 18 and 22 years of age, relatively experienced in outdoor sports and outdoor living, and were all of the same military grade (airmen third class). The subjects had previously completed technical school training at a midwest base and classroom and static camp instruction in survival at a western base, and had participated in field exercises involving living off the land, escape and evasion, seashore survival, and desert survival at the same base. (P. 2)

"The instructor group tended to be a separate and lived somewhat apart from the trainees. This procedure and other more subtle device, utilized by the instructors placed considerable psychological distance between the trainees and the instructors. Generally, orders were transmitted to trainees through the leaders of the three official groups." (P. 2)
II. GENERALIZATIONS AND HYPOTHESES

A. "Group adaptation laps in emergencies when official subgroups break down and are replaced by groupings of the most able and of the least able with the least able." (P. 7)

B. "Non-adaptable groups resist or delay for a dangerously long time acceptance of the seriousness of the situation when danger strikes." (P. 10)

C. "In emergencies and extreme conditions, a history of conflict among the various echelons of power within a group inhibits adaptation." (P. 11)

D. "Under stress, failure of official power structures to accept the informal power structure of the group impedes continued adaptation." (P. 12)

E. "In emergencies and extreme conditions, designated leaders tend to abdicate their power roles." (P. 12)

F. "When danger is great, there is a tendency for the leader to reduce the power of the group, thus increasing the hostility of the group and decreasing the group's capacity to adapt." (P. 13)

G. "Interpersonal stresses resulting from differences in values and personality defects interfere with adaptation in both emergency and extreme conditions, especially in the latter." (P. 13)

H. "Under stress, communications failures within groups tend to increase in frequency and reduce the group's capacity to adapt in emergencies and extreme conditions." (P. 14)

I. "As stress increases, lack of will-to-survive tends to become a group phenomenon and contributes to the group's failure to continue adapting." (P. 14)

J. "Under stress 'concessions to immediate comfort' operate as a group phenomenon and result in failures to take appropriate action resulting in breakdowns." (P. 16)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

Insufficient data on any organization
BASIC INFORMATION

A. Characteristics of disaster
   1. Event: fire
   2. Date-Time: 5:05 p.m., January 29, 1956 (p. 16)
   3. Location: Arundel Park Mall, Anne Arundel County, near Baltimore, Maryland (p. 1A)
   4. Damage:
      a. Number killed: 10 (pp. 1A, 1D, 1G); 12 (p. 1B); 10-14 (p. 1H)
      b. Number injured: Over 200 (p. 1G); 211 (p. 1D); 227 (pp. 1B, 1H); 250 (p. 1A)
      c. Physical damage: Destroyed was an 80 x 120 foot building (p. 1G)
   5. Cause: Fire began from an electrical short circuit (p. 9A)
   6. Unique aspects: Fire suddenly broke out in a building in which 1000-1400 persons were gathered, the crowd panicked trying to escape the burning building (p. 1B)

B. Methodology--1956-0129 A
   1. Research Agency: Baltimore City Civil Defense Health Service and the Hospital Council, Inc. of Baltimore (cover)
   2. Source of data:
      a. Number of interviews: specific number not given (p. 2)
      b. Number of questionnaire respondents: 68 (p. 23)
      c. Time lapse between disaster and data collection: no data
      d. Other: report conducted by State and County Police, (p. 2)
   3. Sample Plan: none
   4. Other: none

B. Methodology--1956-0129 B
   2. Source of data:
      a. Number of interviews: no data
      b. Number of questionnaire respondents: no data
      c. Time lapse between disaster and data collection: less than 24 hours (p. 1)
      d. Other: newspaper report
   3. Sample Plan: none
   4. Other: none

B. Methodology--1956-0129 D
   2. Source of data:
      a. Number of interviews: no data
      b. Number of questionnaire respondents: no data
      c. Time lapse between disaster and data collection: less than 24 hours (p. 1)
      d. Other: newspaper report
   3. Sample Plan: none
   4. Other: none

B. Methodology--1956-0129 G
   1. Research Agency: The Evening Star
   2. Source of data:
      a. Number of interviews: no data
      b. Number of questionnaire respondents: no data
      c. Time lapse between disaster and data collection: less than 24 hours (p. 1)
      d. Other: newspaper report
B. Methodology 1956-0129 H
2. Source of data:
   a. Number of interviews: no data
   b. Number of questionnaire respondents: no data
   c. Time lapse between disaster and data collection: less than 24 hours (p. 1)
   d. Other: newspaper report
3. Sample plant: none
4. Other: none

C. List of Organizations Involved and Their Activities During the Disaster
1. Maryland State Police: (conducted an Investigation of the disaster, p. 2A. Specific activities in the emergency social system not given)
2. Anne Arundel County Police: (conducted an Investigation of the disaster, p. 2A) (Officer on routine patrol saw the building in flames and radioed for fire equipment and ambulances, p. 11A) (This officer lead "more than 50" persons out of the burning building, p. 15B)
3. Anne Arundel County Commissioners: (Agency for which the State and County Police investigation was intended, p. 2A)
4. Brooklyn Park Fire Company: (First engine at the scene, radioed for assistance, p. 11A)
5. Baltimore City Fire Department: (Supplied four engines, p. 11A)
6. Red Cross:
   a. Baltimore Red Cross: (Specific activities not given, p. 11A)
   b. Anne Arundel County Red Cross: (Specific activities not listed, p. 11A)
   c. Philadelphia Red Cross: (Standing by to send additional help, p. 15B)
7. Salvation Army: (Specific activities not given, p. 11A)
8. Box 414 Association: (Amateur fire followers and can see) (Specific activities not given, p. 11A)
9. Baltimore City Police: (Sent one cruiser to the fire, p. 12A)
10. Friendship Airport: (Dispatched components of the Air Force personnel stationed there and of their police force, p. 12A)
11. 175th Infantry of the National Guard: (Specific activities not given, p. 15B)
12. Fort Mead, U. S. Army: (Supplied one truck to transport the dead to the Singleton Funeral Home, p. 12A) (Aided in traffic control, p. 15B)
13. Singleton Funeral Home: (Received the dead from the disaster, then transported the bodies to the Baltimore City Morgue, p. 12A)
14. Baltimore City Morgue: (Received the dead from the Singleton Funeral Home, p. 12A)
15. Deputy State Medical Examiner: (Examined the dead at the Singleton Funeral Home, p. 12A)
16. Anne Arundel County Health Officer: (Arrived on the scene after all persons had been evacuated, p. 14A)
17. Civil Defense for Baltimore: (Were on standby in case aid was requested, however, no official request for Civil Defense personnel or supplies was received, p. 15A)
18. South Baltimore General Hospital: (Received injured from the disaster, p. 16A)
19. University Hospital: (Received injured from the disaster, p. 16A)
20. John Hopkins Hospital: (Received injured from the disaster, p. 16A)
21. St. Agnes Hospital: (Received injured from the disaster, p. 16A)
22. St. Joseph's Hospital: (Received injured from the disaster, p. 16A)
23. Mercy Hospital: (Received injured from the disaster, p. 16A)
24. Anne Arundel County Fire Inspector: (Carried out an investigation as to the cause of the fire, p. 1D)
25. Glen Burnie Fire Department: (Specific activities not listed, p. 3G)
D. Brief Description of the Emergency Social System

"Firemen said the holocaust began when a small blaze broke out in a duct near the wooden ceiling over the kitchen. Several men climbed ladders to attempt to put it out." (p. 18)

"Suddenly, one eyewitness reported, 'the fire shot out all along the ceiling--almost like an explosion.' The crowd which had been orderly and had been offering wisecracking advice to the fire fighters, suddenly panicked." (p. 18)

"Some cool heads sought to preserve order but their voices soon were lost in the din. Many rushed for the two exits at each end of the building. One of them, double doors, would not open. People blocked here turned to the windows. The stampeding, pushing and shoving throng made a chaotic scene. Some helped others through windows. Still others were repeatedly hurled back from the exits as the fire spread and exits were blocked." (p. 36)

"Three initial calls were made to fire companies: One was from the hall, received at the Brooklyn Park Fire Company at 5:08 P. M.; another was by an Anne Arundel County police officer, who, driving past on a routine patrol, saw the rear of the buildings in flames and radioed to Femnale Headquarters for fire equipment--and again, seeing the crowds of injured people, radioed for ambulances. Femnale, in turn, also called Brooklyn Park. The third call was made by a woman who had gotten out of the building with her husband and immediately went to find a telephone. She called the Baltimore City Fire Department. The Brooklyn Park Fire Department also reported calling the Baltimore City Fire Department, but the radio operator who made the call was told that under the regulations someone in authority would have to call the City Fire Department. No such official call was reported to the investigating committee. Ultimately, four engines from Baltimore City were reported on the scene." (p. 11A)

The Anne Arundel County Police officer, after reporting the fire, "pushed his way inside the hall. Turning on his flashlight he yelled: 'I am a policeman. Follow this light and you'll get out of here.' As soon as they had reached safety, Jager went back inside and repeated the same routine, stopping only when the flames made it impossible to go back in." (p. 15B)

"One physician residing in the neighborhood of Arundel Park ... deciding that he was needed at the scene, he started there, taking his bag and wearing a stethoscope around his neck for identification ... He estimated his arrival at around 5:20 p.m. and said that some persons were still coming out, or going back in and coming out, of the building. He began by trying to treat people as he met them, but soon he enlisted police help in setting up an aid station at the corner of the ingress road, where all the ambulances would pass. Word of his arrival spread rapidly and seemed to have a calming effect on the crowd." (p. 13A)

Lack of central control over ambulance movement and the uncontrolled movement of private cars, police cars, and other volunteer vehicles taking injured to doctors and hospitals created a problem of distribution and South Baltimore General Hospital was over-loaded with patients while other hospitals received few patients. (p. 21A)
A. The following actions were taken at the scene of the Odenton Train Wreck as a result of the experience at the Arundel Park Fire the month before:

1. "South Baltimore General Hospital had installed its monitor receiver as a result of the fire."

2. "The necessity for the notification of hospitals was probably uppermost in a few minds because of the fire."

3. "The Red Cross from Anne Arundel County had put in a full-time communications unit, prompted, in part at least, by the fire."

4. "Quicker response by hospitals. It is probable that hospitals mobilized a little more promptly because of the fire experience. Fort Meade had just finished a review of their disaster plan and although this cannot surely be attributed to the fire, there may have been a connection."

5. "Distribution of casualties. It is certain that a few individuals tried to distribute the casualties and the experience of the fire was probably in their minds (in the fire most of the patients were taken to one hospital)."

6. "The fire probably had something to do with the number of doctors who were called to the scene of the wreck." (p. 36A)
SPECIFIC ORGANIZATIONAL ANALYSIS

Insufficient data on any organization
1. **BASIC INFORMATION**

A. Characteristics of Disaster

1. Event: Train wreck
2. Date-Time: 5:26 p.m., 23 February, 1956 (pp. 25-26)
3. Location: Odenton, Maryland
4. Damage:
   a. Number killed: 6 (p. 25)
   b. Number injured: 92 (p. 32)
   c. Physical damage: Several cars were derailed (p. 25)
5. Cause: The train "dropped an axle out of a journal box and onto the ties, in effect jacking up one side of that car and allowing the other wheel to leave the track. This car... and several cars following it were derailed, some overturning." (p. 25)
6. Unique aspects: none

B. Methodology

1. Research Agency: Baltimore City Civil Defense Health Services and The Hospital Council, Inc. of Baltimore
2. Source:
   a. Number of interviews: number not given (p. 2)
   b. Number of questionnaire respondents: number not given (p. 2)
   c. Time lapse between disaster and data collection: less than 1/2 hour (p. 27)
   d. Other: none
3. Sample plan: no data
4. Other: none

C. List of Organizations Involved and Their Activities During Disaster

1. Glen Burnie Ambulance Company: (First to receive word of the wreck, sent ambulance to the site, called police and sent out a general ambulance alarm and alerted hospitals, p. 26)
2. Pennsylvania Railroad: (Put into effect its own disaster plan of operations, called the railway police, p. 26)
3. Provost-Marshal, Fort Meade: (Received word of the train wreck, alerted the Medical Officer of the day, p. 26)
4. Fort Meade Hospital: (Sent into disaster action, clearing wards next to the operating and X-ray areas, and setting up a reception and triage point under a medical officer, and notifying off-duty personnel, p. 27)
5. 68th Medical Group: (Units went to the scene, p. 27)
6. Odenton Volunteer Fire Company: (Dispatched an engine to the site and put one man on radio duty, p. 27)
7. South Baltimore General Hospital: ("Put some eighteen of the house staff on alert and readied the accident room; but they received only the less seriously injured... They were asked to send doctors to the site, but at the moment could not do so, so they called Mercy Hospital and relayed the request," p. 28)
8. Mercy Hospital: (Sent two physicians to the site, p. 28)
9. St. Agnes Hospital: (Stated that they had only eight beds available, p. 28)
10. State Police Medical Service: (Had their ambulance dispatched on standby p. 23)
11. Anne Arundel General Hospital: (Received casualties from the wreck, p. 30)
12. University Hospital: (Received casualties from the wreck, p. 30)
13. Lutheran Hospital: (Received casualties from the wreck, p. 31)
14. Anne Arundel County Ambulances: (Transporting of victims from the wreck, p. 30)
15. State Police: (Specific activities not given, p. 28)
16. Military Police: (Specific activities not given, p. 28)
17. Baltimore Red Cross: (Listing of patients at Fort Meade Hospital and operation of the information center, pp. 31-32)
The accident occurred at 5:26 p.m. At shortly after 5:30 p.m., the Glen Burnie Ambulance Company received an incoherent telephone call from a woman who said she had seen the wreck. One man proceeded directly to the site in an ambulance, leaving others to call police and send out a general ambulance alarm and alert hospitals.

Meantime, the Pennsylvania Railroad, which has its own disaster plan, was in operation also. Someone from the block station called the movement director, who alerted the railway police. The latter called police of Anne Arundel County, of Maryland, of Baltimore, and of Odenton, asking for ambulances and requesting police to alert hospitals. The railway police also called the MP's at Fort Meade, and fire departments of Baltimore City, Baltimore County, and Prince George's County. The chief of the railway police went directly to the site.

At Fort Meade, the medical staff had been sitting in a conference on disaster plans, and as they were breaking up around 5:30, the call came to the Provost-Marshall about the wreck. The Medical Officer of the Day left a surgeon in charge, took a Cadillac ambulance (which mired down), and went to the scene. Fort Meade Hospital, meanwhile, went into disaster action, clearing wards next to the operating and X-ray areas, and setting up a reception and triage point under a medical officer, and notifying off-duty personnel. Units of the 68th Medical Group also went, independently, to the scene.

At Ferndale, the team of investigators authors of this report still working on the Arundel Park fire report, were alerted by State Police around 5:30, and went directly to the scene.

The Odenton Volunteer Fire Company dispatched an engine to the site, and put one man on radio duty, since they were the 'home company'. This radio-control truck got to the site around 5:45 p.m.

The Red Cross Disaster Co-chairman from Glen Burnie called his communications man, who radioed to his wife, who called County authorities. The Health Officer received his call from Civil Defense office in the Court House, and reached the site by around 5:45 p.m.

Baltimore County Fire and Ambulance Companies were alerted at around 5:45 p.m.

South Baltimore General Hospital heard the police radio calls from the County ten minutes before they received the official call from State Police. Baltimore City Fire Department called Baltimore County Fire Department and advised them to divert ambulances to other hospitals. Baltimore City ambulances were not involved. South Baltimore General Hospital put some eighteen of the house staff on alert and readied the accident room, but received only the less seriously injured. They were asked to send doctors to the site but at the moment could not do so, so they called Mercy Hospital and relayed the request. Mercy Hospital sent two physicians to the site. Mercy and other hospitals were also notified of the wreck by the City Fire Department. St. Agnes Hospital replied that they had only eight beds available, but called attending doctors who lived near the wreck and these doctors went out. St. Agnes Hospital then called Lutheran Hospital and also called Baltimore County Civil Defense, which had already been alerted.

State Police Medical Service was called by railway police and had their ambulance dispatcher on standby.
"Equipment from all over the county, along with Montgomery and Prince George's and Baltimore Counties, responded..."

"Variously reported were altercations between police and press, police and MP's, ambulance drivers and police.

"Observers all agreed that 'no one was in charge,' that there was neither adequate command nor any real medical control at the site. Communications was somewhat improved, largely because of the Pennsylvania Railroad disaster plan which was put into prompt effect. Coordination was attempted on a county-by-county basis, and between county and state police, but the general effect was still one of jostling and confusion. Convergence congestion was due primarily to the excess of equipment and the inadequacy of road space." (pp. 26-30)

E. Community Context

"The site was a rather isolated stretch of track with swampy land on both sides, a road on each side but at a little distance, and a single access road but no crossover road. There were houses nearby as well as a factory for the manufacture of plastics." (p. 25)
A. The following actions were taken at the scene of the Odenton Train Wreck as a result of the experience at the Arundel Park Fire the month before:

1. "South Baltimore General Hospital had installed its monitor receiver as a result of the fire.

2. "The necessity for the notification of hospitals was probably uppermost in a few minds because of the fire.

3. "The Red Cross from Anne Arundel County had put in a full-time communications unit, prompted, in part at least, by the fire.

4. "Quicker response by hospitals. It is probable that hospitals mobilized a little more promptly because of the fire experience. Fort Meade had just finished a review of their disaster plan and although this cannot surely be attributed to the fire, there may have been a connection.

5. "Distribution of casualties. It is certain that a few individuals tried to distribute the casualties and the experience of the fire was probably in their minds (in the fire most of the patients were taken to one hospital).

6. "The fire probably had something to do with the number of doctors who were called to the scene of the wreck." (p. 36A)
Insufficient data on any organization
I. BASIC INFORMATION

A. Characteristics of Disaster
1. Event: tornado
2. Date-Time: 3:00 p.m., 15 April 1956 (P. 1-2)
3. Location: MacDonald’s Chapel, Alabama (P. 1)
4. Damage: No data
5. Cause: not applicable
6. Unique Aspects: none

B. Methodology
1. Research Agency and/or Principal Research Personnel:
   Norman E. Green (P. 4)
2. Source of Data
   a. Number of interviewees: 32 (P. 1-2)
   b. Number of questionnaires: none
   c. Time lapse between disaster and data collection: 8 days (P. 1)
3. Sample Plan: none
4. Other: none

C. List of All Organizations Involved and Their Activities During Disaster
1. U.S. Weather Station at Birmingham Municipal Airport:
   (issued storm warning bulletin, P. 3)
2. National Guard: (traffic control into the disaster area, P. 2)
3. Civil Defense: (traffic control in the disaster area, P. 2)
4. Alabama Highway Patrol: (notified of impending severe weather by the Weather Bureau, P. 3)

D. Brief Description of Emergency Social System

"Just before three o’clock the sky became very much darker a heavy black cloud formed and the Tornado first struck suddenly from its point of origin on the edge of the community... Apparently this warning amounted to about only 60 seconds in time before the full fury of the storm struck the village proper. The respondents reported that most people, therefore, didn’t have time to do much of anything." (P. 2)

E. Community Context

MacDonald’s Chapel is an unincorporated community of approximately 3,000 population located near Birmingham, Alabama. The day of the Tornado, radio and TV reported severe thunderstorms did not actually predict tornado activity. (P. 1-2)
I. GENERALIZATIONS AND HYPOTHESES

"Newer developments in radar storm tracking communications nets may greatly improve the warning situation in which case people may have time to apply the U.S. Weather Bureau "Tornado Safety Rules." (P. 3)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

Insufficient data on any organization.
BASIC INFORMATION

A. Characteristics of Disaster
   1. Event: Explosion of thorium powder at the Sylvania Laboratories (A, p. 8)
   2. Date-Time: 8:40 A.M., July 2, 1956 (A, p. 8)
   3. Location: Metallurgical Laboratory of Sylvania Electric Products, Inc., Bayside, Queens, Long Island, New York (A, p. 8)
   4. Damage:
      a. Number killed: 1 (C, p. 39)
      b. Number injured: 9 (A, p. 12)
      c. Physical damage: $25,000 to AEC equipment & building, $100,000 to all equipment including AEC (C, p. 3h, A, p. 13)
   5. Cause: Sudden explosion of a chunk of thorium ignited other pieces of thorium in the room; cause of original explosion unknown (P. 11)
   6. Unique aspects: The process during which the thorium exploded had been done before without trouble; the reason for the explosion was unknown. (A, pp. 4, 18) Thorium is slightly radioactive. (A, p. 4)

B. Methodology
   1. Research Agency and/or Principle Research Personnel
      b. National Analysts Inc. for Committee on Disaster Studies (National Academy of Sciences-National Research Council) 1956-0702B
      c. Merrill Eisenbud (Manager, New York Office of AEC) 1956-0702C
      d. 1956-0702D Not known who did summary

   2. Source of data
      1956-0702 A
      a. Number of interviewees: Not specified
      b. Number of questionnaire respondents: None
      c. Time lapse between disaster and data collection: Not specified
      d. Other: interoffice memorandum, confidential reports, letters--See pp. 1A & 2A (appendix) for listing
      1956-0702 B
      a. Number of interviewees: 45 (B, appendix A)
      b. Number of questionnaire respondents: None
      c. Time lapse between disaster and data collection: Unspecified
      d. Other: Unspecified
      1956-0702 C
      No information at all on data sources, but since author is the chairman of the New York operations office of AEC, which prepared report A, probably same sources
      1956-0702 D
      Same as 1956-0702 B

   3. Sample plan:
      1956-0702 A: Not specified
      1956-0702 B: Respondents were sampled from the area surrounding the plant. Thirteen civic leaders and public officials were included (appendix B)
      1956-0702 C: Not specified
      1956-0702 D: See 1956-0702 B
C. List of All Organizations Involved and Their Activities During Disaster
1. Sylvania Safety Engineer: (took charge of the situation, B, P. 1).
2. New York City Fire Department: (put out the small fire, B, P. 1).
7. Military Police from Fort Totten: (removed sightseers from explosion premises, B, P. 7).

D. Brief Description of Emergency Social System
The laboratory people immediately roped off the area and denied access to all persons. The Safety Engineer ran over from the adjoining building and immediately took charge. A radiation check was made and it was found to be insignificant. The injured were immediately removed and sent to the hospital. When the fire department arrived, the Safety Engineer made them put on all their protective coverings to prevent contamination. They put out what little fire there was. (B, pp. 1-2) An army detachment from Ft. Totten threw a cordon around the buildings until police arrived. (B, P. 7) The press arrived in great numbers and "people from the surrounding territory jammed the telephones wanting to know whether they should evacuate the area or not". (B, P. 2) AEC's New York Operations Office arrived to check the radiation. All other necessary government agencies were notified. (A, pp. 21-22).

Few of the people living near the laboratory heard the blast, and most of those thought it was the usual morning "cannon fire" from Ft. Totten. Some people sent their children on bicycles to see what happened. (B, P. 4) Newspaper stories grossly exaggerated the size, importance, and destructiveness of the blast. (C, P. 3).

E. Community Context
The Sylvania Laboratories are new, modern, fireproof buildings; both buildings and the surrounding grounds are enclosed by an eight-foot chain-link fence. The nearest residence is 300 yards away. (A, P. 8) Most of the closest residents live in two large garden-type apartment buildings. The alarm expressed was by these nearby residents largely. (B, P. 3).
II. GENERALIZATIONS AND HYPOTHESES

A. "The fears associated with the explosion were mainly about radioactive fall-out or how radiation sickness is contracted. The population was so universally ignorant of everything connected with atomic material that they didn't even know what to be afraid of. They knew they didn't know what to fear and this heightened their anxiety. The wish for education on atomic matters was expressed almost universally." (B, pp. 3-4)

B. "When asked what sources of information they would trust in case of a national emergency, the majority of respondents answered 'radio'." (B, p. 5)

C. "The majority of concern was for the welfare of children." (B, p. 5)

D. Certain people were trying to use the incident for political purposes. (B, p. 7)

E. In times of emergency, the overlapping numbers of agencies involved in regulating plants and laboratories "can result in undue and demoralizing confusion". (A, p. 25, C, p. 35)

F. "Each plant, laboratory, or other facility involved in the use of radioactive materials (should) designate an area to be used as emergency headquarters in the event of an accident. It (should) also designate an official and alternate to take charge of this headquarters." (A, pp. 30-31)

G. A summary of "significant findings" of B can be found in 1956-0702 D. However, these findings seem to draw unwarranted conclusions from the data found in report D, and should therefore be used cautiously.

H. An extensive program for indoctrinating both the press and the general public about atomic energy and the nuclear field in general would prevent much of the ignorance and hysteria related to an atomic accident. (C, p. 36)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

Insufficient data
I. BASIC INFORMATION

A. Characteristics of Disaster
1. Event: sinking of the ocean liner Andrea Doria (P. 426)
2. Date-Time: 11:05 p.m., July 25, 1956 (P. 426)
3. Location: "a few miles off Nantucket Island" (P. 426)
4. Damage: no data
5. Cause: collision with the Swedish liner Stockholm (P. 426)
6. Unique Aspects: none

B. Methodology
1. Research Personnel: Paul Friedman and Louis Linn
2. Source of data:
   a. Number of interviewees: "a large number of people" (P. 426)
   b. Number of questionnaire respondents: none
   c. Time lapse between disaster and data collection: unspecified, but it was immediately following the disaster because the authors were passengers on the liner Ille de France which picked up many of the survivors, whom they then interviewed (P. 426)
3. Sample plan: the authors "spent approximately twelve hours, independently, interviewing and observing the survivors, the crew of the Ille de France who participated in the rescue operation, and the passengers aboard the Ille de France." (P. 426)
4. Other methodological comments: "our data, carefully recorded after interviews with a large number of people, do not constitute a systematically scientific study of experience, but may represent a modest contribution to the psychology of disasters." (P. 426)

C. List of All Organizations Involved and Their Activities During Disaster
1. Liner Ille de France: (picked up survivors, P. 426)
2. No other data.

D. Brief Description of Emergency Social System
"The first impact of the collision caused a power failure on the Andrea Doria, putting the public address system out of commission. Moreover, the ship rapidly developed a severe list which, coupled with oil sticks on the deck, made it imperative for each person to save himself from sliding into the sea. These circumstances also made it almost impossible to circulate information on foot: As a matter of fact, Italian crew members did make their way about on the sharply inclined decks, urging passengers to remain calm, and there was indeed very little panic." (P. 426)

The liner Ille de France was one of the boats which picked up survivors. Many of the survivors had lost their shoes and some of their clothing, "crew and passengers of the rescue ship were generous in their contribution of clothing articles." (P. 431)
"The lack of an official list of survivors contributed to the delay in the reunion of families separated during the disaster... such a list was not initiated with the rescued during their stay aboard the Île de France; this and similar delays on other vessels and at collection centers may account for the fact that several days passed, in some instances, before families were reunited." (P. 424)

E. Community Context

"A considerable number of passengers on the Andrea Doria were immigrants coming to the United States..." (P. 429)
II. GENERALIZATIONS & HYPOTHESES

A. "The emotional state of the survivors may be divided into two distinct phases: the state of initial psychic shock and the recovery phase. During the phase of initial shock, the survivors acted as if they had been sedated." (p. 426)

B. "The survivors presented themselves for the most part as an amorphous mass of people tending to act passively and complacently. They displayed psychomotor retardation, flattening of affect, somnolence and, in some instances, amnesia for data of personal identification. They were nonchalant and easily suggestible." (p. 426)

C. "The attitude of helpless dependency identifies this condition as a state of emotional regression in which people who are normally capable of functioning on an emotionally mature, adult level become childlike in their feelings of personal inadequacy and in their tendency to overestimate the powers of those offering help and leadership." (p. 426)

D. The survivors showed "pressure of speech and an apparently compulsive need to tell the story over and over again, with identical detail and emphasis." (p. 426) "We were impressed with the similarity between these repetitive narratives and the repetitive dreams of the traumatic neurosis. Each represents a psychological returning of the trauma, as part of an attempt to master an experience that had proved overwhelming." (p. 427)

E. "We were struck by the frequency with which the survivors who spoke to us were angered. They expressed certainty that the account was the fault of the Andrea Doria even though the details of the catastrophe favored sympathy on behalf of the Andrea Doria. This prejudice was based on the a priori acceptance that Swedes are dependable, faultless sailors and people of impeccable integrity and reliability, while Italians on the other hand are childlike and irresponsible, tending to pursue their pleasures instead of their duties" (p. 427)

F. "The absolute necessity for finding a scapegoat, for locating somebody who was at fault, found an outlet once again in the paranoid projection of prejudice on the part of people on the Ile de France; not only dramatizing that stereotype thinking is still prevalent, but dramatizing its capacity to dominate opinion during periods of crisis and its influence in distorting perception and judgement. Such attitudes are familiar expressions of the quest for a scapegoat, a psychological device for turning aggression outward. It is part of the overall attempt to master an overwhelming trauma. The survivors' tendency to blame the Andrea Doria for their misery derived from their feeling of having been failed. They suffered a narcissistic injury which may be compared to the feelings of a child who finds that the strength of his father has turned out to be a fallacy." (p. 427)

G. "The willingness of some people to assume leadership in a group in disaster situations has repeatedly been observed, and a systematic
study of such individuals might help us to identify the qualities that make for leadership, enabling us to concentrate our civil disaster training on such persons. The existence of a corps of trained people endowed with the qualities of leadership may make the difference between success and disaster in community emergencies. A leader who understands the psychological importance of identifying with a group, as a device for combatting feelings of individual helplessness and despair, will make use of techniques which promote positive group solidarity not merely as effective leadership but as the most important weapon in combating mass hysteria, but mass hysteria as such can be defined as a failure of leadership. Whether a group reacts to a crisis with self-control and cooperation or with emotion and chaos depends almost entirely upon the quality of leadership, and the vital importance of developing able leaders is well-illuminated by a statement of Freud's. (p. 428)

H. "The authors are convinced that a modification of the 'women and children first' rule by insistence that a parent accompany the child, even if the only parent available be the father, would represent a sound application of modern psychiatric insights." (p. 429)

I. "Prompt establishment and publication of identification lists is an important leadership device in combating panic and maintaining morale. This device serves a two-fold purpose. First, it is reassuring to the bewildered survivor to be recognized as an individual; the mere recording of his name, address, and next of kin helps to re-establish, in his mind, the intactness of his shattered ego.... Secondly, to expedite the reconstitution of broken family units is a matter of equal psychiatric importance for the isolated individual.... The publication of an identification list of survivors would have brought a great measure of relief to these people for whom the loss of a passport also meant a discontinuation of their body image, a psychic loss which would have been relieved by being included on such a list." (p. 429)

J. The survivors "looked upon clothing (offered by the passengers on the LIs de France) as protection against the unfriendliness, the enmity of the world as a whole, and as reassurance against the absence of love and security." (p. 431)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

No data
I. BASIC INFORMATION

A. Characteristics of Disaster
   1. Event: Sinking of the Andrea Doria
   2. Date-Time: 11:09 p.m. July 25, 1956 (P. 6C)
   3. Location: 45 miles south of Nantucket Island, Massachusetts (P. 6C)
   4. Damage
      a. Number killed: 50 ("6C)
      b. Number injured: 103 (P. 13 D)
      c. Physical Damage: The Andrea Doria costing 23 million dollars, was sunk and a million dollars was spent repairing the Stockholm. Claims of 116 million dollars were entered against the two ships concerned for deaths, injuries, and cargo losses. (P. 6C)
   5. Cause: Collision of the Stockholm and Andrea Doria. (P. 6C)
   6. Unique Aspects: none

B. Methodology
   1956-0725 C
   1. Research Personnel: Francis Stilley
   2. Source of Data
      a. Number of interviewees: no data
      b. Number of questionnaire respondents: no data
      c. Time lapse between disaster and data collection: no data
      d. Other: none
   3. Sample Plan: none
   4. Other Methodological Comments: Newspaper report in the Chicago Sun-Times published one year after the event.

1956-0725 D
   1. Research Agency: New York Chapter of the American Red Cross
   2. Source of Data
      a. Number of interviewees: no data
      b. Number of questionnaire respondents: no data
      c. Time lapse between disaster and data collection: 18 hours (P. 3D)
      d. Other: Data was gathered by the Red Cross from their relief operations.
   3. Sample Plan: none
   4. Other Methodological Comments: none

C. List of All Organizations Involved and Their Activities During Disaster
   1. House Merchant Marine Committee: (investigated the sinking of the Andrea Doria, P. 6C)
   2. Catholic Charities of the Archdiocese of New York: (helped with relief work, specific activities not given, P. 2D)
   3. Italian Welfare League: (helped with relief work, specific activities not given, P. 2D)
4. New York City Police Department: (specific activities not listed, p. 2D)
5. U.S. Immigration Service: (specific activities not listed, p. 2D)
6. U.S. Customs Service: (specific activities not listed, p. 2D)
7. Italian Line: (specific activities not listed, p. 2D)
8. Kings County Hospitals: (specific activities not listed, p. 2D)
9. Bellevue Hospital Disaster Unit: (transported seriously injured to previously arranged hospitals, p. 3-4D)
10. Press (unnamed): (specific activities not listed, p. 5D)
11. Radio (unnamed): (specific activities not listed, p. 5D)
12. T.V. (unnamed): (specific activities not listed, p. 5D)
13. Steamship Cape Ann: (transported 153 survivors from disaster area to New York, p. 5D)
14. Ile de France: (Transported 740 survivors from disaster area to New York, p. 5D)
15. Private William H. Thomas, U.S. Army Transport: (transported 157 survivors from the disaster area to the Brooklyn Army Base, p. 6-7D)
16. Edward H. Allen, U.S. Navy Destroyer: (transported 78 crew members from the Andria Doria to the Brooklyn Army Base, p. 7D)
17. Abraham and Strauss Store, Brooklyn: (gave clothing to the survivors who landed in Brooklyn, p. 7D)
18. Stockholm: (arrived in New York with her own injured and 569 passengers and crew from the Andria Doria, p. 9D)
19. Department of Hospitals of New York: (through their regular disaster planning, provided for the sick and injured survivors at several voluntary and municipal hospitals, p. 11D)
20. Red Cross
   a. American National Red Cross: (accepted the cost for the relief operation, amounting to $100,000, p. 9D)
   b. New York Chapter: (assumed responsibility for the relief operation, p. inside back cover)
   c. Brooklyn Chapter: (conducted relief operations for those survivors arriving in Brooklyn, p. 5D)
   d. Providence Chapter: (provided a funeral for an Italian girl, p. 8D)
   e. Central Queens Chapter: (specific activities not mentioned, p. 9D)
   f. North Shore Chapter: (specific activities not mentioned, p. 9D)

(A longer list of organizations which were acknowledged by the Red Cross is given on page 12D)

D. Brief Description of Emergency Social System

"It was at 11:09 p.m., July 25, 1956, that the big liners Stockholm and Andrea Doria collided some 45 miles south of Nantucket Island, Massachusetts...The next 11 hours witnessed an incredible display of heroism and fear...Most of the Andrea Doria's
1,700 passengers and crew who could be rescued had been taken away in the *Stockholm* and other vessels by dawn." (P. 6C)

"Only Captain Calamai and a handful of chosen crew men remained behind in a valiant but futile effort to save the big Italian liner." (P. 6C)

"Finally, at 10:09 a.m., July 26, abandoned by all but the dead, the Andrea Doria went down." (P. 6C)

"It was nearly six that evening (July 26) before passengers from the *Andrea Doria* started to come down the steep gangway. The first were the seriously injured, who were... cared for by the *Bellevue Hospital Disaster Unit*, which transported them to hospitals previously arranged for." (P. 3-4D)

The Red Cross clothed and fed the survivors as they arrived at the ports in New York and Brooklyn. (P. 5D)

"For days to come, police, steamship officials and the Red Cross worked to locate and to reunite broken families and to trace the missing." (P. 9D)

E. Community Context

No information
II. GENERALIZATIONS AND HYPOTHESES

None
III. SPECIFIC ORGANIZATIONAL ANALYSIS

Insufficient data on any organization.
BASIC INFORMATION

A. Characteristics of Disaster
1. Event: Fire and Explosion
2. Date-Time: December 3, 1956 at 3:15 p.m. (P. 2)
3. Location: Bush Terminal section of the Luckenbach Steamship Company, pier - 35th Street on the Brooklyn Waterfront (P. 2, 4)
4. Damage:
   a. Number killed: 10 (P. 2)
   b. Number injured: 247 (P. 2)
   c. Physical damage: total property damage about $10,000,000.
      "Except for comparatively small sections of both ends of the pier, the entire superstructure of the pier was destroyed." (P. 11) "The force of the explosion caused considerable damage to adjacent property." The force of the explosion forced many of the cargo doors of Farrell Lines, Inc. pier severe damage. (P. 12)
5. Cause: The exact cause of the fire and explosion could not definitely be determined. A number of possibilities were given. "The initial cause of this fire is attributed to sparks from an oxyacetylene torch steel cutting or burning operation on the north side of the pier." (P. 5) "Sparks from cutting operations may travel 30 feet or more horizontally and retain sufficient heat to ignite combustible material. It appears to have been quite possible for sparks from the cutting operations on this pier to have ignited either the flammable burlap bags in which the foam rubber was packed in cargo doors were not tightly closed, or loose rubber on the deck or apron of the pier." (P. 17)
6. Unique Aspect: The pier was equipped with automatic sprinklers and was considered free of hazardous fires. "The superstructure of this pier was equipped with a good dry pipe automatic sprinkler system that was well maintained and generally considered capable of protecting the pier against excessive fire damage, nevertheless, a fire originating from a comparatively small but hazardous source, spread far beyond its points of origin in but a matter of minutes and became one of holocaust proportions. This in effect was a manifest failure of an accredited sprinkler on a pier to either control or extinguish a fire in its incipiency, not because of mechanical defects or manufacturing of the system, but simply because it was overwhelmed by a very quickly developed large volume of fire." (P. 4)

B. Methodology
1. Research Agency and/or Principal Research Personnel: The New York Board of Fire Underwriters, et. al., 85 John Street, New York 38, New York
2. Source of Data
   a. Number of interviewees: no data
   b. Number of questionnaire respondents: no data

I-1
C. List of All Organizations Involved and Their Activities During Disaster

1. A.D.T. Company: (fully supervised the pier's sprinkling system. "The A.D.T. Company had tested central station sprinkler supervisory service on November 27, 1956 and reported it operative." P. 8) (Set up certain standards by which all watchmen were judged before becoming a pier employee, P. 7) (supervised the pier's 11 fire alarm boxes, P. 7)

2. The New York Fire Insurance Rating Organization: (inspected automatic sprinkler pipes periodically -- graded them 80% effective less than three weeks before the fire, P. 8)

3. Marines: (assisted firemen on the pier, P. 7)

4. Luckenbach Steamship Company: (leased the pier from the city of New York and used it as a general cargo pier for goods in transit, P. 8)

5. Weather Bureau in Manhattan: (kept records, during the disaster, showing the time the fire started, the temperature and the relative humidity. Also the speed and directions of the wind, P. 8)

6. The Fire Department: (received a telephone call from the Luckenbach Steamship Company's operator about 3:15 p.m. on the day of the fire, P. 8) ("When the Fire Department arrived at the pier a few minutes (after 3:15) later, the fire had gained such headway and was of such proportions that a second alarm was requested immediately by radio," P. 9)

7. The Disaster Unit of the Red Cross, The Salvation Army Canteen, Coast Guard boats, various tugs, the New York Fire Patrol, Hospital Personnel, many clergymen and others; (all worked efficiently and commendably at the fire. Specific services performed by these organizations were not listed, pp. 10-11)

8. Committee on Losses and Adjustment of the New York Board: (approximated the Company's losses at $5,663,750. This figure did not include loss of merchandise on the pier which was estimated to be over $2,000,000, P. 14)

9. Enggoin-Nickford Company at Simsbury, Connecticut: (manufactured the fuse involved in the explosion. It is commonly known as "Fordean Detonant" or by the registered trade name "Primocord," P. 15)

10. Interstate Commerce Commission: (challenged with the promulgation and enforcement of safety regulations governing the shipment of high explosives in interstate commerce, P. 21. Passed a
law in 1954 stipulating that the explosives in Cordeau Detonant Fuse could not exceed 110 grains per foot; the allowance was increased to 470 grains in 1956, n. 16) ("the core of the fuse is a material which when shipped in its original state, is classified by the ICC as a Class "A" explosive. This explosive is known as "entaerythritetetranitrate or PETN, n. 15")

11. The U. S. Bureau of Mines: (circulated a pamphlet stating that "Primacord is very insensitive and cannot be detonated by fire, friction or shock of a r'ile bullet. "Usually it is considered to be the safest detonant in use for well-drillhole blasting or other work where long columns of explosives are used," n. 15-16)

12. Dr. Jon's Blasters Handbook: (differed somewhat from the U. S. Bureau of Mines and warned that the hazard of handling this material must be recognized "since Primacord contains a core of high explosives, it is recommended that it be handled in the same manner as other explosives. It is satisfactory to store it in a dynamite magazine or a cap," p. 16)

13. The U.S. Department of Army: (published a field manual stating that, "It is quite possible that rifle fire might detonate it - detonant fuse - if several strands were in contact with each other when fired upon, but his would by no means be a certain method of detonation," p. 16) ("In another section of this manual, the following is noted: "The explosion of any high explosive with which the detonating cord is in contact will also detonate the cord," n. 16)

14. The U.S. Army Ordnance: (in its Safety Manual O. O. Form No. 7324 states: "Primacord Nickford fuse is filled with a high explosive and will be stored in accordance with the provisions of Section IX - High Explosives," p. 16)


16. The US Coast Guard: (issued a pamphlet prohibiting "oxyacetylene burning or other hot work, or the operation of equipment thereof, at anytime on a water front facility during the handling, storing, stowing, loading, discharging and transporting of explosives, p. 17)

17. The National Board of Fire Underwriters: (published several bulletins outlining special precautions to be taken in case of fire, p. 17)

18. Port of New York: (the Captain issued a directive, on October 12, 1954, requiring that the US Coast Guard be notified and a written permit be obtained for shipments of "Class A" explosives in any amount, pp. 20, 22)

19. The Manufacturing Chemists Association: (advocated informative labeling to make certain information common knowledge to safeguard the handler and consumer of chemicals with dangerous potentials, p. 20)

20. The United Nations Committee of Experts on Transport of Dangerous Goods: (proposed that all classes of explosives be labeled, p. 20)

21. Bureau of Explosives of the Association of American Railroads: (purpose is two-fold: that of providing a system for freight rate making and developing packaging requirements to fit the cargo for movement by rail, p. 21).
D. Brief Description of Emergency Social System

"On Monday, December 3, 1956 at 3:15 p.m. the Fire Department received a telephone call of fire on the pier from the Luckenbach Steamship Company's telephone operator. The Brooklyn Fire Alarm Dispatcher notified an engine and truck to respond." (P. 8)

When the Fire Department reached the pier, the fire was almost out of control - additional help was summoned. These extra men included fireboats, employees, searchlight experts, etc.

A number of other agencies responded also. "The Disaster Unit of the Red Cross, the Salvation Army Canteen, Coast Guard boats, various tugs, the New York Fire Patrol, Hospital Personnel, many clergymen and others all worked efficiently and commendably at the fire." (P. 10-11)

E. Community Context

"No data"
II. GENERALIZATIONS AND HYPOTHESES

A. "When catastrophies occur that are in a sense man made, but without intent, and originate because their possibility of developing was either not recognized or was misjudged, then it must follow that some lessons must have been taught that are contrary to what may have been accepted unwittingly as sufficient to prevent such a disastrous occurrence." (p. 4)

B. Spectators viewing a disaster are never injured or killed due to any laxity on the part of the Police and Fire Departments. (p. 14)

C. Careless use of the oxyacetylene while cutting tools caused a substantially large number of fires. (p. 17)

D. Fire Prevention should be an integral part of all good business. All personnel associated with the operations of any business should be trained to recognize fire hazards, to appreciate the terrific loss potential in life and property. (p. 23)

E. More attention should be given to fire safety matters in all welding and cutting operations. (p. 23)

F. "Existing federal, state and municipal regulations and codes should be reviewed periodically for improved understanding of their terminologies, for appropriate classification grouping with explosion hazard and risk evaluations under fire conditions together with a consideration of any areas of undue conflict of interest." (p. 24)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

Insufficient data on any organization.
I. BASIC INFORMATION

A. Characteristics of Disaster

1. Event: Fire

2. Date-Time: December 26-29, 1956 (The first fire was reported at 2:40 a.m. on December 26, the second at 5:47 p.m. on December 27, and the third at 10:50 a.m. on December 28)

3. Location: Malibu, California

4. Damage
   a. Number killed: one (P. 7)
   b. Number injured: no data
   c. Physical damage: 37,557 acres burned, 84 homes destroyed.

5. Cause

   It had been a dry summer with no rain and little fog. The hot, dry winds known as Santa Ana blow both dried the vegetation and later rapidly spread the flames; this wind so dries the vegetation, that "it will almost explode." Normal velocities of this wind register "between 45 and 50 miles per hour and gusts caused by the draft of the fire were estimated from 60 to 80 miles per hour. In some of the places wind would be blowing toward the mountains at the floor of a Canyon like the draft of a chimney while at the ridge it would be blowing in the opposite direction with equal velocity." The humidity never got above the danger point. "Frequently the fire travelled faster than cars and equipment could operate due to heavy smoke that covered the roads...back rats with fur ablaze would run for safety to the unburned areas and spread the fire even faster." (PP. 2, 4)

6. Unique Aspects: The Malibu area has always been "considered by fire fighters one of the most treacherous localities on the West Coast." (P. 2)

B. Methodology

1. Research Agency and Principal Research Personnel: Loren S. Bush, Chief Engineer, Board of Fire Underwriters of the Pacific.

2. Source of Data
   a. Number of Interviewees: no data
   b. Number of questionnaire respondents: no data
   c. Time lapse between disaster and data collection: no data
   d. Other: The only evident source of data is conversations with the Chief of the Los Angeles County Fire Department. (P. 7)

3. Sample Plan: no data

4. Other Methodological Comments: no data

C. List of All Organizations Involved and Their Activities During Disaster

1. Los Angeles County Fire Department: (has responsibility for protecting Malibu area; had patrols out scouting for fires, P. 2) (co-operated with other fire-fighting agencies in fighting the fire, PP. 4-5)

2. California State Civil Defense Office: (ties together,
through a radio net, a comprehensive mutual aid plan between various fire fighting agencies; "maintains 100 pumper throughout the state located in well organized fire departments who agree to respond any place in the state with two experienced fire men," (P. 2)

3. Governor of California: (declared an emergency for the Malibu area, P. 5)
4. President of the United States: (declared the Malibu area a National Fire Disaster, P. 5)
5. Ventura County Fire Department: (provided aid in fighting the fire, P. 5)

D. Brief Description of Emergency Social System

In late December Los Angeles County Fire Officials faced a situation which, due to climatic conditions, made a forest fire seem imminent. Fire patrols, which included the use of helicopters, were covering the Malibu watershed on a 24 hour basis. Off duty firemen were on telephone alert. At 2:40 a.m., December 26, the first fire (the Newton fire) was reported by three sources, a look-out, a public telephone, and an airliner, at almost the same time. It was soon evident that the initial response provided by the Los Angeles County Fire Department was inadequate to handle the blaze, so additional men were provided. When these additional men also were unable to contain the fire, the Chief put predetermined mutual aid plans into effect. (Pp. 2,4)

At 5:27 p.m. on December 27 the second fire (the Hume fire) was reported by a lookout in a more populated area. Since property and lives in the Malibu Beach area were now threatened, the mutual aid plan was further implemented, with the reassignment of men and equipment and the establishment of another operation headquarters. The Los Angeles County Fire Chief requested through channels that Governor Knight declare an emergency for the Malibu area; the Governor agreed. (Pp. 4-5)

At 10:50 the next morning the third fire was reported in the Sherwood Lake area, north of the first fire. Although another county was involved, county lines were ignored as the two fires quickly joined. The mutual aid plan was again expanded with men and operations headquarters being established under the Ventura County Fire Chief. Equipment had been moved into the Malibu area from as far away as the Mexican border and the Oregon state line. President Eisenhower, upon request, declared Malibu a national fire disaster. (P. 5)

Weather conditions began changing for the better and by midnight on the 29th all fires had been contained. The next morning things began returning to normal and equipment was released to its normal units. (P. 5)
E. Community Context

"The Santa Monica Mountains is the range that cuts the city of Los Angeles in two, and extends west 15 or 20 miles along the coast into the next county. The Malibu is an area with indefinite limits, but it is generally considered to include a portion of the Santa Monica Range from the Los Angeles City limits west 10 or 15 miles and north from the Pacific Ocean 8 or 9 miles to the San Fernando Valley....The slopes are covered with green grass in the spring but it dries and turns brown in the summer for lack of rain. Scrub Oak and Chapperal forms an important part of the cover. Of course this has no value as timber but it helps protect part of the most valuable watersheds in the country. Six million people depend upon these watersheds for 70 per cent of their domestic water and when it burns, its loss cannot be measured in dollars and cents.

"...The beaches first started to build up and a famous movie colony was built up at Malibu Beach. Then some preferred the mountains to the seashore, so many fine homes were built overlooking the ocean from higher elevations. More and more people built as the population increased until today there are thousands of homes scattered through the hills and unfortunately, many in canyons where they haven't a chance in case of fire....Fire has always been a problem in the Malibu....Fire for fire protection is available in a conventional water system along the Pacific Highway which cuts its way along the seashore at the base of the mountains. This is a tremendous help in protecting property on the beaches, it is of little use in the mountains. Homes in that area must depend upon water carried on the apparatus. Tanks and cisterns are located at strategic places in the mountain area."

(PP. 1-2)
II. GENERALIZATIONS AND HYPOTHESES

A. "We usually think of watershed fire-fighting as a defensive operation while structural fire-fighting is more offensive." (P. 5)

B. "The type of construction seemed to make little difference if the building was in the path of the fire." (P. 6)

C. "It was observed that many of these fires (in buildings) started from the inside. Evidently, heat and sparks would get into the attic space through the vents and the fire would start there." (P. 6-7)
X. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
1. Name of Organization: Los Angeles County Fire Department
2. Type of Organization: manifest

B. Organizational Description
1. Organizational Goals and Activities: Is "charged with the responsibility" of providing fire protection for all Los Angeles County outside incorporated cities and for six incorporated cities within the county. (P. 2)
2. Organizational Character: stresses importance of "training and guts." (P. 7)
3. Organizational Complexity: Has a Fire Chief, Assistant Chiefs, "attalion Chiefs, engine and truck companies (P. 1-4). Relationship between these is not specified.
4. Organizational Control: no data
5. Recruitment and Orientation of New Personnel: Total force is about 1,580 men, (P. 1). "The department recently dedicated a new training building which is the very latest thing in instruction facilities. All men are trained in both structural and watershed fire fighting." (P. 2)
6. History of Organization: no data
7. Public Image of Organization: The writer states that perhaps the reason why the Malibu fire received so much publicity is because of the "anxiety, planning, courage, and ability" illustrated by the fire fighters. (P. 1)

C. Organizational Activities During Disaster
1. Resources of Organization During Disaster: 1580 men, 109 engine companies, 4 truck companies, and "uncounted" patrol trucks and tractors. "Pumpers are generally of special design equipped with 1250 g.p.m. pump, 500 to 600 gallon water tank, as well as hose and the usual minor equipment. They have an exceptionally high power motor and designed with a short turning radius to enable them to make the steep hills and turns on narrow roads. Patrol trucks are of the pick-up class and carry a 150 gallon water tank. All vehicles are equipped with radio." (P. 2)
2. Special Problems to Organization: Water for fighting fires in this area generally must be carried by the fire apparatus (although some tanks and cisterns are located in the area). (P. 2)
3. Organizational Change During Disaster: no data
4. Evaluation of Disaster Activity: The value of pre-planning and mutual aid was "clearly demonstrated." (P. 7) Also see B 7.

D. Organizational Activities in Emergency Social System
1. Existing Plans for Co-operation with Other Organizations: California has a comprehensive mutual aid plan. The plan, due to distances, works through counties, from counties to regions and from regions to states. This is tied together through the State Civil Defense Office, with the various fire departments being linked through a radio net. The State Civil Defense Office also maintains 100 pumper throughout the state located in well organized
fire departments who agree to respond any place in the state with two experienced firemen. (P. 2)

2. Communications Network: The mutual aid plan is linked together through a radio net.

3.-7. No data

E. Other
None
A. Characteristics of Disaster

Blizzard families isolated in Sedalia, Colorado, February, and in Truckston, Colorado, April. The study did not treat disasters as separate occurrences. No other data given.

B. Methodology

1. Research Agency and/or Principle Research Personnel:
   Behavior Research Laboratory, University of Colorado, Walter Mischel

2. Source of Data
   a. Number of Interviewees: 8 (p. 1)
   b. Number of Questionnaire Respondents: none
   c. Time Lapse Between Disaster and Data Collection: none
   d. Other: none

C. List of All Organizations Involved and Their Activities During the Disaster: no data

D. Emergency Social System: no data

E. Community Context: no data
II. GENERALIZATIONS AND HYPOTHESES

A. "Some of the major kinds of questions which arise—and which could be potentially stated as hypotheses, deal with the relationship between specific behaviors in the disaster situation... and the following, individual variables:

1. Personality variables or "dimensions"...
2. Explicit "faiths"...
3. Widespread and magical thinking...
4. Past experiences with stress or danger situations and the outcome of those situations as well as the individual's past reactions to those situations.
5. The individual's interpretation of the danger situation in terms of:
   a. How he got into the situation. This may affect such reactions as guilt, blame, justification attempts, coping efforts.
   b. The individual's subjective expectations that help will be forthcoming, that he will be able to get out of the danger situation, and nature of the expected sources of help.
   c. The alternatives that appear available to him.
   d. The constraining of the situation as threatening, challenging... etc." (II, p. 2)

B. "The next questions deal with relationship between behaviors in the disaster situations and the following situational variables:

1. Nature of the group...
2. Time factors...
3. Physical characteristics of the situation...
4. The effects of familiarity-unfamiliarity with the area and terrain in which the disaster occurs.
5. The relative effects of various kinds of deprivations...
6. Prolonged confinement in a small area...
7. The source and reasons for irritability, annoyance, tension in the interpersonal relationships of the individuals...
8. Effects of the scope or extent of the danger situation..." (I, p. 2-3)

C. "Other questions for exploration concern:

1. The after-effects of the danger situation, over varying time periods...
2. The reaction of 'outsiders'...
3. The possible relationship between 'disaster proneness' and 'accident proneness'.
4. Variables influencing preparation for, or 'readiness' for potential disaster situations.
5. Comparisons of individuals and groups who are able to cope with danger situations of the kind studied..." (I, p. 3)

D. "Prior to the individual's entry into the disaster situation proper, we can think of four major sources of which are apt to influence his reactions. The first of these are general individual or organismic variables, or general personality 'traits'..."
The second, less general, source of influence which the individual brings to the disaster situation are his past experience with stress, danger, and disaster situations, his reaction to these situations, and their outcomes. Third, the time dimension would seem to be of very considerable importance, how sudden or gradual is the onset of the disaster... Fourth, and perhaps most directly rooted to the immediate disaster situation, are the more or less direct antecedent events prior to entry into the immediate disaster situation and the individual's interpretation of these events." (II, p. 2)

E. "Once the individual is exposed to the disaster situation proper a number of other variables would appear to interact with those cited above in determining the locus in which the individual contrives or defines the situation." (II, p. 2) "The composition of the group within which he finds himself, and the interaction of the groups, may exert important influences in his construction of the situation... In addition to the imposition of, and interaction within, the group there are the properties of the situation itself." (II, p. 5) "From a psychological point of view, the physical characteristics of the situation are not, of course, the locus, but rather the ways in which the situation is construed, the perceived available pathways and barriers are the locus of concern... Perhaps the most important considerations here are the individual's expectations regarding the way in which the disaster or similar situation will terminate." (II, p. 4)

F. "A significant area of future research might well be concerned with the situational and individual variables which appear to determine the passive-active waiting for help as opposed to searching for solutions aspects of behavior in disaster situations." (II, p. 6)

G. "Closely related to the individual's expectations regarding the sources of help are his evaluations of the severity of the situation and the speed with which help from external sources is apt to be available. Thus, in a situation which is perceived as imminently disastrous and likely to progress to catastrophic proportions, and in which help from external sources is not seen as fairly forthcoming, one might expect little reliance on, and perseveration with, efforts towards a solution emanating from oneself or, if the expectancy that such efforts will not be of avail are negligible, passive resignation and hopelessness." (II, p. 6-7)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

Insufficient data.
I. Basic Information

A. Characteristics of Disaster
   1. Event: Blizzard
   2. Date-time: Late at night, March 22, 1957, lasted three days
   3. Location: Texas Panhandle, north of Amarillo
   4. Damage:
      a. Number killed: 13 dead
      b. Number injured: no data
      c. Physical damage: up to 20% of cattle herds caught in the blizzard. (p. 146)
   5. Cause: Not applicable
   6. Unique aspects: the worst blizzard since 1938

B. Methodology
   1. Research agency and/or principal research personnel: Billy G. Crane
   2. Source of data:
      a. Number of interviews: no data
      b. Number of questionnaire respondents
      c. Time lapse between disaster and data collection: no data
      d. Other: "complete and close scrutiny of all available records of the various government units concerned and of relevant newspapers accounts and articles, personal interviews with the various governmental officials who participated in these activities and firsthand observations when possible, made in the field during disaster operations." (p. 9)

   3. Sample Plan: none
   4. Other Methodological comments: none

C. List of all organizations involved and their activities during the Disaster:
   1. Texas Highway Dept. (District Engineer ordered several snow plows and other equipment moved from Borger to Amarillo, but the storm struck from Borger north to Perryton. p. 68. Maintained regular examinations of road conditions, evaluated situations affecting highways, and closed roads when circumstances warranted. District headquarters posted men and equipment throughout the district, surveyed conditions continually and reported back to District Engineer. Close contact kept with Public Safety.) (pp. 69-70)

   2. U.S. Weather Bureau ("forecasted the forecast of severe..."

I-1
weather conditions to District headquarters of the Dept. of Public Safety.) (p. 69)

3. Department of Public Safety (District Disaster Liaison officer sent 13 units to towns in various parts of district. They were to stop traffic only when it was absolutely necessary. They periodically reported back to Blackwell. p. 69. Local control officers kept Liaison officer posted. p. 70. Liaison officer sent National Guard personnel in trucks loaded with food to Vega after Vega sheriff called.) (p. 129)

4. Sheriff of Hutchinson County (Borger) (Is also Director of Civil Defense. His eight deputies and approximately 70 auxiliary deputies are trained in C.D. Sheriff coordinated activities with Public Safety. p. 71. Sheriff spent first night of blizzard at airport planning rescue operations - helped decide on types of aircraft needed. p. 125. Next day, spent part of time at airport, part downtown handling incoming calls, p. 128)

5. Local Officials (alerted about storm, p. 125)

6. Borger Texas Municipal Airport (Manager helped chart maps of affected area and determined types of aircraft needed, p. 125.

7. Civil Air Patrol (Operations Officer helped chart maps of affected area and determine types of aircraft needed, p. 125. Devised set of signals for isolated farmers and motorists, could signal their needs. Instructions for signals were dropped on the pass over the house or car, p. 121. Also reported highway conditions and conditions at farms and ranches Tuesday, six C.A.P. planes from Borger went north to Perry to drop unstrung wires and relay needs. Also dropped packages, fly out six people needing hospital care, stopped air traffic, located buried equipment and passenger vehicles, 'and even dropped butane gas to one house which was without fuel,' p. 142)


9. State Disaster Relief Headquarters in Austin (went on partial alert, kept governor informed, p. 126)

10. Federal Civil Defense Administration, Regional Office
11. Red Cross (Morning of storm - asked to bring food and blankets to airport. Prepared food-drop packages, p. 127. Through the Dept. of Public Safety radio network and the amateur radio operators, field representatives of the American Red Cross gave periodic reports to the Red Cross Midwestern headquarters and to the P.R. man at the State Disaster Control Center. Also handled welfare inquiries from over the nation. Provided temporary shelter for some. pp. 145-146)

12. Salvation Army (Morning of storm - were asked to bring food and blankets to airport. Prepared food-drop packages, p. 127)

13. Locomotive and cars (Sent by citizens of Vega to section of tracks paralleling highway, picked up stranded motorists and brought them to Vega, where they were housed and fed. p. 129)

14. County Sheriff (In county where Vega is located) (Directed the establishment of emergency headquarters to coordinate relief activities. Contacted Public Safety p. 129)

15. Vega schools (Superintendent supervised feeding of stranded persons in school cafeteria, p. 129)

16. National Guard (Personnel brought food to Vega, p. 129. Borger National Guard was activated Sunday, brought 10 men and some equipment to sheriff in Borger. They aided in rescue work. The entire National Guard did not participate, p. 131.)

17. Amarillo Air Base (U.S. Army Reserve Unit representatives offered the sheriff help, p. 131. Air Force officer threatened to march some troops cross-country to rescue stranded woman. He was dissuaded. p. 131)

18. A Radio Station (reported stranded sick woman, p. 132)

19. U.S. Army (Helicopters were procured to aid in rescue and food drop, p. 143)

20. County Highway Department (Heavy equipment used to aid...
21. Perrytown Officials (City Manager requested a helicopter Monday, p. 145)

22. Station KEKE in Perrytown (serves as operations headquarters for the town, p. 141)

23. Amateur Radio Operators (Often provided the only means of communication within the stricken area and with outside points, p. 144)

D. Brief Description of Emergency Social System:

The weather bureau issued warnings that the snowstorm had the "earmark of a record breaker." It was believed that the worst damage would be in Amarillo. It actually occurred northeast of Amarillo, bound on the south by Borger and on the north by Perrytown. Much Highway Department equipment had been moved to Amarillo because of the expectations. (pp. 68-69)

The department of Public Safety was in charge of traffic control and coordinated its activities with other agencies. The sheriff of Hutchinson County (Borger), was also in charge of Civil Defense. The advance preparation by these departments enabled them to save many lives. (pp. 70-71)

Borger airport and Perrytown served as centers for planning and executing food and medical drops to isolated cars and villages. The Red Cross and Salvation Army provided food and blankets and made up food drop packages. The helicopters from the Army and a private firm performed the drops and picked up injured after planes from the Civil Air Patrol dropped instructions for signaling and brought back instructions for helicopter drops. Some planes also flew out persons needing hospitalization and dropped some food supplies, especially in the Perrytown area. (pp. 125, 127, 128, 139-140)

In the small town of Vega (pop. 640), a locomotive was sent along tracks paralleling the highway to pick up stranded motorists. They were fed at the school cafeteria; under the supervision of the superintendent. National Guard personnel brought in trucks loaded with food. The refugees were quartered in the school, courthouse, and private homes. pp. 128-129

The National Guard as a whole was not mobilized, but some units in or near the affected area volunteered to help. They were permitted to use National Guard equipment. Other "volunteers"
were from U.S. Army reserve unit and from Amarillo Air Base and from various firms (p. 121).

There had been some difficulty in obtaining army helicopters. The decision to request the helicopters seemed to originate from local officials in Hutchinson County. The regimental commander of the National Guard in Amarillo reported the request to the Texas Adjutant General, then his C.O.D. liaison officer gave the request to the State Disaster and Relief Organization. Then two hours later the local sheriff directly requested the helicopters from McGill, the head of the State Disaster and Relief, who checked with the Army about availability of the helicopters. McGill asked the communications officer at the state headquarters of the Department of Public Safety to inform state agencies and F.C.D.A. Region Five headquarters of conditions in Hutchinson County. At least ten more steps in the communication process occurred before the helicopters were secured. (pp. 136-137)

Public Law 875 was not put into effect although Region Five of F.C.D.A. was on alert. They provided assistance in some coordination. p. 138. The highway department worked at opening roads and keeping the road conditions under surveillance. (p. 141 & 142)

Frequently the only means of communication within the stricken area and with outside points was amateur radio operators. The Red Cross and others used this means of communication often. (pp. 143-145)

Red Cross also provided mobile canteens in some localities. (p. 146)

E. Community Context:

"The inhabitants of the Panhandle in Texas are accustomed to cold weather and an abundance of snow; but before the disaster of the spring of 1957 they had not witnessed a full-fledged blizzard since 1936." (p. 67)
II: Generalizations and Hypothesis
(also applies to "studies of \( \text{taco tornado}\), Hurricane Audrey and Lampasas flood done by \( \text{GMM} \))

A. Guides for the future co-ordination of inter governmental relations in disaster relief
   1. "State organization assume more responsibility for providing the leadership for co-ordination." (p. 282)
   2. "Adequate planning for disasters can be achieved only from a concentrated and continuous effort directed toward local officials." (p. 287)
   3. "The primary role of the national officials will continue to be complete the necessary procedures to assure adequate national financial participation and, secondarily, to remain available for advice and general supervision." (p. 289)
   4. "Local officials will be held primarily responsible for the immediate protection of lives and property according to pre-arranged plans developed through the co-ordinated efforts of themselves, state and GMM officials." (p. 289)
   5. "The Division of Defense and Disaster Relief of the Office of Governor will eventually assume total responsibility for the designation of state officials to act as team coordinators at the scene of the disaster." (pp. 289-290)

B. Decision - making process will probably remain the same.
   1. "When such technical decisions (as what constitutes a health hazard) had to be reached it was usually through the combined efforts of National, state and local technicians in those areas." (p. 291)
   2. "More drastic decisions were reached after several officials from all levels of government had discussed all possible courses of action and had mutually decided on the best alternative. "This method of decision-making will continue to be used because it permits the degree of flexibility necessary to utilize the knowledge of local officials and citizens about the region receiving assistance." (pp. 291-292)

C. "Politics" of administration of disaster relief
   1. "The political careers of several office holders might well be influenced considerably by their success or failure in procuring outside assistance, by how quickly aid is secured, by the quantity and quality of the assistance rendered, and by the public relations involved in the entire matter." (p. 292)
   2. "Another aspect of the "politics" of disaster relief administration manifests itself when the national and
state officers are suddenly confronted with local rivalries between groups and individuals." This is the "brink of stage after the rescue period and during the beginning of the recovery period. (p. 294)

D. Special Problems in Disaster Relief Procedures

1. "One of the distinguishing traits of a major disaster is that the situation is so severe as to demand immediate outside assistance." (p. 297)

2. "...frequently local officials are physically and emotionally unable to assume prompt control and supervision of the disaster operation. It is at this point that the state must have trained forces ready to move in instantly to assume direction of the rescue activities." Nearby military units must continue to come in quickly. In metropolitan areas having tested and detailed plans for disaster action, state and national forces participating should coordinate with civil defense if possible. "The important thing is to have one recognized source of authority to direct all the emergency activity."

E. "It is human nature in a disasterous situation to immediately seek a uniform as a symbol of order and stability and the victims and volunteers will do exactly that, disregarding entirely all the disaster organization plans ever conceived. "Thus, those in authority assigned to rescue, guarding the disaster perimeter and traffic control should be in uniform." (p. 298)

F. The military, with its equipment, training and personnel seem to indicate that it would be best if the military took command of disaster relief during the emergency phase until "competent state or national disaster officials arrived to do the job." (p. 301) However, "Local authority must retain immediate control of the entire disaster processes because they are the only persons with adequate knowledge of the stricken area, its population patterns, likely damages, immediate and long-range needs, and local sources of supplies and manpower." (p. 302)
III. Specific Organizational Analysis

A. Organizational Information
1. Name of organization: Hutchinson County Civil Defense
2. Type of organization: Manifest

B. Organizational Description
   no data

C. Organizational Activities During Disaster
1. Resources of organization during disaster:
   a. The heart of the organization is also the sheriff of Hutchinson County. "His eight deputies and approximately seventy auxilliary deputies have completed a fifty-four hour training course in Civil Defense and they constitute the backbone of his organization." (pp. 70-71)

2. Special Problems to Organization
   a. Because darkness and storm conditions prevailed, no rescue action was possible the first night.
   b. "None of the telephones at the farm and ranch houses functioning by Saturday morning, and it was impossible by that time for these people to report their conditions to authorities." (p. 126)
   c. Sheriff had to go to town Saturday to handle the "vast number of calls coming in."
   d. Communications was the paramount difficulty during course of rescue operations. Approximately 75% of the stricken area remained without communications facilities during the emergency period. Most commercial telephone lines were jammed. State officials had trouble maintaining contact with major local points of operations. "During the first phase of the disaster, some confusion occurred as to what messages should be sent to which office. The uncertain maintenance of clear radio channels added to this disorder." It, Page of the National Guard helped to curtail this situation by sending a message to Austin Sunday night requesting that all messages be sent to Borden Airport." (p. 144)

3. Organizational change during disaster
   a. "The pivotal point for the actions taken during the blizzard was the Borger, Texas, Municipal Airport, the only open terminus in the stricken area." The sheriff, who was also head of Civil Defense, spent the most of the first night there planning rescue operations. (p. 127)
   b. The Civil Air Patrol became in effect an aim of the Civil Defense. (p. 127)

4. Evaluation
   no data

D. Organizational Activities in Emergency Social System
   no data
2. Communications Networks Existing and Emergent
   a. "Sheriff Anderson and Captain Blackwell (Public
      Safety), district Disaster Liaison Officer, spanned
      the 35 miles separating them via radio to achieve
      a commendable degree of coordination throughout
      the disaster."

   b. Sheriff received reports of plight of isolated
      people on his radio system from "a large number of
      oil companies with rigs located throughout the
      stricken area," the morning after the first night
      of the storm. (p. 127)

   c. When sheriff was in town Saturday he kept in constant
      contact with Griffin through radio communications.
      (p. 128)

   d. The communications media used to procure the army
      helicopters was mainly telephone. The request
      went from the local officials, through the National
      Guard to the Texas Adjutant-General to the Civil
      Defense Liaison Officer in the Adjutant-General's
      office, to an assistant in the State Disaster and
      Relief office. Two hours later, the local sheriff
      formally asked McGill, head of Disaster and Relief
      for the helicopters. Then McGill called the Civil
      Defense Liaison officer in the Adjutant-General's
      office to determine where the nearest helicopter
      would be.

      After pinpointing the source of the helicopters,
      McGill called the state headquarters of Public
      Safety to inform state agencies and Region Five
      FCDA headquarters of the situation in the stricken
      area. Then, McGill tried to telephone the sheriff,
      but the lines were dead. He then teletyped the sheriiff
      to tell him that they were attempting to get the
      helicopters to him but weather conditions were bad.

      The sheriff requested prompt action. This prompted
      McGill to ask his assistant to call the Adjutant-
      General's liaison man and to have him locate other
      helicopters, if necessary. This process of calls
      continued through many other channels, until the
      weather finally cleared at Fort Sill much later that
      day. (pp. 135-141)

   e. Griffin kept in touch with his planes by radio.
      He was in touch with the Perryton base mainly
      through an amateur radio operator there who relayed
      messages through the sheriff's office. (p. 143)

   f. The Civil Air Patrol reconnaissance planes dropped
      instructions to the victims in the event that aid
      was needed. The pilot circled back over the
      dwellings and radioed the assistance needed, if any.
      (p. 142)
4. Use of non-organizational members for work of the organization
   a. Griffin, Civil Air Patrol officer, became in effect, the assistant to the sheriff, who was head of Civil Defense. Then the sheriff left the airport to go to town, he designated Griffin as his representative. The Civil Air Patrol handled some of the food drops, and most of the message gathering from isolated farm houses and cars. (p. 128)

5. No data

6. No data

7. Relation of Organization to Governmental Units Active in Disaster
   a. Weather Bureau alerted local officials to expect heavy snowstorm. (p. 125)
   b. The Operations office for the Civil Air Patrol worked with the sheriff the first night to plan rescue operations. He was also manager of the airport. They worked at Borger airport, with the airport manager. (p. 125)
   c. Expanded rescue plans in cooperation with Civil Air Patrol officer the following morning.
   d. Griffin decided army helicopters were needed on Monday. The sheriff concurred. However, the procedure for procuring the helicopters proved to be quite complex. (p. 127)
   e. Griffin requested that the highway department open certain roads so the trucks bringing special fuel for the helicopters could get through. They did. (p. 141)
I. BASIC INFORMATION

A. Characteristics of Disaster
1. Event: Tornado
2. Date-Time: April 2, 1957, 4:20 p.m. (p. 1239)
3. Location: Dallas, Texas (p. 1239)
4. Damage
   a. Number killed: approximately 10 (pp. 1241-1243)
   b. Number injured: approximately 192 (p. 1241)
   c. Physical damage: 155 buildings destroyed, 483 buildings damaged
5. Cause: not applicable ("The tornado track was only 50 to 200 yards in width, and the funnel cloud was moving at about 20 miles per hour." (p. 1241)
6. Unique Aspects: "best documented Tornado on record," a motion picture, 30 minutes in length has been made using footage shot of this tornado. (p. 1242)

B. Methodology
1. Research Agency and/or Principal Research Personnel: Committee on Disaster Studies of the National Academy of Sciences - National Research Council (Disaster Research Group) (apparently Raker & Friedsam).
2. Source of Data
   a. Number of interviewees: no data
   b. Number of questionnaire respondents: no data
   c. Time lapse between disaster and data collection: no data
   d. Other: no data
3. Sample Plan: no data
4. Other Methodological Comments: "Because of the widespread feeling in Dallas that the medical care rendered to the casualties of this tornado was of an extremely high caliber, an invitation was issued to representatives of the Committee on Disaster Studies of the National Academy of Science - National Research Council (now Disaster Research Group) to enter the Dallas area and conduct a study of the medical care aspect of the disaster." (p. 1239)

C. List of All Organizations Involved and Their Activities During Disaster.
1. Dallas City - County Civil Defense and Disaster Committee: (had "established plans for the handling of the various aspects of civilian disaster," p. 1239) (had fundamental responsibility for the care of casualties, including provision of first aid and transportation to the hospitals, p. 1240)
2. Disaster Relief Committee of Dallas County (Chapter of American Red Cross: unspecified activities, pp. 1239-40)
3. Dallas County Medical Society: (unspecified activities, p. 1240)
4. Dallas Police: (received first alert of approaching tornado; alerted ambulance centers at funeral homes of the possibility
of many casualties; police cars kept the police dispatcher aware of the progress of rescue activities; established several command posts for the control of traffic and the clearing of all activities through the central dispatcher; did not participate actively in rescue operations to any great extent but served as control points for rescue workers; provided the ambulances with instructions; alerted and subsequently cooperated with the activities of the Dallas Emergency Corps and at least three other emergency squads sponsored by commercial enterprises; was in control of rescue operations, P. 1242) (helped maintain casualty lists, P. 1243)

5. Dallas Emergency Corps: (provided first aid and rescue activities, P. 1240, 1242)

6. Parkland Memorial Hospital: (received 177 victims, 7 dead on arrival, Hospitalizing 41, P. 1241)

7. Methodist Hospital: (received 18 victims, admitting 6, P. 1241)

8. Southwestern Medical School: (being adjacent to and associated with Parkland Hospital, it provided a pool of medical students and nursing personnel, P. 1241)

9. N. W. Weather Bureau: (issued tornado alert, P. 1241)

10. Duncanville Sheriff: (shortly before 4 p.m. alerted the Dallas County Sheriff's office that a tornado had "come down" in Duncanville, P. 1242)

11. Dallas County Sheriff's Office: (relayed Duncanville call to Dallas police, P. 1242)

12. Civil Defense Headquarters: (was in frequent contact with the Civil Defense and Disaster Commission, P. 1243)

13. "Unspecified Local Funeral Home: (as in the common practice in Dallas, provided ambulance service under police orders, P. 1240)

14. Unspecified Emergency Squads: (at least three unspecified emergency squads sponsored by commercial enterprises aided in rescue operations, P. 1242)

15. Unspecified Local Industrial Plants: (have organized rescue squads and trucks available, P. 1240)

16. Local Radio Station: (dispatched a mobile broadcasting car which closely followed the tornado as it progressed, giving a running account of its progress, P. 1242)

D. Brief Description of Emergency Social System

"During the day a tornado alert had been broadcast by the United States Weather Bureau. Such warnings had been made approximately 100 times in the previous year," but none of the alerts had been followed by a serious storm. (PP. 1241-1242)

Shortly before 4 p.m. the Dallas County Sheriff's Office received a call from the Sheriff of Duncanville (a small town about 12 miles southwest of Dallas) that a tornado had "come down" here. The message was relayed to Dallas police by a direct line between the Sheriff's Office and the police dispatcher's board. The police dispatcher immediately alerted patrol cars in the southwestern area of Dallas to watch for an approaching tornado.
When police in the southwestern area sighted the tornado, they radioed the dispatcher that a tornado was "on the ground" moving toward Dallas. Local news agencies and television stations monitor police calls and consequently learned of the tornado; their mobile broadcasting cars were sent into the area where the storm had struck. At 4:10 telephone calls (using special "hot lines") notified Parkland Hospital and the ambulance centers at specified funeral homes of the possibility of many casualties. (P. 1242)

"It was possible for police cars to withdraw from the area threatened by the tornado, to follow along with it, and to come back into the devastated area behind the storm....After the police cars re-entered the disaster zone, they remained in radio contact with the police dispatcher and reported the progress of rescue activities." (P. 1242)

Police established a total of ten command posts along the 16-mile path of the tornado. (The command post idea was adopted from a system used when handling heavy traffic in Cotton Bowl district; a command post, consisting of a patrol car or motorcycle with radio communications to the dispatcher and any auxiliary vehicles assigned to the point, is set up for traffic control at a strategic intersection. Information is fed to the central dispatcher and orders returned to the command posts. Traffic can consequently be controlled in accordance with the existing situation.) Not all ten command posts were operating at once, but were moved in leapfrog fashion along the route of the storm as rescue operations progressed. At any one time three to five posts were operating. Although police did not participate actively in rescue operations to any great extent, they served as a control point for rescue workers, controlled traffic, and cleared all activities through the central dispatcher. (P. 1242)

"The ambulances were ordered by the police dispatcher to report to specific 'command posts' and to take their directions from a patrol car at that post in order to pick up the casualties. The dispatcher designated the 'command post' in accordance with requests for ambulances which came from the patrol cars or through telephone communications direct from the public. The official ambulances were instructed to take casualties to Parkland Memorial Hospital." Those ambulances without radio were always sent out with a radio-equipped ambulance. (P. 1242)

"The Dallas Emergency Corps and at least three of the emergency squads sponsored by commercial enterprises were called by the police dispatcher through direct telephone communications. Several of these rescue squads went into action in the immediate disaster zone in cooperation with the 'command posts' which controlled traffic entering and leaving the disaster area." Rescue operations appear to have been controlled by the police
dispatcher who, in turn, was supervised by the chief of police.  
By 7 p.m. all ambulances had been ordered back to their stations.  
(P. 1242) At Parkland Hospital the last of the casualties were 
admitted by 6:45 and almost all major emergency activities had 
been completed prior to 11 p.m.  
(P. 1243)

"...a few disaster victims were taken directly to other Dallas 
hospitals. None of these hospitals were notified of the tornado 
directly by the police, but most received notice of the passage 
of the tornado by staff members who saw it. Personnel were called 
together to 'stand by' and to await any activity. Only one of 
these hospitals received more than one or two disaster casualties 
during the night."  
(P. 1244)

E. Community Context

Dallas is the second largest city in Texas with an estimated  
1957 population of over three-quarters of a million people.  
"In general the industrial development is light, and a number of 
the factories are distributed along the course of the Trinity 
River which flows from northwest to southeast through the center 
of the city. The main business district and the larger residential 
areas are east of the river. Roughly two-thirds of the total 
length of the tornado's path was west of the river in the 
residential areas of Oak Cliff and West Dallas. The remaining 
one-third of the storm's path was east of the river but several 
miles north of the main business district. The social service 
and relief agencies of the city were similar to those of other 
cities of comparable size; however, certain arrangements in the 
ter-relationships of these organizations were probably unique 
to Dallas, Texas or at least to the southwestern area of the 
United States."  
(P. 1239)

"From the section of Oak Cliff where the tornado first struck 
and along the first six to eight miles of its path, the storm 
was traversing predominantly middle-class white residential 
areas. In this section damage was relatively light, and casualties 
were relatively few. The storm then crossed an industrial district 
and caused considerable property damage. It entered West Dallas 
section at a point where a Negro residential area is located. 
(This happens to be an area which houses a lower scale socio-
economic group.) Both property damage and casualties were 
relatively heavy in this district, partly because of the flimsy 
nature of the housing. The funnel cloud then moved across the 
Trinity River and smashed into a second Negro residential area 
called Record Crossing. Although the housing in this area was 
somewhat better and newer than in the West Dallas section, property 
damage and casualties were again comparatively heavy, probably 
the heaviest of any area in the tornado's path. From the Record 
Crossing section the tornado moved across another industrial 
center (inflicting relatively light damage) and into another 
middle-class white residential neighborhood where again casualties 
were few."  
(P. 1241)
II. GENERALIZATIONS AND HYPOTHESES

A. "Medical preparedness for disaster too frequently is associated with nuclear warfare and a staggering casualty problem of inconceivable proportions." (p. 1239)

B. There is a "need for medical preparedness for the carrying out of emergency operations to cope with all kinds of disasters, including protection and survival in an all out war." (p. 1239)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
1. Name of Organization: Parkland Memorial Hospital
2. Type of Organization: Manifest, crisis

B. Organizational Description
1. Organizational Goals and Activities: "Parkland occupies a unique position among the hospitals of the city because it is operated under an amendment to state laws which created hospital districts and permitted local authorities to use tax money raised locally for their operation. Parkland's district was established about 1950, and the hospital now operates with a surplus, in spite of the fact that it provides almost all of the charity work done in Dallas. The hospital's work includes more than 90% charity cases."
   "...the hospital was planned for the treatment of casualties in case of disaster and established as the hospital where most emergency cases and indigent patients are treated." (P. 1244)

2. Organizational Character: Does most of the charity work in Dallas, Section Bl. "There are separate facilities for Negro and white patients, and it seems to be the accepted fact that most of the Negro patients in the city will be cared for at Parkland." (P. 1241) "The Board of Trustees of Parkland...has a very liberal financial policy toward its charity work." (P. 1241)

3. Organizational Complexity: Administrator, Staff Doctors, Residents, medical students, and student nurses are mentioned. (PP. 1242-44)

4. Organizational Control: The hospital disaster plan designates a doctor as "director of activities of the professional staff." (P. 1243)

5. Membership Recruitment: no data

6. History of Organization: "The hospital was completed in 1952, at a cost of 10 million dollars. The physical planning was made with the prospect of caring for large numbers of emergency patients in mind." (P. 1241)

7. Public Image of Organization: "Most of the medical emergencies in Dallas are now treated at this hospital, and this fact is generally accepted by the police dispatcher, ambulance drivers, other hospitals, and the public at large." (Pp. 1241-1244)

C. Organizational Activities During Disaster

1. Resources of Organization During Disaster: "...consideration... had been given to the planning of the physical plant...in order to orient it toward effective function in case of disaster." (P. 1240) "The hospital is adjacent to and associated with the Southwestern Medical School. The medical students and nursing personnel associated with the hospital usually live nearby and are readily available in case of an emergency." (P. 1241) Consequently there were approximately
120 medical students and 175 student nurses available. (p. 1243) "There is a small fulltime clinical staff as well as a house staff of 130 residents and interns." (p. 1241) "Because of the liberal financial policies in effect when Parkland was built and because its administrator...was conscious of the need, the hospital was planned so that there could be expansion of its physical facilities in time of disaster. There are four operating rooms in the emergency ward, and the space assigned to patients can be extended rapidly into adjacent corridors and rooms otherwise used for access to hospital's admitting offices and the classrooms of the nursing school. The emergency ward has a special x-ray facility immediately available to it. If the load becomes too great for this facility, provision is made for x-ray work to be done in rooms adjacent to the regular x-ray department. "Elsewhere in the hospital there are large classrooms, lecture halls, and waiting rooms, all equipped with facilities to provide for additional patient care in times of emergencies." (p. 1241) "When the alert was received, "a number of staff surgeons were still in the hospital because of an 'unusual heart operation' being done that afternoon; these men were available for immediate duty,"
(p. 1242-43) "The administrator was in the hospital when the notification was received." Telephone operators on duty called certain staff members who were designated by the disaster plan. (p. 1243) "It was not necessary to expand the activities of the emergency ward into nearby nurses' classrooms, nor was there any need to admit patients to beds in the teaching and lecture areas which had been provided with facilities for patient care. These steps could have been taken if the situation had demanded them." (p. 1243)

2. Special Problems to Organization: "The staff men interviewed were of the opinion that their greatest need was for better intra-hospital communication. During the night of the disaster they used student nurses as runners but found that this system did not function quickly or accurately enough. A second criterion offered by the staff surgeons was that there was no method of re-sorting the patients who were referred for x-rays after the first triage. Apparently, after the films were taken, there was not a rapid return of patients to the emergency ward, and several fairly serious developments occurred among the waiting patients." (p. 1243)

3. Organization Change During Disaster: "The surgeon in charge of the professional activities directed those who reported for duty to various areas to carry out their work." (p. 1243)

4. Evaluation of Disaster Activity: There was "widespread feeling in Dallas that the medical care rendered to the casualties of this tornado was of an extremely high caliber." (p. 1239) "It was generally agreed that, on the night of the Tornado, Parkland Hospital was not taxed beyond its capacity to handle
patients." (P. 1244) "...there was no shortage of hospital personnel," (P. 1243) Much of the success was "the result of careful and intelligent planning for the "emergency functions" of Parkland Memorial Hospital...The internal operation of Parkland's disaster-control plan seemed to be very effective, and, since it was never necessary to expand the space assigned to emergency functions to the planned maximum, it seems likely that an even larger volume of patients could have been handled well." (P. 1244) Another factor which contributed much to the success was that "the police, the ambulance drivers, and the injured persons themselves were oriented toward the use of Parkland when disaster struck." (P. 1244)

D. Organizational Activities in "Emergency Social System"
1. Existing Plans for Cooperation with Other Organizations: "In event of disaster the plan of the Health Committee of the Civil Defense and Disaster Commission is that Parkland is to receive casualties until its capacity is reached and only then are the casualties to be diverted to other hospitals." (P. 1241) "Pre-existing arrangements...made possible closely controlled cooperation" between the hospital, the police, and rescue agencies. (P. 1244)

2. Communications Networks: Telephone calls, using special "hot lines," were used by the police to notify Parkland. (P. 1242) "The administrator was in frequent contact by police telephone with the police dispatcher...The physician vice-chairman of the Civil Defense and Disaster Commission came to the emergency ward...and participated in the overall direction of activities. He was in frequent contact with Civil Defense Headquarters." (P. 1243)

3. Competition and Conflict with Other Organizations: "About 6 or 7 p.m...the surgeon-in-charge and the administrator discussed the possibility of diverting patients to other hospitals. They reached the decision not to do this because: 1. They concluded from police sources that the anticipated casualty load could be handled by Parkland. 2. Parkland was well equipped to accept charity patients whereas the handling of charity patients at other hospitals might create a difficult financial and administrative problem to be settled in the future. 3. The "emergency activity at Parkland was good experience for the staff." (P. 1244)

4. 7. No data

E. Other
None
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
1. Name of Organization: Dallas Police
2. Type of Organization: Manifest

B. Organizational Description
1. *No data*

C. Organization Activities During Disaster
1. Resources of Organization During Disaster: The command posts which were established consisted of a patrol car or motorcycle and, sometimes, auxiliary vehicles. (P. 1242)
2. Special Problems to Organization: "The largest problem encountered by the police during the day of the disaster was to establish traffic control along the main highways leading from the disaster areas to the hospitals since it was hard to exclude sight-seers who insisted on passing police blockades." (P. 1242)
3. Organization Change during Disaster: The "command post" arrangement, normally used only when handling heavy traffic in the vicinity of the Cotton Bowl football stadium, was adopted for use in disaster operations. (P. 1242) See Section D for a description of the "command post" arrangement.
4. Evaluation of Disaster Activity: The "command post" arrangement was considered to have "contributed greatly to the control of traffic in the immediate area of the impact zone itself. Less adequate supervision of traffic was in evidence along the highways leading from the disaster zone to the hospitals." (P. 1244)

D. Organization Activities in Emergency Social System

1. Existing Plans for Cooperation with Other Organizations: Some type of unspecifid arrangement exists with the Dallas Emergency Corps. (P. 1240) "When a hospital receives a request for ambulance service, the police dispatcher is called, who in turn contacts the appropriate funeral home and orders an ambulance to be sent to the patient's address." (P. 1240) The ambulances are owned and operated by funeral homes but are under contract to furnish service as direct by the police. (P. 1240) "...pre-existing arrangements in the functioning of the city... made possible closely controlled cooperation between the activities of the police department and the rescue services. (P. 1244) It is generally accepted by the police that most medical emergencies are treated at Parkland; rescue operations were accordingly geared. (P. 1241-1243)
2. Communications Networks: The police dispatcher can reach, "directly or indirectly," the Dallas Emergency Corps. (P. 1240) The dispatcher has a direct line to the funeral homes providing ambulance service. (P. 1240) There is a direct line between the sheriff's office and the police dispatcher's board. (P. 1240) There is a radio net between the dispatcher and patrol cars; this net is monitored by local news agencies and television
stations. (P. 1242) Special telephone "hot lines" connect the police and Parkland Hospital. (P. 1240) When police cars entered the disaster zone, "the remained in radio contact with the police dispatcher and reported the progress of rescue activities. To prevent confusion an attempt was made to establish radio discipline by asking patrol cars to call in only under circumstances of extreme emergency. The police dispatcher believes that radio traffic did not fall far behind the requirement of the messages waiting. The dispatching room held a number of routine messages off the air until the disaster situation was under control." (P. 1242) "The ambulances were ordered by the police dispatcher to report to specific command posts and to take their directions from a patrol car at that post in order to pick up casualties. The dispatcher designated the command post in accordance with requests for ambulances which came from the patrol cars or through telephone communications direct from the public." (P. 1243) "The rescue operation seems to have been under the direct control of the police dispatcher with the supervision of the chief of police." (P. 1243) Police were in constant communication with the administrator of Parkland by telephone. (P. 1243)

E. Other
None
III.

SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
   1. Name of Organization: Dallas City-County Civil Defense and Disaster Commission
   2. Type of Organization: Manifest

B. Organizational Description
   1. Organizational Goals and Activities: It is "planned that the fundamental responsibility for the care of casualties in case of disaster would rest with the Health Division of the Dallas City-County Civil Defense Commission. This responsibility was to include the provision of first aid and transportation to the hospitals." (P. 1240)
   2. Organizational Character: no data
   3. Organizational Complexity: The Civil Defense "Commission consists of the mayor, the city manager, the county judge (ex officio) and a number of appointed members. The chairman, three vice-chairmen, and three other members represent the important business and professional interests of the city... The medical activities of the (CD) Commission were entrusted to the supervision of the second vice-chairman of the commission, a physician." (P. 1239) Four physicians and a hospital administrator serve on the Health Committee. (P. 1240)
   4. Organizational Control: no data
   5. Membership Recruitment and Orientation: The physician in charge of medical activities is also a member of the Disaster Relief Committee of the Dallas County Chapter of the American Red Cross and has responsibility for medical and nursing care and first aid activities of the Red Cross. (PP. 1239-40) One member of the Health Committee represents the Dallas County Medical Society. (P. 1240) ". . . there are a number of rescue squads which have been organized under the rescue section of the City-County Civil Defense and Disaster Commission and are immediately responsible to the chairman of the rescue section. Many of these rescue squads and trucks are associated with industrial plants. There has been an attempt to conduct a training program for these rescue squads over the last several years." (P. 1240) (also see B3)
   6. History of Organization: The commission was established in 1954. (P. 1239)
   7. Public Image of Organization: no data

C. Organizational Activities During Disaster
   1. - 4. no data
D. Organizational Activities in Emergency Social System

1. Existing Plans for Cooperation with Other Organizations:
   CD "has established elaborate plans for the handling of the
   various aspects of civilian disaster." (P. 1239) "In the
   plans of the City-County Civil Defense and Disaster Commission,
   the control of ambulance service in case of disaster is
   under the direction of the owner and operator of one of the
   largest funeral homes of the area." (P. 1240) "In event of
   disaster the plan of the Health Committee of the Civil Defense
   and Disaster Commission is that Parkland is to receive
   casualties until its capacity is reached and only then are
   the casualties to be diverted to other hospitals." (P. 1241)
   "The physician vice-chairman of the Civil Defense and
   Disaster Commission came to the emergency ward of Parkland
   early in the evening and participated in the over-all direction
   of activities." (P. 1243)

2. Communications Networks: The CD physician vice-chairman at
   Parkland was in frequent contact with CD Headquarters. (P. 1243)
   He was aware of and concurred with the decision of Parkland
   officials not to divert patients to other hospitals.

3. - 7. No data
BASIC INFORMATION

A. Characteristics of Disaster

1. Event: forest fire (P. 3)
2. Date-Time: May 7-10, 1957 (P. 5)
3. Location: Athol, Billerica, Boylston-Shrewsbury, Manchester, Marlboro, Marstons Mills, Mashpee, Methuen, Middleboro-Taunton-Lakeville, Montague, New Salem, Plainville, Plymouth-Carver, Wrentham; all locations are in Massachusetts. (P. 22)
4. Damage
   a. Number killed: no lives lost (P. 19)
   b. Number injured: "only minor injuries" (P. 19)
   c. Physical damage: 17,808 acres burned (P. 22); small property loss (P. 19)
5. Cause

"The normal spring 'dry season' in Massachusetts occurs after the ground has dried out from the winter snow and early spring rains, but before the foliage is 'leafed out.' About 85% of the forest and brush fires experienced annually occur during this period, which usually is a fairly short one. However, in 1957, a prolonged period without appreciable rain began on April 5th and extended until the evening of Friday, May 10th. The usual type and number of forest and brush fires was experienced until Tuesday, May 7th, when a fire that had been smouldering for several days in a wooded part of the town of Manchester was fanned by strong winds and became a severe threat. Later on the same day, another serious fire broke out in the town of New Salem." On May 8th and 9th additional fires broke out in the locations listed in A3. (PP. 2-3)

6. Unique Aspects

"A total of 220 fires of all sizes occurred in Massachusetts during these four days, May 7-10, 1957. They were all considered part of the same forest fire emergency. Firefighters were still heavily engaged and the fires still a great threat when an unexpected heavy rain moved across the state. "At the same time, in an effort to secure additional rainfall, privately owned 'rain-making' machines were utilized throughout the state with National Guard crews." Most of the rain, however, had fallen before the 'rainmakers' went into action. (PP. 2p5)

B. Methodology

1. Research Agency: Massachusetts Civil Defense Agency, 143 Speen Street, Natick, Massachusetts
2. Source of Data
   a. Number of interviewees: no data
   b. Number of questionnaire respondents: no data
   c. Time lapse between disaster and data collection: the report was prepared "as soon as possible" after the emergency. (P. 1)
C. List of Organizations Involved and Their Activities During Disaster

1. Governor of Massachusetts: (met with State Director of Civil Defense and other state agency heads to discuss emergency; declared a state of emergency throughout Massachusetts, P. 2)

2. Manchester, Massachusetts, Fire Chief: (appealed to the Massachusetts Civil Defense Agency "for all possible help, P. 2)

3. University of Massachusetts: (provided 125 men to aid in fighting Athol fire, P. 8)

4. Massachusetts National Guard
   a. Unspecified Units: (aided in fire fighting and maintenance of law and order under police direction; operated the "rain making" equipment after a brief training period; supplied over 2,000 men at "one time or another" provided "spotter" aircraft and radio communication, Pp. 14-15)
   b. Tank Company, 182nd Infantry: (aided in fire fighting in the Sargus area, P. 15)
   c. Civil Defense Liaison Officer of National Guard: (approved request by Sargus Selectmen for use of Tank Company, 182nd Infantry, P. 15)
   d. Adjutant General, Massachusetts National Guard: (handed requests for use of Guardsmen before emergency declared by Governor, P. 14)

5. Sargus, Massachusetts, Selectmen: (requested use of Sargus National Guard Company—Tank Company, 182nd Infantry, P. 15)

6. Civil Air Patrol: ("...worked closely with the Massachusetts Civil Defense Agency in providing aerial observation at the major fires, air ground communications to CAP radio cars, and special observations as directed by MCDA—Massachusetts Civil Defense Agency—State Headquarters, where the CAP unit was on an around-the-clock basis. In addition, CAP personnel assisted in manning the operational telephones, and in working on the maps at MCDA Headquarters," Pp. 15-16. ) (equipment provided included aircraft and radio cars, Pp. 7-8)

7. Howell Associates: (provided "rain making" equipment, P. 15)

8. Massachusetts State Police: (assisted local police in traffic control, provided escorts for numerous convoys, provided information on fire and road conditions, served "as a channel to local authorities through the Attack Warning Radio System," and provided the basis for the "rain making" operations, P. 15)

9. Auxiliary Police: (aided in fighting Manchester fire and Montague fire, Pp. 6 & 9)

10. Massachusetts Department of Natural Resources (DNR): (district wardens provided "assistance and advice" at Manchester and New Salem fires, P. 12) (named a "fire boss" at each major fire, who, in turn, handled all requests from local fire
officials to Civil Defense authorities, P. 12) (director of
DMR requested that provisions of the 12 state Northeastern
Forest Fire Compact be invoked, P. 13) (requested through
MCDA the assistance and advise of U.S. Forest Service
personnel, P. 14)
11. U.S. Forest Service, Department of Agriculture: (provided
experienced personnel who assisted the DNR 'fire bosses' and
observed and advised on operations at MCDA Headquarters, P. 14)
12. Massachusetts Department of Public Works (DPW): (helped staff
MCDA Engineering Service, MCDA Headquarters, area staffs, and
sector staffs; provided men, supplies, and equipment; trans-
ported 'priority items' to the various fires, P. 14)
13. Red Cross: (fed and housed fire fighters, P. 19)
14. Northeastern Forest Fire Compact: (provisions of this 12 state
pact were invoked by the Massachusetts DMR, who requested
"additional supervisory personnel from the other signatory
states. Because forest fire conditions were generally re-
dangerous, only Rhode Island was able to comply" by sending
through its State Director of Civil Defense, 9 state and local
fire officials; due to the unexpected rainfall, the services
of these men were not needed and they were returned to Rhode
Island, P. 13)
15. Rhode Island Civil Defense Director: (when the Northeastern
Forest Fire Compact was invoked, arranged for 9 Rhode Island
fire officials to go to MCDA Headquarters, P. 13)
16. Region 1, Federal Civil Defense Administration: (was co-
ordinating agency between MCDA and other federal agencies,
P. 10)
17. Massachusetts Civil Defense Agency (MCDA) (State, Area,
and Sector levels are mentioned)
a. MCDA State Headquarters: (activated appropriate Area
and Sector Headquarters, P. 9) (handled some "requests
for resources--equipment, manpower, supplies and services--"
not able to be met by area C3; this primarily included
certain requests, such as aircraft and National Guard,
which must be cleared through MCDA Headquarters; "main
function was...intelligence, public information, and
'trouble shooting' any major difficulties at area or
sector levels....other important function was...continuing
coordination of other state agencies at the state level,
policy determination with the Governor and other state-
agency and federal officials, and relations with Region 1
of the Federal Civil Defense Administration," P. 11)
(readied the "complete fire inventory and engineering
inventory"--covering state, municipal, and private
engineering equipment, P. 10)
b. Area Civil Defense: (with the declaration of the emergency,
formed a working staff, P. 9) (made periodic situation
reports to MCDA Headquarters, P. 10) (handled "almost all
requests for resources" except those which had to be
cleared through MCDA Headquarters, P. 11)
c. Sector Civil Defense: (aided in co-ordination and handling
of requests and reports, Pp. 7, 10)
d. State Director of Civil Defense: (met with Governor and
heads of various state agencies to discuss emergency; was named by Governor as co-ordinator of all state activities to combat the fire, P. 2)

e. MCDA Fire Officer: (worked with the State Director of CD and the Director of the State Division of Forest and Parks in devising a plan by which a "fire boss" would be named for each of the major fires, P. 12)

18. Mutual Aid System: (a mutual aid system was in effect at the Manchester fire, with various local fire departments giving support to the Manchester Fire Department, P. 2)

D. Brief Description of Emergency Social System

On May 7th the fire which had been smouldering in a wooded section of Manchester was fanned by a strong wind and became a severe threat to the town itself. The fire rapidly exceeded the capabilities of the Manchester Fire Department and supporting fire departments furnishing aid under a "mutual aid" system. At 2:35 the Manchester Fire Chief appealed to the Massachusetts Civil Defense Agency for all possible help. Later on the same day, another serious fire broke out in the town of New Salem. In the evening an appeal from here was also made to MCDA for help. (P. 2)

Upon the request for assistance from Manchester and New Salem, appropriate Area and Sector Headquarters were activated. No special measures were taken by MCDA State Headquarters because the situation was still localized and could be handled within the local Areas and Sectors. (P. 9)

By Wednesday, May 8th, the Manchester fire had grown into an even more serious threat, and new fires in Athol, Marlboro, Mashpee, Boylston, and other cities and towns were creating a serious situation in which available resources were being spread dangerously thin. The most serious single threat arose at South Carver, where a rapidly spreading fire in the Myles Standish State Forest swept through miles of forest into Plymouth. It was reported that it would be difficult, if even possible, to stop this fire short of the ocean. Early in the evening the Governor called the State Director of Civil Defense and other state-agency heads to the State House, where it was decided that a state of emergency should be proclaimed throughout Massachusetts and that the State Director of Civil Defense would be made co-ordinator of all state activities in combating the fire. (P. 2)

MCDA was already in operation and was immediately placed upon a full around-the-clock basis at all levels. All local CD directors were directed to be available for the duration of the emergency. MCDA State Headquarters was set up on a skeleton basis for operations, activating those staff sections and services expected to be involved in emergency operations. (These were Operations, Intelligence, Fire, Engineering, and Transportation.) All area and sector directors were ordered to provide State Headquarters with periodic fire reports. Almost all requests for resources
were met within the local MCDA Area. Certain requests, such as for aircraft and National Guard personnel, were, however, made through MCDA State Headquarters. (PP. 10-11)

On the following day, May 9th, a "valiant" stand by fire fighters saved hundred of homes in Plymouth from the Myles Standish fire. Equipment used in this stand was from all parts of Southeastern Massachusetts and as far north as Boston. Meanwhile new fires broke out at Billerica, Stockbridge, Methuen, Taunton, and "many" other points. The most threatening new fire was at Montague in the western part of the state. (PP. 2, 3)

On the next day, Friday, May 10th, the Plymouth fire broke out on the northern flank and again threatened the community. New fires at Saugus and other locations throughout the state continued to engage fire fighters. An unexpected heavy rain developed in western Massachusetts and moved eastward across the state, reaching the Plymouth area in late evening. At the same time, privately-owned "rain-making" machines were used throughout the state by National Guard crews in an effort to produce additional rainfall. Over an inch of rain fell in most of the state. (The effectiveness of "Operation Rainmaker" is not evaluated in the report.) (P. 3)

On Saturday, May 10th, skeleton MCDA control crews were still maintained and fire fighting teams were standing by, but with continued wet weather, all MCDA operations were terminated as of noon, Sunday, May 11th. (P. 3)

E. Community Context

"The normal spring 'fire season' in Massachusetts occurs after the ground has dried out from the winter snow and early spring rains, but before the new foliage is 'leafed out'. About 85% of the forest and brush fires experienced annually occur during this period, which usually is a fairly short one." (P. 2)
II. GENERALIZATIONS AND HYPOTHESES

A. "The remarkable capacity of local leaders in most cases to establish an organization to handle an extensive disaster, and the willingness of the people as a whole to go "all out" to support such an effort on a volunteer basis is heartening proof that the basic assumptions of the Civil Defense system are valid." (P. 19)

B. "In an extended forest fire emergency, the major problem is the insufficient number and exhaustion of leaders at the "fire front," and steps must be taken to train "reliefs" for this purpose." (P. 20)

C. "...intensive training in the Civil Defense procedures for receiving and dispatching large numbers of personnel and equipment, and in establishing adequate field-to-headquarters communications systems, should be provided for all local fire fighters in communities where there may be a forest fire threat." (P. 20)

D. "There must be increased pressure on local governments to secure an effective local Civil Defense organization, and to have them understand, and abide by the mandatory provisions of the Civil Defense Act." (P. 20)

E. "It is imperative that state officials at all levels are fully informed of the Civil Defense responsibilities and procedures which would affect their particular agencies or offices and that whenever there is a change in such responsible positions, that the new incumbents are completely briefed on this matter." (P. 20)

F. Following a "chain of command" principle (i.e. handling a problem at the lowest possible level) in CD operations has three major advantages (P. 4):

1. "...handling the problem as close to hand as possible means that such help will reach the requesting municipality at the earliest possible time because it will have a shorter distance to travel." (P. 4)

2. "...it means that each request for assistance is handled by the fewest number of headquarters, with less chance of mistakes." (P. 4)

3. "...it usually means that the larger the area that a Civil Defense Headquarters deal with, the fewer the number of actions it is required to take, freeing the upper-tier staff for over-all control of the situation." (P. 4)

G. A serious weakness "is the failure of local governing officials to insist on the selection of a capable local Civil Defense director, to fully support him in the organization of integration of municipal resources under Civil Defense co-ordination, and to back him up in emergencies. This is a responsibility of local government, as part of their general public safety responsibility." (P. 17)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
1. Name of Organization: Massachusetts Civil Defense Agency (MCDA)
2. Type of Organization: Manifest, crisis

B. Organizational Description
1. Organizational Goals and Activities: MCDA is authorized by law to operate in time of natural or enemy caused disaster. (P. 3) "The disaster function of Civil Defense at all levels is primarily to co-ordinate the efforts of existing agencies and organizations in the common struggle against the effects of disaster." (P. 4) "MCDA does not and cannot take over direction of local disaster action, which local authorities usually are best able to do, unless the disaster is such that the local government is actually shattered or exhausted and needs additional leadership from the outside." (P. 4)

2. Organizational Character: The co-ordinating function of MCDA is "to ensure that units are working in smooth..."team play..." (P. 4) The "efficiency" of CD and "the willingness of the people as a whole to do all out to support such an effort on a volunteer basis" are considered "proof that the basic assumptions of the Civil Defense system are valid." (P. 19)

3. Organizational Complexity: In Massachusetts, the key unit of CD is the "city or town;" the heads of local government are required to appoint a CD director. (Pp. 4 & 5) The basic principle of MCDA operations is that of the "chain of command." An attempt is made to handle each problem at the lowest possible level. A local CD unit will not request assistance until it has exhausted or sees that it will exhaust its own resources. If assistance is required, it is requested from CD Sector Headquarters. If Sector cannot muster sufficient assistance from other local CD units within the sector, the request is passed up to Area Headquarters. If Area Headquarters cannot obtain sufficient assistance from the various sectors within the Area, the problem will then reach State Headquarters, which obtains help from other areas or other states. (P. 4) For a chart of the Civil Defense "chain of command" see Page 5. Various staff sections and services were activated at MCDA State Headquarters: Operations, Intelligence, Fire, Engineering, and Transportation. (P. 9) MCDA also has a state fire officer. (P. 12)

4. Organizational Control: See CD "chain of command" structure listed in B3.

5. Membership Recruitment and Orientation: The engineering service at MCDA is (at least partially) staffed by personnel from the State Department of Public Works. (P. 14)


7. Public Image: no data

C. Organizational Activities During Disaster
1. Resources during Disaster: For a list of the total assistance provided by MCDA to the local authorities in the major fires, see pages 5-9. Resources generally included fire fighting
equipment, volunteer personnel, communications equipment and vehicles. (Pp. 6-9)

2. Special Problems to Organization: Several "weaknesses" in the system became apparent:
   a. There was a "failure of a few local civil defense directors to provide complete support in the way of supplies, manpower, and all other services to their local fire chiefs." (P. 17)
   b. There was a "failure of a few local officials to accept the 'chain of command' once the state of emergency was proclaimed, and—especially in the fire service—to continue to operate through the 'mutual aid' system at the same time the MCDA was operating through the centralized command structure, organized to achieve the most effective use of available resources of equipment, manpower, supplies and service support." (P. 17)
   c. CD radio communication was insufficient, especially communication between the field and control centers. (P. 17)
   d. In several cases it was impossible for volunteer staffs to report for duty. (PP. 17-18)
   e. It became evident that some officials in various state agencies were not familiar with CD plans and the relation of CD to their agency in a declared emergency. (P. 18)

3. Organizational Change during Disaster: no data

4. Evaluation of Disaster Activity: The CD system of emergency operation conducted through the "chain of command" concept was fully validated. (P. 18) The Co-ordination of the efforts of all state agencies by MCDA is viewed "as ensuring the most efficient utilization of state-agency resources." (P. 18) Operations at MCDA Control Center and the Areas and Sectors involved were considered as being "very well carried out." (P. 18) "There local CD units had been properly organized and supported, "response to the disaster was very good." (P. 18) The "fire boss system", innovated during the emergency was "acclaimed by the local and state officials concerned as being the most effective way of dealing with such major fire emergencies." (P. 18) "The mission assigned to the Manchester Civil Defense Agency was accomplished successfully." (P. 19)

D. Organizational Activities in Emergency Social System

1. Existing Plans for Cooperation with Other Organizations:
   "The specialized direction of emergency activities remains under the direction of the trained specialists....Civil Defense does not and cannot "take over" the detailed direction of any of these vital specialized jobs." (P. 4) MCDA can only request assistance from municipal governments or state agencies prior to a declaration of a state of emergency, but MCDA can order all such units to carry out necessary actions after such a declaration (P. 3). MCDA maintains inventories of state, local, and private fire and engineering equipment available. (P. 10)
2. Communications Network (existing and emergen ): "A special forest fire periodic situation report was devised, to be reported by each area" four times daily. (P. 10) The Civil Air Patrol worked closely with MCDA in providing aerial observation at major fires, air-ground communications through CAP radio cars, and special observations as directed by MCDA State Headquarters. (P. 16) National Guard spotter aircraft and communications were used at the Manchester fire. (P. 15) National Guard also maintained communications with local fire bosses. (P. 16) MCDA was in contact with the CD liaison officer of the National Guard to facilitate requests for Guardsmen. (P. 15)

3. Competition and Conflict: no data

4. Use of Non-Organizational Members for Work of Organization: "To assist (the) 'fire bosses', and to relieve some of the local fire officers who had been working for days without rest, experienced fire officers were drawn from cities where there was little forest fire threat, and many of these officers were assigned to front line or staff duty." (P. 13) When the Northeastern Forest Fire Compact was invoked, Rhode Island furnished 9 fire officials to MCDA Headquarters. (P. 15) On request by the State Department of Natural Resources, MCDA secured supervisory personnel from the U.S. Forest Service, Department of Agriculture. (P. 14) The State Department of Public Works provided a large number of men and "substantial" supplies, equipment, and transportation. (P. 14) Civil Air Patrol personnel assisted in manning operational telephones and working on maps at MCDA Headquarters. (P. 16) A company of National Guardsmen were used at the Saugus fire. (P. 7) Auxiliary police were used at Manchester and Montague. (P. 7, 9)

5. No data

6. Relationship of Organization to Governmental Units Active in Disaster: MCDA can only request assistance from municipal governments or state agencies prior to a declaration of a state emergency, but MCDA can order all such units to carry out necessary actions after such a declaration. (P. 3) On May 8, the Governor called the State Director of Civil Defense and other state agency heads to the State House, where it was decided that a state of emergency should be declared and that the director of CD would be made co-ordinator of all state action necessary to combat the fire. (PP. 2, 21) Requests for help from Federal Agencies were made by MCDA through Region I, Federal Civil Defense Administration. (P. 18) See P. 15 for a chart detailing the relation of MCDA to state and federal agencies. (P. 13)

E. Other
None

III-MCDA-5
SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
   1. Name of Organization: Massachusetts National Guard
   2. Type of Organization: Latent, crisis

B. Organizational Description
   1. Organizational Goals and Activities: no data
   2. Organizational Character: no data
   3. Organizational Complexity: The only specific unit mentioned is the Tank Company, 182nd Infantry (p. 7). Before the declaration of emergency, any Guardsmen were called into action by direct requests to the Governor's office, which were then passed on to the Adjutant General of the Guard. "After that period, such requests were supposed to clear through MCDA State Control except in cases where 'relief' shifts were required." The Tank Company (from Saugus) illustrates the 'chain of command' followed. At 12:37 Saugus Selectmen requested their CD Sector Director to secure use of the Saugus NG Company. At 12:43 the Sector Director requested that the Area Director secure this through MCDA. At 12:58 the Area Director contacted MCDA HQ which, at 13:05, contacted the CD Liaison Officer of the NG. This request was approved and the Saugus Company informed at 13:10. At 15:00 the company arrived at Fire HQ, Saugus, for assignment. (PP. 14-15)

4. Organizational Control: Control was maintained through the MCDA chain of command, with close contact being maintained with the 'fire bosses' as the particular locations in which they were being used. In areas where it helped maintain law and order, Guardsmen were under the direction of police. (P. 15)

5. - 7. No data

C. Organizational Activity During Disaster
   1. Resources of Organization during Disaster: "Over 2000 National Guardsmen were utilized at one time or another." Guard spotter aircraft and radio communications were used at the Manchester Company. (P. 15)

2. - 4. No data

D. Organizational Activities in Emergency Social System
   1. Existing Plans for Cooperation with Other Organizations: no data
   2. Communications Networks: Radio communications were used at the Manchester fire. (P. 15)
   3. Competition and Conflict: no data
   4. Use of Non-Organizational Members: Rain-making equipment and directions were provided by Howell Associates. Four rain-making teams were based at State Police barracks.

5. - 6. No data

7. Relation to Other Governmental Agencies: NG activities were co-ordinated by CD. (P. 18)

E. Other
   None

III-NG-1
II. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
1. Name of Organization: Massachusetts Department of Natural Resources (DNR)
2. Type of Organization: latent

B. Organizational Description
1. Organizational Goals and Activities: The Division of Forest and Parks of DNR is the established state forest-fire fighting agency. Its normal function is to assist municipal fire departments in fires which are beyond their resources. Upon request of local officials, DNR leaders may assume overall direction of a major fire. (P. 12)

2. Organizational Character: No data

3. Organizational Complexity: DNR has a Commissioner who works for the Governor and who is on a level with the State Director of Civil Defense. "Working for the Commissioner is the Director of the DNP Division of Forest and Parks: in the emergency response, he was at the level of authority as the Civil Defense Fire Officer. Beneath the Director was a DNR Liaison Officer at each CD Area Headquarters. Finally, there was a DNR "fire boss" for each major fire; the "fire boss" was appointed after the state of emergency had been declared. DNR also has district wardens in each locality. (P. 12-13)

4. Organizational Control: "All requests for assistance by the local fire chief(s) were to channel through the 'fire boss' to the Civil Defense Sector in which the fire was located." Upon request of local officials, DNR leaders may assume overall direction of a major fire. (P. 12)

5. No data

C. Organizational Activities During Disaster
1. Resources of Organization During Disaster: Has "fire-fighting staff and trucks." Working with MCDA, made available "hundreds of pieces of equipment and thousands of fire fighters." DNR radio is mentioned. (P. 12)

2. Specific Problems to Organization: No data

3. Organizational Change During Disaster: Prior to the declaration of a state of emergency, DNR district wardens merely provided assistance and advice to local fire chiefs who retained command. After the declaration, DNR personnel were appointed as 'fire boss' of a major fire. (P. 12)

4. Evaluation of Disaster Activity: No data

D. Organizational Activities in Emergency Social System
1. Existing Plans for Co-operation with Other Organizations: DNR is a member of the 12 state "Northeastern Forest Fire Compact." Provisions of the Compact were invoked, but because forest fire conditions were generally so dangerous, only Rhode Island was able to comply, sending 9 state and local fire officials. (P. 13)
2. Communications Network: A DNR radio net is mentioned. (P. 12)

3. Competition and Conflict with Other Organizations: no data

4. Use of Non-Organizational Members for "work of Organization:"
   "To assist..."fire bosses," and to relieve some of the local
   fire officers who had been working for days without rest,
   experienced fire officers were drawn from cities where there
   was little forest fire threat, and many of these officers
   were assigned to front line or staff duty." Nine Rhode Island
   fire officials were provided through provisions of the
   Northeastern Forest Fire Compact. Several U.S. Forest Service
   (Department of Agriculture) personnel were secured through
   MCDA; they assisted DNR "fire bosses." (PP. 13-14)

5. No data

7. Relation of Organizational to Governmental Units Active in
   Disaster: After the declaration of emergency, DNR activities
   and requests for aid were co-ordinated by CD. (PP. 12-15)

E. Other
   None
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
   1. Name of Organization: Massachusetts Department of Public Works (DPW)
   2. Type of Organization: latent

B. Organizational Description
   No data

C. Organizational Activities During Disaster
   1. Resources of Organization During Disaster: Provided "a large number of men and substantial supplies and equipment, as well as" transportation. (P. 14)
   2. Special Problems to Organization: "The only serious delay in meeting a request--involving four bulldozers... occurred because when it was transmitted down to the appropriate MCDA Sector Headquarters... the Sector Engineering Officer had not been informed through DPW channels that the declaration of a state emergency permitted DPW to hire private equipment. On his initial query to DPW, he was informed on the authority of an official in DPW, Boston, that no such authority existed. However, before word of the failure of the bulldozers to arrive on schedule reached any MCDA Headquarters, clarification on this policy had been made by the Commissioner of Public Works." (P. 14)
   3. Organizational Change During Disaster: no data
   4. Evaluation of Disaster Activity: "DPW action began on a voluntary basis in advance of the declaration of emergency." (P. 14)

D. Organizational Activities in Emergency Social System
   1. Existing Plans for Co-operation with Other Organization.: The engineering service at MCDA is staffed at least partially by DPW personnel. (P. 14)
   2. No data
   7. Relation of Organization to Governmental Units Active in Disaster: Activities of DPW were co-ordinated by MCDA. (P. 12)

E. Other
   None

III-DPW-1
I. BASIC INFORMATION

A. Characteristics of Disaster
2. Date-Time: 8:30 P.M., May 12, 1957 (Dusday).
3. Location: Lampasas, Texas.
4. Damage:
   a. Number killed: 5
   b. Number injured: scores hospitalized.
   c. Physical damage:
      homes: 38 destroyed, 46-major damage and 226 minor damage
      business buildings: 5 destroyed, 40-major damage, 41-minor damage
      1 church destroyed
      1 school major damage
      1 hotel major damage (P. 149).
      Total monetary loss = $3,742,000.00. Largest losses:
      $1,275,000.00 - merchandise and fixtures
      $616,000.00 - business buildings
      $577,000.00 - residential damage
      $229,000.00 - personal property
      $175,000.00 - automobiles
      $130,000.00 - city property and utilities (P. 150).
5. Cause: sudden, heavy rainfall flooded creek tributaries (P. 66), caused
tremendous rush of water to crumble levees.

B. Methodology
1. Research agency and/or principal research personnel: Billy G. Crane.
2. Source of data:
   a. Number of interviewees: 1611 (P. 215).
   b. Number of questionnaire respondents: none.
   c. Time lapse between disaster and data collection: no data.
   d. Other: Complete and close scrutiny of all available records of the
      various governmental units concerned and of relevant newspaper accounts,
      articles, personal interviews with the various governmental officials who
      participated in these activities, and first hand observations, when
      possible, made in the field during disaster operations (P. 9).
4. Other methodological comments: none.

C. List of all Organizations Involved and Their Activities During Disaster.
1. City officials (did not report to city hall to resume duties, P. 150. Later,
   helped determine priority of jobs to be done, P. 223, aided in coordination of
   relief activities, P. 223).
2. Ward Lowe, editor of weekly newspaper (was in telephone exchange building,
   coordinated all incoming emergency calls, accepted help from Fort Hood
   although technically not authorized to do so, P. 151).
3. Volunteer Fire Department (since they were already in downtown area sand-
   bagging along store fronts, were able to turn to search and rescue activities
   when flood hit, P. 152. Continued rescue efforts with aid of boats brought in
   for 26 straight hours. Put out warehouse fire, P. 153).
4. Department of Public Safety (sent sergeant to Lampasas to maintain communica
   tions, sent four units to move clothing and equipment in from Gainesville and Hamilton,
   P. 152. Thirty policemen arrived to help in rescue before the waters receded,
   P. 152).
5. Army Corps of Engineers (sent boats, clothing and emergency equipment from Brownwood to Lampasas, P. 152, arranged tours of flood area for go around, P. 223).

6. Local Unit of National Guard (at night after start of flood, some set up guard around flood perimeter while others helped move trapped victims from flood area to Red Cross headquarters, were 40 men in all. When other units of National Guard arrived, local guard took the night shift, P. 153. Helped on clean-up, P. 167).

7. Fort Hood (70 men arrived an hour after disaster. Although commander said they worked under local authorities, it appears they took command of rescue operations. Helped on clean-up and guard duties, P. 167).

8. Local Civil Defense (director did nothing noticeable - was a "paper" organization P. 155).

9. Red Cross (established emergency headquarters P. 153. Arranged for military helicopters, which would have arrived too late, P. 155. established two shelters with food and sleeping facilities, two mobile canteens to serve rescue workers, P. 158. Purchased 150 outfits of clothing and much food P. 166. Gave rehabilitation aid to victims, P. 235).

10. Federal Civil Defense Administration (FCDA) region five (sent man to State Control Center the night of disaster to assist state personnel in complying with requests from disaster scene, supply his superior with disaster information, report National agencies activities, P. 155-157. FCDA coordinated activities of federal agencies such as S.B.A., H.E.A., V.S.A., D.H.E.W., etc. P. 169. After arrival one man started public relations program while two inspected city, P. 21. Too over coordination of relief activities that fell within scope of Public Law 875, on Tuesday, P. 221. Attempted to help county attorney straighten out legal problems arising from debris clearing, P. 224-225).}

11. Local Dairy (lent two refrigerator trucks to Red Cross, P. 158).

12. State Department of Public Welfare (had request for food which was cancelled because of adequate supply. Some caseworkers helped Red Cross with registration P. 159).


14. State Highway Department (brought "safe" water in by department trucks, P. 160).

15. Non-local National Guard (helped with guarding and rea work during the day, P. 153. Brought "safe" water in by truck, P. 160. Helped on clean-up and guard duties, P. 167).

16. Radio (announced that water might be contaminated, P. 160. Was used by Red Cross to inform citizens of small business aid available, P. 236).
17. Lampasas Public Health Department (as listed by military and civilian volunteers, the unit administered tetanus, typhoid and polio vaccine shots to those who wanted them, P. 164. Requested help from state agencies to get vaccine, etc., P. 165).

18. Electric Company (crew from the company and from other cities helped repair damage, PP. 162-163).

19. Austin Central Fire Station (sent a portable power plant, P. 163).

20. Killeen fire department (sent portable power plant with floodlight, P. 163).

21. Gas Company (local crew and some from neighboring town repaired broken lines. No major lines involved, P. 164).

22. Local Hospital (took care of casualties without outside help, P. 164).


24. Killeen Air Force Base (helped guard and clean-up town, P. 167).

25. State Defense and Disaster Relief Office (was on alert, P. 170, McGill, director, declared area disaster area, P. 216. Approved estimates of funds needed for health projects, P. 222).

26. United States Public Health Service (met with other officials on Tuesday. Helped ascertain health needs for city, P. 222. Outline phases of preventive action to be taken, P. 226).

27. Lampasas County Attorney (met with other officials on Tuesday, P. 222. Tried to help straighten out legal problems arising from disaster, P. 224).

28. Lampasas County Health Officer (tested water, found it safe, P. 161. Helped ascertain city's health needs, P. 222).

29. Small Business Administration (set up a disaster relief loan office, P. 230).

30. Governor (inspected flooded area, spoke, posed for pictures, PP. 229-230).


32. General Services Administration (sent representative to act as community facilities engineer, P. 232).

33. Federal Housing Authority (made loans to individuals to restore homes, P. 236).

34. Texan Educational Agency (gave opinion to TESDA that school gym floor was a necessity not a luxury, P. 237).

35. Archives Division expert from Library of Congress (aided in preserving county courthouse records, P. 238).

I-3
36. Printing and Binding Company in Austin (worked to recondition and preserve county records, (P. 238).

37. Fourth Army Headquarters (served as a message coordinating center and helped make decisions on military aid allowable, P. 220.)

D. Brief description of Emergency Social System

"...somewhat heavy rains throughout the day had caused water to begin accumulating around the town square, as usual after heavy rains. Some 35 members of the Lampasas Volunteer Fire Department had assembled during the afternoon and were engaged in their usual tasks of removing several automobiles from around the square and helping merchants sandbag the fronts of their buildings." Two creeks received heavy rainfall over their watershed within a short period of time. The levee was not able to hold the rush of water and the top began to crumble. The water swept over the city, in a wall measuring up to 10 feet. (pp. 66 and 148)

There was no advance warning. Over 1,200 of the 1,600 telephones were useless. All lines to the outside were down briefly, "and only one line was available for a lengthy period. Local officials could not, or did not, report to city hall concerning assumption of their duties." Confusion reigned. Darkness and lack of proper equipment hampered rescue activities. (P. 150)

The editor of the weekly newspaper happened to be in the telephone exchange building. He remained and assumed control of all emergency calls coming in. Lowe accepted the offer from Fort Hood for equipment and personnel, even though that is usually the mayor's decision. The mayor had been trapped by the flood. (P. 151)

The Volunteer fire department was already downtown sandbagging stores. They began search and rescue activities immediately. The fire chief asked the editor to call out for boats, clothing and communications equipment to be sent in from the north since all other roads were under water. After receiving this information, the Department of Public Safety district headquarters in Waco sent a sergeant "to Lampasas to maintain communications and arranged to have four highway patrol units move clothing and other equipment from Gatesville and Hamilton." The Army Corps of Engineers sent 12 boats, plus clothing and emergency equipment from Brownwood. The 40-plus members of the National Guard were activated quickly, some doing rescue work and others guarding the perimeter of the flood area. (P. 152) About 27 Guardsmen from Gatesville, forty miles away, arrived the next day. They alternated with local Guardsmen, taking the day shift.

Volunteer fire department worked continuously for 26 hours. Besides rescuing victims, they put out a fire in a warehouse. The balance of the night, they moved survivors to emergency shelters. (P. 153)

Volunteers offered their services and boats and equipment. There were more volunteers than could be used profitably. Fort Hood sent 70 men and officers, who arrived an hour after the disaster struck. These men appeared to take over rescue activities. Civil Defense director did nothing discernible. The organization was "on paper only." Up to the point when the army took over leadership in rescue activities, no attempt had been made to coordinate rescue work done by the local fire and police departments, National Guard and the multitude of private volunteers. (PP. 154-155)
Others who helped in rescue were 30 highway patrolmen and the Red Cross. The Red Cross arranged to get military helicopters, but the water receded before these could be gotten. Offers of boats and operators from the Marine Corps through regional civil defense headquarters arrived too late. The waters receded after 20 hours. (PP. 155-156).

The region five office of FCDA had been active with other disasters before the Lampasas flood struck. An office was established in Austin to coordinate national activities with those of state and local government. "Therefore, state and national forces primarily concerned with disaster relief were prepared to render immediate assistance to the stricken community." Aikin, who was on duty at the State Control center, acted as coordinator of messages from the disaster area. (PP. 156-158)

The large staff of national disaster workers took over the organization's activities within hours. Volunteers from adjoining chapters and six case workers from the Department of Public Welfare aided. Soon there was a surplus of clothing. The Red Cross helped provide both food and shelter. (PP. 159-160)

Because of suspicion that the water supply was contaminated, National Guard and Highway Department trucks brought in safe water. The next day, the water system supply was tasted and found safe, although there were breaks in the mains. The worst damage to the water system was in the sewage disposal system. Fort Hood supplied pumps to supplement those damaged at the disposal plant. It was decided to give the sewer lines a thorough cleaning out later rather than a hasty one with improvised military equipment. (PP. 160-162)

The electric power plant damage was confined mainly to the distribution system. Repairs were made by local crews, crews from nearby towns and personnel from the Lower Colorado River Authority from Austin, within the next few days. (PP. 162-163)

Gas service was restored by the following day by local crews and some outside help. The local hospital was able to handle injuries without outside help. The Lampasas Public Health Department, with volunteer assistance, gave preventive shots to those who wanted them. The vaccines were located through the Department of Public Safety's communication unit, which called state agencies. Typhoid vaccine arrived the day after the storm, but others did not arrive until the following day. (PP. 163-166)

Highway patrolmen helped guard the town. For Hood men helped both in guarding and clean-up, as did men from two air bases. (P. 167)

After the area was declared a disaster area, in this case by the State Co-ordinator of Defense and Disaster Relief, and FCDA team was sent in to assume direction of relief activities. They arrived 15 hours after the flood began. Public Law 875 was put into effect shortly thereafter. There was some conflict between the military and federal agencies representatives about what the military's duties were. Proper channels of communication were set up for requests for military aid. Military aid was coordinated with FCDA, and procedures were more strictly adhered to after Public Law 875 went into effect. (PP. 216-219).

The FCDA task force changed slightly in make-up during the following day because a member were needed elsewhere. (P. 221) On Tuesday, a meeting was held to discuss a health and sanitation survey done by the task force, state and county health personnel. Included were members of the city government. Later that day the estimates for public health work were approved. Some friction
among the city officials had developed, over priority of work and "red tape."
(Pp. 221-223)

The city attorney and the state coordinator attempted to settle legal problems
incurred in the debris-clearing operations. (Pp. 224-226)

The governor inspected the flood area, spoke and mentioned the aid given by
national agencies. (Pp. 228-230) The Small Business Administration and other
national governmental agencies set up offices to administer rehabilitation
loans. The public health agencies got the various preventive measures
underway. (Pp. 231-233) The Red Cross began its rehabilitation program for
individuals. (Pp. 235-236) While administering Public Law 875, some differences
in interpretation of eligibility arose, but were fairly quickly settled. (Pp. 236-237)

E. Community Context

"City had suffered heavy floods in 1913 and 1936. In 1948 a levee six to nine
feet high had been constructed along Sulphur Creek several blocks from the business
district to prevent such recurrences. Nevertheless, it had become a common
occurrence for water to back into the stores of Lampasas business district
following heavy rains because of the inadequate drainage system in the creek bed.
Residents along the creek banks had endured similar discomforts repeatedly. In
fact, water backed into the stores just three weeks prior to the disastrous flash
flood. The fire department had established the practice of sounding a siren alarm
to warn merchants and residents of the danger of getting themselves and their
possessions water-soaked." (P. 66)

Lampasas is a town of 4,000, with a Volunteer fire department and a small police
department. (P. 132)
XI. GENERALIZATIONS AND HYPOTHESES

A. "The impact or emergency phase during the Lampasas flash flood of 1957 was reminiscent of the confusion and lack of coordination which marked the period immediately following the Waco tornado. (P. 266)

B. "Had cooperative federalism been applied toward effective preventive measures, a system of dams and levees would have prevented the flash flood from occurring." (P. 280)

C. Love's action in taking command in the absence of the Mayor "testifies to the accuracy of Moore's observations that, during the rescue period, 'if the titular leaders do not assume control, others will take over'" (P. 151)

D. "An overabundance of unorganized volunteers poses one of the primary problems during the impact phase of a disaster." (P. 154)
II. Specific Organizational Analysis

A. Organizational Information

1. Name of organization: Fort Hood Army Base
2. Type of organization: latnet

B. Organizational description
No data.

C. Organizational Activities During Disaster

1. Resources of organization during disaster
   a. Sent 70 men to Lampasas during first hour after disaster. (P. 154)
   b. "More than 350 troops from nearby Fort Hood and Kelleen and Gary Air
      Force Bases were ordered into Lampasas early Monday morning following
      the Sunday night flood." Helped in guarding and clean-up. (P. 167)
   c. Fort Hood gave many supplies needed by disaster area workers.
      (P. 220)

2. Special Problems to the Organization
   a. "...Considerable confusion developed over the manner in which military
      assistance should be requisitioned once the extreme emergency phase
      had passed." (P. 166)

3. Organization change during disaster
No data.

4. Evaluation of disaster activity
   a. "Non-military interviewees viewed the army's assumption of command with
      approval,""in view of the state of disorder prevailing during the first
      hours of the disaster." (P. 154)

D. Organizational Activities in Emergency Social System

1. Existing plans for cooperation with other organizations. The State Coordinator
   for Disaster and Relief contacts all military bases and works with them and with
   other national agencies. (P. 48) The military sends a liaison officer to
   work at the State Control Center with representatives of other agencies
   after disaster strikes. (P. 52)

2. Communications networks - existing and emergent.
   a. Base headquarters telephoned town to offer assistance. Newspaper editor
      accepted the offer. (P. 151)
   b. "An example of the manner of coordinating the procurement and utilization
      of the military personnel is a request sent by radio, from Captain Browning
      to the State Control Center in Austin the day following the flood. ... urgent
      need for 30 more Army personnel. McGill's (state control center
      director) representative at the control center. ...contacted the military
      liaison officer assigned to the center who, in turn, relayed the request
      quickly through channels to Fourth Army Headquarters in San Antonio.
      ...troops dispatched." (P. 168)
      "The procedure used during the emergency phase to obtain military assis-
      tance...became obscured, however, as subsequent non-emergency relief
      activities were undertaken." (P. 168)
      During the immediate period after the waters had receded, the major
      called directly to Fort Hood for assistance. After FCDA men arrived
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
   1. Name of organization: Department of Public Safety (highway patrol).
   2. Type of organization: Manifest.

B. Organizational Description
   1. Organizational goals and activities
      No data.
   2. Organizational character
      No data.
   3. Organizational complexity
      The public safety department head is a part of the State Civil Defense
      and Disaster Relief Council, along with the heads of Public Welfare,
      Civil Aviation, Health, Fire, Highways, the Railroad Commission, Employment
      service, state consultants on engineering and education; a Red Cross
      liaison officer, and a representative of the Attorney-General of
      Texas. (PP. 48-49)
      The state of Texas is divided into six regional disaster districts which
      parallel the highway patrol districts. Each region is further divided
      into two districts. The highway patrol captain each of these twelve districts
      serves as liaison officer between the Division of Defense and Disaster Relief
      and his district. (P. 49)
   4. Organizational control
      No data.
   5. Membership recruitment and orientation
      No data.
   6. History of organization
      No data.
   7. Public image of organization
      No data.

C. Organizational Activities During Disaster
   1. Resources of organization during disaster
      a. Sent Sergeant to maintain communications, within minutes after disaster.
         Sent four units to move clothing and equipment from two nearby towns.
         (P. 152)
      b. Thirty highway patrolmen were sent for rescue, guard and traffic duty before
         waters receded (about 15-12 hours past impact). (P. 155) Few arrived
         in time for rescue work. (P. 167)
      c. Within a few hours after impact, 20 mobile units were moved into city.
         (P. 167)
      d. Forty-five patrolmen were kept on duty, mainly guarding and directing traffic.
e. Plans -- "When a disaster of major proportions threatens or actually occurs, the Public Safety Liaison officer contacts the Division of Defense and Disaster Relief, and the State Control Center in the State Department of Public Safety is activated. All communications via the Public Safety state-wide radio network are received at the center and are evaluated by representatives of the agencies making up the State Civil Defense and Disaster Relief Council. (P. 52)

2. Special problems to organization
   No data.

3. Organization change during disaster
   No data.

4. Evaluation of disaster activity
   No data.

D. Organizational Activities in Emergency Social System
1. Existing plans for cooperation with other organizations.
   See B - 3.

2. Communications networks - existing and emergent
   a. The communications unit sent into Lampasas during the first few hours of the flood was used extensively to relay messages to the State Control Center. (P. 158) Some of these messages were sent by the unit to district headquarters in Waco to the State Control Center in Austin and vice versa. Many local officials and outside agencies used the facilities to call requests out - it was not used exclusively by the highway patrol. (PP. 158 & 163) See also C - 1.

3. Competition and conflict with other organizations
   No data.

4. Use of non-organization members for work of organization
   No data.

5. Effect of the emergence of informal organizations on organizational activity
   No data.

6. Effect of role conflict on organizational activity
   No data.

7. Relation of organization to governmental units active in disaster
   Worked with National Guard, other military to guard and direct traffic. (P. 154)

E. Other.
   None
XI. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
   1. Name of organization: Main area-Federal Civil Defense Administration, Region 5, National level, and others.
   2. Type of organization: Manifest.

B. Organizational Description
   1. Organizational goals and activities
      a. Regional offices, after FCDA was created, then put in charge of P.L. 875, "urged those states which had not done so to establish a disaster relief co-ordinator at the state level. To date, 43 states have charged their civil defense agencies with the responsibility of participating in disaster relief activities and such legislation is under consideration in the other states. Many of the states have devised comprehensive natural disaster programs coupled with their civil defense plans." (p. 33)

      b. "A register of national, state and other agencies which function in disaster situations or which possess needed resources is maintained by each regional office in accordance with national headquarters directives.

      The regional office keeps data pertinent to the operating policies of these agencies and retains a continuous file of personnel making it possible to reach key officials at any hour. Thus, in the event of sudden disaster, the regional office is able to produce the manpower and material at once. ... also provides the co-ordination for national agencies within its area which have standing authorization to act with or without a presidential declaration of a 'major disaster.' ... is the connecting link for the securing and communicating of information to the Natural Disaster office, OCDM, in Battle Creek, Michigan, and subsequently to its national headquarters in Washington, D. C., during the development of a disaster. (pp. 34-35)

   c. Region Five Office - OCDM
      1. Plans and operation office duties "(a) to develop, plan, test and evaluate Regional Emergency Operations Plans, (b) to co-ordinate and plan with National agencies on emergency operational plans, and (c) to conduct the operational office." (P. 36)

      2. Training, Education and Public Affairs Office - "responsible for aiding national agencies and state and local governments in the development of educational programs, for developing announcements of interest to the public, for conducting emergency information and natural disaster information programs, and for assuring the effective dissemination of C.D. publications. (PP. 36-37)

      3. Administrative Office - performs audits in connection with natural disasters. (P. 37)

      4. Financial Assistance Office - "administer non-public funds for disaster relief. (P. 37)."
5. Resources and Production Office - "assisting national agencies and state and local governments in determining requirements for material, manpower and services for emergency operations; of administering the surplus property program; and of aiding state and local governments in developing plans and procedures designed to restore and rehabilitate essential public facilities." (P. 37)

6. Natural Disaster Coordinator - "Co-ordinate and assist offices within the Regional Office, National agencies, and state and local government in administering P.L. 875 at the regional level. He is responsible for the preparation of instructions to all levels of government in regard to P.L. 875.

Specifically, he is to:
a. Arrange and conduct orientation meetings with state and local authorities as required.
b. Receive and review all disaster project applications for administrative efficiency, route applications to offices of primary responsibility and maintain suspense and control of all applications in process; prepare application for final processing and recommend appropriate action to the Regional Administrator.
c. Maintain general natural disaster files.
d. Recommend composition of Disaster Field teams and establish itineraries for all such teams operating on a regional basis.
e. Prepare disaster status reports as required.
f. Insure that all natural disaster plans and procedures are in consonance with current policies of FCDA and recommend appropriate changes as required.
g. Carry out, in routine operations, such other activities as may be delegated to him by office directors and approved by the Deputy Regional Administrator. (P. 38)

7. Deputy Regional Director - "responsible for co-ordinating the overall natural disaster operation of the Regional Headquarters and the Natural Disaster Co-ordinator, as his principal assistant, must maintain constant surveillance of all natural disaster operations of the headquarters, supplying the Regional Director and his Deputy with information during all phases of disaster activity. In a word the Natural Disaster Co-ordinator is to co-ordinate offices, not people." (PP. 37-38)

8. Program Policy Office - directs the continually changing programs affecting the entire operations of Region Five Headquarters and its relations with state and local organizations. He recommends changes in the long-range programs to the Regional Director.

9. "Each Regional Office of OCM is aided by a general advisory body which is responsible for the overall planning of the operating procedures. These are the Regional Civil and Defense Mobilization Boards with the one for Region Five consisting of the following national departments and agencies: Farmers Home Administration, Food Distribution Division, Atomic Energy Commission, Civil Service Commission, Business and Defense Services Administration and many, many more." (PP. 38-39)
10. State Coordinators - "Prior to the merger of FCDA and ODM with the subsequent administrative organizational changes, these State Coordinators were designated as Survival Plan Coordinators and their primary task was to devise methods of instructing state and local civil defense directors as to the best methods of planning for survival in the event of total war." They completed this phase. The new organizational plans formalize their secondary duties. "The Administrator of Region Five, found that his organization had a great advantage in those states where the Survival Plan Co-ordinator Office was already established and functioning as a liaison with the State Civil Defense Office."

a. "Information was available from the earliest hours of the disaster ... Answers to specific questions could be provided without troubling the State Directory..."

b. "A personal representative of the Regional Administration was always on hand in the capital to confer with state officials concerning policy problems and operations leading up to the Governor's request for invocation of 675, and Task Force establishment and operation!"

c. "...co-ordinator would be immediately designated Task Force Co-ordinator, thus eliminating the problem of finding a suitable staff officer from Regional..."

d. "Office space was already procured and available for instant use by a Task Force Headquarters."

e. "Communications were already installed and could be easily amplified by the addition of more telephones or TNX lines."

f. "Clerical assistance was immediately available to ensure keeping up disaster records from the beginning."

g. "Survival Plan Co-ordinators were already acquainted with State and Federal agency heads, and other sources of assistance."

(PP. 39-41)

B. - 2. Organizational character

a. "Although the eight Regional Directors are expected to assign their personnel in accordance with the general outlines of the (organizational) chart, some degree of flexibility is permitted." (P. 35)

B. - 3. Organizational complexity

a. "The Office of Civil and Defense Mobilization (OCDM) divides the 49 states among eight regional offices. Each regional office has the responsibility for supervising the operation of interstate and national assistance to its group of states. The regional office controls, within its area the utilization of national resources other than military. (P. 34)

b. Region Five Office

1. Composed of New Mexico, Oklahoma, Texas, Louisiana, and Arkansas, with headquarters in Denton, Texas. (P. 35)

2. In headquarters, there are the following divisions

a. Plans and operations office: assistants in charge of: communications, communicable, Biological and Radiological; Federal, State and Local Plans; Community Service; shelter; and continuity of government (P. 35a)

III - FCDA - 3
b. Training, Education and Public Affairs: assistant in charge of Training and Education; Public Affairs; Liaison, National Women Organizations, and Liaison, National Organizations.

c. On the level above the before-mentioned divisions are Resources and Production, State Coordinators, Administrative Office and Financial Assistant. On a slightly higher level are the Director of Women's activities and Special Assistant. All the aforementioned are under the direction of the Administrative Assistant.

d. The Deputy Regional Director has the administrative assistant, the Program Policy and Natural Disaster reporting to him. He in turn reports to the Regional Director who works with the Regional Civil and Defense Mobilization Board. (P. 35a).

4. Organizational Control

a. Most policy and decisions not answerable in the field appear to be made in the Region Five headquarters. (P. 238)

b. The FCDA, in 1953, was authorized to undertake the following activities under the Presidential Executive Order on Administration of Disaster Relief, Executive order No. 10427:

"1. Direct Federal agencies to provide assistance in major disasters."

"2. Coordinate the activities of Federal agencies in providing disaster assistance, and to direct any Federal agency to utilize its available personnel, equipment, supplies, facilities, and other resources, in accordance with the authority contained in the act."

"3. Coordinate on behalf of the President...plans and preparations... of Federal agencies (made)...in anticipation of their responsibilities in the event of a major disaster."

"4. Foster the development of such state and local organizations and plans as may be necessary to cope with major disasters."

"5. [Co-ordinate]...assistance...and other Federal action...as may accord with the existing policies, practices, or statutory authority of such agency... (PP. 31 & 32).

Also, Federal relief is only to supplement state, local and/or private relief. Thus, state and local must make "reasonable contributions" to relief before Federal help can be expected.

c. Much of the authority transferred to the FCDA by executive order 10427 was redelegated by the Administrator to FCDA Regional Directors but further redelegation was prohibited. Regional directors were directed to:

"Give maximum consideration to the existing responsibilities, authorities, practices, customs, and arrangements of the other Federal agencies, states, local governments and the American National Red Cross with respect to natural disasters." (P. 32).

d. National FCDA office, meanwhile, worked with other national agencies and Red Cross in drawing up pre-disaster plans which spelled out agency responsibility, functions and practices for providing assistance in disaster relief. Once the plans were worked out, the FCDA sent bulletins telling of the plans to state and local CD directors to help them establish their machinery. (PP. 33-34)

e. "The major changes in administering disaster relief since the passage of PL 875 have occurred by intra-agency practices and administrative directives, not by formal congressional amendatory procedures. "These have been gradual and pragmatically inspired. (P. 43)
5. Membership recruitment and orientation.
a. "The Regional Director and... the Deputy Regional Director are the only
   two officials who are appointed directly by the National headquarters
   and whose duties are assigned from there."  (P. 35)
b. 'OCDM personnel are under civil service regulations and the total number
   of employees with specific job titles assigned to a particular
   Regional office is beyond the immediate control of the Director.
   Some Regional offices are understaffed; others have their full
   quota of personnel."  (PP. 35-36)
c. Region Five --
   1. Plans and operations office - Director has six major assistants.
      Total staff is 18 specialists.  (P. 36)
   2. Training Education and Public Affairs Office - has a director,
      three training and education officers, and a public affairs officer.
      (P. 37)
   3. Administrative office - director and four assistants.  (P. 37)
   4. Financial assistance office - a director, a contributions officer, and
      a contributions analyst.  (P. 37)
   5. Resources and Production office - director and four specialized
      assistants.  (P. 37)
   6. Natural Disaster Co-ordinator (P. 32)
   7. Program Policy office - one officer.  (P. 38)
   8. State Coordinators - one for Texas, one for Oklahoma.  (P. 39)


   Although this history does not entirely deal with the organization in
   its present form or name, it does deal with similar types of relief given
   by the federal government.

   "For a number of years several departments and agencies were given
   specific statutory responsibilities to render assistance in certain types
   of disasters.  The Corps of Engineers... has had emergency authority for many
   years to repair and restore flood-control protective works and to conduct
   rescue activities.  Since 1934, the Commissioner of Public Roads has been
   provided with an emergency fund for the repair and reconstruction of highways
   and bridges on the federal aid systems."

   Agencies such as Small Business Administration, Agriculture Department,
   Public Health Service, Food and Drug Administration, Bureau of Public Assistance,
   Bureau of Employment Security and others have been assigned specific roles
   in the processes of disaster relief.  During the 1930's, emergency agencies
   initiated comprehensive programs involving disaster relief.  Some were
   quite effective.

   The Disaster Loan Corporation was created by Congress in 1937.  It was
   amended several times to increase funds available for loan victims.

   However, "there was no general legislation on a national level governing
   such activities and no provision for coordination of such assistance.  The
   Disaster Act of 1950 attempted to remedy these deficiencies and did not
   repeal the laws making the various national agencies and departments
   responsible for certain aspects of disaster relief."

   The Surplus Property Disaster Act of 1947 was the first general policy
   for national disaster assistance.  This proved "cumbersome and expensive to administer.
   This plan was curtailed by the gradual exhaustion of surplus stock.  General
   Services had been handling the dispensing of surplus goods under the 1947
   act.  "Cash granted to states and localities slowly replaced relief in kind.
   The President was furnished with emergency funds from which he could allocate

III - FCDA - 5
necessary sums for disaster relief. This practice eventually led to the
creation of a specific fund for disaster relief operations and this was the
forerunner of the existing legislation on the subject." (F.P. 21-26)

When Public Law 875 was passed in 1950, the Housing and Home Finance Agency
was designated to supervise the disaster relief. This was a temporary measure,
since the same congress "passed the Civil Defense Act of 1950 with the clear
intent that eventually the administration of Natural disaster relief would
fall within the jurisdiction of the civil defense agency.

On January 15, 1953, the FCDA was given authority to execute Public
Law 875 and to coordinate the activities of national agencies. (P. 31)

FCDA General Order No. 232, February 16, 1956 "removed the responsibility
of directing natural disaster operations from the Office of the Administrator
and vested it in the newly created Natural Disaster Office within the FCDA. (P. 34)

The administrative machinery seems to be in a constant state of change.
"From 1957 to 1958 there were two major revisions of the administrative
machinery and, effective July 1, 1958, the Office of Defense Mobilization
and the Federal Civil Defense Administration were merged by Reorganization
Plan No. 1 of 1958 which was prepared in accordance with the Reorganization
Act of 1949, as amended. A new agency resulted from this merger: the
Office of Civil and Defense Mobilization. (P. 35)

7. Public Image of Organization:
No data.

C. Organizational Activities During Disasters.

1. Resources of organization during disaster.
   a. Because Topeka had been having a series of disasters, the various offices
      were already set up and operating. Thus, they were prepared to give
      immediate aid to Lamapas. Treadwell was in the Austin office and
      Aiken was at the state disaster control center. (P. 156) They were
      able to act quickly because Public Law 875 was put in effect immediately
      by the State Coordinator of Defense and Disaster Relief. The State
      Coordinator had been given this unusual power because of the number of
      disasters occurring during that time. (P. 216)

2. Special problems to organization.
   a. Aiken reported to national FCDA headquarters - that most highways were
      flooded, making it difficult to get equipment in and communications are
      cut. (P. 157)
   b. Team captain was unfamiliar with Public Law 875, so had difficulty making
      sound decisions and had to get help from Austin FCDA liaison office.
      Could not help County Attorney on legal problems arising from relief and
      debris-clearing activities. (PP. 222-224) details of one problem on
      PP. 224-225.
   c. During early meeting, funds for health preventive measures had to be
      approved so these tasks could be undertaken quickly. This included
      rodent and insect control. This was done after the task force had
      inspected the town and cost estimates were drawn up and approved.
      (P. 226)
   d. Had some problems in interpreting Public Law 875, i.e. - was replace set
      of school gym permissible under the law? After much checking it was
determined that the gym was a necessity and not a luxury for the
school, so funds were approved. (P. 237)
3. Organizational change during disaster
   a. Treadwell set up an office in San Juan to coordinate national activities with those of state and local governments. (P. 156)
   b. Aiken, regularly attack warning officer "was temporarily assigned to assist Treadwell in San Juan." At the State Control Center, he was to "assist the state personnel in complying with the requests emanating from the disaster scene, to supply his regional and national superiors with all available information pertaining to the disaster, and to report the steps being taken by National agencies to alleviate the situation." (PP. 156-157)
   c. A task force for Llano was composed of Haun, transportation officer from the Resources and Requirements office, captain; Wheatley, general engineer of the Natural Disasters Office; and Rosch, director of the Special Activities office and Worlman, Assistant Sanitary Engineer from U.S.P.H.S. Shortly after arriving, Haun was sent to another assignment. (PP. 216-217)
   d. Rosch and Wheatley were selected as members of the task force, later on that day they arrived. New team members were Ogden, Vector Control Engineer, U.S.P.H.S., and Rogers, Texas State Health Dept. (P. 221)
   e. The first meeting of FCDA and other officials: "Team Captain apologized for the prevailing confusion, explaining that he was ordinarily a Transportation officer for FCDA and had never before served as coordinator of a task force to administer a flood disaster. He was unfamiliar with the details of Public Law 875 and admitted that he had spent a large portion of time since coming to Llano seeking information from Miss Treadwell in San Juan." (PP. 222-223)
   f. By Thursday morning the task force had a new Captain. He was a training specialist who, like the previous captain, had little previous experience with the application of Public Law 875. He took charge of a meeting and appeared to handle it well. (P. 234)

4. Evaluation of disaster activity
   No data.

D. Organizational Activities in Emergency Social System
   1. Existing plans for cooperation with other organizations: The FCDA coordinates activities of federal agencies, such as S.B.A., H.H.F.A., U.S.D.A., D.H.E.W. etc. (P. 169)

2. Communications networks - existing and emergent
   a. Aiken, at State Control Center, provided much of the contact between various governmental agencies on different levels (national, state, and local) outside the disaster zone. He made many of the contacts to procure needed equipment and personnel requested in the disaster area. (PP. 157-158)
   b. Upon the arrival of the task force, Rosch went to the newspaper office and began the public relations program. (P. 217)
   c. Proper channels for communications were established by FCDA officials for requesting relief aid. This consisted of people in Llano checking through the State Control Office or FCDA liaison headquarters in Austin rather than the mayor phoning Fort Hood directly for aid. (P. 218)
   d. Treadwell, head of the Austin liaison office, was in close contact with the task force captain and with the Denton headquarters. She was busy locating personnel and supplies needed in this and other disaster areas. (P. 231)
3. Competition and conflict with other organizations
   a. When FCDA men arrived in Lampasas, they instituted proper channels of
      communication for requesting military and civilian aid. Shortly after the
      arrival, the military unit working there was ordered to do nothing without
      checking with FCDA. The proper channels of communication were still not
      clear-cut, which caused considerable irritation to those trying to coor-
      dinate relief activities, an example of this problem in detail on
      page 220.

4. Use of non-organization members for work of organization
   No data.

5. Effect of the emergence of informal organizations on organizational activity
   No data.

   No data.

7. Relation of organization to governmental units active in disaster
   a. During first meeting of task force with city officials, little time was
      taken because of the demands on the time of the officials. (P. 217)
   b. The FCDA worked with local officials to determine eligibility of projects
      for aid under Public Law 875. (P. 238)

E. Other
   No data.
III. SPECIFIC ORGANIZATIONAL ANALYSIS.

A. Organizational Information
   1. Name of organization: Red Cross - all levels.

   2. Type of organization: Manifest.

B. Organizational Description
   1. Organizational goals and activities: To help individual sufferers in disaster (P. 21). See also, history of organization.

   2. Organizational character: See history.

   3. Organizational complexity: Has national level, with paid professional disaster workers who are equipped to direct disaster relief. Local chapters have volunteer workers who belong to the organization. (P. 159).

   4. Organizational control
      "The American Red Cross is a quasi-governmental organization operating under congressional charter, officered in part, by government appointment, disbursing its funds under the security of a governmental audit and designated by presidential order for the fulfillment of certain treaty obligations into which the government has entered. It owes, therefore, to the government which it serves the distinct duty of discharging all those functions for which it was created. (P. 19)

      "This tacit understanding assigning humanitarian responsibilities to the Red Cross in disaster relief was verified expressly in Section 4 of the Disaster Act of 1950 which reads: 'Nothing contained in this Act shall be construed to limit or in any way affect the responsibility of the American National Red Cross under the Act approved January 5, 1905, as amended.'" (P. 21).

   5. Membership recruitment and orientation
      No data.

   6. History of organization
      The original purpose of the Red Cross was to alleviate suffering caused by war. In 1881, the Red Cross devised "the first continuing nationwide plan of private aid," thus deviating in emphasis from the primary purpose of the organization.

      As the founder, Clara Barton, explained it, since the U.S. was far more likely to be subject to physical disasters than to war, it seemed desirable to extend services to physical disasters. ..."In short, any unlooked for calamity so great as to place it beyond the means of ordinary local charity and which by public opinion would be pronounced a national calamity."

      She felt there was a need for this type of service because of the lack of efficiency of temporary organizations created to cope with disasters and lack of trained nurses. "She believed the Red Cross, through experience and permanent organizational methods, could gain the necessary
wisdom and perspective vital to contending with the varied and numerous problems of furnishing relief to disaster victims."

The Red Cross was ipso facto agent for relief in the U. S. from 1881 to 1900, when the government granted its first charter. A new charter in 1905 provided for annual audits of funds by the War Department and increasing governmental representation on the Central Committee.

In 1917, the Red Cross was under the jurisdiction of the War Council. "For the first time the Red Cross maintained a recorded history of each major disaster consisting of the nature and extent of the disaster, the relief work accomplished, the amount and sources of financial relief afforded, and the accounting for expenditures."

In the 1930's, the Red Cross was the center of a clash between opposing groups. One group felt that "relief should remain the responsibility of local government supplemented by donations from the populace made through private agencies." Opposing this were those who felt that "such traditional answers could not meet the results of unemployment without a national program of relief." A bill for national funds was introduced, the Red Cross spoke against it, and it died. Nevertheless the Red Cross did distribute government wheat and cotton during the drought of the 1930's. They did not feel this was as trend-setting as the acceptance of money, and would not discourage private donations.

"The period between the two world wars brought about a fairly exact definition of the relationship between the government and the Red Cross. The general area of responsibility assigned to the Red Cross was the welfare of the individual sufferers of disasters. ...the Red Cross had stood ready to help local and state governments, if the need existed in protecting public health." (PP. 15-21)

7. Public Image of organization.

Much criticism of the organization. It is the author's belief that the "public relations program of that organization has completely over-emphasized the role of the Red Cross during the impact phase of a disaster and has grossly under-emphasized the much greater role played during the restoration and rehabilitation phase. Of course, the latter is much less dramatic than the former but a false idea has been formulated in the public's mind that the Red Cross should be right on the spot when the dam bursts, rescuing people and salvaging valuable personal property. The organization itself is, in part, to blame for this incorrect impression." (PP. 302-303)

C. Organizational Activities During Disaster
1. Resources of organization during the disaster
   a. Local chapter immediately established two shelters to accommodate 300-400 persons the first night of the flood. Food and sleeping facilities were available there. (P. 158)
   b. Two mobile canteens were used to feed rescue workers on the job. (P. 158)
   c. A few hours after impact, national Red Cross workers arrived and took over the organization's operations. (P. 159)
   d. Purchased 150 outfits of clothes; 1200 cartons of milk and an assortment of baby supplies. (P. 160)
e. During the restoration and rehabilitation period, 65 workers supervised by the area director, rendered assistance to individual victims of the flood. Over $250,000 was estimated as the cost of Red Cross rehabilitation. (P. 235)

f. Agreed to build 17 homes, provided household furnishings and supplies. (P. 236)

2. Special problems to organization
a. Afraid that there was lack of food. (P. 159)

3. Organization change during disaster
No data.

4. Evaluation of disaster activity
No data.

D. Organizational Activities in Emergency Social System

1. Existing plans for cooperation with other organizations.
No data.

2. Communications network - existing and emergent
   a. Red Cross used local radio to tell people that the organization was permitted to assist businessmen providing their businesses had a net income of under $7,500 annually, employed no more than five persons, and had a stock inventory of under $12,500. "(P. 235)
   b. Attended meetings with other officials. (P. 234)

3. Competition and conflict with other organizations
No data.

4. Use of non-organizational members for the work of the organization
   a. Local dairy furnished two refrigerator trucks to help preserve food, permitting breakfast to be fed to 700 the morning after the flood. (P. 158)
   b. Fearing a food shortage, Red Cross people in state control center asked State Department of Public Welfare representative to check on availability of surplus food from U. S. Dept. of Agriculture. This proved unnecessary because food began arriving from many places. (P. 159)
   c. Volunteers from adjoining chapters assisted the local volunteers. (P. 159)
   d. "Six case workers from the Department of Public Welfare aided the Red Cross officials in victim registration. (P. 159)
   e. Clothing was sent from many sources. Within 24 hours there was an oversupply. The clothes were brought in by military and police organizations. (P. 159-160)
   f. State Department of Public Welfare sent several representatives to help Red Cross in rehabilitation work. (P. 235)

5. Effect of the emergence of informal organizations on organizational activity.
No data.

No data.
7. Relation of organization to governmental units active in disaster. worked with local and state officials to expedite relief. (P. 159)

E. Other
None
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
   1. Name of organization: Lampasos Public Health Department
   2. Type of organization: latent

B. Organizational Description: no data

C. Organizational Activities During Disaster
   1. Resources of organization during disaster:
      a. Health officer tested water and said it was safe. Took precaution of increasing chlorine in water to prevent any contamination. (p. 161)
      b. Used health unit members to administer tetanus, typhoid and polio vaccine on a voluntary basis. (p. 164)
      c. Established temporary dispensary for distributing shots (p. 166)
      d. Helped inspect for insects and rodents (p. 161)
   2. Special problems to organization: no data
   3. Organization change during disaster: no data
   4. Evaluation of disaster activity: no data

D. Organizational Activities in Emergency Social System
   1. Existing plans for cooperation with other organizations: no data
   2. Communications networks:
      a. City Health Officer used highway patrol communication unit to request vaccine from state agencies
   3. Competition and conflict with other organizations: no data
   4. Use of non-organization members for work of organization:
      a. Military and civilian volunteers helped administer vaccine shots (p. 164)
      b. Highway department delivered some vaccine (p. 165)
      c. State Health Department supplied vaccine, syringes and needles.
      d. State and National health agencies helped with inspection for health hazards, recommended steps to be taken and, under P.L. 875, material aid was given to implement the recommendations (p. 232A)
   5. Effect of the emergence of informal organizations on organizational activity: no data
   6. Effect of role conflict on organizational activity: no data
   7. Relation of organization to governmental units active in the disaster:
      Report given at first FCSA meeting was: "an excellent example or representatives of the three levels of government performing their joint tasks quickly, efficiently, thoroughly and in complete accord."(p. 222)

E. Other: none
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
1. Name of Organization: City Officials and municipally owned utilities
2. Type of organization: Latent

B. Organizational Description
1-2 no data
3. Organizational complexity: Had both a mayor and city manager. (p. 217)
4-7 no data

C. Organizational Activities During Disaster
1. Resources of organization
   a. Municipally owned utilities
      1. Electric power plant was unharmed
   b. The mayor provided coordination for relief activities. (p. 169)
2. Special Problems to organization
   a. Mayor was trapped in a building by the flood until 2 a.m. the night of the flood. (p. 151)
   b. Other city officials did not or could not report city hall to assume their duties. (p. 150)
   c. Municipally owned utilities
      1. Water system was not working during flood. Later, contamination was feared. Sewer system was disrupted extensively as house broke away foundations, etc. Hour pumps in the sewage and other miscellaneous equipment was badly damaged. Approximately 45,000 feet of sewer lines needed to be cleaned in the flooded area. (p. 161) "Two major sewer lines were broken and two others were stopped up." (p. 162)
      2. Electric power "hot" lines had to be repaired. (p. 162) Lack of power especially in flooded areas, threatened to impede activities designed to protect health and safety. (p. 163)
      3. The financial status of the city did not permit funds to be used for the needed public health measures. (p. 227)
   d. When the new task force captain arrived on Thursday, he had not made his presence known to the city manager. At that time, more rain was predicted and the levee was still unrepurred. The city manager attempted through several sources to find equipment and men to repair the levee. Much confusion existed because of an assortment of regulations. During the course of this little crisis it was discovered that the new captain was in the building. The levee problem was resolved when it did not rain as much as predicted. (p. 232)
3. Organizational Change during disaster
   a. The city manager's office was converted into the
      headquarters for national state and local officials
      directing relief operations. (p. 218)
   b. About 45 members of the highway patrol were quartered
      in the city hall. (p. 221)

4. no data

D. Organizational Activities in Emergency Social System
1. Existing plans for cooperation with other organization
   "no plans". The officials and citizens...were ill-
   prepared physically or mentally, to cope with a major disaster.
   (p. 149)

   But - the plan is supposed to be "Defense and disaster
   relief organization are supervised in the political
   subdivisions of the state through the county judges
   and mayor or city managers. The county judges and mayors
   of all incorporated municipalities within the county
   serve as the County Defense Council as a rule. Usually
   such a council has a civil defense director as its
   administrative officer. (p. 49)

2. Communications networks - existing and emergent
   Used highway patrol communications unit to request
   supplies of food, clothing, cats and blankets. Request
   was sent to State Control Center where Red Cross
   representative handled it. (p. 158)

3. Competition and conflict with other organizations:
   Lampasas County Attorney noisily differed with mayor
   "over priority arrangements given certain phases of
   the cleaning up process," etc. This occurred at a meeting
   with FCDA and other officials shortly after the task
   forces arrived. (p. 223)

4. Use of non-organizational members for work of organization
   a. The editor of the local weekly newspaper initially
      worked as coordinator of emergency calls. The
      mayor was trapped in the flood. The editor accepted
      the aid offered by Fort Hood, even though this
      type of aid is usually asked for and accepted
      by the mayor. (p. 151)
   b. Municipally-owned utilities: electric power -
      crews from nearby towns and from the Lower
      Colorado River Authority from Austin helped repair
      lines. (p. 163)

   Water - "The inoperative motors at the disposal
   plant were replaced by auxiliary equipment rushed
   in from Fort Hood." Equipment to clean sewer lines
   was requested from Fort Hood. Request was with-}
   drawn when it was decided that the job should be
done thoroughly rather than with makeshift military equipment. (p. 162)

5-6 no data

7. Relation of organization to governmental units active in disaster: Worked with state and national officials on relief and debris clearing. (p. 217)

E. Other: none
I. BASIC INFORMATION

A. Characteristics of Disaster
1. Event: tornado
2. Date-Time: May 20, 1957 (P. 23)
3. Location: Rockin Heights, and other suburbs of Kansas City, Missouri (P. 23)
4. Damage:
   a. Number killed: 31 (P. 21)
   b. Number injured: 200 (P. 21)
   c. Physical damage: No data
5. Cause: None
6. Unique aspects: None

B. Methodology
1. Research agency and/or principal research personnel:
   Irwin Deutscher and Peter Kong-Ming New (P. 21)
2. Source of data
   a. Number of interviewees: not specifically stated
   b. Number of questionnaire respondents: None
   c. Time lapse between disaster and data collection: not specified
   d. Other: "Relevant news stories, human interest items, and advertisements in the local newspapers were clipped and analyzed." (P. 23)
3. Sample plan: "In addition to our informal observations, there was a systematic interviewing program of agency personnel who were active in or concerned with the disaster or immediate post-disaster period." (pp. 22-23) "One of the writers attended a number of meetings and interviewed members of stricken families." (P. 23)
4. Other methodological comments: This was basically a participant-observer study, (P. 22) and an "impressionistic arrival at some hypotheses". (P. 23)

C. List of All Organizations Involved and Their Activities During Disaster
1. Local radio and TV stations: (appeal for medical aid, P. 23; urged people to stay away from disaster area, P. 24)
2. Kansas City police: (directed traffic, P. 24; rescue work, P. 26; patrolled to prevent looting, pp. 32-33)
3. National Guard: (patrolled against looting, pp. 32-33)
4. Civil Defense: (mentioned, but activities not specified, P. 27)
5. Salvation Army: ("field services", P. 28)
6. Red Cross: (disaster relief work, P. 27; fund-raising for disaster victims, P. 28)

D. Brief Description of Emergency Social System
"Within a few minutes after the radio and television appeal for medical aid in Rockin Heights, it became clear that a tornado had touched ground in that area, and mobile transmitters from local radio stations began relaying reports to the millions people in the surrounding metropolitan area. In the quiet darkness following the
storm it was impossible to determine the extent of the damage. Rapidly the main thoroughfares leading to the stricken area became alive with solid streams of automobiles..." (pp. 23-24)

Because of the huge crowd conveying on the area it was difficult for ambulances and rescue workers to get through. The Kansas City police and National Guard aided in rescue work, traffic direction, and patrolled the stricken area, keeping back curious spectators. "Deep-rooted and institutionalized antipathies fell by the wayside" as various relief agencies worked together. (pp. 24-25)

The Red Cross and Salvation Army both went into action on the scene, and later began fund-raising for the victims. (pp. 26-28)

F. Community Context
The tornado hit a suburban area of mostly new $10-12,000 homes. (pp. 28-29) Although the area was outside the city limits, Kansas City police aided at the scene. (P. 25)

II. GENERALIZATIONS AND HYPOTHESES

A. "The storm, which descended upon the fringe of the city appeared to provide thousands of spring-fever stricken citizens with recreation, occupation, relaxation, and a sense of fulfillment—the kind of collective excitement which offers a welcome respite from the monotonous routine of urban living." (P. 21)

B. "The unanticipated and frequently unrecognized consequences of a disaster need not be dysfunctional from the perspective of all the groups concerned...there may be important latent functions of a disaster." (pp. 21-22)

C. "A disaster, from the sociological point of view, is an unanticipated event presenting what is defined by the participants as an immediate threat to their physical selves and persisting for a relatively short fragment of time." (P. 22)

D. "Several distinct types of 'fun' and 'profit' behavior were exhibited during and immediately following the Kansas City tornado..." (P. 23)

E. "The conveying tornado spectators fit well the distinguishing features of a mass: The derivation of participants from all walks of life, anonymity of individuals involved, lack of interaction among participants, and the absence of organization and leadership." (P. 25)

F. "Perhaps the most remarkable observation to be made regarding the restoration of order out of the chaos concerns the weakening of long-standing animosities...deep-rooted and institutionalized antipathies fell by the wayside." (P. 25)
"The forces of social cohesion resulting from a disaster situation appear to transcend the immediate stricken area and the victims. To the extent that the experience was part of the socialization of the people in the community (though much of it may well have been superficial), the disaster could have enduring effects on the relationships among individuals and institutions in the community." (pp. 26-27)

"...many people obtained various kinds of satisfactions as a result of the tornado. The gratifications of the hard-working members of disaster relief agencies provide one of the clearest examples.... These people were radiant with the glory of being needed and being able to apply their skills at disaster relief." (P. 27)

"During the days immediately following the tornado, a carnival-like atmosphere pervaded the disaster scene." (P. 28)

"Agencies and individuals alike discovered exploitative possibilities in the disaster." (P. 28) "A disaster may also be used as a political spring-board". (P. 29)

"Competition between relief groups ran high...By week's end, the rosy glow of cooperation had begun to wear thin and expressions of resentment toward other groups were commonly made by representatives of particular agencies." (P. 30) "Such competitive forces...are part of the ongoing socialization of the individuals involved. It may be assumed that there is some surviving residue of these conflicts which affects later relationships between the individuals and institutions concerned." (P. 30)

"The functionality of such a disaster from a commercial point of view is reflected in newspaper advertising during the weeks following. The newspapers were literally overflowing with special advertisements." (P. 30)

The effect of syndicated and network newscasts of the disaster was to reinforce the renewal of family cohesiveness that usually follows such a disaster. In this case, families separated by half the continent used the disaster as an excuse for a reunion or a long-distance call. (P. 31)

"The carnival-like atmosphere, coupled with the general state of confusion, the hoards of sightseers, the concentration of police in the area of total destruction, and the several hundred partially damaged houses standing open and unoccupied on the fringe of the area, led inevitably to the free flow of rumors and accusations of looting." (P. 32)

Behavior during a disaster which is functional for one group may be perceived as dysfunctional by other groups involved. (P. 33) Some latent functions of a disaster are obviously dysfunctional for the larger community, but many are important in strengthening both community and family cohesiveness. (P. 35)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

Insufficient data
I. BASIC INFORMATION

A. Characteristics of Disaster
   1. Event: tornado
   2. Date-time: May 20, 1957 (p. 23)
   3. Location: Ruskin Heights, and other suburbs of Kansas City, Missouri. (p. 23)
   4. Damage:
      a. Number killed: 31 (p. 21)
      b. Number injured: 200 (p. 21)
      c. Physical Damage: No data
   5. Cause: None
   6. Unique aspects: None

B. Methodology
   1. Research agency and/or principal research personnel:
      Irwin Deutscher and Peter König-Ming New (p. 21)
   2. Source of data
      a. Number of interviewees: not specifically stated
      b. Number of questionnaire respondents: None
      c. Time lapse between disaster and data collection: Not specified.
      d. Other: "Relevant news stories, human interest items, and advertisements in the local newspapers were clipped and analyzed." (p. 23)
   3. Sample Plan: "In addition to our informal observations, there was a systematic interviewing program of agency personnel who were active in or concerned with the disaster or immediate post-disaster period." (pp. 22-23)
      "One of the writers attended a number of meetings and interviewed members of stricken families." (p. 23)
   4. Other methodological comments: This was basically a participant-observer study, (p. 22) and an "impressionistic arrival at some hypotheses." (p. 23)

C. List of all Organizations Involved and Their Activities During Disaster
   1. Local radio and TV Stations: (appeal for medical aid, p. 23)
   2. Kansas City police: (directed traffic, p. 28; rescue work, p. 26; patrolled to prevent looting, pp. 32-33)
   3. National Guard: (patrolled against looting, pp. 32-33)
   4. Civil Defense: (mentioned but activities not specified, p. 27)
   5. Salvation Army: ("field services", p. 28)
   6. Red Cross: (disaster relief work, p. 27, fund-raising for disaster victims, p. 28)

D. Brief Description of Emergency Social System
   "Within a few minutes after the radio and television appeal for medical aid in Ruskin Heights, it became clear that a tornado had touched ground in that area, and mobile transmitters from local radio stations began relaying reports to the million people in the surrounding metropolitan area. In the quiet darkness following the storm it was impossible to determine the extent of the damage. Rapidly the main thoroughfares leading to the stricken area became alive with solid streams of automobiles..." (pp. 23-25)
Because of the huge crowd converging on the area, it was difficult for ambulances and rescue workers to get through. The Kansas City police and National Guard aided in rescue work, traffic direction, and patrolled the struck area, keeping back curious spectators. "Deep-rooted and institutionalized antipathies fell by the wayside" as various relief agencies worked together. (pp. 24-25)

The Red Cross and Salvation Army both went into action on the scene, and later began fund-raising for the victims. (pp. 26-28)

F. Community Context
The tornado hit a suburban area of mostly new $10-12,000 homes. (pp. 28-29) Although the area was outside the city limits, Kansas City police aided at the scene. (p. 25)
II. GENERALIZATIONS AND HYPOTHESES

A. "The storm which descended upon the fringe of the city appeared to provide tens of thousands of spring-fever stricken citizens with recreation, occupation, relaxation, and a sense of fulfillment—the kind of collective excitement which offers a welcome respite from the monotonous routine of urban living." (p. 21)

B. "The unanticipated and frequently unrecognized consequences of a disaster need not be dysfunctional from the perspective of all the groups concerned ... there may be important latent functions of a disaster." (pp. 21-22)

C. "A disaster, from the sociological point of view, is an unanticipated event presenting what is defined by the participants as an immediate threat to their physical selves and persisting for a relatively short fragment of time." (p. 22)

D. "Several distinct types of 'fun' and 'profit' behavior were exhibited during and immediately following the Kansas City tornado..." (p. 23)

E. "The convening tornado spectators fit well the distinguishing features of a mass: The derivation of participants from all walks of life, anonymity of individuals involved, lack of interaction among participants, and the absence of organization and leadership." (p. 25)

F. "Perhaps the most remarkable observation to be made regarding the restoration of order out of the chaos concerns the weakening of long-standing enmities...deep-rooted and institutionalized antipathies fell by the wayside." (p. 25)
III. SPECIFIC ORGANIZATIONAL ANALYSIS
none
Characteristics of Disaster

1. Event: Hurricane
2. Date-Time: June 27, 1957; early a.m.
3. Location: Lower Cameron Parish, Louisiana
4. Damage
   a. Number killed: "over 400" (A, P. 1)
   b. Number injured: unspecified
   c. Physical damage: "Hurricane Audrey left behind an almost unbelievable amount of devastation. Over half of the houses in the three Lower Cameron communities east of the Calcasieu River-Cameron, Creole and Grand Chenier--were lost. They had floated so far as 20 miles from their original location or had disintegrated and disappeared forever. Over 80% had suffered such severe damage as to be uninhabitable..." (see B, P. 35 or C, P. 21 for graphic breakdown by community and category of damage)

"Economic losses were commensurately great. For example, it is estimated that 50,100 cattle out of a pre-disaster population of 80,000 were killed in the storm. Of the remaining 20,000, many died after the storm, or were sold at a loss because it was feared they might die. The electric company and the telephone company were wiped out and each had to borrow about a half million dollars to get back into operation. School buildings, churches, roads and business establishments suffered tremendous damage."

"...The whole community was disrupted; communications and transportation facilities were either gone or inoperable; water supply was polluted; schools and churches were in a shambles; stores and restaurants were destroyed; overgovernment was temporarily immobilized." (C, Pp. 20-25)

5. Cause: not applicable
6. Unique Aspects: "The fact that Cameron Parish is an isolated area and is set off from other contiguous communities by the barrier of the marshes makes it particularly valuable as a laboratory in which to study social change." (C, P. 93)

Methodology

1957-0627 A

1. Research Agency and/or Principal Research Personnel:
   Disaster Research Group, National Academy of Sciences,
   National Research Council by H.J. Friedsam, Department of
   Sociology, North Texas State College.

2. Source of Data
   a. Number of interviewees: 60 (A, P. 2)
   b. Number of questionnaire respondents: none
   c. Time lapse between disaster and data collection: 27 days
      (A, P. 1)
   d. Other: records, logs, lists and other materials made
      available by Calcasieu Parish Civil Defense and the
      Louisiana Task Force, P.G.D.A., among others. (A, P. 2)
3. **Sample Plan:** none (effort was made to reach personnel in each of the major formal organizations involved. A, p. 2)

4. **Other Methodological Comments:** the author mentioned several limitations to his study, among them being:
   a. Problem of "retrospective distortion"
   b. The effect of the interviewer on the interviewee, e.g., the "boot-foot-forward" response
   c. Only a part of the total area struck by Hurricane Audrey was dealt with, i.e., Calcasieu and Cameron Parishes with parts of both not visited. (A, p. 3)
   d. Not all formal organizations were contacted.
   e. For many organizations only one interview was secured, while for others as many as 8 interviews were conducted. (A, pp. 4-5)

1957-0627 B

1. **Research Agency and/or Principal Research Personnel:** Disaster Research Group, National Academy of Sciences, National Research Council by Albert S. Foley, Spring Hill College, Mobile Alabama.

2. **Source of Data:**
   a. Number of interviewees: unspecified
   b. Number of questionnaire respondents: unspecified
   c. Time lapse between disaster and data collection: unspecified
   d. Other: unspecified

3. **Sample Plan:** unspecified

4. **Other Methodological Comments:** none

1957-0627 C


2. **Source of Data:**
   a. Number of interviewees
      1). Families - 61 (C, p. 181)
      2). Officials and special respondents - 44 (C, p. 181)
      3). In addition, 102 transcribed interviews conducted previously by Foley, Friedsam, Fritz, and Hayner were available to the authors.
   b. Number of questionnaire respondents: none specified
   c. Time lapse between disaster and data collection: 50-75 months (see C, p. 181)
   d. Other:
      1). Interviews conducted by Friedsam, Foley, Fogleman, Fritz, and Hayner (see C, pp. 179-180)
      2). Records of Civil Defense and Red Cross (C, p. 180)
      3). "The interview data were supplemented by voluminous documentary material and by direct observational material collected during the field work period." (C, p. 182)

3. **Sample Plan:** "In the interviews with families, an attempt was made to re-interview the same sample which had been used by Fogleman in 1957....families which had not returned to the Parish after the storm were desired in the sample. Because Fogleman's sample consisted entirely of returnees, these had to be new interviews....Secondly, it was desired to include some cases in which either wives had lost husbands, or husbands had lost wives, in the storm...."
"The interviews with officials and key informants numbered 44. The 44 interviews were with 35 different respondents nine of whom were interviewed twice. Of these 36, 26 were disaster victims and six were persons who had not suffered any loss in the storm."

"All of the 29 special informants in the parish were among the key leaders. They were all white. Twelve of the 51 families interviewed were Negroes. This latter group included three non-returnees."

4. Other Methodological Comments:
   a. Problem of establishing some baseline against which to measure social change and mental health affects.
   b. Respondents were asked about sources of aid and when various events in the rehabilitation period took place. (C, P. 184)
   c. "Social science methodology prepares us to deal with positive or negative responses, but we are ill-prepared to interpret... 'no-response' responses." (C, P. 185)

1957-0627 D

1. Research Agency and/or Principal Research Personnel: unspecified; prepared by Joseph W. Hinsley who was Hospital Administrator of Lake Charles Memorial Hospital and Health Services Coordinator of Calcasieu Parish Civil Defense

2. Source of Data:
   a. Number of interviewees: none
   b. Number of questionnaire respondents: none
   c. Time lapse between disaster and data collection: unspecified
   d. Other: unspecified

3. Sample Plan: none

4. Other Methodological Comments: none

G. List of All Organizations Involved and Their Activities During The Disaster

1. Weather Bureaus
   a. Unspecified: (be an issuing hurricane warning June 24, A, P. 16)
   b. Weather Bureau's Hurricane warning Center at New Orleans: (released first public bulletin on storm June 24. Continued to issue advisories up to time of impact. A, P. 16-17)
   c. An independent meteorological service: (reference was made to at least one call made to a Cameron company, warning it of the storm. A, P. 38)
   d. Air Weather at Bolling Air Force Base, U.S. Fourth Army, Lake Charles Air Force Base, and Barksdale Field: (all provided weather warnings to Fort Polk Army Base. A, P. 21)
   e. Lake Charles Weather Bureau: (issued advisories and bulletins concerning the magnitude and direction of the storm. Distributed warnings by telephone to 'all interests in the threatened area.' A, P. 16) (madecollect calls to
several business firms in Cameron area, primarily oil and fishing industry companies - these were apparently made at the request of the 8 or 9 firms concerned. A, F. 38)

2. Civil Defense

a. Unspecified: (Authorized a new-release to radio and T.V. stations on "precautionary measures" such as closing down aereals, bringing carboys, cans, wooden posts, toys and swings inside, etc. Authorized a news release indicating the area which would be hit by the hurricane. A, F. 55) (Opened schools in Calcasieu Parish for shelters and arranged to transport food to these places. A, F. 40) (Sent buses in attempt to evacuate people from a shelter which had collapsed, A, F. 45) (Furnished transportation for the sending of food and water into the stricken area. Unmannel requests from Cameron to Red Cross at Lake Charles. Acted as communications liaison for Red Cross. Shared with a local Red Cross official the responsibility of approving orders for supplies. A, F. 61) (Issued permits to people wanting to enter Cameron area after impact, A, F. 70)

b. Federal: "Sent representatives to Cameron but report does not indicate their activities, A, F. 94)

c. Regional (Region 5, F.G.C.D.A.): (sent personnel to the impact area, A, F. 47)

d. State: (Issued warnings to the Lake Charles, Jefferon, New Orleans, and Bernard C.D. units advising them to take precautionary action, A, F. 26) (notified the various parishes of impending storm - C.D. director of Calcasieu counties took his contact by state agency; these warnings seem not to have reached Cameron, A, F. 36) (dispatched six National Guard DJK's to Lake Charles, A, F. 41) (sent representatives to Cameron where they took over control of C.D. operations, A, F. 83)

e. Calcasieu Parish C.D.: (tried to establish communications via radio operators with Cameron, A, F. 36) (issued general instructions to volunteer, small boat operators, A, F. 55)

f. "Local" C.D. units: (major functions were described as being in the areas of communications and transportation. Additional functions were "medical, supply, evacuation and rescue - in the limited sense of the term - supplementing police, and - most important of all - liaison and coordination functions," A, F. 63)

6. Other

1. Civil Defense Police (unit and level unspecified): (assisted State Police in Cameron area, A, F. 70, 77)

2. Calcasieu Parish C.D. Health Service: (Set-up a hospital in Creole; treated injured persons and assisted in evacuation proceedings - served as a collection point, the latter turned out to be its major function, A, P. 55-56) (An estimated 500 persons were evacuated through this unit)
3. Lake Charles C.D. Transportation Service (level unspecified): (transported many people from their homes to shelters, A, P. 42)

4. Civil Defense Policewomen (level unspecified): (manned telephones or C.D. transportation service - took calls requesting evacuation, A, P. 42)

State Police: (made the first major effort to set into the Cameron area during height of the hurricane. Rescued a family of six drifting on the remains of a displaced house, A, P. 45) (controlled traffic into Cameron area. Established a communications line from Cameron to Lake Charles. Was the first organized group to enter Cameron after the storm. Established a communications network in Cameron with police cars. Cleared the main street in Cameron, A, P. 69) (issued permits to people wanting to enter Cameron area, A, P. 70)

State Police, Troop 'D': (acted as communications liaison between State Police unit in Cameron and the Director of Transportation Service, Calcasieu Parish Civil Defense, A, P. 70)

5. Cameron Sheriff's Office: (was on the same radio net with Lake Charles and Cross and Civil Defense, A, P. 92) (a deputy called the Red Cross at Lake Charles telling them that Cameron was in distress and needed help, A, P. 41) (Deputies engaged in rescue operations, A, P. 62) (The Cameron Sheriff's Office seems to have been the point where most organizations entering Cameron converged. "For all those agencies the Sheriff represented contact with authority," A, P. 77) (Assumed responsibility in emergency organization after storm, A, P. 92)

6. Calcasieu Parish Sheriff's Dept.: (was on the same radio net with Lake Charles Red Cross and Civil Defense, A, P. 93) (sent a departmental launch with a Red Cross worker, a Red Cross nurse, and some deputies to Cameron, A, P. 54) (this broke Cameron's isolation. The unit which entered Cameron with the launch burned and burned dead cattle, assisted in corpse identification, controlled traffic into the area, and established lines of communications, A, P. 60) (issued permits to persons wanting to enter Cameron area, A, P. 70) (set up a temporary morgue at Lake Charles after consulting local morticians, A, P. 82) ("In general, body search activities became a primary function of the law enforcement agencies, particularly the two Sheriff's Depts. assisted by the State Police." A, P. 80)

7. Lake Charles Police: (assisted state police in Cameron, A, P. 77)

8. A Texas Sheriff's Dept.: (deputies worked in the disaster area for several days. Their activities are not specified by report, A, P. 75)

9. Mayor's Office, Lake Charles: (called radio stations and asked them to notify public that the schools would be open for shelters, A, P. 41)

10. Salvation Army (level unspecified): (had three mobile canteens in the disaster area, A, P. 73)

12. Red Cross
   a. Level unspecified: (major functions were the provision of supplies and operation of evacuation centers and shelters, A, P. 36) (furnished food and overall supervision in mass-feeding programs in Lower Cameron, A, P. 125)
   b. National: (assisted in private rehabilitation activities, A, P. 102)
   c. National or Regional: (sent chapter manager and field representatives for 18 chapters to Lake Charles; they arrived 3 hours before storm struck, A, P. 46)
   d. Local: (assumed a support function i.e., provision of food, shelter, medical aid, etc. A, P. 29)
   e. Lake Charles Chapter (local): (maintained communication with Cameron, A, P. 36)

13. Armed Services
   a. In general, it was reported that several branches of the armed services were active in the area, but only one — the Army — was contacted by the researcher. A few references are made to the Air Force and Coast Guard.
   b. Army (level and unit unspecified): (evacuated people, approximately 566, from stricken area, A, P. 57) (used helicopters for reconnaissance and rescue operations. Helicopters also took about 177 persons into the area. Provided equipment e.g., cots, blankets, communications and mess equipment. Brought medical personnel and supplies into the area. Sent an ambulance unit and its equipment to Lake Charles but it was "not committed," A, P. 58)
   c. Fort Polk Army Base: (may have been the source of activities listed under 13b, report was not clear about this) (provided army personnel in the rescue evacuation phase, A, P. 20) (sent reconnaissance teams to Dehill and Lake Charles. Established contact with Air Force Base at Lake Charles, which was supposed to provide Army teams with information regarding conditions in the region, A, P. 47)
   d. Coast Guard (level or unit unspecified): (sent fixed-wing and helicopter aircraft into stricken area, which were presumably reconnaissance flights) ("Communications trucks and all available vessels directed to proceed to stricken area." A, P. 52) (assisted the State Police in Cameron. Fixed the approaches to the ferry at Cameron, "Rioted up some lights." A, P. 69)
   e. Coast Guard-Caldasie R.B. Station at Cameron (level unspecified): (transmitted warnings to a deputy Sheriff in Cameron. Gave callers the latest weather advisory; told them to evacuate as soon as possible, A, P. 38)
   f. Air Force (level and unit unspecified): (used helicopters to drop hay for cattle feed, A, P. 118) (supplied mess personnel for the mass-feeding programs in Lower Cameron, A, P. 125)

14. Lake Charles High School: (used as a "secondary echelon" shelter for whites, A, P. 62)
15. First Ward Colored School; Lake Charles: (used as a "secondary
echelon" shelter for negroes, A, P. 62)
16. McNeese College, Lake Charles; (faculty members "undertook
traffic control functions among others" on campus, A, P. 78)
(provided refuge for about 600 persons from Lake Charles;
used as a relief receiving and processing center, A, P. 62)
17. Lake Charles Memorial Hospital: (had a relief; received
evacuees, A, P. 57)
18. Southwest Louisiana Mutual Aid Association: (this is a radio
network set up by local industries in Lake Charles to obtain
warnings directly from the Weather Bureau. The network
includes the fire departments of Lake Charles, Sulphur,
Westlake, Lake Charles Air Force Base, and the fire departments
of industrial plants in the Lake Charles region, and the
Calcasieu Parish Civil Defense) (Received Weather Bureau
reports and advisories at the Central Communications Center,
and broadcast them over the above described network. Made
telephone calls to some agencies including the local chapter
of the Red Cross, A, P. 19) (set up a communications center
in Cameron, A, P. 70)
19. The Lake Charles American Press: ("headlined" the approaching
Hurricane on June 25, A, P. 20)
20. A Lake Charles Radio Station: (had a direct line to the
Weather Bureau; issued a weather report every 30 minutes prior
to impact, A, P. 20)
21. A Lake Charles Radio-T.V. Station: Be an "Operation Audrey"
at noon, Tuesday, June 25 when the Weather Bureau issued the
first advisory, A, P. 20)
22. Central Steering Committee (a committee formed during a
general meeting of representatives of all formal organizations
in Calcasieu Parish having possible disaster functions for or the
purpose of controlling public information releases. This
committee was located in Lake Charles.): (issued advisories
concerning the progress of the storm and precautions which
should be taken to meet it, A, P. 55)
23. 35-40 HAM radio operators: (worked at one time or another
under Civil Defense direction, A, P. 66)
24. Local Clothing Stores: (sent clerks to work at receiving and
processing center - issued clothing; this was done to "create
a normal store atmosphere" i.e., for therapeutic reasons, A, P. 62)
25. Welfare Department (local): (provided interviewers to supple-
ment professional Red Cross workers at receiving and processing
center, A, P. 62)
26. A Private Insurance Organization: (regional office dispatched
executives toward impact area with initial supplies for setting
up temporary offices - "storm offices," A, P. 49-50)
27. Association of Commerce (level unspecified): ("assumed the
responsibility of notifying the merchants - of the storm." 
A, P. 68)
28. A Rescue Team From Bay St. Louis: (assisted in rescue operation in Cameron - went through every house in Cameron, A, P. 70)

29. State Attorney-General's Office (state): (sent a representative to work with local officials in mass burial proceedings, A, P. 84)

30. A "Citizen's Group" (local): (composed of a local judge, Calcasieu Parish Coronor, the District Attorney, Assistant District Attorney of Calcasieu and Cameron Parishes, a Catholic priest, a Protestant minister, funeral home directors, and citizens of Cameron Parish, the group was formed to approve the mass-burial proceedings, A, P. 84)

31. Federal Bureau of Investigation (national): (handled the identification processing of the dead until it was no longer possible to take fingerprints, A, P. 83)

32. An Oil Company (local): (allowed the helicopters to be used as reconnaissance purposes in body-search operations, A, P. 81)

33. Police Jury (the formal governing body for Cameron Parish): (made decision to take full advantage of the resources available under Public Law 875, A, P. 97)

34. The General Adjustment Bureau (level unspecified): (assisted in private rehabilitation activities, A, P. 102) (handled insurance claims in Cameron Parish, A, P. 107)

35. State Insurance Commissioner (state): (was sent to Cameron Parish to straighten out a misunderstanding regarding insurance settlements, A, P. 109)

36. Small Business Administration (level unspecified): (assisted in private rehabilitation activities, A, P. 102) (made loans available to small business operators and property owners - had only 142 applications for such loans, A, P. 111) (of these only 42 applications were for business loans; the remainder were from owners of residential property, A, P. 112)

37. Louisiana State Medical Society (state): (member sent a gift of $8,000 to three Cameron Parish doctors, A, P. 112)

38. A Lions Club in Texas and Three Other Lions Clubs in Unspecified Locations (level unspecified): (made lifts to a Cameron Lions Club, A, P. 112)

39. Department of Highways (state): (brought equipment into Cameron, A, P. 69) (Participated in cattle disposal, A, P. 117) (cleared roads entering the disaster area, repaired washed-out bridges, A, P. 71)

40. Local Health Unit (location unspecified): (director was asked and accepted responsibility for mass-burials, A, P. 84) (Participated in cattle disposal, A, P. 117)

41. Calcasieu Parish County Agent's Office: (initiated cattle rescue activities, A, P. 118)

42. State Department of Agriculture and Immigration: (paid for the hay used to feed stranded cattle, A, P. 118)

43. The Livestock and Branding Commission (level unspecified): (furnished radio units to coordinate rescue units in cattle-rescue operations, A, P. 119)

44. Cameron Parish Planning Commission: (was organized by the Police Jury, A, P. 112-115)
D. Emergency Social System

On Monday night, June 24, Audrey was identified as a tropical depression in the Gulf of Mexico. The first public bulletin was issued by the Weather Bureau's Hurricane Warning Center at New Orleans at 10:30 p.m. on the same evening. The bulletin announced a "Hurricane Watch" for the Texas and Louisiana coast. Later, at 10:00 a.m., June 25, the "Hurricane Watch" advisory was changed to "Hurricane Warning." (A, P. 16) From the time of the first advisory up until Audrey's impact, the weather bureau issued regular advisories via the mass media. In addition, the bureau contacted several organizations by plane and informed them of Audrey's progress. (A, PP. 16-21)

"Tuesday afternoon was period of watchful waiting on the part of various organizations, but Wednesday was a day of more or less hectic activity as they converted the Weather Bureau's warnings into the channels of information flow indicated above (between the various administrative heads of organizations, interorganizational communications, and communications to the public). For example, after a conversation with the Weather Bureau meteorologist, the Director of Calcasieu Parish Civil Defense alerted all "A, Directors of Civil Defense. Similarly, ranking Red Cross personnel were alerted later the same day. Regional offices of the various disaster-oriented organizations began alerting their personnel in much the same manner. (A, Pp. 24-26)

On Wednesday afternoon a formal meeting was held in Lake Charles. Present were representatives of "virtually all formal organizations in Lake Charles that might have disaster functions." Plans for Civil Defense were discussed, and a "Central Steering Committee" was formed. This committee apparently served as a control body for public information releases.

It should be made clear that at this time most of the significant organizational preparatory activity occurred in Lake Charles; some 40-60 miles away from Cameron, which as it turned out, was the most heavily impacted area. In fact, there seems to be some question as to the adequacy of warning in Cameron (see A, PP 34-39) and the issue generated considerable controversy after the storm. In any event, Lake Charles became the focal point of organizational activity-local, regional, and national-and it remained "headquarters" for several organizations even after impact.

The hurricane was not expected to strike until sometime late Thursday evening so, by Wednesday evening, organizations had settled into a period of "watchful waiting." However, a "Weather Bureau announcement at 1:00 a.m. Thursday morning indicated that the storm had increased its forward speed and could be expected to hit much earlier. "By 1:30 a.m. June 27, schools in Lake Charles and over the parish of Calcasieu were being opened for shelters and arrangements for transporting of food to these schools was made. All full Calcasieu Parish Civil Defense personnel position or job which had been previously outlined." (A, P. 40)
"Within two or three hours following the bulletin, calls were also made (in addition to those made to the mayor) to at least two of the local (Lake Charles) radio stations, and possibly to the third, asking that they go back on the air. Other organizations were moving toward a full alert in a similar fashion. All Sheriff's deputies, who had been alerted the night before, and all of 'Troop D, State Police, were on duty by early morning."

Red Cross was notified of the changed conditions by the Sheriff (or Sheriff's deputy) in Cameron. He stated that Cameron, "... was in distress and needed help." Red Cross apparently notified Civil Defense (State headquarters) and, as a result, Nunn National Guard D.U.K.7.'s were dispatched to Lake Charles. These D.U.K.7.'s were later used by the State Police in an unsuccessful attempt to reach Cameron during the height of the storm.

In the meantime, Civil Defense had initiated mass-evacuation proceedings in Lake Charles, a procedure which was later bitterly attacked by the Red Cross. (see A, P. 42)

The Army unit at Fort Polk sent reconnaissance teams to DeRidder and Lake Charles. (A, P. 46)

The first successful attempt to break Cameron's isolation was made by the Calcasieu Sheriff's department late Thursday night. The Sheriff sent a departmental launch into the area with his own and Red Cross personnel aboard. (see A, PP. 53-55)

"The major organized operation in the Creole area early Friday was apparently that of the Calcasieu Parish Civil Defense Health Service. The doctor who is Director of the Health Service was called by Civil Defense about 12:30 a.m. He was told that 'things look bad in Cameron,' and that he should get nurses, doctors, and medical supplies and be ready to leave at 4:00 a.m. in the National Guard D.U.K.7.'s. In accordance with a pre-existent plan, he in turn asked a local hospital administrator to secure supplies, a local nurse to contact 15 nurses, while he contacted doctors... The group moved to Creole, where the hospital was set up on the only land available... evacuation emerged as the major function of the group." (A, P7. 55-56)

During the rescue-evacuation phase, duplication, lack of coordination, and the absence of a central authority became major organizational problems. (see A, PP. 73-89)

( NOTE: The foregoing comments on the emergency social system have been extremely brief and spotty. The reader is referred to A, PP. 16-120 for a more complete discussion.)

E. Community Context

1. Geographic Features

"...the hurricane disaster area is concentrated mainly in Lower Cameron Parish, the southern marshland section of the 1,444 square mile 'county' at the southwest corner of the state of Louisiana." (B, P. 1)
"It is probable that in few disasters in the United States has the physical setting been as important as it was in the Calcasieu-Cameron area. Numerous informants commented on this point, and it is obvious that to a considerable degree the rescue-evacuation and rehabilitation plans of several organizations were influenced — in some cases largely determined — by these factors." (A, p. 6)

"...lower Cameron Parish is for the most part low coastal marsh in which rises six or seven feet above sea level are regarded as high ground." (A, p. 6)

"Only two asphalt roads, one to the east and the other to the west of Calcasieu Lake, traverse the marshes to provide transportation by land to the 'mainland.' Boat transportation is limited to the deep-water channel dredged roughly along the route of the Calcasieu river." (B, P. 3)

"...the damage to roads and bridges minimized the movement of vehicular traffic into the disaster area for a period of over forty-eight hours despite the fact that at least one 'convoy' got into Cameron via the Hackberry road late Friday. This meant, of course, that virtually all rescue-evacuation work in lower Cameron Parish had to be carried on by means other than the ambulances, cars, trucks, buses, etc., which are so much a part of the 'normal disaster picture.' It also meant that the movement of emergency supplies and equipment into the area was severely restricted until Saturday afternoon." (A, p. 9)

"The very fact that lower Cameron Parish was a coastal area and that Cameron itself was a fishing port and something of a 'staging area' for offshore and other oil-drilling operations had important consequences during and after the hurricane. First, it was an area with hurricane experience. Second, it meant that much of the special equipment, such as helicopters and marsh buggies, which were so valuable for searching the marsh, and some of the boats used in evacuation from Cameron to Lake Charles were immediately at hand and manned by personnel who knew the area. Third, the fishing industry produced one of the imponderables with reference to the death toll. A number of informants asserted that there were a large number of transients mostly negroes, in the area working either on the "pogy boats" or for the two Menhadan fish companies. There was definite feeling among these informants that the exact number of casualties among these transients would never be known. Forth, a number of persons who were active in rescue-evacuation work were familiar with the area because they had hunted and fished there prior to the disaster...." (A, P. 10)
"Under the impact of the hurricane and high water it (the physical setting) tended to create a much higher degree and longer period of isolation of the affected area than is usual. The road net in the disaster area was virtually useless for forty-eight hours following the hurricane, thus requiring the use of water and air transport, the former of which was itself restricted in its utility for search activities by the recession of the high waters. Since the main water route led to Cameron community, this was probably a strong factor tending to produce 'Cameron oriented' activity. The limitations on means imposed by the physical setting brought into prominence certain modes of transportation not usually found in disasters, and - it will be argued later - attitudes toward certain groups who participated in the rescue-evacuation phase were probably influenced significantly by their control of these means. Finally, and closely related, adaptations which had been developed for living and working in the coastal marsh area were at hand and proved useful in the post-impact period." (A, PP. 10-11)

2. Demographic Features
The population of Lower Cameron Parish numbered roughly 3,696 persons (as of 1950) or 3/5 of the total parish population. (see B, PP. 4, 9 for census breakdown)

"For the parish as a whole, and presumably for Lower Cameron proportionately, the census reported 65 per cent rural non-farm; and only 35 per cent rural farm dwellers. The median age of the population was 25.2 years. Six per cent of the people were sixty-five years or older, and only 9.3 per cent were non-white." (B, PP. 4-5)

"As far as the ethnic composition of the population is concerned, it is plain that the earlier predominance of the French-speaking Acadian-Americans has yielded to an almost equal division of the population into those of French-speaking background and those of Anglo-Saxon provenience."

"While the first wave of settlers, the French-Acadian people, had been traditionally Catholic in their religious identification these latter settlers (Anglo-Saxon) were mainly Methodists and Baptists."

"Of more recent years, a much more heterogeneous diversity of population groups has tended to be found in Lower Cameron. These ethnic and nationally differences, however, have tended to disappear in the general Americanization process, so that at present, they do not represent significant cleavages in the community," (B, PP. 6-7)

3. Cultural and Economic Background
"Until the coming of the oil boom to Cameron Parish in the nineteen-thirties, the economic base of Lower Cameron Parish had been mainly rural-farming, cattle-raising, trapping, and fishing."

I-12
"On that economic base was built an isolated, remote, and relatively simple country life, characterized by a rudimentary system of institutions."

"...the discovery of oil in Hackberry in 1937 changed the whole economy and culture of the parish. Cameron and Grand Chenier both became bases for (marshland and offshore) oil operations. Oil leases were taken on all of the lands of lower Cameron parish, resulting in a considerably useful monthly income for the landowning families."

"The median income of families, as reported by the 1950 census, was about $2300. The fifteen largest landholders registered incomes of more than $10,000 per year. Another ninety-five reported incomes between $5,000 and $10,000 per annum."

"The coming of the oil development has definitely affected the employment patterns in lower Cameron parish. In a random sample of 472 occupations of the lower Cameron men, it was found by the writer that oil operations and their allied services employed more than two times as many as did any of the other sources of work in the Chenier area. Thirty-seven and two tenths per cent of the men were registered as working for oil companies or in the construction and supply services required by these operations. Only 17.7 per cent were employed by the Menhaden plants and the boats bringing in its commodity. Another 17 per cent were employed in small businesses. Only 15.4 per cent were farmer-cattlemen. Slightly more than half of this number (41) were skilled workers, such as carpenters, electricians, painters, 8.8 per cent of the total. Approximately 2 per cent of the sample were fishermen and shrimpers."

"The stereotype of the 'marshdweller' as mainly a trapper or fisherman simply does not hold for lower Cameron parish. This area is culturally more akin to the Texas oilfields than to the Bayou folk of piroque and fur-trader lore."

(see B, pp. 10-11)

(see B, pp. 12-15 for list of small businesses and services available in lower Cameron.)

4. Physical Characteristics of Lower Cameron Community

"...besides the village type of settlement evident in the remaining uncrushed half of Cameron town, the remainder of the lower Cameron community was characterized by what is called the 'line-village' type of settlement."
"For the most part, these houses were of light construction, one-story buildings, with only a rare two-story dwelling to interrupt the modesty of the housing pattern. A few rich and professional people had within recent years constructed brick veneer houses of the popular ranch-style architecture, but these do not affect the generalization that lower Cameron housing was particularly vulnerable to hurricane damage because of the light and flimsy frame construction of the vast majority of the dwellings." (B, PP. 16-17)

5. Government
"In 1950, the census reported no urban places or incorporated towns in Cameron Parish. The political organization is still that of a rural county. The Sheriff-and-Police Jury system still constitutes the basic governmental form in the area. One member of the police jury is elected from each of the six wards within the parish. For all practical purposes, the sheriff is the political head of the parish. He is aided by the representative police-jury in making ordinances and regulations, and is assisted by a score of deputy sheriffs in enforcing them."

"Because of its position as county seat, Cameron town has the courthouse and jail, the county school board building, and the county health department's headquarters, as well as the tax assessor, the welfare office, the county agent's office, and a number of other political 'jobs' available for the friends and relatives of the party in power."

"Of importance to our problem of disaster control, warning, evacuation, rescue and rehabilitation, is the appointment of the secretary of the Police Jury, as head of Civil Defense in Cameron Parish, who, in this capacity, was technically responsible for disaster planning and other phases of civil defense. But, up to June, 1957, nothing had been done politically or financially about Civil Defense." (B, p. 19-20)

6. Miscellaneous
"The educational institutions of Lower Cameron did not extend beyond the secondary level..."

"The census reports of 1950 showed that about 95.4 per cent of the children from age seven to age thirteen were in school, but that only 65 per cent of those between the ages of 14 and 19. Only about 1 per cent of those above twenty were in college." "

"Outside the staffs of the five schools and those of the churches, there were very few professional people in the three communities (Cameron, Creole, and Grand Chenier - in Lower Cameron Parish). There were only three doctors and two lawyers in residence. The dentist came from Sulphur once a week for his clients in Cameron. Practical nurses predominated over registered nurses in the staffing of the three medical clinics in the area. And, in general, the proportion of competently trained professional people was quite low even for a rural county." (p. 23-24)
(For a more thorough treatment of community context including background and setting, demographic background, cultural and economic background, domestic background, Cameron churches and religious associations, Cameron schools and professions, and social-civic clubs and community leadership, see R, PP. 1-26).

"...Cameron Parish before Hurricane Audrey, although changing, was still organized along traditional informal lines.... familism was a strong pattern in the culture and social organization of the area, and it furnished the basis for the social structure of the area....there was a long standing pattern of suspicion and distrust of strangers, and of dislike for both state and federal government interference in local affairs....there was great local pride in the area's independence of state and federal aid; indeed such aid had been rejected on a number of occasions....many local people felt that elected officials, including the sheriff, the state representative, and police jurors (county commissioners), could take care of most welfare problems for anyone who really needed assistance.... In such cases an extremely personal relationship was emphasized rather than an official or formal one. Kinship and friendship were not ignored, but rather woven into the pattern of public assistance." (C, P. 46)

(NOTE: see C, PP. 95-111 for a more thorough background discription of Cameron Parish, including historical background, economic history, social organization, significant ethnic groups and population categories, and political structure.)
II. GENERALIZATIONS AND HYPOTHESES

A. "Only a few attempts have been made to study the long-term effects of disaster on social systems. This means that little reliable information is available on how, in the long run, communities and individuals go about restoring their life patterns and institutions after experiencing a major disaster. Likewise, there is a paucity of information on lasting changes produced in the life patterns of individuals and in the organization and functioning of communities by disaster." (C, P. 1)

B. "Disaster and its aftermath place both the individual and his social system under extreme stress (Form and Nosow, 1958). This stress manifests itself in the following forms:

1. Role Conflict: Individuals are faced with conflicting obligations to various groups and individuals and are forced to choose among various role expectations. This may result in heightened anxiety during the disaster experience, feelings of guilt and shame after it is over, and subsequent interpersonal and intergroup conflict and recrimination.

2. Role Frustration: Disaster frustrates the playing of normal roles by destroying the situation in which they are played and the individuals with whom they are played. For example, during the warning and impact phases of a disaster a person may be separated from his family and be frustrated in attempts to play his 'rescue' and 'protector' roles. After the impact, destruction of homes and business establishments will result in frustration. As in other cases, frustration might result in anxiety and in aggression of one sort or another. Scapegoats in the form of individuals, groups, and public agencies may arise to drain off the pent-up energy resulting from frustrations.

3. Role Adequacy and Inadequacy: There are various roles that people are expected or forced to play during a disaster. Every role places certain personality requirements on the individual playing it. This results in differential 'goodness of fit' between the role requirements and the personal attributes of persons called upon to play the role. During disaster, individuals may prove inadequate to the roles thrust upon them. This will result in stress for the 'individual' and impaired functioning of groups and organizations in which he is attempting to play the role. Individuals may later feel shame and guilt because of their own inadequate performance or may be severely criticized by members of their group. (also see PP. 56-60, C, for discussion relevant to situation in Cameron Parish).

4. Role Saturation: When individuals become over-loaded with roles that they are expected to play, a situation called role saturation occurs. This can easily happen during a disaster when key individuals, because of various circumstances, become loaded down with responsibility. Overloading of this sort places the individual under extreme pressure and is apt to call
forth various emotional reactions. In addition to this, certain consequences for the functioning of the social system are apt to occur. For example, certain roles are apt to be performed too late or inadequately as a result of overloading one person. An opposite kind of situation arises when too few roles are required of a person and he is left with 'nothing to do.' This is apt to occur in the aftermath of a disaster and to be accompanied by role frustration (Nix and Bates, 1962)." (also see C, pp. 58-59 for discussion relevant to situation in Cameron Parish)

C. The stresses placed on individuals ans social systems by role conflict, frustration, inadequacy, and saturation will result in more or less permanent changes in the social system and in the life patterns of individuals.

D. There are certain disaster roles which are learned as a part of the culture of every society. These roles remain dormant or latent until persons perceive themselves as being in a disaster. At that time, they attempt to play their disaster roles.

1. The disaster roles are organized around the basic human attributes of age, sex, and occupation, and specify the obligations of a person with given attributes to persons of other attributes. For example, males are supposed to aid and sacrifice for females, and adults for children; doctors, nurses, and certain public servants are expected to perform special self-sacrificing roles.

2. Culturally defined disaster roles prescribe relatively well understood differential obligations during the various phases of a disaster.

3. Failure to play disaster roles in an acceptable fashion results in recrimination among disaster victims." (C, pp. 3-5)

E. "...the major organizations which aided in the rehabilitation process in Cameron Parish were large-scale, bureaucratically or formally organized structures....Then such organizations go into operation in a disaster area, it is normal for them to seek a formalized and somewhat bureaucratic working arrangement with local authorities....In large cities this would normally mean that they would work with other bureaucratically organized agencies accustomed to the routines and procedural patterns normally found in this type of large-scale organization. When, however, they enter an area such as Cameron, which is organized along different lines, they must deal with structures which are informal and non-bureaucratic. A situation is created in which people accustomed to doing things 'by the book' in the coldly efficient bureaucratic fashion have to work with people who are used to doing things informally, giving emphasis to the personal equation.
F. "A great deal of confusion arose early in the process because the first attempts at rehabilitation were not made through this informal but nevertheless official structure of Cameron Parish. ... it seems clear that it (failure to link with informal structure of Cameron Parish) was also partly the result of such organizations as Civil Defense and the Red Cross being unable to link up effectively with a single rural social system which lacked the refinements of organization found in the large cities to which these organizations are "suited." (C, pp. 45-46)

u. With respect to "role frustration" (see n. 2 above):
1. The authors (C) suggest that disruptions in routinized behavioral patterns in disaster situations are theoretically more important than the loss of property and loved ones in explaining the grief and anxiety of disaster victims. The "anxiety to rebuild" is, at least in part, "an anxiety to re-establish old habitual patterns of everyday behavior."

2. Roles are understood as having both primary and secondary functions ("manifest" and "latent" in Merton's terminology) for individual group members and for the group as a whole. Then it is necessary for formal organizations to take over functions associated with roles which are, in times of normalcy distributed among individuals, families, etc. Certain complications arise as a result of the formal organization performing only part of the function(s) (the primary or manifest function) and leaving unperformed or even thwarting the secondary or latent function(s). The result is role frustration.

3. "For example, mass-feeding centers performed the food-supplying function for disaster victims in the sense that they got enough food, but the secondary functions of food customs in the family were not accomplished."

4. "Mass feeding may have important secondary functions of its own which are unanticipated by the planners. For example, mass-feeding centers may become centers of the rumor mill or grapevine and provide a means of passing on information, both accurate and inaccurate, from one disaster victim to another. Such centers may have the function of intensifying and solidifying attitudes toward relief agencies, both positive and negative. Certainly it can be said that these bring together members of different families and create an opportunity for them to compare notes. This may have a therapeutic effect as suggested by Fritz (1961a) or it may spread dissatisfaction among disaster victims." (C, p. 56)

(See C, pp. 55-58 for a fuller discussion of Role Frustration)

W. The authors (C) evaluate the Fritz "Therapeutic Community" hypothesis (see n. 61) in the light of data yielded by Audrey studies. It is suggested that the data do not support the Fritz hypothesis. Specifically:
1. "While it may have been true that certain interpersonal conflicts which had loomed large to people before the storm were temporarily reduced, it is equally if not more true that new conflicts arose which were more severe in consequence for the social system than those that had existed before."

2. "Our data seem to indicate that the existence of a community of sufferers softened the early shock and trauma of the disaster experience itself and of losses in life and property suffered from it. This same fact, however, seems to have added in several ways to the pain suffered by many victims over the long run. First, there was no escape from the constant reminder of their loss,..." Competition as well as cooperation in the use of limited resources was present,... etc.

3. "...there was an abundance of evidence of anti-social behavior. First, looting did take place... What might be called white-collar looting (fraudulent claims against disaster relief funds) took place also...."

4. "People, it appears to these investigators, were not changed in their basic motivation by the disaster experience. Those with a social conscience acted in accordance with it, and those with selfish orientations continued to act in that way."

5. "It may be that under conditions of less complete disruption the Fritz hypothesis holds true."

6. "It may be that had a longer period of time been covered by other earlier research the kinds of facts turned up in this study would have been found."

7. "Another factor that may account for differences in findings is the amount of time spent in interviewing disaster victims as opposed to key officials and rehabilitation personnel. Generally, the negative aspects of rehabilitation are better known to the leaders and officials of the disaster area than to the victims themselves."

8. "Another possible explanation is the difficulty of reporting negative facts without injuring individuals and groups. For this reason such facts may tend to be under-reported by both interviewees and by the disaster researcher." (C, PP. 60-63)

I. The authors (C) point out that existing literature by no means manifests agreement as to the mental or psychological effects of disaster. Specifically, they point to the Fritz 'therapeutic community' hypothesis which posits the existence of social mechanisms which obviate or mitigate the potentially deleterious effects of disaster but which seems not to be supported by some of the evidence e.g. Moore's findings from a study of the Waco Tornado.

On the basis of data yielded by surveys conducted by C four years after Audry (see C, PP. 65-75) the following are among the interpretations offered:

1. "There is no evidence here to support Moore's contention that 'natural disasters lead to more long run emotional stress than is commonly supposed,' if this statement is applied to children (Moore, 1959)"
2. "...Re this as it may, these facts tend to support Moore's findings from the "San Angelo and "Maco Tornado studies insofar as they demonstrate the existence of a heightened anxiety over weather conditions and the possible recurrence of a disaster (Moore, 1959). It should also be pointed out that Moore's study areas are disaster prone in that they continually experience tornado warnings." (C, P. 75-77)

An overview of the discussion which follows the interpretation of the above survey data is provided by the opening paragraph:

"Hurricane Audrey may be viewed in terms of the kinds of stresses it created for the population and the community. Individuals suffered and community organization was disrupted, resulting in various modes of reaction and adaptation at the individual, family and community levels. In this section several types of stress will be discussed which have particular relevance to individual adaptation, and thus consequences for mental health and illness. The focus here is on the psychosocial system; changes in the social system, per se, have been dealt with elsewhere in this report and will be referred to when relevant."

Kinds of Stress:
1. Primary: This is apparently the stress derived from the individual's personal encounter with the disaster agent.
2. Secondary: This seems to be the stress induced by the sight of other individuals in danger without the observer being able to do anything about it - also caused by loss of family, relatives, or friends.
3. The stress caused by loss of property.
4. Stress caused by disruption of businesses and occupations.
5. Stress caused by disruption of the community social organization.
   a. Appearance of vacant roles in the family.
   b. Role vacancies in other parts of the community social system. "...the stress experienced probably being dependent on the degree of kinship and/or functional importance of the missing person to the individual."

"...the appearance of many outsiders on the scene who participated in and in some instances controlled various kinds of social interaction patterns (created a situation in which) many new roles appeared which were not integrated into the existing socio-cultural system. Therefore, the rehabilitation system itself was a source of change and engendered stress and anxiety.

The authors present a model of the "psycho-social system" (C, P. 79-82) in terms of which the above kinds of stress are analyzed (C, P. 82-90). "The term psycho-social system refers to the idea of the individual functioning in - or in transaction with a socio-cultural milieu"....
"An underlying assumption is that a psycho-social system develops some sort of reaction pattern when it experiences stress. The reaction which develops may be either adaptive or maladaptive in terms of the continuance of adequate functioning of the system, etc. (see C, p. 79-82 for a more complete development.)

"Social Systems tend to change and to adapt to conditions of stress. The kinds of reaction patterns identified in individuals may logically derive, at least in part, from changes in social systems rather than being a direct consequence of an immediate and overwhelming threat to the individual...In general, it is hypothesized that a more slowly developing threat with more diffuse consequences for the individual would result in more attenuated and diffuse reaction patterns following impact.

"...it is hypothesized that the existence and functioning of stable organized groups during the disaster impact tend to reduce the effects of primary. To the extent, however, that certain kinds of psychic malfunction exist, the ameliorative effects of such facilitative relations will be reduced.

"The individual who could not or would not perform hazardous rescue operations during impact may become subject to various guilt reactions even though basic supportive attitudes are expressed by others. If such behavior occurs in the presence of others who have clearly exceeded normal expectations, the guilt may be even more severe. Overt expression of failure may indeed relieve the individual, particularly in a supportive atmosphere, but may eventuate in rather subtle, diffuse changes in role relationships which, if persistent, induce a clinically treatable anxiety syndrome. Confession may be good for the soul but not for the social system.

"Grieving may be viewed...as a response to the loss of a whole system of assumptions and expectations upon which human beings build a view of the world—where the grieving is blocked for any reason the individual has to adopt some precarious defensive sort of adaptation rather than attempting to make a new construction with the materials at hand. (Shands, 1955)

"The social expression of grief through customary practice and rituals facilitates the work of grieving and eventually permits integration of the psycho-social system.

"Loss of personal property and disruption of the economy...create anxiety by destroying stable guideposts of day-to-day activity. Personal property of various kinds has the additional characteristic of being invested with a certain degree of emotional attachment—it is a symbol of self and family, and its abrupt loss is disorienting. Businesses and occupations are also characterized by a large investment of self and typically serve to locate the
individual in the social system. To the extent that occupational roles buttress other roles, they are crucial to the self concept, particularly "or family providers.

"...in Cameron there were younger men, not occupying formal positions in the community, who were responsible for much of the reconstruction initiative. Such occurrences engender ambivalent attitudes toward formally constituted leaders, adding to the general confusion.

"Several other aspects of the therapeutic community are also relevant to this discussion. Fritz has suggested that following disaster people are more amenable to social and personal change; the possibility of introducing social innovations is perceived; danger, loss, and suffering become public rather than private phenomena; and pre-existing values, norms and goals are replaced by emergent values and norms. This may be true for certain types of communities, but, typically, institutionalized values are not given up easily. If our model has any validity, traditional values and norms are bound up with personality functioning and social relationships. Changes would be met with resistance and reaction, particularly in a well-integrated familialistic society like that of Lower Cameron Parish.

"While it is probably true that traditional modes of relationship were modified during the impact and rehabilitation periods, this was probably perceived as a temporary state of affairs. It appears more realistic to think of the individual as desiring a return to the established order with its satisfying relationships, rather than hypothesizing, somewhat narrowly, a great desire for innovation. Many communities in this country, including Lower Cameron, are generally tradition-oriented rather than innovation-oriented. This is not to say that the possibility for innovation is not perceived by some: certainly it is. However, innovation is most often conceived of in terms of concrete things, such as new water and sewerage systems or new schools, which will be accomplished within a framework of familiar relationships and values. To the extent that change is perceived as subverting such relationships and values, it will be resisted.

"An aspect of the therapeutic community which requires particular attention is that "forms of expressive behavior that are normally circumscribed or inhibited by cultural taboos are not only tolerated but are openly discussed and sanctioned." (Fritz, 1961b, P. 11) It has been noted in various places above that this kind of situation is not necessarily therapeutic. Rather, the excessive expression of feelings of fear, guilt, shame, despair, hope, love and other sentiments is deviant from normal expectations in social relations and may actually engender uneasiness and contribute to role conflict... In each culture there is provision for expressive and instrumental roles, to employ a highly simplified dichotomy. Blurring of expressive and instrumental relationships requires considerable re-orientation on the part of the individual and may actually block re-establishment of traditional expectations."
Emotional expression is highly institutionalized and, in general, deviations from expectations are not without risk. Even in integrated familialistic cultures, the therapist's ideal of direct emotional expression may not be condoned outside the primary group. Whether or not more open and less discriminate expression of emotions is therapeutic is problematic. Such expression may set the stage for subtle changes in role relations. Certainly, it is plausible that more free expression of emotions may actually be less therapeutic than culturally institutionalized modes.

To the extent that the psycho-social, reaction-adaptation model is valid, it is hypothesized that there would be many and varied patterns of reaction and adaptation among the individuals of the population. Anxiety among adults about storms, some anxiety in children, depression in adults, sheltering of rehabilitation agencies (Velfort and Lee, 1943), and religiosity are all considered evidence of psycho-social consequences of the disaster.

The general conclusion that may be made on the basis of this discussion is that psycho-social reactions to the extreme stresses of the disaster are probably grossly under-reported.

A much needed area of research... is the relationship between adaptive patterns and the specific cultural and structural mechanisms available in the socio-cultural system.

The under-reporting noted above is primarily a result of deficient methodology in this general area of knowledge. Moore has pointed out that the results of psychological survey and pencil-tests may be ambiguous and not amenable to usual statistical analysis (Moore and Hannum, 1960). It is conceivable, of course, that anxieties, role frustrations, and role inadequacies do not result in changes in basic personality structure, at least as elicited in such tests. What is required is a methodology that provides information on a wide range of behaviors, and changes in them, following stress.

One of the major drawbacks in the studies dealing with mental health and illness consequences of disaster has been the reliance placed on the statements of the people themselves. It is quite clear that most laymen do not have the sophistication for discerning reaction patterns of this kind. Yet many studies rely on this type of response. Since individuals respond from different experiential bases, there is no common framework of perception. Thus there is no basis for evaluating the meanings of the data. Appropriate data consist of descriptions of detailed, concrete, specific behaviors and feelings of respondents secured by interviewers trained in the point of view of social psychiatry. It is believed much more useful to secure detailed information on a sample of respondents than relatively superficial information on the total population. At this stage in the development of our knowledge it will be much more useful to attempt to relate the
dynamics of stress adaptation with elements and mechanisms of the psycho-social and sociocultural systems than to make highly generalized statements of the amount of mental illness following a storm or other disaster."

(All the above is extracted from C, Chapter 5, "Mental Health Effects of Hurricane Audrey," pp. 65-91)

J. The following is taken from C, Chapter 6, "Social Change in Response to Hurricane Audrey," pp. 93-135:

1. "The general hypothesis that disaster leads to social change will be tested against the experience in Cameron Parish."
   a. "...Sjoberg has noted that the changes which occur in the post-disaster period are apt to have their roots in the pre-disaster situation. He says, 'one proposition that emerges from some disaster studies is that disaster brings to the surface changes in the system that actually were under way prior to the advent of the catastrophe.' (Sjoberg, 1963) This proposition will be restated in the following terms for purposes of this study: Disaster results in an acceleration of the rate of change in the social system and causes changes already under way to occur more rapidly than would have been the case without disaster."
   b. A corollary to this proposition is the notion that changes may be on the brink of taking place, but are held back or dammed up by the existing social structure. When disaster occurs the status quo is broken and the flood gates of change open. Essentially this idea involves the notion of cultural lag, in Ogburn's terminology. The reasoning is that change processes in the social system have gone on in the past at unequal rates, creating stresses and strains between various elements of that system. Those elements which have lagged behind are under pressure to change, but are resistant. For one reason or another the status quo in these areas is maintained and bolstered against the pressures for change.
   c. "If this idea is valid and the pre-disaster situation is well enough known, it should be possible on the basis of sociological theory and knowledge to predict the direction change will take in response to specific disasters."
   d. "In Cameron Parish, there had been certain economic and technological changes which were in the direction of bringing industrial occupations and urban values into the area. These changes had not been accompanied by changes in the family and kinship system, nor had they increased to any extent the formality of social relations. It was hypothesized at the beginning of this study that the disaster-induced changes which would occur in Cameron Parish after Hurricane Audrey would result in:

1). Greater formalization of social relations and a greater emphasis on contractual as opposed to non-contractual relations
2. Greater emphasis on secondary group activities.
3. Loss of some family and kin group functions to more formalized organizations in the community. (C, pp. 93-95)

2. See pp. 95-111, C, for history and background of Cameron Parish prior to Audrey. (Also see Section 1E this outline and B, pp. 1-26). On the basis of this background information the authors believe that certain changes can be detected in Cameron Parish which, at least in part, can be traced to Hurricane Audrey. Changes in Statuses and Roles; new groups, organizations and services; changes in public services; changes in communities and their relationships; changes in the nature of social relationships; the formalization of social relations; increase in secondary groups; and loss of family functions are examined (C, pp. 111-135). In general, the changes, although slight, occurred in the direction of increased formalization and a greater dependence upon secondary rather than primary group relations. These changes "...represent an acceleration of already operating processes rather than the introduction of completely new directions into the normal change process." (C, p. 135)

3. "That changes occur after such a disaster depend on the point in the change cycle or life arc at which a community or society is caught. If there are many potential changes stored up in the system, a flood of change is likely to occur, but if a flood is already ebbing, the chances of a disaster releasing a new torrent of change are small. Furthermore, the changes that do occur at such a time will fit into the pre-existing pattern of change and represent expressions of it rather than completely new and different trends. One must also consider the possibility that disaster might retard change. This might be particularly true of economic change, for example. A disaster might destroy the resources—human, financial, or natural—upon which economic growth and change might have been based, and thereby inhibit changes which were already underway."

4. "There are two types of changes (induced by disaster).... First, there are changes which are the direct result of the destruction wrought by the disaster.... Second, there are changes which result from the reaction of the social system and of rehabilitation organizations to the destruction caused by the disaster agent."

5. "It is the contention of this report that the rehabilitative system may constitute a more powerful agent of change than the impact of the actual disaster. It may alter the status of individuals and change the nature of groups and organizations; it may induce cooperation or engender conflict. Thus, the change is indirectly 'caused' by the disaster agent. It is the result of the interrelationships between the disaster"
agent, the rehabilitative system, and the community social system. Although similar disasters may cause similar physical loss, they will not necessarily produce a similar rehabilitative system or similar reactions in the social system of the community. That happens depends upon the organization and culture of the area involved." (C, p. 113-114)

6. "One interesting feature which accompanies mass destruction, such as experienced in Cameron is that the normal patterns of obsolescence are disrupted. A large proportion of the population at one time gets new cars, home appliances, furniture, and houses. This creates a period in which the demand for such goods must necessarily diminish (because) normal obsolescence (will) not create a demand for the replacement of worn out goods." (P. 119)

7. "Formally, it was apparently the local neighborhood which dominated the loyalties and thoughts of people rather than the whole parish. Audrey, because of the way public agencies, news media, the outside world in general acted, placed emphasis on the parish as an important entity. While this did not break down intense neighborhood loyalties, it added a new consciousness of the whole parish as a social unit worthy of the loyalties of its people." (C, p. 121)

K. The Following is taken from C, Chapter 8:

The authors construct a theoretical model for the longitudinal study of disasters. Briefly, the model consists of a five phase time sequence model: pre-disaster, warning and threat, impact and isolation, rescue and rehabilitation, and post-disaster irreversible change phases.

Pre-disaster regularity in the social system (steady-state) is seen as a function of three independent variables - social-cultural structure, personality, and situation (system internal environment) - plus the intervening variable "Social Interaction" (intervening because "...it is through interaction that the independent variables...are brought together"). Each of these variables is considered as having an internal structure and to be more or less in equilibrium with one another in times of normalcy (steady state).

Changes in the system are viewed in terms of the peculiar disaster inputs at each of the various stages of the time sequence model. For example, disaster warnings are introduced into the system in the "warning and threat" phase; the disaster agent itself is introduced in the "impact and isolation" phase; and the rehabilitation system is introduced in the rescue and rehabilitation phase. Each of these inputs generates peculiar forms of role stress in the internal structures of each of the independent variables mentioned above. It is these role stresses rather than the disaster inputs themselves which produce changes. The authors identify the kinds of
stresses peculiar to each of the independent variables - those which arise within the structure of each variable - as well as the stresses which arise from a disequilibrium between the variables. In addition, the authors identify three types of social change sequences: (1) change already underway in the system which would have occurred without a disaster, (2) change produced directly by the various disaster inputs, and (3) change "as a response to stresses aroused in the system by an interaction between a disaster input and a former state of the social system." (see C, PP. 157-170)

"Structured interviews such as those used here seem to be particularly unsuited to the study of both mental health and social change. There is too great a tendency with interview data to make the respondent an observer and recorder of subtleties with which he is obviously unable to deal." (C, P. 174)

"With respect to social change, "these questions are better resolved by questioning a highly select sample of informants at key places in the social structure than by interviewing a carefully a constructed random sample of the population the disaster area. The point is that social changes may occur and only certain people may be aware of them." (C, P. 175)

(See C, PP. 175-177 for a suggested research design appropriate for the study of the effect of natural disaster on mental health and social change).

"The period during which Audrey threatened and then struck at Cameron and Lake Charles was one of maneuver and convergence of forces for the regional organizations. Indeed, so striking is this fact that it would seem that for such organizations a typology utilizing the concept of maneuver would be more fitting than the victim-oriented concepts of threat and impact." (A, P. 45)

"Nowhere is there greater danger of a disaster researcher imposing a sense of order on his data that was not characteristic of the real situation than with reference to rescue and evacuation activities. The danger is particularly great when one's point of reference is formal organizations. Fritz and Mathewson make this point when they comment: 'formal relief and control agencies normally keep some form of record of the extent and type of assistance which they render to a disaster-struck population. The great bulk of the informal, volunteer assistance, on the other hand, goes unrecorded, unnoticed, or unevaluated. The result is that formal relief and control agencies frequently over-estimate the proportional extent of their own efforts...and grossly underestimate the extent of informal assistance." (A, P. 49)
...we should like to suggest that the concept of volunteering is to a considerable extent determined by organizational perspectives. It is not so much the act of volunteering as one's previous or lack of previous role in the organization that affects attitudes toward the volunteer. Thus, to a 'professional' in a law enforcement agency, a Civil Defense policeman is a 'volunteer,' but to a Civil Defense policeman a 'volunteer' is a person without previous experience in Civil Defense who offers his help in the emergency." (A, PP. 87-88)

"It seems to be fairly characteristic of disaster situations that the professionals, i.e., those with well-defined roles in disaster-oriented organizations tend to blame volunteers; i.e., those without such roles or those in organizations without disaster traditions for many of the problems that occur, particularly, in the area of inter-organizational relationships." (A, P. 88)

"Those volunteers who had a monopoly on some means that came to be regarded as indispensable in the rescue-evacuation phase, including body recovery, tended to receive strong positive evaluations. Although one cannot ignore a factor of social status which may and probably did enter into these attitudes, it may be suggested that the activities of volunteers in a disaster situation...will be evaluated by 'professionals' in terms of a principle of substitution. Those persons who volunteer the most easily reproducible goods and services (e.g., clothing, food, manual or clerical skill) will be given the lowest evaluations, possible even a negative evaluation. Those who offer virtually monopolistic goods and services will be given a high evaluation. It may be further hypothesized that these evaluative tendencies will occur almost regardless of the actual performance of the volunteers." (A, P. 89)

"...those involved in the emergency phase of a disaster are likely to resent outside control, particularly when it appears to be imposed, while those who are involved later are much more likely to assume a 'bureaucratic' perspective." (A, P. 99)

"It must be remembered that communications channels, particularly radio nets, are vested interests, and like all vested interests they tend to be jealously guarded. Furthermore, in a disaster the scope of activity of an organization is largely determined by the scope of its communications." (A, PP. 75-75)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
1. Name of organization: Civil Defense, (national, state, local)
2. Type of organization: manifest

B. Organizational Description
1. Organizational goals and activities: no data
2. Organizational character: "...civil defense (is a) multigroup system which (is) comprised of a number of groups which are quite primary in character. (The)...individual neighborhood civil defense units have primary characteristics. It is in their overall organization that these groups display secondary characteristics." (C, P. 134)

"...the transportation service had been characterized by considerable advanced planning, which had included collecting data on a large number of vehicles of various types owned by various businesses and individuals in Lake Charles....The transportation director himself seems to have had a good conception throughout of what was needed and the resources available to meet the need.

"The health service, too, was characterized by considerable advanced planning, although not for exactly the type of operation it actually engaged in." (A, P. 65)

3. Organizational complexity: no data
4. Organizational control: "A contact was made Tuesday between Louisiana State Civil Defense Agency headquarters and Calcasieu Parish Civil Defense headquarters, but its nature has become a matter of controversy." The controversy involved whether or not the state headquarters had warned the parish headquarters of the hurricane and whether advisories had been received by the parish headquarters regarding preparations to be made." (A, PP. 23-24)

5. Membership recruitment and orientation: "We just decided what was needed: like communications, supply, maintenance, power, etc. We looked for a man after that that we thought could do the best job. (The Department of Highways engineer)... and I (new Administrator of Cameron Parish Civil Defense) did the filling of most of the places. We put a man in and might have to take him out later. We made about six changes of this sort; I don't think there were any hard feelings. About four quit due to conflict with personal business...." (A, P. 98)

6. History of organization: "Civil defense was represented in Cameron Parish by a parish director of civil defense. There was no civil defense organization. Attempts had been made to organize civil defense in the parish prior to 1957, but with little success. Various parish officials reported that public..."
support for civil defense could not be secured. At least two public meetings had been held prior to 1957 in attempts to organize civil defense, but to no avail. It was reported by several top ranking officials that people thought of civil defense as being designed for atomic disasters and not for natural disaster. As a consequence the rural people of Cameron Parish could not be aroused because atomic warfare seemed so remote from their lives." (C, P. 110)

7. Public image of organization: no data

C. Organizational Activities During Disaster

1. Resources of organization during disaster

a. "...the Civil Defense medical unit which went to Creole... did not have a two-way radio and had to depend on helicopters to carry their messages back to Lake Charles." (A, P. 76)

b. Reference was made to the "Louisiana Survival Plan Project." "It is (the writer's) understanding that planning under this project is concerned primarily with the possibilities of atomic weapons attack and that such planning has to date been primarily concerned with preparing an evacuation plan (for Lake Charles)." (A, P. 37)

c. Calcasieu Parish Civil Defense installed four additional telephones, including a "hot-line" to the Red Cross, in preparation for the hurricane - "...indicating an awareness of the communication problem to be faced." (A, P. 26)

2. Special problems to organization: Friedsam mentions lack of coordination and duplication of effort as crucial problems at the inter-organizational level. "For example, the Calcasieu Parish Sheriff's emergency organization duplicated at several points, e.g., supply and transportation, that of Civil Defense. Both in turn appear to have duplicated Red Cross in the supply function. It is conceivable, of course, that all three would have handled various aspects of supply without duplication, but apparently no such agreement was reached either before or during the hurricane or its aftermath." (A, P. 73)

"Our major problem was labor records, time and work. That's been responsible for 99 percent of my headaches, chiefly from when the work was started in the beginning. So much misinformation or wrong information was given out and passed down; it's been impossible to get it corrected. A man came in yesterday and raised Cain because he hadn't got a check. I asked him who had turned in his time. He said, 'Nobody.' I asked him who he had been helping. He said... 'First one, then another.' Said an 'Army man' told him to sign up and he'd get paid.

"It think the 'Army man' was... (a state Civil Defense Official) "...We would just tell these people, 'Sign up and go on about your business.' We had a six month old baby on the payroll. I recognized the name." (the Cameron Civil Defense Administrator, A, Pn. 38-99)
when the Cameron civil defense office was opened in Cameron on 9 July, no supplies were on hand for administration or record keeping. There were 1,500 workers in the area and several outside contractors and house movers already operating on the authority of Cameron "parish, Cameron civil defense, state civil defense, or just 'operating,' without responsible authority. The presence of many of these people was not known to parish civil defense officials until bills began to be presented for payment after 15 July. State civil defense maintained a separate but duplicate office in the courtroom of the courthouse. It was signing up as many as 400 to 500 people to work each day with no foreman to supervise their activities. Entire bus loads of workers signed the work sheets each morning, and immediately reloaded the buses and returned to Lake Charles or other nearby towns. Yet each worker was given credit for 14 hours work and bills were submitted for rental on the buses they rode even though riders were charged as much as $2.00 each per day to ride some of them. House movers picked up several houses near the highway right-of-way. When the owners, who had been unable to get house movers or were waiting their turn with a mover, asked that their houses be placed on their lots, they were told by the movers to pay them $500 or they would dump the house in the marsh. Several houses were actually carried past their original places and dumped in the marsh. Later court action was taken in several instances of this nature.

"The payroll records for the last three days of June could not be verified by parish civil defense and were all thrown out. An advance of funds was made by the Cameron Parish police jury to make the first payroll. After this payroll was figured and the checks all written, the state civil defense auditor and other officials insisted that social security be deducted from the checks. The administrator pointed out to no avail that the police jury was exempt from social security on its employees. All the checks had to be made over. Later, the state civil defense auditor and an official in the social security office in New Orleans insisted that extra help be hired in order to get the social security report in on time to prevent the levy of a fine as a penalty for being late. All work in the office had to be stopped to complete the report. This required several weeks of time and much expense. Several months after the final report was made and all social security paid, a letter was received from the social security office in Atlanta asking why the social security was collected and paid. The administrator was directed to get each employee who had social security withheld from his check to sign a statement so that the illegally collected social security could be returned. After many months of negotiations the federal auditors finally got the amount of social security paid by Cameron Parish refunded. The administrator never attempted to contact the 7,650 people who had worked in the area to get the statements signed and social security never made a refund to any of these employees.

III-CD-3
"During the first weeks of July, two of the foremen supervising work collected all the checks for the men working for them, forged their signatures, cashed the checks, and left the area.... Some truck drivers hired by state civil defense to make trips for surplus equipment were given courtesy cards and ran up large bills for apparently nonexistent repairs. Then the state officials could not justify these expenses, they passed the bills on to Cameron Parish Civil Defense. The Administrator turned them over to PDDA auditors.

"The state and federal officials required all records to be made out in nine copies. These included every purchase ticket and every daily record of labor. After all the records were made up on nine files and nine final reports, Cameron was notified that only four copies were needed. At the close of the project, only two were needed and used.

"The job of coordinating the activities of all the organizations and agencies operating in the area was virtually impossible. Many of the agencies did not even know that a coordinator existed, and others felt that coordination was for others and did not apply to them. Gasoline generators and water pumps would be placed by civil defense according to a carefully worked out plan at locations selected to serve the most people. At night individuals and even representatives of one agency would take the generators and pumps and set them up in some other location.

"The residents in the area did not understand that civil defense funds and work were restoring public facilities, health, and sanitation on a public basis. Many attempted to secure individual aid from civil defense and some succeeded because of the confused situation. For example, the force of the water had washed out large holes not only on the public roads but on private house sites. Many individuals expected civil defense not only to fill holes on their property, but to buy the dirt from them to do it with. Civil defense could not legally fill any holes unless the health department declared them to be a health hazard. As a result of this misunderstanding holes and dirt became very disagreeable topics of discussion.

(Also see Section C3 and C4 for day-scale difficulties)

"It can be readily seen from the amount of money requested (2,600,000) that the civil defense activities were big business, especially when you consider that most of this money was to be spent in less than two months. Very little time was taken to set up facilities or to organize civil defense activities.
3. Organization change during disaster:

'State civil defense had also set up offices in the Pioneer Building in Lake Charles and had hired a man to receive all orders for equipment and supplies from Cameron, and to see that they were delivered. Later it was discovered that this man had been discharged from the state police force for several reasons, one of which was alleged dishonesty. Before he was dismissed from the state police, he had been stationed at Cameron where he was reputed to have written many bad checks and to have become involved in a scandal with the daughter of a local family. The sheriff's father was alleged to have stated publicly that he would kill him on sight if he came back to Cameron. Then supplies and equipment failed to be delivered, and the administrator investigated, he discovered the identity of the man in charge at the state civil defense office in Lake Charles and also discovered that a competing office for hiring was in operation in the Cameron courthouse.

"After the duplication of effort was discovered by the Cameron parish coordinator-administrator, the available records in the state civil defense office at Cameron were taken over by the Cameron Parish civil defense office, its personnel were discharged, and the state office in the courthouse at Cameron was closed. State civil defense officials in the area were called in for a meeting and asked to discharge the man in Lake Charles, but this was not done. A few days later the Cameron administrator called the state civil defense director and asked him to come to a meeting in Cameron. This meeting was attended by the state representative, the sheriff, the administrator, and the director of Louisiana civil defense and his staff members in the area. The administrator asked the director to discharge the Lake Charles man, and the director gave the order after his auditor discovered a shortage of funds in the Lake Charles petty cash account. A local school teacher was hired in his place. The warehouse director in Cameron (an alcoholic who neglected to keep records) was replaced by outside men who had experience in warehouse work, and a system for keeping records was finally established." (C, p. 50)

"...the sheriff (Cameron Parish?) and two other local officials went to Grand Chenier to ask the man who had been principal of a parish high school to accept the position of Administrator of Cameron Parish Civil Defense. He accepted, and after disengaging himself from personal commitments, took the position on July 7. So far as the investigator could determine, the Director of Cameron Parish Civil Defense, who evacuated on Wednesday prior to the storm, retained his title." (A, P. 97)
The authors estimate that $301,000 was spent before the civil defense coordination office was established and office space and record supplies were secured. The work of organization had to be carried on under chaotic conditions at the same time that all the activities of the rehabilitation process were going on." (C, pp. 53-55)

Quotation from remarks of Cameron Parish Civil Defense Administrator: "When FOMA set up their scale (pay scale for rehabilitation workers), they ruined our economy. A dollar or a dollar and a quarter an hour was the prevailing wage: $1.55 an hour (the state approved rate) drew workers away from the local companies.... The FOMA rates even drew a lot of people from Lake Charles. At the same time $2.10 is not enough to get skilled workers.... Paying prevailing wages would have made the problem much simpler. Who ever heard of a cowboy getting $1.55 an hour?" (A, P. 98)

"Several Civil Defense informants, including the Director, have commented that the organization lacked 'command in depth,' by which they mean that as the emergency went on with key personnel working for long hours, there were no previously designated and trained persons to relieve them. 'When exhaustion made relief absolutely imperative, the person who took over lacked the necessary information to fit in without disruption.' (A, P. 77-78)

"...the Civil Defense Rescue Service appears to have been limited in its work both by its small size and by the type of equipment it possessed. An informant in the Rescue Service said that it had about 45 members but that only 20-25 were 'hard core.' The major piece of equipment used by the service is a rescue truck. It could be taken only to Gibbstown Ferry on Friday and could not be moved down into the struck area until after the washed-out bridge above Creole was repaired on Saturday afternoon." (A, P. 66)

"State civil defense officials...made an attempt to get into Lake Charles on Thursday (day of impact), but were unsuccessful. They flew in, but were unable to land." (A, p. 47)

"With respect to role inadequacy, the magnitude of the disaster and the unique circumstances in Cameron Parish account for the presence of this type of role stress. It occurred at several places in the disaster system...no one was present in Cameron Parish who was familiar with the various policies and practices of disaster agencies. For example, the coordinator-administrator of civil defense in the parish, had been, until Audrey, a high school principal. He had to learn the bureaucratic procedures of civil defense and other relief agencies as he went along." (C, P. 59)
"Every informant with whom this system (communications not from Cameron to Lake Charles where Calcasieu Parish Civil Defense ordered and dispatched supplies and equipment to Cameron) was discussed asserted that it worked well until the Transportation Director was succeeded by state Civil Defense officials in Lake Charles." (A, p. 73)

"Civil Defense (local) did not even have a Supply Service at the outset, and the Transportation Director simply emerged as 'de facto' Supply Director because he had control of transportation." (A, pp. 73-74)

"One question which arose after the hurricane was the responsibility of the Director of Calcasieu Parish Civil Defense for warning in Cameron. First it must be said that there was no Civil Defense organization in Cameron itself. A man had been designated as Director, but nothing appears to have been done to implement organization. This man stated publicly following the hurricane that he had left Cameron on Wednesday (preceding the storm). In the State Civil Defense Agency materials available to the writer there is no evidence that this person or anyone else in Cameron was contacted by the agency directly. However, the copy of the report of the Director of Calcasieu Parish Civil Defense, which was given to the investigator, has appended to it a copy of a Region 5, F.C.D.A., TVX message which quotes a TVX from the state agency as follows: "(the Calcasieu Parish Civil Defense Director was referred to as Director of Area 5 - which he denies being at the time - and was reported to have been told to contact various parishes, Cameron being among them. The Calcasieu Parish Civil Defense Director denies receiving any such notification and the tone of relevant entries in Calcasieu Parish Civil Defense records implies that the Director did not feel legally responsible for Cameron Parish (A, p. 37) although, one attempt was made to establish a communications link with Cameron (see Section D2). The Calcasieu Parish Civil Defense Director was later - July 2 - verbally appointed acting Area 3 Director)." (A, p. 37)

4. "Evaluation of disaster activity:" "When the Red Cross and Civil defense moved into the disaster area after the storm, it was (the) informally organized social system (of Cameron Parish) that they had to work with. A great deal of confusion arose early in the process because the first attempts at rehabilitation were not made through this informal but nevertheless official structure of Cameron Parish, but through Calcasieu Parish and even through state organizations. This was partly because such total disruption existed in Cameron Parish that no other alternative seemed possible, but it seems clear that it was
also partly the result of such organizations as civil defense and the Red Cross being unable to link up effectively with a simple rural social system which lacked the refinements of organization found in the larger cities to which these organizations are geared." (C, P. 48)

From post-disaster recommendations made by Cameron Parish Civil Defense: "All branches of civil defense should get together and agree on a single policy covering the actions of all. Much hard work, worry, and expense could be avoided if all the agencies would get together and coordinate their activities in such a manner that all would be working toward a common goal." (C, P. 44)

"So disorganized was the situation that the new parish civil defense administrator was unaware of the fact that state civil defense officials were maintaining an office upstairs in the courthouse. Outside workers by the hundreds were being hired to work by this office with no supervision whatsoever, and equipment and supplies were being purchased and brought into the disaster area by almost anyone who wished to do so." (C, P. 30)

From Comments made by the Administrator of Cameron Parish Civil Defense: "The 3rd through the 13th (of July) was where the trouble was. After the 13th we got the (payroll) forms and that cut out most of the trouble. Neither the state nor F.C.D.A. had the forms for us before that. We got some time records on pieces of cardboard, blank paper, fur tags. Civil Defense should have these (forms) ready to bring in. Before a man goes on the payroll, he should be assigned to a foreman. If F.C.D.A. had a man familiar with the records that will have to be kept, he could move in with them when something like this happens. They could call a meeting of responsible officials and say, 'you're going to need this, this and this. We'll take over until you get a man.' If we had had the best civil defense organization in the world, how could it have functioned (immediately after the storm)? They could handle it in those first few days, then as local people could, let them take over." (A, P. 99)

"...the attitudes generally expressed toward (the F.C.D.A.'s) work were at the opposite pole from those expressed toward the state agency. One informant (who expressed negative attitudes toward the state agency) said: 'F.C.D.A. came in to assist the state Civil Defense in its program. They did it in a quiet way. They did a wonderful job of coordination with local and state Civil Defense.' Another gave much the same evaluation: 'F.C.D.A. didn't give any trouble, but they didn't tell them (Cameron officials) what they had to do. Federal moved in to explain and to protect...(the sheriff) too.' (A, P. 99)

"Without evaluating the fairness of the attitudes, it may be said that not once did the investigator hear a positive evaluation of the state agency. Said one informant: "When
the Governor sent the state Civil Defense down here, he placed them under my orders. I think that kept down duplication. But they try to operate like an army. The Calcasieu Parish Civil Defense are fine fellows, but some of those others are grandstanders."

Another described the situation and the relationship, as he saw them, at greater length:

"The purchasing and the supplies were under ...(the Transportation Director). He would call anywhere, give them the order, ask how soon it would be ready, send someone out to pick it up and send it down to us. He was known, trusted, civic-minded. If they people know you, they will cooperate; if they don't, they won't."

"Then the state (Civil Defense Agency) came in. The state is supposed to know what you can get under Public Law 275 and what the parish pays for. They offered ...(the Transportation Director) a job at $550 a month. He told them he couldn't afford to take it. The state had no system. Food was no problem, but other things just stopped coming in: for example, shovels, boots, gas-masks....There was another difficulty: the state had no transportation. The man in the state Civil Defense office would order from local stores and let them deliver. (The Transportation Director) ...always back-checked to see that things moved. The state didn't; they had no follow-up. They didn't know who to call for things, where to get them, or how to dispatch them.

"The transition from local to state control has to be smooth and coordinate. It was too abrupt."

"This informant stated that the state Civil Defense Officials made some of the local officials mad."

"A third informant...said:

"I had excellent cooperation with the Calcasieu Parish Civil Defense; I know those people....(The Transportation Director)....could call people on a personal basis. That's the difficulty with outsiders calling; they don't know them, and they don't know who to call....The state Civil Defense came in and superseded the local Civil Defense, and the federal came in. It ended up with all three doing the same job. There was a lack of coordination."

"The Transportation Service Director in his report to the Director of Calcasieu Parish Civil Defense made two recommendations which, by implication, bear on this discussion: 'Let local Civil Defense Forces be in strict command of the situation with state and federal forces having an advisory capacity only. When state and federal Civil Defense forces ultimately take command, let the change be gradual. An abrupt change in command does absolutely nothing but foul up the works.'" (A, PP. 93-95)
"An official of one agency said with some emphasis that he would not consider entering into written plans for disaster with other agencies and that he did not see the role of Civil Defense in such a situation. The same official indicated that his agency called on Civil Defense for aid and he was critical of the fact that it was not forthcoming more quickly and in greater amounts." (A, p. 87)

"The work of the transportation and Health Services has received much post-disaster praise, and these services have been singularly free from criticism. Even an official of another agency whose evaluation of the overall Civil Defense effort was rather harsh described the transportation function as a 'wonderful job.'"

"Local Red Cross officials (Lake Charles) have attacked the mass evacuation in Lake Charles (conducted by Civil Defense) almost bitterly. One has referred to it publicly as a 'hysterical movement, mass hysteria.' Another has called the opening of the schools (to be used as shelters) 'stupid,' and added that 'the schools were not as safe as homes.'" (A, p. 42)

D. Organizational Activities in Emergency Social System

1. Existing plans for cooperation with other organizations:

"The major organized operation in the Creole area early Friday was apparently that of the Calcasieu Parish Civil Defense Health Service. The doctor who is Director of the Health Service was called by civil defense....He was told...that he should get nurses, doctors and medical supplies....In accordance with a pre-existent plan, he in turn asked a local hospital administrator to secure supplies, a local nurse to contact 15 nurses, while he contacted doctors." (A, p. 55)

"It was decided in (an) informal meeting held in the Civil Defense Director's place of business that a formal meeting would be held in the City Hall Auditorium at 4:00 o'clock Wednesday (prior to impact) afternoon with representatives of virtually all formal organizations in Lake Charles that might have disaster functions present." (A, p. 30) (NOTE: see A, pp. 31-32, for informants-representatives of various organizations—differential perception of the nature of this meeting.)

"After his conversation with the Weather Bureau official, the Director of Calcasieu Parish Civil Defense contacted several organizations and officials as well as his own personnel. These included the Mayor, the Sheriff of Calcasieu Parish, and Red Cross. The calls made to the latter two were evidently intended to transmit the newly received weather information and to make sure that these agencies would move, if they had not done so already, to an alert. The call to the Mayor was concerned, among other things, with the necessity of taking
down or securing the signs of business establishments in the main business district. ... The Civil Defense 'Summary of Operations' also indicates that calls were made to oil companies having off-shore rigs." (A, P. 28)

"... the acting head of the local Red Cross chapter had received warning apparently from other or additional sources than Civil Defense, and undertook to make contact with the Civil Defense Director. He was concerned about 'fields of responsibility' since during a previous disaster experience, a flood in Lake Charles in 1953, there had been some crossed wires." (A, P. 29)

2. Communications Networks - existing and emergent: "The local Civil Defense unit was rather critically placed with reference to communications. In part this resulted from what was evidently a considerable public identification of its headquarters as the control center for disaster operations in Lake Charles.... As a result Civil Defense headquarters received hundreds of calls with offers to help ranging from the 'What can I do?' type to specific offers of boats and other forms of transportation. Civil Defense communications were also crucial to the Red Cross supply function, since... it was one of the two main sources from which Red Cross was securing information about needs in lower Cameron Parish. Furthermore, the local headquarters is and was tied into the organic law-enforcement nets which operate in Calcasieu Parish and into the Southwest Mutual Aid net which on Friday and Saturday was able to extend its range by a relay system into the Creole-Cameron area. In addition to this, some 35 to 40 HAM operators worked at one time or another under Civil Defense direction." (A, P. 66)

"... the Director of Calcasieu Parish Civil Defense asked his Radio Officer through his Communications Service Director to get a WAM operator to the court house in Cameron. This the Radio Officer was unable to do, but he did contact a company in Lake Charles that had radio contact with one of its installations in Cameron. The Civil Defense 'Summary of Operations' indicates that the company '... advised they would remain in (sic) the air in direct contact with...(Civil Defense) control center in Lake Charles, Louisiana. This contact was maintained until 9:10 Thursday morning.' Although the writer is not certain, it is his impression that this channel was used very little if at all." (A, P. 56)

The head of the local Red Cross chapter "... indicated that he also called the Civil Defense Radio Officer (Calcasieu Parish), with whom he had worked previously in Red Cross, to suggest that 'rather than chisel a portion of communications out of Civil Defense, we should set up a tie from Civil Defense to Red Cross headquarters." (A, P. 29)
Calcasieu Parish Civil Defense Director: "The weather bureau called me Wednesday morning around 8...called and gave me the weather picture from the preceding afternoon on...gave me the picture from the turbulence into the hurricane." (A, p. 19)

3. Competition and conflict with other organizations:
   
a. "Before civil defense could proceed in Cameron Parish, it was necessary to establish a civil defense organization there. In the interim both state civil defense and Calcasieu Parish civil defense conducted relief activities in the Cameron area. At the same time local residents of the disaster area were organizing themselves independently for rehabilitation. Ultimately jurisdictional problems developed among the three civil defense groups involved." (C, p. 47)

b. "...the 'affair of the fans' appears to be one of the post-disaster points of contention between Red Cross and Civil Defense (a broadcast appeal was made for fans which, as it turned out, could not be used. The appeal resulted in 'truckloads of fans' being donated), the former believing that the latter was the source of the broadcast appeal and the latter believing the same about the former. The issue appears to have been intensified when Lake Charles residents started trying to have their fans returned." (A, p. 79)

c. "No less than five law-enforcement groups were operating in the general area: The State Police, the Sheriff's Departments of Calcasieu and Cameron Parishes, the Civil Defense Police, and the Lake Charles Police. Three or four of these groups were operating, at least occasionally, in the same area. When the pass system was set up, late Saturday or Sunday, three of the agencies (State Police, Calcasieu Parish Sheriff's Department, and Civil Defense) were authorized to issue passes. The inevitable happened: an instance occurred of one agency refusing to honor the passes of another, creating a problem which had to be 'ironed out' at higher levels." (A, p. 77)

d. "It is fair to say that local Red Cross chapter informants indicated definite negative attitudes toward local Civil Defense. To what extent this was a function of relations between the two organizations beyond the local scene, the investigator is unable to say. However, there were - and are - two or three factors in the local situation which are worthy of comment. First, although formal relationships existed between the two organizations prior to hurricane Audrey, it seems fairly evident that little had been done to implement them. For example, the Director of Welfare

III-CD-18
Services for Civil Defense had been a member of the chapter staff. She was replaced in late March, 1957, by the Director of the Parish Welfare office pursuant to an agreement made at the state level, and although the latter was a member of the Board of the Local Red Cross Chapter, little or nothing was done to bring the two organizations closer together. Second, a well-known local citizen had assumed responsibility as Red Cross Disaster Chairman some three weeks before the hurricane. Red Cross informants said that he had visited Civil Defense about two weeks before the hurricane to try to learn something of the division of responsibility between the two groups, but that "all they did was throw a bunch of directives" at him. The possibility of personality conflicts in this situation should not be overlooked. Finally, there is some reason to believe, although the investigator cannot adequately document this, that here is a certain amount of covert conflict between Civil Defense and the Calcasieu Parish Sheriff's Department as to who should control a disaster situation. In this conflict certain important Red Cross chapter officials tend to give their allegiance to the Sheriff."

(A, P. 89-90)

4. Use of non-organization members for work of organization: "As one civil defense informant said, "There were lots of volunteers who had not worked with Civil Defense before; they weren't much good."" (A, P. 88)

The Calcasieu Parish Civil Defense provided general instructions for, "a considerable number of small boats, owned and manned by volunteers...." (A, P. 55)

5. Effect of the emergence of informal organizations on organizational activity: no data

6. Effect of role conflict on organizational activity: no data

7. Relation of organization to governmental units active in disaster: "The Mayor himself was apparently strongly oriented to the local Civil Defense organization." (A, P. 85)

E. Other

"To a considerable degree the major 'outside' organizations other than Red Cross seem to have been oriented to the local Civil Defense unit....That the Louisiana civil defense agency and F.C.D.A. should have been oriented to the local organization is, of course, to have been expected, but this also had the effect of tying National Guard (in Louisiana the head of the State Civil
Defense Agency is also head of the National Guard) and Army activities into Civil Defense... The result of these relationships was that the local Civil Defense organization was in a particularly strategic position to secure aid from the outside organizations. (A, p. 63-65)
XI. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
1. Name of organization: Red Cross (all levels)
2. Type of organization: Manifest

B. Organizational Description
1. Organizational goals and activities: no data
2. Organizational character: no data
3. Organizational complexity: "The National Red Cross pattern of organization for its activities was to establish the overall operational headquarters for the entire area affected by Audrey - twenty parishes in Louisiana and four counties in Texas - in Lake Charles. The total area was then broken down into four sub-areas with headquarters in Port Arthur, Texas, Crowley and Abbeville, Louisiana, and one in Lake Charles, which handled cases from Calcasieu Parish as well as those from Cameron."

"The Director of Operations described other aspects of the organizational concept and its functioning in this manner:

"We had the headquarters of the operation here with our hands on the other three areas. They were staffed to roll as self-contained units with a minimum of contact from this office. We had a Director, two Assistant Directors (of operations) and a Director and Assistant Director of Family Service....."

"We didn't know what the pattern would be at the outset. You have to tailor-make it to fit the disaster. Feeding was a big thing from the beginning....It (the storm) wasn't just an Cameron community; as we learned more, we saw there were different communities. We started sending teams of functional people into those communities. We had five at first, but consolidated to three....."

"We saw that Lake Charles had only superficial damage; the big job was in Cameron. The administrative headquarters could be a sort of rear echelon support for supply, accounting, personnel, and supervision, but the operation was down there; we had to decentralize our people to work with families....."

(A team was made up of) a person in charge - he was not an area or sub-area director at the beginning; we wanted to keep it "fluid" - he made contacts, looked after the mass feeding; a nurse; and one or more case workers. These were the original crews." (A, PP. 104-105)

"Although the local chapter has its headquarters in Lake Charles, it is the Calcasieu-Cameron chapter." (A, "P, 36)
G. Organizational Activities During Disaster

1. Resources of organization during disaster: "a National Red Cross official has described the convergence of personnel of his organization as follows: 'As the storm comes in, you begin to move your forces, but you have to keep it spread - the storm can burn on you. But you begin to move in as depth toward a mobilization point for assignment.'" (A, p. 46)

2. Special problems of organization: The local Red Cross chapter had difficulty getting supplies from the Civil Defense warehouse because the request had to be cleared through the regional Civil Defense office. A local Red Cross official made the following comment: "...what's the warehouse for? What's an emergency if this wasn't one? ...I started early Thursday morning trying to get eats from that warehouse. I talked with folks in Atlanta, to Civil Defense here. They had to clear it with Dallas, Texas. We finally got 5000. We needed more, and I couldn't get them even when I said that Red Cross would be responsible." (A, p. 36)

According to a Red Cross official: "A radio appeal went out for clothing, food, and fans...No one was set up to answer what went out..."

"Then came this deal with 'red clothing.' People would carry out big piles and dump it (at Colissa): we had to dump it; it wasn't sorted or anything. They would bring food out and dump it. We weren't able to use the donated food at Colissa. Then we closed up out there, we had to move 8 truckloads of food. Contributions of large quantities in an organized fashion are wonderful, but not a dozen eggs."

"They said we wanted fans; that didn't originate with Red Cross. In the first place there was no place to plug them in. But people would bring them out and drop them. We had truckloads of fans out there." (A, p. 79)

"Despite the many radio calls operating, some organizations did not have direct communications channels to the impact area. Red Cross is an example. It depends on the Calcasieu Parish Sheriff's Department and Civil Defense for the information. A local Red Cross official said..."
"Something of the intensity of the Red Cross evacuation in this situation is suggested by an additional quotation from this official: "Never again will we leave evacuation centers on another agency for transportation and communication." (A.P., '76)

"Local Red Cross officials have attacked the mass evacuation in Lake Charles almost bitterly. One has referred to it publicly as a 'bizarre movement': mass hysteria." Another has called the opening of the schools 'stupid,' and added that, "The schools were not as safe as homes." Both have pointed to the collapse of the auditorium of a school at Grand Lake (in which no one was injured) as the sort of thing that might have happened in Lake Charles. One factor which probably had influenced this position is that Red Cross, at least temporarily, 'lost control' of the shelter situation. The number of buildings opened as shelters was far in excess of what Red Cross had contemplated. One chapter official described the situation thus:

"Before it was over, 27 buildings reported to us with over 13,000 people. It takes about six people to staff a shelter: a shelter manager, nurse, registration person, food, etc. - six in each is a minimum. We couldn't staff all of them. Civil Defense was evacuating people; others were evacuating themselves. The wind was blowing. Buildings were opened, and people just went in. I have a list of 27 somewhere. We tried to keep up with the number so we could get food out." (A, PP. 42-43)

With respect to the communications blackout in Cameron, "One local Red Cross official (Lake Charles) described another as being, '...as familiar with that (Cameron) area as you are with your own home town. He was bursting in pieces because he didn't know what was happening, and there.'" (A, p. 38)
Some problems were summarized by one informant as follows:

"...One was the refugee nature of the Cameron part; another was the distance involved. "We had to wait for the water to go down, and then there was a public health problem: the dead animals, the condition of the wells. All business was at a standstill. There were...problems I've never seen before. (The Director of Family Service)...has been at this for 27 years, and she hasn't seen it before. Others with 20 or 22 years experience had never seen it. All of them have seen parts of a community destroyed, but a whole community — actually a series of communities, the fact that there were just two roads, the Intracoastal Canal which often blocked movement, the way of life of the community and virtually of the Parish having to be rebuilt from the ground up.

"Just trying to make contact (with survivors) was a problem. Some would keep you advised once you had made contact, and some wouldn't. If a case worker couldn't find a family here, she would go down (to Cameron Parish). Maybe they were there yesterday, but not today..."

"The general conditions were like combat; at first we had to haul water in for a safe drink." (A, p. 105)

"Under Public Law 875, prevailing wages in the disaster area prior to disaster are supposed to be the basis for determining wages. This policy was not followed in the Audrey disaster, and such failure is believed by local businessmen to have resulted in delaying private enterprises in returning to business. This condition affected the operation of the Red Cross in the area. They could not end their mass feeding program until grocery stores and restaurants were opened." (C, p. 35)

It was difficult for Red Cross to follow its usual procedures. "Among the complicating factors in the Red Cross operation were the following. First, Red Cross chapter headquarters for the Cameron Area were located in Lake Charles, and it was here that rehabilitation headquarters were initially established. This was between 30 and 70 miles from the center of the disaster area where the case work for rehabilitation had to be done. Second, the disaster area itself was more vast and more inaccessible than usual, covering 2,200 square miles of marshland and Chenier country. Third, Red Cross workers who were, for the most part, of urban
middle class backgrounds, were ill prepared to cope with the South Louisiana rural environment which included not only strange geographic features but an unfamiliar cultural landscape. Among the features of the cultural milieu which complicated the Red Cross's job were the French language spoken by many victims as their mother tongue, the informality of social organization, and the customs related to mutual aid in the area. The financial habits and customs of the area also presented special problems to Red Cross workers. Especially puzzling was the fact that many persons who appeared by urban standards of speech, dress, and manner to be of low socio-economic status were in reality quite well-to-do financially and quite high in status in their own community. Also complicating the work of the Red Cross was the intricate system of kinship relations which made secrecy of relations between the Red Cross and its clients impossible.

"As in all major disasters, the Red Cross established a committee of prominent local citizens to act as a decision-making body on the distribution of aid. This committee included most of the elected officials of the parish as well as representatives from the individual communities of the area affected by the storm. According to Red Cross officials, particular difficulty was encountered in finding leaders to participate on this committee from one of the communities where there appeared to be no definite pattern of leadership which could be discerned." (C, p. 36)

"The responsible officials in the Red Cross chapter were not drawn from the disaster area, and therefore did not have the advantage of intimate knowledge of the workings of the Cameron social system. Thus one of the principal advantages to the Red Cross of having local volunteer workers in charge of various activities was lost at the outset. This buffer between the national organization and its policy and local practice and custom was not present in the Audrey disaster because the Red Cross was a Lake Charles chapter and not a Cameron Parish one." (C, p. 37)

3. Organization change during disaster: "Although a national official said, "There is local responsibility for the emergency period," it is the writer's impression that something of a division of responsibility occurred, with local officials largely handling the problem of supplies to Cameron and national officials to a considerable extent taking over the shelter function with an eye on its relationship to future rehabilitation work....(The) national officials who directed the Audrey operation appeared to be extremely aware of and sensitive to the local chapter....On several public occasions the Director of Operations paid tribute to the local
officers, and he said in an interview that when national finally assumed full control of the operation, '...we made sure that the chapter felt we weren’t taking it away.' The transition to full national control was completed on July 3rd, with the opening of a headquarters for the rehabilitation program. The appeal for funds, which was announced in the Lake Charles paper on Tuesday, was, of course, left in the hands of the local chapter." (A, p. 103)

4. Evaluation of disaster activity: "Both the (Disaster Advisory Committee) and the Red Cross were criticized on the basis of (beliefs concerning unfair distribution of awards). Without exception, however, the nine persons who served on the committee said that the Red Cross did an excellent job in Cameron and was unfairly criticized. Only three of the 25 community leaders interviewed, including the nine committeemen, were critical of the Red Cross. It was apparent to interviewers that almost all people who were in a position to know the details of the Red Cross rehabilitation effort were in sympathy with it. This does not mean, however, that they were pleased with their roles in the process. On the contrary, every person who had served on the Red Cross committee said he would never want to be in a similar position again."

"The extent of critical evaluation of Red Cross efforts may be roughly estimated from responses to the family interview schedule. Of the 61 families interviewed, 18 were completely negative in their opinions of the Red Cross work performed after Audrey, four were neutral, and 28 were positive. Eleven gave no indication of their attitudes. Of the 28 who were generally positive in their attitudes, 19 mentioned other peoples’ dislike for Red Cross procedures or mentioned that they believed that distribution of aid had been inequitable."

"A total of 23 of the 61 interviewees stated the belief that some people got more than they deserved and others got less. Interestingly enough, by far the largest number mentioned cases of people getting too much aid as compared to others, and only a few cited cases of persons who did not get aid but deserved it."

"Only six of the 61 families interviewed specifically mentioned the advisory committee critically. None, however, mentioned it favorably, although favorable comments were possible..."

"The source of resentment toward the Red Cross was the fact people were subjected to case investigations and had to answer a lot of questions and fill out a lot of forms. These formalized procedures were unfamiliar to people in Cameron Parish and apparently were negatively associated with being on relief or welfare." (C, p. 51-52)
"As is often the case in disaster situations, Red Cross enjoyed a good press while being the subject of all sorts of adverse rumors, usually on informal group levels. The investigator was told that Red Cross held up for hours several truckloads of supplies destined for the stricken area, that Red Cross personnel refused to give cigarettes to rescue workers, etc. What is considerably more important is that the reputation of Red Cross on these informal levels was such that it produced very definite public relations problems for the organization. Although the investigator cannot document one story of a large sum of money being sent into the area for rehabilitation with instructions that it not go to Red Cross, the story of a nearby community that started its own "relief campaign" because of local feeling about Red Cross can be documented (see A, p. 106 for details)." (A, p. 106)

"When food...(for the shelters) was not forthcoming as rapidly as some thought it should be, Red Cross tended to get the blame." (A, p. 43)

D. Organizational Activities in Emergency Social System

1. Existing plans for cooperation with other organizations:

"A Red Cross southeastern area official stated that, "When we hear that a hurricane is coming in, we keep in close touch with the Weather Bureau," and suggested that this procedure was followed with reference to Audrey." (A, p. 21)

"A Red Cross informant indicated that additional phones were installed in the chapter house...and commented that, "(a) hot line or whatever you call it from Civil Defense to Red Cross was installed: The one where when you pick up the phone at one end, it rings at the other."" (A, p. 26)

The following comment was made by a small business administration (which acted as a loan agency after Audrey) informant:

"We work closely with Red Cross this way. When they get into rehabilitation, we sometimes refer disaster victims to them, and they refer them to us. We might find a man whose home was totally destroyed. He has a moderate income, a good-sized family, and all he has left is his lot. His earning capacity won't justify the loan he needs. We try to work out a deal with Red Cross for an award, and we will loan him the rest. It's the same with the small businessman; Red Cross might make him a grant to pay his old bills and debts, and we put him back in business. We talk back and forth with the caseworkers and try to work out something he can carry without breaking his back. Some cases are strictly Red Cross; some are ours without Red Cross; some are in between." (A, p. 125)
2. Communications networks - existing and emergent: On the evening preceding the storm's impact Red Cross, "... requested Cameron to maintain communication through the night; to make it known if they wanted anything from Red Cross." (A, P. 35)

3. Competition and conflict with other organizations; see Civil Defense, Section D5(d).

4. Use of non-organization members for work of organization:
   "A committee (Disaster Advisory Committee) composed of prominent citizens from each of the disaster communities was formed to assist Red Cross officials in awarding assistance to each applicant."

   "Red Cross caseworkers collected information on each case and presented it to this local committee along with their recommendations. Committee members discussed the case and added personal information and recommendations. Their opinions were considered and they affected decisions governing the amounts of assistance given." (C, P. 37)

   "On the committee in Cameron were all the elected officials of the parish plus representative leaders from each of the affected communities. It was in the work of this committee that the formalized procedures of the Red Cross came in most direct contact with the informal traditional ways of operating which were characteristic of Cameron Parish. It is obvious that the committee was designed to act as a buffer between the Red Cross and the public by placing at least nominal responsibility for decision-making on the shoulders of local people." (C, P. 48)

   "The major Red Cross functions in the emergency period were the provision of supplies and the operation of evacuation centers and shelters. Food and water in particular were sent into the area by transportation furnished by Civil Defense and by the Sheriff's Department. A local Red Cross official described the relationships in this manner:

     "Every order was approved by... (The Disaster Chairman) or me... We made them out on duplicate sheets of paper. Civil Defense would send a truckdriver; we would give him the top one and keep the other... We had a number of volunteers at the chapter house... Civil Defense would send a truck, and we would send some of the volunteers to help load it at the warehouse. The people who owned the warehouses were opening them up themselves..." (A, P. 61)

   "Since insufficient professional Red Cross workers were on hand initially, interviewers were secured from the local Welfare Department by an arrangement worked out before the Red Cross Family Service Director for the operation and the Director of the local Welfare Department."
Effect of the emergence of informal organizations on organizational activity: no data.

Effect of role conflict on organizational activity: "Members of the Disaster Advisory Committee, Cameron. See Section D of this outline) were quick to realize they were in for trouble with their peers, and various committee members reacted in different ways. At least two elected officials immediately realized that they were being placed in a position of accepting public responsibility for the way Red Cross aid was to be distributed, and that, furthermore, the policies governing the distribution of aid would be hard if not impossible to explain to the people of Cameron, who were used to the personal touch, characteristic of their traditional mutual-aid familism. These officials decided to accept the risk as part of the fortuna of political life and responsibility. Others took steps on the basis of similar judgments to disassociate themselves from such responsibility.

"Local leaders who took part in the advisory committee's activities were caught between two sets of expectations. On the one hand, they were conscious of their responsibility to the Red Cross for carrying out (their)...policies. On the other hand, they were aware of the traditional expectations of the people. Red Cross policy emphasized impartiality in applying the principle of need in distributing aid. The traditional values of the people emphasized loyalty and obligation to kinsmen and neighbors. Persons who were relatives of or life-long friends and neighbors of committee-men expected special consideration, and many were extremely critical when they did not get it...."

"It can be seen that committee members were expected by at least some of their constituents to keep quiet, or to aid in getting Red Cross assistance when, according to the criterion of need, it was not warranted. On the other hand, at least some of the committee members felt strongly that such attempts to make fraudulent claims were reprehensible. All committee members who were interviewed, judging from their own accounts, suffered anxiety over having conflicting expectations placed upon them. It is quite apparent that role conflict was experienced in severe form by all committee members."

(See Section on Generalizations and Hypotheses for distinctions between role conflict, role frustration, role inadequacy, and role saturation) due to the vastness of the disaster area and the state of partial evacuation which prevailed for weeks and months. Case records were difficult to secure.

III-FG-9
because families were hard to locate and because a great deal of travel was necessary. Temporary quarters set up in creoles in a tent proved frustrating also because of the lack of privacy for interviewing clients and the absence of proper facilities for handling the paper work involved."
(C, P. 58)

7. Relation of organization to governmental units active in disaster: no data.

8. Other: no data.
I. BASIC INFORMATION

A. Characteristics of Disaster

1. Event: Hurricane
2. Date-Time: June 26, 1957; between 8 and 9:00 a.m.
3. Locations: "...a complete history of Hurricane Audrey would place primary emphasis upon the havoc wrought in Louisiana but the confines of this study demand that the effects of this particular disaster be examined only with regard to the way they affected Texas." (P. 171)
4. Damage
   a. Number killed: In Cameron and Vermillion Parishes between 400 and 500. "The exact number of casualties will never be known." "Eleven deaths in Texas and two in Mississippi were attributed to the hurricane." (P. 170)
   b. Number injured: no data
   c. Physical damage: "The total damage attributable to this hurricane is estimated at approximately $150,000,000; $8,000,070 in Texas, $9,000,000 in Mississippi and the remainder in Louisiana." (P. 170). See p. 172 for damage breakdown by city.
5. Cause: not applicable
6. Unique Aspects: none

B. Methodology

1. Principal Research Agency and/or Personnel: Billy G. Crane
2. Source of Data
   a. Number of interviewees: 13 specified. In addition, "Personnel interviews with numerous members of the staff of Federal Civil Defense, Region Five Headquarters, Denton, Texas." (PP. 322-323)
   b. Number of questionnaire respondents: none
   c. Time lapse between disaster and data collection: unspecified
   d. Other: Public laws, Public Documents, Books, articles and periodicals, and unpublished material. (PP. 317-321)
3. Sample Plan: unspecified
4. Other Methodological Comments: none

C. List of All Organizations Involved and Their Activities During Disaster
See Section D

D. Emergency Social System

Monday, June 24, 1957, the Weather Bureau requested the United States Navy to assign two planes to make reconnaissance flights into a "Tropical depression" (a storm with winds less than forty miles per hour) over the Gulf of Mexico 350 miles southeast of Brownsville, Texas and 525 miles due south of Lake Charles, Louisiana. During one of the routine flights the night of June 24, the pilot discovered the storm had winds near its center ranging up to seventy-five miles per hour with "ales extending outward for a radius of one hundred miles. This qualified the depression to wear the title of hurricane" which, being the first of the
season, was named Audrey. The hurricane’s forward rate of progress at first was a slow seven miles per hour but it soon gained speed, striking the mainland Thursday morning, June 27, and finally coming to an end over Lake Erie Friday night, June 28. Thus, the population of the affected areas had almost sixty hours from the time of the Weather Bureau’s first formal recollection of the hurricane until it struck to prepare for the onslaught.

The New Orleans Weather Bureau station issued the first bulletin relating to the storm at 10:37 p.m., Monday night, June 24, 1957.

* * *

The Weather Bureau issued Advisory Number 1 for Audrey at noon, Tuesday, June 25. This was the initial announcement of a hurricane watch and the statement was repeated throughout the day at six-hour intervals. The Weather Bureau in Austin, Texas relayed this information immediately to the State Civil Defense Office and to the Department of Public Safety Headquarters. William L. McGill, State-Coordinator of Defense and Disaster Relief, notified FCDA, Region Five, Denton, Texas and the governor. The Department of Public Safety, in turn, sent the message to all state agencies and to public officials in the area deemed to be vulnerable. From its first indication, Hurricane Audrey was plotted at regular intervals each day and night by the Department of Public Safety communications division and by the State Disaster Control Center after its activation Wednesday, June 26.

The advisories issued by the Weather Bureau Tuesday, June 25, were received in the Region Five, FCDA Headquarters in Denton, Texas. The first positive action by the regional office in regard to Hurricane Audrey was the order given by William Crockett, Deputy Regional Administrator, to the Operations Control Office authorizing the activation of the headquarters’ control center. After careful and constant observation of the situation, it appeared that such action was necessary. It was further requested that the course of Audrey be charted on maps throughout the period of its activity.

...the Weather Bureau requested the aid of the Coast Guard in distributing its advisories to groups likely to have missed them when announced on the radio or on television. During Tuesday, June 25, planes from the Coast Guard Air Detachment, Corpus Christi, Texas flew reconnaissance missions from their base up the coast to the Louisiana border. The pilots dropped copies of the latest Weather Bureau advisory to isolated groups and also determined concentrations of fishing vessels off the coast for a
distance of 150 miles, radioing this information back so that contact could be completed. During the night of June 25, local Civil Defense, aided by the Coast Guard, evacuated some families from the lower end of Bolivar Peninsula across from Galveston as a precautionary measure because it was feared high water would undermine the only bridge and would, therefore, isolate this resort area.

The New Orleans Weather Bureau first changed its advisories from those announcing "hurricane watch" to those declaring "hurricane warning" in its regular advisory at 10:30 a.m., Wednesday, June 26, 1957-twenty-two hours before Audrey's center crossed the coastline. "Hurricane warnings were issued for the entire Louisiana coast and for the Texas coast as far south as Galveston, which meant that this particular area would feel the full effects of the storm, necessitating all possible precautionary action.

* * *

As soon as the Weather Bureau officially decided that storm conditions warranted the issuance of hurricane warnings, the Regional Office, FCDA, Denton, Texas took immediate steps to fulfill its primary responsibility of co-ordinating the activities of national agencies most likely to be called upon for assistance. The Region Five Operations Control Center was fully activated one hour before Hurricane Audrey struck the coast. The National Disaster Office in the national headquarters, Battle Creek, Michigan, was kept fully informed on the progress of Audrey. This office had been on a seven-day-a-week alert since May 1, 1957, because of severe weather constantly plaguing the nation. Billy Cox, Assistant Federal Liaison Officer in the Regional Office, used the direct-line telephone communications system in the regional office to contact all primary national agencies within the state to advise them of the impending disaster, to alert them to prepare for emergency action, and to request a summary statement from each agency in regard to available supplies, equipment and personnel. The Agricultural Marketing Service replied that surplus food commodities primarily for school lunch programs were available for use in the area threatened by the disaster upon receipt of requests from a threatened disaster agencies. The Small Business Administration informed the FCDA Regional Office that the non-adversely affected counties already had been declared eligible to receive loans from the agency because of previous severe weather ...

The General Services Administration answered that surplus property would be available upon request and that it was placing two of its engineers on a standby basis subject to call, if needed. The Department of Health, Education and Welfare ordered two vector control engineers to be ready at all times to move into the threatened area. Similarly, two engineers from the Housing and Home Finances Agency were ordered to stand by constantly. Several other national agencies were alerted by the FCDA Regional Office and reported the state of their preparedness to render assistance if called upon.
Mattie Treadwell, FCDA Survival Plan Co-ordinator for Texas, had been in Austin for several weeks prior to the warnings of Audrey's approach. She had been devoting her entire time to the fulfillment of her temporary duties as Task Force Co-ordinator for the numerous FCDA teams throughout the state. She moved to the State Disaster Control Center immediately following its activation, immediately following the first alert. Miss Threadwell performed the vital functions of keeping the Regional Office informed on all developments and of representing the Regional Administrator in the necessary processes of decision making.

In accordance with formal agreements between the Department of Defense and FCDA, requests for military assistance were co-ordinated through the Fourth Army Headquarters in San Antonio, Texas. The Regional Office was kept fully informed in regard to the activities of the military services during the entire course of Hurricane Audrey. "Warnings, evacuation, rescue, and sheltering procedures on the part of the Coast Guard account for the greater part of these activities. Coast Guard reconnaissance flights originating from Corpus Christi were initiated as soon as hurricane warnings were issued. The Coast Guard base at Sabine Pass, Texas - being in the middle of the threatened area - devoted its full efforts to disaster activity. At the time of Hurricane Audrey's appearance only fifteen officers and men were stationed at this base. Under standing regulations applying to all military forces, these men had the responsibility of passing weather bureau warnings on to the people. The officer-in-charge assigned two vehicles with two men each to the task of arousing the citizens and giving word-of-mouth warnings. The task was performed throughout most of the night preceding the arrival of the hurricane. The men were given typed copies of the latest weather advisories which they left for distribution at key points. In addition to warning individuals, they informed the owners of all business concerns of the impending danger. The Coast Guard is without authority to enforce evacuation but did bring ten people caught without transportation back to the base for the duration of the storm. Approximately forty other evacuees sought haven at the Coast Guard base during the hurricane. These civilians were given sleeping accommodations and five meals by the Coast Guard. The officer-in-charge maintained radio contact with the District Headquarters of the Department of Public Safety in Beaumont, the Jefferson County Civil Defense Control Center, the sheriff's office, and the Fort Arthur Police Department during the warning phase of activities. Failure of the generator, however, prevented coordination between the Coast Guard, state patrolmen and local officials. The Sabine Pass base is now equipped with an emergency generator.\n\nI-4
Although the Fourth Army Headquarters in San Antonio remained alert for possible requests of assistance, the activities of the Coast Guard represent the role of the military in the pre-impact phase of this disaster with one minor exception. The Fourth Army, in response to a request from the Red Cross in Port Arthur, sent 500 cots with blankets, which arrived by truck from Fort Polk, Louisiana the night before the hurricane struck.

Local Red Cross chapters in the threatened area co-ordinated their efforts very closely with local civil defense groups and private relief agencies throughout the course of Hurricane Audrey. During the pre-impact phase the Red Cross concerned itself primarily with arranging temporary shelters for evacuees and planning their care and feeding while the disaster was in force. Several Red Cross volunteers aided local civil defense workers in evacuating persons around the Sabine Pass area. The entire Red Cross organization in the threatened area was alerted for full participation in coping with the disaster. Ralph Husted, Red Cross State Representative, sent several trained disaster workers into the threatened area to co-ordinate efforts.

* * * *

State Disaster District 7 (22), with headquarters in Beaumont, suffered the brunt of the hurricane as it affected Texas. Captain Moore, Disaster Liaison Officer, has no direct communications connection with the Weather Bureau network but is dependent upon the State Headquarters of the Department of Public Safety and the local Weather Bureau Station at Beaumont for his information. However, this potentially dangerous procedure served adequately in this instance to warn his office of the approach of Hurricane Audrey. Moore spent the night before the disaster in his control center, co-ordinating the preparations for its arrival and gathering vital information for use by the state officials in Austin. At 10 p.m., Wednesday, June 23, he sent his units into the areas supposed to be affected. The local civil defense organizations and the Coast Guard were busily warning and evacuating people and the state patrolmen were assigned to the task of insuring that no one had been missed. Moore received constant reports from all those engaged in warning procedures and blocked out the areas covered on maps in his office. Thus, he was able to make certain that a thorough job was being done. By midnight Moore had become convinced that his personnel would be inadequate during the impact phase of the disaster; so he called the district headquarters of the Department of Public Safety at Lufkin, the adjoining district to the northeast, requesting additional units to be assigned to his jurisdiction. This additional aid was approved at once by the state headquarters. The Highway Patrol units used loud speakers, when available, to inform the populace of the impending danger. All cars are now equipped with loud speakers. The patrolmen worked in conjunction with local officials and private citizens in warning
processes as these people knew their area best. Because of its vulnerability to isolation, one patrol unit was assigned to High Island for communications purposes with orders to remain there even if completely stranded. "When asked about duplication of effort in warning procedures, "Moore replied that if the Coast Guard went over an area once, then the local civil defense personnel, and finally the state patrolmen, the people would probably become convinced that evacuation was the correct step to take and, furthermore, few individuals would be missed in the warning process.

A few hours before the hurricane struck, Moore began to fear the possibility of a power failure at his headquarters. He communicated, on telephones, with J.S. Fletcher, Assistant Director of the Department of Public Safety, and requested a mobile communication unit with auxiliary power equipment be sent from Austin.

As soon as his office received the first Weather Bureau advisory declaring a hurricane warning, Moore contacted all the local civil defense groups within his district, the Red Cross, the district headquarters of the Highway Department, and the local representative of the state Welfare Department. He did not contact national agencies since national aid was not considered necessary during this phase of the disaster.

Moore also remained in frequent contact with the Sabine-Neches Chiefs Association, a private disaster group composed of the fire chiefs and plant protection chiefs of the numerous industrial plants in the region. This organization plays a vital role in civil defense and disaster planning in this highly-industrialized part of the state.

* * *

The Jefferson County Civil Defense organization went into operation shortly after the first hurricane warning advisory was issued by the Weather Bureau. The Jefferson County Civil Defense Director, George Gary, was in Chicago during the course of Hurricane Audrey and it is to the credit of his office that his very able secretary, Mrs. Theda Patterson, was able to activate the control center and carry on all the functions of the organization. Art Woldorf, chief meteorologist at the Weather Bureau station located at the Jefferson County Airport adjacent to the civil defense control center, called Mrs. Patterson and requested that she open her headquarters in view of the severe weather and high tides predicted. Mrs. Patterson called in several persons most directly concerned with civil defense and disaster activities: County Judge James A. Kirkland, Chairman of the Jefferson County Civil Defense Council; James Carter, Director of the Red Cross at Port Arthur; C.W. Wilson, Jr., President of the Sabine-Neches Chiefs' Association; L.D. Reed, Chief of Plant Protection at Neches Butane Products; Jerry McNeill, Co-ordinator of Civil Defense at Nederland, Texas; Jake Owens, Manager of the Jefferson County Airport; and County Commissioners T.B. Ellison and Lamar Lawson. These people remained
in the control center the entire night before the disaster occurred, mayors and local civil defense co-ordinators were in and out of the control center throughout the eve of the hurricane.

Advised by the Corps of Engineers, the local civil defense groups had ascertained, two months before Audrey arrived, that the lowest spot along the northeastern Texas coast was at the mouth of the Sabine River. This locality measures only 3.8 feet above sea level, waves measuring up to ten feet were predicted to accompany the hurricane as it blew in. The group assembled at the disaster control center studied the weather reports, discussed the situation, and decided that Sabine Pass would have to be evacuated. No one person arrived at this conclusion; it was a decision resulting from group discussion. Plans were initiated to have the Coast Guard, Department of Public Safety, Port Arthur police, and local law enforcement officers at Sabine Pass warn the inhabitants and assist them, if necessary, in evacuation.

Meanwhile, Mrs. Patterson was adhering to the pre-arranged routine of alerting all parties concerned of the impending danger. This procedure has already been described in regard to preparations taken during a tornado alert. She used the radio communications system to contact all mayors, local civil defense co-ordinators, hospitals, schools, Red Cross units, etc. She ascertained which schools could remain open for shelter purposes and passed that information on to Red Cross officials in the threatened communities. She was, of course, in constant contact with the District Disaster Office at the Department of Public Safety Headquarters in Beaumont, informing the personnel there of her actions and plans. Her office, in this respect, served as a clearing house for the flow of information between the District Disaster Liaison Officer, Captain Moore, and the local disaster groups. Communications sent to the State Control Center by Mrs. Patterson were handled through Moore's office.

The Civil Defense organizations in Chambers, Orange and Galveston Counties were alerted and their control centers activated as well. The city civil defense organization established headquarters at Port Arthur under the supervision of the fire chief. Working in close cooperation with the county and state law enforcement personnel, this group was very active in evacuating the Sabine Pass area. Also, in Port Arthur, eleven Red Cross, Salvation Army and other civilian organizations were mobilized, since this city of 60,000 is virtually at sea level, with elevations ranging in heights of from only three to ten feet. The well-organized Galveston County Civil Defense organization was alerted by the State Control Center and it, in turn, alerted all the local emergency organizations throughout the county. The various units of the county organization under their co-ordinators operated on a standby basis and were called as the need arose. These units handled such problems as transportation, medical aid, auxiliary police, and communications. More than 500 citizens were evacuated by civil defense groups in Galveston County. The County Control Center remained in constant contact with the State Highway Department and with Department of Public Safety offices in Houston, Texas City and Beaumont. (PP. 72-92)
E. Community Context
No data
II. GENERALIZATIONS AND HYPOTHESES

None
XII. SPECIFIC ORGANIZATIONAL ANALYSIS

Insufficient data on any organization.
I. BASIC INFORMATION

A. Characteristics of Disaster
   1. Event: Hurricane Esther (p. 1)
   2. Date-Time: September 16-19, 1957 (p. 1)
   3. Location: Southeast Louisiana coast, Northward up the Mississippi Valley (p. 1)
   4. Damage:
      a. Number killed: "several deaths attributable to the storm have been reported" (p. 1)
      b. Number injured: no data
      c. Physical damage: "Preliminary reports show no extensive or severe losses from the storm" (p. 1)
   5. Cause: none
   6. Unique aspects: none

B. Methodology
   1. Research agency: Weather Bureau
   2. Source of data: "texts of advisories and bulletins issued by Weather Bureau offices concerning this storm" (p. 1)
   3. Sample plan: no data
   4. Other: no data

C. List of Organizations involved and Their Activities During Disaster: no data

D. Emergency Social System: no data

E. Community Context: no data
GENERALIZATIONS AND HYPOTHESES

None
III. SPECIFIC ORGANIZATIONAL ANALYSIS

Insufficient data on any organizations
I. BASIC INFORMATION

A. Characteristics of Disaster
   1. Event: Blizzard (Snow)
   2. Date-Time: March 19-21, 1958
   3. Location: Morgantown, Pennsylvania (Pa. Turnpike)
   4. Damage:
      a. Number killed: 1 (p. 13)
      b. Number injured: None
      c. Physical damage: None
   5. Cause: Not applicable
   6. Unique aspects: About 800 stranded in restaurant for 36 hours. (p. 1)

B. Methodology
   1. Research agency and/or principal research personnel: Disaster Research Group, National Academy of Sciences - National Research Council (Charles E. Frit, Samuel L. Guskin, and Jeannette F. Rayner)
   2. Source of Data:
      a. Number of interviewees: 11 (p. 1)
      b. Number of questionnaire respondents: None
      c. Time lapse between disaster and data collection: One week. (p. 1)
   3. Sample Plan: No specific plan followed: "On March 26, five persons were interviewed at the scene of the incident. All were employees of the restaurant or adjacent gasoline station, and had been involved in the shelter situation. They were the manager of the restaurant, his assistant manager, a waitress, a kitchen worker, and the manager of the gasoline station. On March 27, interviews were obtained at offices or homes in Lancaster, Marietta, and Middle town, Pennsylvania. The persons interviewed were: a physician, who had been active in organizing the shelter group; his wife, who had also been active in the shelter situation; three Air Force helicopter pilots, who had been active in rescue activities and also in leadership activities; and one newspaper reporter, who had been flown in to the scene by helicopter." (p. 9)
   4. Other methodological comments: Interviews, "were unstructured and were aimed at obtaining information concerning the restaurant as a shelter facility, i.e., it's provisions and resources; the sequence of events in the shelter; and such matters as: a. The population of the shelter, its skills and weaknesses. b. The development of organization, leadership and self help. c. Expectations concerning duration of stay in the shelter. d. Information and communication problems and solutions. e. Reactions to crowding, confinement, and lack of privacy. f. Reaction to possible crucial shortages." (pp. 9 & 10)

C. List of Organizations Involved and Their Activities During Disaster
   1. Howard Johnson Restaurant: Provided the physical shelter; prepared and distributed food during confinement period. (p. 7)
2. Olmstead Air Force Base, Middletown Pennsylvania: Evacuated an ambulance patient and a cardiovascular patient by helicopter and flew in medical supplies and bread. Provided a helicopter which kept up more or less continuous liaison between restaurant and external rescue operations.
   a. Removed body of dead man to Navel Air Station, Willow Grove. (P. 12-13)

3. State Police: Reached the restaurant Friday morning shortly after 4:00. (P. 14)

4. Turnpike authority: "Dr. L., initiator of group organization in the restaurant, talked by telephone with Secretary S. of the Turnpike Authority who assured him that a maximum effort would be made to get the people out of the restaurant. (P. 15)

5. Other turnpike restaurants: Sent employees to relieve employees of this restaurant who had worked 50 hours straight and were tired. (P. 18)

D. Description of Emergency Social System

Wednesday, midnight to Thursday, 5:00 a.m.: "An increasing number of cars, trucks, and busses were becoming immobilized. Many people spent the night in their cars. An estimated 60-150 people spent the night in the restaurant or had arrived by 5:00 a.m."

By Thursday evening about 800 persons had sought refuge in the restaurant.

Thursday, 1:00 or 2:00 p.m.: Organization of the refugees began. The leader of the refugees talked by telephone with the Secretary of the Turnpike Authority who assured him that a maximum effort would be made to get the people out of the restaurant.

Thursday, 3:00 - 5:30 p.m.: Olmstead Air Force Base was called and asked for a helicopter to evacuate an ambulance patient. (P. 16)

Thursday, 4:30 p.m. "At about 4:00 p.m., Major T at Olmstead was notified of the situation and was requested to bring a helicopter to the restaurant to rescue a stretcher case and evacuate a busload of persons also stranded on the turnpike. He left his base about 4:10 p.m., arrived at the restaurant about 4:40 p.m., and started rescue operations, which continued until darkness made operations precarious." (P. 16)

Thursday, towards evening: Volunteers were added to the regular restaurant staff. (P. 17)

Thursday night: "Mr. L (leader of refugee group) made plans with Major T to evacuate the ambulance patient, a diabetic, and a cardiovascular patient in the morning. The restaurant manager, who was stranded at his home, arranged for a helicopter to pick him up in the morning. Major T arranged to have two more helicopters from his base join in rescue operations in the morning. Major T relieved Dr. L and his aids so that they might get some rest." (P. 17)

Thursday, 11:00 p.m. to Friday, 2:00 a.m. Major T organized a foot rescue team which checked cars and trucks (for stranded people)." (P. 17)
Thursday, 11:30 p.m. to Friday, 3:00 a.m.: "Major T. closed restaurant operations when the assistant manager informed him that his employees had been working continuously for 37 hours and were very tired." (P. 17)

Friday Daybreak: "Major T took off in his helicopter with a diabetic patient, a woman accident patient, and a cardiovascular patient. He flew them to his air base, picked up medical supplies there and several cases of bread from a Harrisburg bakery, and then returned to the restaurant." (P. 17)

Friday, 11:00 a.m. Employees from other turnpike restaurants arrived to relieve employees of this restaurant. (P. 18)

Friday, about noon: "People began leaving the restaurant. The road was opened. Almost all people left within a few hours." (P. 18)

E. Community Context: No data
II. GENERALIZATIONS AND HYPOTHESES

1. In a fortuitous, random selection of people, what social and personal characteristics are likely to be represented?
   a. Is such a selection likely to contain people with all the basic knowledge and skills needed to sustain life in shelters, or are important skills missing or under-represented?
   b. Is such a selection likely to contain sufficiently large proportion of dependent people (young children, aged, ill, infirm, etc.) to cause special problems?
   c. Are the latent skills of such a group utilized under these conditions or does the situation discourage the exercise of needed skills? (a-c, p. 18)

Findings: The variety of persons present (in the restaurant) appeared to have sufficient skills and knowledge to deal quite adequately with the problems faced in the restaurant. There were persons present who could deal with problems of organization, medical care, rescue and other physical labor tasks, child care, equipment maintenance, cooking and serving, emotional support ("spiritual" care), etc. Most of the problems faced by the people in the shelter required orientations towards particular kinds of work but did not require special training for their solutions e.g. preparing and serving food and foot-rescue work. For those tasks, which required special training and experience, the required personnel seemed to be present.

The number of dependent people in this group probably added up to about 50, or roughly 6 percent of the total. The proportion of dependents in this situation was probably lower than might be expected in many typical shelter situations, since with the exception of the ambulance patients, only those able to travel were represented.

There is no evidence that latent specialized skills of the people (e.g., hobbies, skills learned in the past but not used recently, etc.) were utilized. Presumably, since most of the specialized needs of the situation were met by persons whose primary occupational skills fitted the situation, there was little need or opportunity to use latent skills. (PP. 22-23)

2. When there is no pre-designated leadership or form of shelter organization, does informal leadership and organization arise in the group, or does the group remain an unorganized, amorphous mass?
   a. If informal organization arises, who takes a leadership role in such organization? Are there any particular categories or classes of people who are more likely to take a leadership role than others?
   b. Are the suggestions and commands of the emergent leaders followed or does discord develop over the assumption of leadership and the instructions issued by the leader?
   c. What kinds of division of labor and function develop in such a group? Is the division of labor adequate to handle the essential tasks of maintaining the shelter?
   d. What needs beyond sheer survival tend to be spontaneously recognized and provided for by the shelter group?
e. Are most people willing to volunteer their time and efforts in behalf of the group?

f. What kinds of needs facilitate or impede the development of the organization? (a-f, P. 19)

Findings: "The shelter situation was never without an organization of some kind. Initially, this consisted entirely of the pre-existing restaurant employee organization. This was not satisfactory in reducing the considerable discomfort which developed in the over-crowded restaurant. Informal leadership and organization then developed to deal with the special problems...

"Each of (the) leaders about whom we have any information is normally engaged in an occupation in which the role of supervisor, leader, or counselor is important. Furthermore, each probably comes from a middle socio-economic class background which emphasizes the need for order and rational behavior."

"Suggestions and commands seem to have been followed readily. There is no evidence of discord developing over either the assumption of leadership or the instructions issued by the leaders."

"Cooperation with the informal leaders included respect for new rules as well."

"In general...division of labor was based on pre-existent skills either related to peoples' occupations or associated with their age or sex group."

"There seems to be no evidence to indicate that the division of labor and function which developed was inadequate in dealing with the essential tasks of this shelter situation."

"Very few of the activities of this shelter group were concerned with the problem of sheer physical survival." Other needs recognized and provided for include, "physical comfort, cleanliness, and health; activity; emotional support; information; isolation and privacy; social values (e.g. single men's sleeping quarters segregated, etc.); special treatment for dependent persons; centralization of problem-solving effort."

"As soon as the need for organization was defined, most people were willing to volunteer their time and efforts in behalf of the group. Prior to the announcement concerning (the need for) organization, only a few persons were engaged in any voluntary efforts."

"Interpersonal conflicts and tension over available food, space, and service initially dictated the need for organization and probably facilitated the development of organization...Dr. L's (the initiator of organization) personal need for some kind of orderly situation seems also to have been involved."

II-2
3. "What expectations do people have about their length of stay in the shelter under conditions where length of confinement is uncertain?"
   a. "Are they optimistic or pessimistic in their estimates?"
   b. What are the consequences of such expectations in developing organization social values, rules of behavior, and allocation of supplies? (a-b, p. 19)

   Findings: Data did not permit generalization to the entire group of shelterees in regard to length of stay expectations.

4. What information and communication needs are expressed by people in such a situation?
   a. How are communication channels with the outside world utilized? Is there a problem of establishing control over the external communication facilities? Does conflict develop over their use? Are vital messages to outside authorities delayed because communication channels are tied up by people wishing to send individual messages?
   b. What kinds of rumor or informal verbal communication arise and what subject matters are they concerned with?
   c. How is information from outside authorities utilized in the shelter? Are the shelterees kept informed about what is happening on the outside? (PP. 19-20)

   Findings: "There seems to have been no problem of establishing control over these facilities (3 public telephones and two private telephones), no conflict over their use, and no problem of people in the restaurant tying up the channels to send individual messages." (P. 30)

5. "How do people react to conditions of close confinement, lack of solitude and privacy, and conditions of crowding?"
   a. Do such conditions in themselves produce conflicts, tensions, and irritability, or are they modified by the development of social organization?
   b. Are normal prejudices and conflicts between various racial, ethnic, and social class groups carried over into and intensified in the shelter, or are such cleavages mitigated by shelter life? Do people with high social and economic status in the outside society attempt to exercise their normal prerogatives over others?
   c. Do small cliques of dissident people develop to oppose the shelter leadership and form of organization?
   d. Does a control group develop to deal with troublesome offenders of the shelter rules?
   e. What rules develop among the shelterees concerning utilization of space and shelter facilities? What priorities, if any, are established in terms of need and access to these facilities? (a-e, PP. 20-21)

   Findings: "It seems that the initiation of organization acted to reduce the tensions." (P. 32)

   "There is no evidence in this situation pointing to the carryover of preexisting prejudices and conflicts between racial, ethnic, and social status groups. If anything, such cleavages seem to have been mitigated by the situation." (P. 33)
6. How do people react to the possibility of shortages of food or other essential supplies?
   a. Is there a tendency for competitive behavior to develop, so that some people seek to hoard food or other supplies or consume disproportionate quantities compared with others? How are these problems handled?
   b. Do the ill and other dependent types of people in the shelter have their needs adequately cared for?
   c. Does the absence of certain kinds of food or luxury items create tension? Are there some kinds of food that are gastronomically unnecessary, but symbolically important for maintaining morale? (P. 21)

   Findings: "Worry about the supply of food led leaders to inventory the food supply and then to reassure people that the food supply was adequate. There was apparently considerable tension around the food counter, particularly while people were still arriving from outside."

   It was found that considerable alarm was caused when the bread supply ran out. The shortage of bread seemed to signal a general food shortage. "The importance assigned to bread may derive from the imagery of bread as the 'staff of life'; or, it may derive from the fact that sandwiches were a major item being served up to that point." (P. 33)

7. "What happens to normal social and moral codes in such a situation? Are they maintained, degraded, or changed to adapt to the situation?" (P. 21)

   Findings: "There seemed to be no basic change or degradation of moral codes." (P. 36)

8. "What elements of physical design of the shelter serve to enhance or decrease habitability of the shelter and a sense of well-being?" (P. 21)

   Findings: No generalizable data.

9. "Organization seems to have been impeded by people's tendency to view the situation as a personal emergency rather than an emergency for the total group of shelterees; and also by the attempt on the part of the acting management of the restaurant to continue usual restaurant activities as long as possible." (P. 2)

10. "...it is suggested that in future studies of similar phenomena, a research team be flown into the shelter situation as soon as possible, i.e., during the emergency period." (P. 5)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
1. Name: The Brandywine Howard Johnson's Restaurant (local)
2. Type: Non-crisis

B. Organizational Description
1. Goals and activities: Provide food service for turnpike users with a view towards making a profit. The restaurant also operated a small gift shop.
2. Organizational character: No data.
3. Organizational complexity: Positions of restaurant manager, assistant restaurant manager, waitress, and busboy were mentioned (p. 12) but no indication of their relative numbers, functions, etc. was given. However, there seems to have been only one restaurant manager and one assistant.
4. Organizational control: No specific data although it seems that the assistant restaurant manager attempted to maintain the same degree and type of control over his staff during the initial stages of the crisis that he exercised in non-crisis periods, and that this control was modified somewhat by the emergency of informal organization among the refugees.
5. - 7. No data.

C. Organizational Activities During Disaster
1. Resources of organization during disaster:
   a. Physical characteristics of the shelter facility: "A restaurant, gift shop, and an adjoining Gulf gasoline station are housed in a stone-faced building containing two floors - a main floor and a basement. The main floor of the restaurant contains two dining rooms, capable of seating 125 people; a counter area with a seating capacity of 35; a small gift shop; a lobby with a circular couch; a large kitchen; two storerooms; and a large walk-in freezing room. The Gulf station contains a display room, a two-bay lubrication garage, an office and a basement storeroom. The basement of the restaurant contains a large L-shaped furnace and equipment room (with two furnaces, two water tanks, compressors for refrigerators, etc.), a storage room, a men's locker room, a women's locker room, and a dining area for employees. The total floor space of the main floor of the restaurant and Gulf station is approximately 8,500 square feet. Total floor space of the basement is approximately 5,500 square feet. The total habitable floor space, combining restaurant and gas station, but subtracting counter areas, kitchen equipment, etc., more nearly approximates 7,500 square feet." (p. 10)
   b. Food:
      1. Food supply enough to last 5-6 days without rationing.
      2. A stalled dairy truck on the highway was able to supply all the milk necessary.
      3. Water supply was adequate since the restaurant had its own wells and storage tanks.
4. "The bread supply, depleted sometime Thursday, was partially replenished Thursday afternoon by a farmer who brought a truckload of bread to the restaurant, and was completely replenished Friday morning when a helicopter brought an order in from a Harrisburg baker." (P. 11)

5. Most of the food was prepared and required little preparation. (Pp. 10-11)

   c. Heating, Ventilation, and Lighting: "...were severely disrupted by the storm." The restaurant's emergency generator was not powerful enough to supply all the electric power required. Heating system was operative. The normal ventilation system was completely inoperative.

   d. Toilet Facilities: (PP. 12-13)

      1. One ladies' rest room.
         a. Eight commodes (four "pay," four "free."
         b. Six sinks with mirrors.
         c. Dressing room with full length mirror and 4 hasekoks.
         d. Dispensing machines for combs, "Kleenex," perfume, lipstick, and other cosmetics and for sanitary napkins, sanitary belts, and paper towels.

      2. One men's rest room: Six urinals; five commodes; five sinks with mirrors; dispensers for paper towels, two blower-dryers, and a dispensing machine for combs, nailclippers, shoe polish, toothbrushes, etc.

      3. Two separate facilities for male and female employees.

   e. Scating and Sleeping Facilities: Rather painfully inadequate for such a large (500) number of people. The restaurant was designed to handle about 200 customers. (P. 13)

   f. Medical Care: "The restaurant had no special medical or first aid facilities." (P. 13)

   g. Communication Facilities: "The restaurant and service station together had a total of five telephone lines, two private and three public, all of which were in operating order throughout most of the time the refugees were present." The restaurant had no public address system. (PP. 13-14)

2. Special problems to organization:

   a. Lighting, although apparently adequate, was not operating at normal capacity.

   b. Ventilation system was inoperative and the air became foul.

   c. Restaurant personnel were greatly overworked and had to be relieved after working 30 hours straight. The task of preparing and serving food for 800 people by a staff accustomed to maximum crowds of 200 or less obviously placed excessive demands upon the organization's efficiency. It seems clear from the report that the organization would not have been able to function effectively at all, had it not been for organization on the part of the refugees and subsequent augmentation of the restaurant personnel by volunteers. A particularly crucial problem during the early periods of confinement was the distribution of food.

ITI-2
It was the quarreling and bickering and competition during food-distribution times, incidently, which motivated one of the group members to initiate some sort of organization. It is perhaps of some significance that there is no indication in this report that the assistant restaurant manager attempted to organize the refugees, in spite of the fact that confusion among them greatly impeded the performance of his function. The person who did initiate organization, however, did solicit and receive the manager's permission before doing so.

3. Organization change during disaster:
   a. The food preparation and serving staff was augmented on unspecified amount by volunteers from among the refugees.
   b. It seems that an officer who arrived from a local Air Force Base assumed a certain amount of authority as is evidenced by this statement: "Major T closed restaurant operations when the assistant manager informed him that his employees had been working continuously for 30 hours and were very tired."

4. Evaluation of disaster activity:
   a. The following recommendations made by interviewees after the event suggest some of the areas where the restaurant's response to the disaster situation may have been inappropriate:
      1. "Serve cafeteria style only."
      2. "Serve only 3 meals a day--no continuing service."
      3. "Use paper plates, cups, etc."
      4. "Institute a ticket system for controlling number of meals per person."
      5. "Give food away instead of charging (to save time)."
      6. "Allot more space to women and children."
      7. "Give everybody a job to do."
      8. "Provide guidance for the group."
      9. "Don't try to conduct 'business as usual'."
     10. "Serve only one menu or kind of food at a time."
     11. "Restaurant employees should only supervise volunteers in kitchen and serving; should not do jobs themselves." (PP. 37-38)
   b. Also, this statement regarding food distribution techniques: "Initially, the situation was conducive to competitive behavior because the restaurant personnel attempted to continue its normal operating procedures. The scarcity of waitresses and counter space in relation to the size of the crowd led people to react competitively." (P. 34)

D. Organizational Activities in Emergency Social System
1. - 3. No data.
4. Volunteers assisted the regular staff in food preparation and service. Degree of assistance not specified.
5. No specific data, although it seems clear that informal organization greatly aided the efficient distribution of

III-3
food and relieved regular personnel of the necessity of assuming responsibilities not directly related to food preparation and service.

6. No data.
7. No data.

E. Other:
1. This comment, made by Dr. L., pertinent to the emergence of informal group organization:
   "About noon I went back out into the dining room and I saw that people were beginning to push and shove and shout for food; they were becoming quite disorderly...there were just too many people crowded into too little space. People were tired, hungry, and discouraged. You could feel the tension mounting. You could hear people shouting, "that's my hamburger."...Everyone who came in felt that he was an emergency --felt that he should be served right away...(then) I asked permission of the assistant manager to get organized. I got up on the counter and introduced myself and said it was time to get organized. I...asked for attention and everyone turned and stopped talking at once; it was so quiet you could hear the snow falling...The response was amazing; tremendous. We got cooperation from everyone." (P. 26)

2. "There was one death during the isolation period. A man died of a heart attack while struggling through the snow towards the restaurant. His body was wrapped in blankets and kept outside in the snow until flown out by helicopter Friday." (P. 15)
BASIC INFORMATION

A. Characteristics of Disaster
   1. Event: a "sawdust" (p. 1)
   2. Date: 06 p.m., October 23, 1958 (p. 1)
   3. Location: "Minetown" (p. 1) (Springfield, Canada)
   4. Damage:
      a. Number killed: 75 (p. 1)
      b. Number injured: 42 (p. 1)
      c. Physical damage: mine was closed down (p. 1)
   5. Cause: a "bursting of the coal seam with the floor and roof of the tunnels being thrown together with irresistible force." (p. 87)
   6. Unique aspects: none

B. Methodology
   1. Research agency and principal research personnel:
      Dalhousie University: Armstrong, Nollen, Beseth, HoDg
      Reddie, C.; Livingstone, Elizabeth; Denton, LoRe
      Lucas, R.A.; Murphy, N.P.; Weir, R.J.
   2. Source of data
      a. Number of interviewees: 32 (p. 71) (scores used for 23 due to failure to get all of original interviewees for follow-up tests, p. 40)
      b. Number of questionnaire respondents: 232 (p. 2)
      c. Time lapse between disaster and data collection:
         the first of the series of questionnaire administrations took place 2 months after the disaster and the last 11 months after it. (p. 88) The psychiatric interviews with the miners were given from 5 to 23 days "after rescue operations were completed" (p. 69) as many as possible of these interviewees were reexamined 6 months after the disaster. (p. 70)
      d. Other: two medical examinations were made of the interviewees, one immediately after the disaster and another 1½ years later. (pp. 88-89)
   3. Sample plan:
      a. The interviewees: 19 miners trapped underground for 6½ to 8½ days, plus a control group of off-shift miners - matched for age, education, religion, marital status, and type of work performed in the mine. (p. 69)
      b. The questionnaire respondents: "senior high school students (grades 11 & 12) were used as subjects in this study. They were chosen largely because of their availability for repeated testing." (p. 17)
   4. Other methodological comments:
      a. Questionnaire respondents: "an attempt to get a sample of adults in Minetown to take the test, and check the validity of the students' ratings, was not successful." (P. 17-18) "Comparative data, important for making reference and interpretations, were obtained by administering the test to 70 senior high school students in another mining town, Comptown. This sample was tested in March, 1959, the results there..."
being comparable to those obtained in larch in line-
town. Grades 10, 11, and 12 were represented in the
Compton sample, whereas only grades 11 and 12
were used in Linetown. However, the grade 10 students'
ratings did not differ observably from those of their
fellow students in grades 11 and 12." (p. 18)

"Compton was chosen as the control town because 1) it
had a population of over 4,000 the nearest in size
to Linetown of any coal mining town in the general
area; 2) mining began in 1871, just two years
before it began in earnest in Linetown, and the
development of the town was much like that of
Linetown; and 3) its inhabitants were dependent upon
mining, there being no other primary industry in the
town. On the other hand, Compton contrasted with Linetown in two ways significant for this study:
1) it had no history of large scale disasters and
chronic danger from bumps; and 2) coal mining was still
in progress." (pp. 18-19)

b. interviewees: "the nature of the disaster conditions
particularly similitudes of time and the miners'
susceptibility to fatigue, made it necessary to
modify the battery (of psychological tests) in
some respects." (p. 69) "Ten new control
miners were interviewed by the psychiatrist when the
final examination was carried out. They only received
two tests, and their data are used only where those
tests data are involved." (p. 71)

C. List of All Organizations Involved in Disasters: no data

D. Brief Description of Emergency Social System
There was no panic above ground after the "bump". The people
of Linetown immediately identified the impact as a "bump".
"Community institutions carried out immediate relief operations
and all rescue operations in a coordinated and effective
manner..... i.e., did not congregate at the pit head because
their husbands had instructed them to stay away from the mine
if a disaster occurred." (p. 6) 19 miners were trapped by
the "bump" and rescued after a period of 6-9 days. (p. 1)
The mine was then sealed. (p. 87)

E. Community Context
Linetown has 7,000 inhabitants. (p. 1) It is "situated
on a hill overlooking mixed agricultural land and rocky wooded
terrain. For 90 years coal was mined from the depths of the
fjedge, as far as 14,000 feet from the surface. Coal
mining was the town's only industry, with nearly all of the
seven thousand odd inhabitants being directly or indirectly
dependent on the mine for income. At one time four mines

I-2
worked, but this number had been reduced to one at the time of the 1957 disaster. The other three mines had been closed for reasons of safety, the third in 1956 after a coal dust explosion..." (p. 87) With the sealing of the last operating mine after the 1958 disaster, Kinetown thus lost its only primary industry, and nearly 1,000 men were suddenly unemployed." (p. 87)

"The history of mining in Kinetown, characterized as it was by constant danger, frequent minor accidents, and occasional major disasters, led to the development of a whole series of practices designed to handle such emergencies. A disaster fund to provide for the widowed and orphaned was set up in 1886 and has operated continuously since then. It was a local institution, designed to meet the exigencies of injury and death of family breadwinners. Six fraternal societies and lodges provided burial benefits for members who worked in the mines. An employees' relief fund was organized by the union, its contributions coming from the members monthly dues, the coal company, and the provincial government. It was used in cases of sickness, accident, and death, but not for unemployment. In cases of prolonged sickness or under other special circumstances, a voluntary relief collection was taken on pay day from fellow workers." (p. 2)

"Many other institutions were integrated into the general program of preparedness for disaster in the mines. In addition to the check-off system for union fees and the employee's relief fund, a check-off system was used for payment of taxes, medical and hospital services, church contributions, and funeral and burial expenses...... Institutional arrangements were such that the eventuality of death in the mines would not result in undue burden or economic loss for the individual family and community institutions." (p. 3)

"In addition to economic preparedness for disaster, Kinetowners had developed a number of shared attitudes, rationalizations, and modes of behavior designed to cushion the psychological stresses of constant threat, uncertainty, and bereavement. One set of practices could be characterized as avoidance, as expressed, for example, in absenteeism." (p. 3)

"As another means of attempting to cope with the problem of chronic danger, the miners refrained from emphasizing fears and anxieties about the hazards of their occupation, when underground...... A third type of response which appeared to be a means of dealing with ever-present danger was the miners' fatalistic view of injury or death." (p. 4)

"The community of Kinetown had attained a social solidarity as a result of its history of disasters...... The community was characterized by a spirit of interdependence and mutual assistance." (p. 7)
II. GENERALIZATIONS AND HYPOTHESES

A. "It might be expected that kinetowners history of mutual help and interdependence, although developed around coal mining and disaster, would bind the community sufficiently to make for considerable homogeneity and stability of attitudes in the face of the new problem of unemployment. Attitudes designed to legitimate preservation of home and community, attitudes which made it deviant behavior to move away to obtain jobs." (p. 12)

B. "Kinetowners rated their town much higher than Comptowners rated their town on many of the scales... These differences are strong evidence for the inference that kinetowners were much more strongly identified with their town than were the people of Compton. It is suggested that this was a consequence of their history of disaster experiences, repeated occasions on which national attention was focused on kinetown, and their current desire to retain their homes and preserve the community." (p. 21)

C. At time passed, "the disaster experience receded in importance within the frame of reference of the unemployment became the dominant consideration." (pp. 26-27)

D. "Several types of variables were expected to contribute to particular attitudes, and three of these were thought to be common to the groups examined in this study. They were:
1. broad cultural values and thoughtways, such as the tendency to give positive evaluations of church and education.
2. general community values, like those which prevail in any community which is largely dependent upon one industry. In that kind of situation community values would be expected to involve an emphasis upon identification with the industry and some identity of the industry and the town.
3. Values peculiar to the samples used to appraise attitudes..." (p. 46)

E. Types of variables expected to contribute to differing attitudes in the groups compared:
1. historical events
2. precipitating events
3. situational variables
4. events, contiguous with attitude changes, which were relevant to the values and needs of the people.
5. the passage of time. (p. 47)

F. "Community solidarity and its associated values and practices, developed in relation to mining and in preparation for disaster in the mines, was the broad base from which kinetowners attempted to meet a different kind of problem, the problem of unemployment."
but the frame of reference and the new problem were incompatible; 
but the frame of reference and the new problem were incompatible; 
group cohesiveness would bind the men to kinetown - and to un-
employment. If no large scale source of employment came to 
kinetown, the behavior which group cohesiveness engendered 
would be as functional for the individual unemployed men 
and, in the long run, probably for the community as well. 
On the whole, both the employed and the unemployed continued 
to affirm the in group values which had been established through 
a history of danger, injury, and death in the mine. Nevertheless 
attitudes appropriate to the particular needs of each individual 
group were often evident and at the end of the period the 
unemployed were exhibiting the greater tendency to assert 
individual needs and to question group values." (p. 53)

G. "The abilities to concentrate and to perceive in an organized 
and realistic fashion were impaired by the stress of the disaster." 
(p. 74)

H. Findings on the psychological tests suggested that "age 
and years of mining experience inured the older non-trapped 
men to the stress of waiting and rescue work, while youth and 
inexperience made for more hope and less anxiety in the younger 
men of the trapped group." (p. 71)

I. "The depressive self-concern which characterized the trapped 
group's expressed needs and worries, just after the disaster, 
although somewhat decreased six months later, was still more 
common in the trapped than in the non-trapped miners." (p. 80)

J. "The particular cases with marked (psychological disturbance) 
symptoms came from both the trapped and non-trapped groups, 
again suggesting that entrapment was not a crucial determinant 
of their symptoms. For this reason it is inferred that the 
unemployment consequent on the closing of the mine was the 
major cause of their developing symptoms." (p. 102)

K. "The employed group of miners exhibited fewer symptoms; 
total thinking and somatic, than did the unemployed sick group. However, when compared with the unemployed 
well, the employed had a significantly higher symptom 
count and a significantly higher count of somatic symptoms." 
(p. 112)

L. Roles adapted by the miners after the disaster may be 
classified as:
1. deviant - employed - leaving kinetown - and finding 
   employment elsewhere 
2. unemployed miner - remaining in kinetown and unemployed 
3. psychiatrically sick - those developing dysfunctional 
symptoms as a response to the unemployed role (class P)
4. conforming = employed = employed in Minetown
5. unstable = vacillation between remaining in Minetown and leaving to get employment elsewhere.
   (pp. 115-116)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

Insufficient data
I. Basic Information

A. Characteristics of Disaster
   1. Event: Smog
   2. Date-Time: November 24, 1958
   3. Location: Lancashire, England
   4. Damage
      a. Number killed: no data
      b. Number injured: no data
      c. Physical damage: none
   5. Cause: no data
   6. Unique aspects: none

B. Methodology
   1. Research agency: no data
   2. Source of data
      a. Number of interviewees: no data
      b. Number of questionnaires: no data
      c. Time lapse: no data
      d. Other: no data
   3. Sample plans: no data
   4. Other: none

C. List of all organizations Involved
   No specific organization mentioned.

D. Brief Description of Emergency Social System
   "Smog in the northwest of England lasted from November 24
to November 30 then returned on December 2 and stayed
until December 6. It often cleared partially at midday
and was never quite as dense as some of the well-
known earlier smogs."

   "The social indices of the effect of this smog were remarkably
consistent. Family doctors were not abnormally busy, but much
minor illness affected the community ....... Host chemists
reported that they were some 20 per cent busier.... Big industrial
firms reported little absenteeism. (p. 1338)"

E. Community Context: no data
II. Generalizations and Hypotheses

II-1
III. Specific Organization Analysis
Insufficient data on any organizations
I. BASIC INFORMATION

A. Characteristics of Disaster
   1. Event: Air raid alert
   2. Date-Time: November 25, 1958, at 6:30 P.M.
   3. Location: Washington, D.C.
   4. Damage:
      a. Number killed: No data
      b. Number injured: No data
      c. Physical damage: No data
   6. Unique aspects: None

B. Methodology
   1. Research Agency: The Disaster Research Group, NAS-NRC
   2. Source of data:
      a. Number of interviewees: 218 (P. 16)
      b. Number of questionnaire respondents: 1,691 (P. 18)
      c. Time lapse between disaster and data collection: "...both the questionnaire and the interview schedule were administered as quickly as possible after the day of the alert. The first schedules were completed 10 days after the air raid warning sounded, and the whole study was completed within 14 days, or 24 days after the alert." (P. 18)
      d. Other: None
   3. Sample plan: "The population for the study consisted of Federal government employees in six government agencies: (Veterans Administration; Department of Health, education, and Welfare; Department of Commerce; the Weather Bureau; Department of the Treasury; and the Department of State). Approximately 500 respondents were randomly selected from each agency (except the Weather Bureau and HEW) and asked to fill out questionnaires. Samples for both the Weather Bureau and HEW were randomly chosen but, due to their relatively small size, a different sampling rate was used."

      "...interviews were held with approximately one percent of the employees in all of the selected parts of the agencies included in the study. Interview samples were drawn first, and those persons selected for interviews were not included in the questionnaire sample."

      "There was a high percentage of returns on the questionnaires, ranging from 71 to 85 percent in the 6 agencies." "...satisfactory data were collected on 1,691 questionnaire respondents." (pp. 17-18)
   4. Other methodological comments: None

C. List of All Organizations Involved and Their Activities During Disaster
   No data
D. Brief Description of the Emergency Social System

"At four-thirty in the afternoon of November 25, 1956, telephone workers in Washington, D.C., accidentally tied in the downtown Washington circuit with the Montgomery County Civil Defense System."

"Air raid warnings sounded immediately in several parts of Washington, in the downtown area, and inside several establishments which had internal air raid systems connected with the central warning siren."

"The warning signal that sounded was the same one that had been used up to that time only for previously announced practice alerts. However, it should be kept in mind that this was an accidental sounding of the system. Consequently, there were no informed Civil Defense leaders on hand who knew for sure that this was not a real attack. (P. 17)

E. Community Context

No data
I. BASIC INFORMATION

A. Characteristics of Disaster
   1. Event: flood (p. 68)
   2. Date-Time: unspecified
   3. Location: Poona, India (p. 68)
   4. Damage: no data
   5. Cause: no data
   6. Unique aspects: none

B. Methodology
   1. Principal Research Personnel: V. G. Pundalik and Smt. Sunanda Patwardhan
   2. Source of data:
      a. Number of Interviewees: not specified
      b. Number of questionnaire respondents: none
      c. Time lapse between disaster and data collection: no data
      d. Other: none
   3. Sample Plan: "We used to spot out from the "flood relief" centres groups of people of, say, 10 to 15 and just make them talk on various matters... wherever this was not possible, the individual approach was resorted to. On an average, we thus interviewed four groups from each centre. Immediately on coming out of centres, we jotted down our observations and impressions." (p. 68)
   4. Other methodological comments: "This is, frankly, an impressionistic study and therefore, it has some obvious shortcomings from the methodological point of view." (p. 68)

C. List of all Organizations Involved and Their Activities
   1. Flood relief centers: (unspecifed, p. 68)
   2. Community-kitchen centers: (unspecifed, p. 68)

D. Emergency Social System
   Most of the relief centers were organized on a one-caste basis; some had organized cultural programs. (p. 71)

E. Community Context
   The flooded-out groups at the hospital centers comprised a number of different castes. The Manges, a rope-making caste, were closely tied to their particular colony, and were very upset by its loss through the flood. (p. 69) The Mahars did not have a single community occupation nor strong desire for an exclusive colony -- their desire was mainly for religious (Buddhist) consolidation (pp. 69-70). The Gondhalis had high ritual status, but were mostly petty traders or workers; they had a high degree of homogeneity and were eager to resettle as a group (p. 70). The Maratha were a lower middle class caste also anxious to resettle as a group (p. 70). The Brahmin families scattered throughout the rest centers were mainly lower middle class (p. 70).
II. GENERALIZATIONS AND HYPOTHESES

1. "The feeling of oneness as a result of being the same victims of a great tragedy was quite perceptible in these centers." (p. 71)

2. "The meals in the centres were taken out one or two times in one straight row without any discrimination. There was no demand for separate times of meals for separate castes in any centre." (p. 71)

3. "The reactions of various people on problems of rehabilitation recorded here are significant in that the flood hit parts . . . typically represent the ecological pattern of any district town in Maharashtra. At any rate, they dispel the popular belief that industrialization and urbanization per se will destroy the elements of the caste system in India. These views . . . bring in bold relief the vital need of a sociological perspective for the planned urbanisation in India."
Insufficient data.
I. Basic Information

A. Characteristics of Disaster
   1. Event: Mine explosion (p. 1)
   2. Date-time: no data
   3. Location: Wyoming Valley, Pa. (p. 1)
   4. Damage
      a. Number killed: 3 killed, with 12 additional trapped
         with little hope for rescue. (p. 1)
      b. Number injured: n. data
      c. Physical damage: "weakening of mine structures
         causing faults and collapses, endangering surface (?)
         in wide area over honeycomb" was feared. (p. 1)
         Twelve mines closed. (p. 1) "Surface flood damage
         (and ice damage) elsewhere than in mines" was feared.
         (p. 1)
   5. Cause: no data
   6. Unique Aspects: There was a threat all mines in the area
      with 10,000 miners would be shut, cutting 1/3 of entire
      anthracite industry. (p. 1) Also threat that coal gas
      might be forced to surface causing additional explosions.
      (p. 1)

B. Methodology
   1. Research Agency: no data
   2. Source of data:
      a. Number of interviewees: no data
      b. Number of questionnaires: no data
      c. Time lapse: no data
      d. Other: Memorandum outlining nature of disaster
         prior to development of systematic investigation.
         (pp. 1-2)
   3. Sample plan: no data
   4. Other method comments: no data

C. List of all Organizations Involved and Their Activities During
   the Disaster
   1. United Mine Workers (no data on activities, p. 1)
   2. Pennsylvania State Department of Mines (no data on activities
      p. 1)
   3. Governor (declared Wyoming Valley a State Disaster Area,
      p. 1)

D. Brief Description of Emergency Social System: no data

E. Community Context: Wyoming Valley produces 40% of world's
   supply of anthracite coal. The area has an unemployment
   problem which would be greatly aggravated by closing the
   mines. There has been some mining underneath the towns in
   the area. There evidently have been "ethnic stresses"
   between the Irish and Slavs. (p. 1)
II. Generalizations and Hypotheses

A. "Attention to preventing or limiting primary impact (the disaster per se) is restricted to a few specialists because of limitations of physical and technological access. Public concern will therefore be oriented toward preventing and coping with secondary impact" (problems arising because of the disaster but not the disaster per se). (p. 2)

B. "Those who are unable to attend to primary impact will act either on basis of 'it can't happen here' or 'it has happened here' and act accordingly: 1.e. first will almost deny seriousness of threat; second will take maximum precautions (flight, following all instructions, etc.). All or nothing response." (p. 2)

C. "Question arises of 'what determines which person is which type.' Possible answers are 'experience (determining meaning of warning)', 'source and kind of warning,' and 'certain loss (money, prestige) by taking precautions vs. size of threat vs. problem of threat.'"

D. "...which concern will motivate action most effectively: 'we want you to help yourself' or 'you have a social responsibility', a 'selfish vs. altruistic dimension.'" (p. 2)
III. Specific Organizational Analysis: no data
I. BASIC INFORMATION

A. Characteristics of Disaster
1. Event: Fire and explosion (A, P. 2)
2. Date-Time: 11:14 a.m., August 7, 1959 (A, P. 2, C, P. 18)
3. Location: Roseburg, Oregon (A, P. 2)
4. Damage:
   a. Number killed: 13 (A, P. 2); a 14th person later died from injuries (B, P. 2)
   b. Number injured: over 125 (A, P. 2)
   c. Physical damage: over nine million dollars in property damage (A, P. 3); "property loss approached $12,000,000" (C, P. 18); about 9% of the property in the city was actually lost (B, P. 3)
5. Cause: A truck containing 2 tons of dynamite and 4½ tons of a blasting agent was being transported by an explosives manufacturer from his plant in Washington to customers in the vicinity of Roseburg. The truck and its load of explosive products had been parked en route, for the night, on a city street, only a few feet from a building-materials warehouse which subsequently caught fire. In less than ten minutes flames or heat from the fire ignited the explosives and the explosion occurred. (A, P. 2)
6. Unique aspects: "The explosion was a classic example of sudden and unexpected disaster." (C, P. 18)

B. Methodology

1959-0807A
1. Research Agency and/or Principal Research Personnel:
The National Board of Fire Underwriters, 85 John Street,
New York 38, N.Y., and Oregon Insurance Rating Bureau,
721 S.W. Oak Street, Portland 7, Oregon.
2. Source of Data:
   a. Number of interviews: no data
   b. Number of questionnaire respondents: no data
   c. Time lapse between disaster and data collection: no data
   d. Other: Data has been obtained from officials of the city of Roseburg, especially the Roseburg Fire Dept., from the Oregon State Police, and from the Oregon State Fire Marshal's office. Loss and damage data was obtained from the General Adjustment Bureau. (P. 1)
3. Sample Plan: no data
4. Other Methodological Comments: no data

1959-0807B
1. Research Agency and/or Principal Research Personnel:
Mark R. Greene, Bureau of Business Research, University
of Oregon
2. Source of Data:
   a. Number of interviews: 76 business operators (P. 5)
   b. Number of questionnaire respondents: no data
   c. Time lapse between disaster and data collection: no data
d. Other: Bank deposits in Roseburg were compared with three other nearby Oregon cities (P. 4). Data on the extent of non-coverage of losses was gathered from the claim files of the General Adjustment Bureau, a postcard survey of individuals filling loss claims made by the U.S. District Court, and personal interviews. (p. 11)

3. Sample Plan: no data
4. Other Methodological comments: no data

1959-0807 C
1. Research Agency and/or principal Research Personnel: Bonnie Wallace Hills
2. Source of Data
   a. - c: no data
   d. Other: personnel recollections of disaster
3. Sample Plan: no data
4. Other Methodological Comments: An account of the disaster which appeared in the Saturday evening Post.

C. List of Organizations Involved and Their Activities During Disaster
1. Roseburg Fire Department (fought fire at warehouse and, after the explosion, fought the numerous fires in the vicinity of the explosion, A, P. 6-10, C, P. 18)
2. Roseburg Rural Fire Department (responded to request from Roseburg Fire Department for aid with 24 firemen and 3 pumper, A, P. 6, 12)
3. Sutherlin Fire Department (furnished a pumper and a fireman, A, P. 8, 10)
4. Myrtle Creek Fire Department (stood by as reserve force in a Roseburg Rural Fire Station with a pumper and four firemen, A, P. 8, 10)
5. Roseburg VA Hospital (provided a pumper and 3 firemen who stood by in a Roseburg Fire Station as a reserve force, A, P. 8, 10)
6. Eugene Fire Department (furnished 2 pumper and 10 firemen which stood by as a reserve force, P., P. 10, 12)
7. Springfield Fire Department (furnished a pumper and 4 firemen which stood by as a reserve force, A, P. 10, 12)
8. Winston Dillard Fire Department (furnished 8 firemen to assist Roseburg Fire Department, A, P. 12)
9. North Bend Fire Dept (furnished 6 firemen to assist Roseburg Fire Dept., A., P. 12)
10. Coos Bay Fire Department (furnished 5 firemen to assist Roseburg Fire Dept., A, P. 12)
11. Cottage Grove Fire Department (furnished one fireman to assist Roseburg Fire Dept., A, P. 12)
12. Roseburg Police Department (engaged in traffic control, rescue activities, first aid, and evacuation operations. Transported injured to hospitals. Patrolled streets to prevent looting. Worked with the city attorney in developing a pass system to allow authorized persons into restricted (i.e. heavily damaged) areas. Prevented entry into heavily damaged buildings where there was a further danger (A, P. 14, C, P. 22)

I-2
D. Brief Description of Emergency Social System

A truck loaded with explosives and blasting agents arrived in Roseburg at about 8:50 p.m. on the evening of April 6, too late to make deliveries at two places outside the city. The driver parked the truck in front of the Gerritson Building and Supply Company warehouse (part of his consignment was destined for the Gerritson magazine located about three miles outside the city), which lay adjacent to the Roseburg business district, and checked into a hotel several blocks away. At about 11 p.m., the driver examined the truck before retiring. (A, P. 5)

Sometime during the evening, a fire broke out in the warehouse and was finally discovered by a passing motorist at 1:05 a.m. on the morning of August 7. The driver instructed his wife to call the fire department from a nearby gas station while he attempted to extinguish the flames. "By the time the wife had given the alarm, the flames were apparently coming through the wall and roof of the building... The warehouse fire spread rapidly... Intense heat from the warehouse fire developed quickly, exposing the 'explosive' truck and its contents to rapidly rising temperatures." (A, P. 6)
The fire department received the telephone call at 1:05, with
a normal first alarm fire response of a pumper, assistant chief,
and a fireman being made. At 1:05, however, the assistant chief
told the dispatcher to sound the general alarm. Additional men
and equipment were dispatched to the scene. (A, P. 6)

"At first, the parked explosives truck was inadvertently
used as a shield against the radiated heat," but soon flames began
impinging upon the truck and smoke began coming from the truck.

"The truck driver, who had been asleep in a nearby hotel, was
awakened by the fire sirens and started to run towards the truck
load of explosives. The Assistant Chief, from all indications,
appeared not to be aware that the vehicle was an
'explosive truck' and had ordered the area evacuated when the
explosive detonated," at about 1:14 a.m. (A, P. 6-7)

After the detonation, fires soon appeared in approximately
at buildings in a 7 clock area around the explosion. All remaining
Rouseburg fire equipment and firemen were rushed to the scene. At
1:15 the fire lieutenant who had assumed command, after learning
that the explosion had killed the assistant chief informed the
dispatcher to call for all available outside help. Under the
previously established aid plan, the Roseburg Rural Fire Department
immediately responded, arriving about ten minutes after receiving
the call for help. Shortly thereafter, fire departments from
Sutherlin, Wythe Creek, and the Veterans Administration Facility
responded. Calls for aid were made to Springfield and Medford, with
men and equipment arriving from them, at about 3 a.m. (A, P. 8-10)

At about 3 a.m. the fires were brought under control.

"Final extinguishment and mopping up operations followed throughout
the night. In the morning, a 26 square-block area was restricted
until all buildings could be inspected. The people were only
permitted to enter buildings declared structurally safe." (A, P. 9-10)

E. Community Context

"Roseburg, Oregon, is located in the western part of the
state about 190 miles south of Portland. With a population of
12,200, it serves as the seat of Douglas County. The city is
the center of considerable lumbering operations and is located
in a fertile agricultural area. The terrain of the central area of
the city is fairly level, sloping towards a river, but steep
grades occur as the distance increases from the central area.

The main business district is quite compact, extending...a
length of 4 blocks and...a width of three blocks. The Japqua
River, which serves as a natural barrier during the conflagration,
bounds the western side of the semi-industrial area in front of
the central business district. Buildings are predominantly of
ordinary masonry construction two or three stories high, with
a moderate number four and five stories in height. Adjoining
this district on the west and located within the general area
where the disaster occurred, were sales and service garages and
various light industrial and warehouse occupancies. Between
this area and the river is a narrow district of wood frame
dwelling. The major portion of the residential area heavily
affected by the blast consists of older type homes, many of them
two stories." (A, P. 4)
II. GENERALIZATIONS AND HYPOTHESES

A. "This disaster clearly exemplifies the serious fire and explosive danger accompanying the increasing trend to transport highly hazardous material by motor vehicles over public highways, and the severity of exposure to which even small communities may be subjected unknowingly." (A, P. 1)

B. "There is a need for the enactment and cooperative enforcement at state and local levels of laws and regulations covering the storage, handling, and transportation of explosives and blasting agents." (A, P. 19)

C. "Approved routes for the transportation of explosives and blasting agents and the adoption of pertinent federal regulations should be considered for enactment on a state-wide level and cooperative enforcement at all levels. Emphasis should be placed on the avoidance of travel through heavily populated communities and congested highways." (A, P. 19)

D. "Inspection programs conducted by local fire departments should include inquiries into the storage of explosives, blasting agents and hazardous chemicals in plants and warehouses." (A, P. 19)

E. "Firemen training programs should cover fire problems involving explosives and blasting agents." (A, P. 20)

F. "Managers and drivers of private, contract and common carriers should be thoroughly familiar with the hazardous nature of the articles comprising their cargo and the pertinent federal, state and local rules and regulations regarding their transportation by motor vehicles." (A, P. 20)

G. "An auxiliary electric power generator is recommended for fire department base radio stations in order to provide continuous communication during power failure or breakdowns. Adequate radio communications should be established between fire departments cooperating in outside-aid plans. Where conditions permit, the rise of a common frequency with outside fire departments should be utilized." (A, P. 20)

H. Since the disaster "affected a substantial proportion of the business firms in the city, one might expect to find significant changes in basic economic indicators describing Roseburg's economy. For example, one might expect a rise in business activity during the period of reconstruction in Roseburg relative to other similar cities in the area, or conversely, one might have expected a decline if there had occurred an exodus of business firms or customers as a result of the blast." (B, P. 4)

I. In many larger disasters, "the problem of obtaining contractors' estimates of loss is a bottleneck in settling claims." (B, P. 19)
J. "Economic indicators of business activity in Roseburg, such as employment, bank loans, business income, and bank deposits, showed no significant change which could be traced to the blast. Sample opinions of business firms confirmed the fact that business activity showed little disturbance. It is estimated that relatively few firms moved or went out of business directly as a result of the blast, although some moving continued, which was already in progress before the blast." (3, P. 26)

K. "It seems indisputable that the general insurance coverage of Roseburg firms was adequate and that insurance proceeds played a vital role in enabling the city to recover with as little disruption as was evident." (B, P. 26)

L. "In general, insureds were satisfied with the role played by their agents in insurance management problems, but it seems evident that agents play somewhat more of a minor role in claims settlement than is commonly supposed, or is claimed by advocates of the independent agency system. Most of the burden is carried out by adjusting personnel, who are either independent businessmen hired for this purpose or who directly represent insurers in the adjusting process. Agents appear to play some psychological role in offering comfort and reassurance to insureds following a loss." (B, P. 27)

K. "Actions were taken by all significant proportion of insureds following the blast to correct errors in insurance and risk management procedures. Many increased their limits of coverage, or bought coverage previously rejected. Some rebuilt with better types of construction. Group action was taken to adopt fire insurance codes and explosive agents codes to prevent further occurrences of disasters within the city." (B, P. 27)
SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
   1. Name of Organization: Roseburg Fire Department
   2. Type of Organization: Municipal

B. Organizational Description
   1-2. No data
   3. Organizational Complexity: Quasi-military organization with
      chief, assistant chiefs, and lieutenants being specifically
      mentioned. (A, P. 6)
   4. Organizational Control: "on all building fires, a general
      alarm is sounded in different parts of the city. All off
      duty firemen and all volunteers are expected to respond."  
      (A, P. 12)
   5. Membership Recruitment and Orientation: Sixteen paid men
      work two 24-hour shifts in each 5-day period and are backed
      by 15 active volunteers. (A, P. 12)
   6-7. No data

C. Organizational Activities During Disaster
   1. Resources of Organization During Disaster: Thirty-one
      regular and volunteer firemen responded (A, P. 7). A
      total of 7 pumps were used (A, P. 12).
   2. Special Problems: "A power shut down caused failure of the
      radio base station of the Roseburg Fire Department. In
      addition, it was difficult to communicate with the incoming
      outside aid equipment as they did not have a common radio
      frequency. No truck-to-truck communication was possible
      between departments. The serious difficulties in communication
      added to the fire fighting problems." (A, P. 9)
   3. Organizational change: No data
   4. Evaluation of Disaster Activity: "The chain of events at
      Roseburg might have been different if the initial companies
      responding to the fire had been adequately manned. In addition,
      a standby power source for the base radio station and
      planning for interdepartment communications would have been
      most helpful in maintaining continuous communications after
      the electric power was shut down at Roseburg."  (A, P. 19)

D. Organizational Activity in Emergency Social System
   1. Existing plans for cooperation with other organizations:
      "Within the past year, the city of Roseburg joined with other
      fire departments in the county to form an outside-aid
      organization. During this emergency, the other departments
      cooperated, and the move-up functioned according to plan."  
      (A, P. 12)
   2. Communications network: Roseburg has no municipal fire
      alarm system. (A, P. 12) (see C3)
   3. Competition and Conflict: No data
   4. Use of Non-organizational Members: Several private citizens
      helped in fighting the fire. (A, P. 7, C, P. 18) (see D1)
   5-7. No data

III-1
I. BASIC INFORMATION

A. Characteristics of Disaster
   1. Event: Epidemic of food poisoning (P. 1)
   2. Date-Time: 15 August 1959
   3. Location: The victims were from Elkhart, Indiana, but were
      stricken while attending a picnic near Angola, Indiana. (P. 2)
   4. Damage: Total monetary cost of the epidemic was $27,157 (P. 54
      a. Number killed: 0 (P. 6)
      b. Number injured: About 1100 persons became ill (P. 2)
      c. Physical damage: not applicable
   5. Cause: "Early in the morning, approximately seven hours
      before the picnic began, an unventilated, unrefrigerated
      truck containing a large supply of ham sandwiches was parked
      at the picnic grounds. The truck was exposed to the heat of
      direct sunlight, while the average ambient temperature for
      the day was close to 100 degrees Fahrenheit. In this
      environment, the staphylococcal organisms which elaborate the
      toxin multiplied rapidly....There is some evidence that the
      enterotoxin was present in the ham even before the ham was
      removed from refrigeration and transported to the picnic." (P. 2)
   6. Unique Aspects: none

B. Methodology
   1. Research Agency and/or Principal Research Personnel: The
      Institute for Cooperative Research, University of Pennsylvania
      (P. 1)
   2. Source of Data
      a. Number of interviewees: no data
      b. Number of questionnaire respondents: no data, (Appendix B)
         however, includes several abridged letters which were
         used in data gathering. (P. 80)
      c. Time lapse between disaster and data collection: "The
         study was conducted 1 1/2 months after the end of the
         epidemic." (P. 4)
      d. Other: Data was obtained "by consulting official records
         and also by interviewing local physicians, civil defense,
         and police officials, hospital and town administrators,
         victims of the disease, and volunteer workers who took
         part in the relief activities." (P. 4)
   3. Sample Plan: no data
   4. Other Methodological Comments: "...this study is not a measure
      of how well (Angola) was organized to take care of itself;
      (since the victims were from Elkhart), but a measure of how
      well an unaffected community can aid an affected community." (P. 15)
D. List of All Organizations Involved and Their Activities During Disaster

1. Angola Civil Defense: (had all relief measures organized within 1½ hours after first patients arrived, P. 9) (established CD Control Center, P. 10) (readied Angola National Guard Armory to receive several hundred patients, P. 10) (alerted medical personnel and the two Angola hospitals, P. 10) (established traffic control points at places where congestion or confusion were likely, P. 10) (took measures to protect abandoned cars, P. 10) (furnished beds, blankets, mattresses, medical supplies, and other essential items, P. 10) (housed and fed well relatives of the ill, P. 11) (set up emergency flood lights at the armory and hospitals, P. 11) (provided special disposal squads to bury the large amounts of vomitus and fecal matter which accumulated, P. 11) (provided transportation home or to abandoned vehicles, P. 11) (kept a record of patients at the armory and hospitals, P. 34) (CD auxiliary, police guarded parked cars in the vicinity of the armory and hospitals, P. 35)

2. Angola Mayor: (turned response over to CD Director, P. 10) (placed all Angola agencies— including police and fire—under control of CD, P. 33)

3. Johnson Company: (sponsored picnic at which victims became ill, P. 2) (ran tests to identify agent causing illness, P. 19) (directed those attending picnic to return home when first victims became ill, P. 45) (paid costs arising from epidemic, P. 52)


5. Local Radio and Television Stations: (carried news of epidemic within hours of occurrence, P. 12) (made reassuring statements about benign character of disease and gave helpful hints for first aid treatment, P. 12) (alerted Angola physicians of the epidemic, P. 39) (broadcast instructions to those becoming ill while driving to turn on their headlights as a signal to state police cars, P. 39)

6. Indiana Department of Health: (ran tests to identify the organism causing the epidemic, PP. 18-19)

7. State Police: (checked roads for those who became ill while driving, P. 44) (transported ill, usually to hospitals in Elkhart since Angola hospitals became crowded, PP. 26-44) (used their radio net as means of communication, P. 44)

8. Elkhart Hospital: (treated about 150 patients, P. 41)

9. Elkhart newspaper: (ran story on epidemic, P. 32)

10. Angola Hospitals: (treated about 750 patients, P. 40)

11. Park Ridge Picnic Facility: (placed call to Angola requesting ambulances, P. 33)

12. General Telephone Company: (handled increased traffic, about 7,000 extra calls, due to epidemic, P. 55) (installed extra phones at the CD Control Center, P. 55)

13. Tri-State College of Angola: (supplied bedding to armory and hospitals, P. 45)

14. Angola YMCA: (supplied bedding to armory and hospital, P. 43)

15. Local Angola Dairy: (supplied wax containers to armory and hospitals, P. 44)
D. Brief Description of Emergency Social System

On a Saturday in mid August, the Johnson Company of Elkhart was holding its annual picnic near Angola. About 1700 persons attended the picnic. (p. 1) Shortly after the first persons became ill the picnic was disbanded and the picnickers were directed by a plant official to return home. Nearly all those attending the picnic lived in Elkhart, approximately 60 miles away. "As a result of the rapid exacerbation of the disease, many people driving away from the picnic grounds were forced to halt their vehicles in midroad. The congestion of cars created a potential traffic hazard which would have been very marked if the roads were heavily traveled, as would have been the case near an urban area. In all known cases the driver was able to exercise sufficient self control to stop the vehicle, and no automobile accidents resulted. However, many cars were not pulled off the road, nor were engines stopped or doors closed." (P. 9)

"The first symptoms of food poisoning at the picnic began about 1:30 p.m. By 1:55 p.m. the first ill individual had been admitted to an Angola hospital, and by 2:00 p.m. a sufficient number of ill people had arrived in Angola to indicate that the illness was likely to be widespread. By that time, also, calls for ambulances had gone out from Park Ridge, the picnic ground. The mayor heard the calls coming over the police radio while conferring with the police chief on other matters. Shortly thereafter, while going out for a cup of coffee, the mayor was hailed by an ambulance driver who was returning from a run to the picnic grounds. The driver indicated to the mayor that an epidemic was developing. The mayor immediately returned to his office and telephoned the Angola CD Director. However, the director had already been informed by a nurse at one of the hospitals that an unusual number of persons were becoming ill. She, in turn, had obtained the information from a victim who had just arrived at the hospital." (P. 33)

"In accordance with a previous informal agreement, the mayor placed all town agencies, including the police and fire departments, under Civil Defense direction; this, however, did not include the two hospitals, since they are privately owned and operated...." (PFs 33-34)

"The Angola Civil Defense director's first step was to make three calls to alert his section chiefs, who in turn called their staffs, and to arrange for the use of the school gymnasium. However, soon after the Civil Defense director arrived at the school to meet with his workers and to direct preparations, he received messages indicating the influx of ill individuals exceeded previous expectations. As a consequence, it was now
decided to use the more capacious armory and to hold the gymnasium in reserve. By 5:00 p.m. the Angola Civil Defense Control Center was operating in the armory, which had been readied to receive several hundred patients. The first arrivals, who were initially directed to the gymnasium, were transferred to the armory." (PP. 33-34)

"Were it not for the fact that one of the high officials of the Johnson Company directed picnickers to return to Elkhart when the first illnesses occurred, the patient influx as Angola would have been larger. Many of those attempting to reach Elkhart were, of course, overcome on the road and had to be brought in by ambulances and state police cars. It took until 7:00 p.m. Saturday to clear the roads of ill individuals, although many cars were abandoned until Sunday or Monday." (P. 43)

"On Sunday the epidemic no longer constituted an emergency situation. However, county school buses were used to take home many individuals who still did not feel strong enough to drive or had become separated from the persons who initially drove them to the picnic. Transportation was also arranged for persons wishing to pick up stranded vehicles." (P. 51)

E. Community Context

1. Elkhart: "Elkhart is the home of the Johnson Company and nearby all of its employees. It is a town of 35,600 inhabitants and has many small and some large manufacturing industries....Elkhart has one TV station and three radio stations." Elkhart has a general hospital and a small clinic. The Johnson Company also maintains a small plant clinic. (P. 48)

"Emergency services in Elkhart are provided by the police and fire departments. The former consists of 67 men and is equipped with two way radio communication. There are two ambulances which are dispatched by police radio and manned by a crew of six firemen. In addition, three hearse-ambulance combinations are available from local undertakers." (P. 49)

2. Angola: "Angola is 60 miles due east of Elkhart, at the center of a popular vacation region that is dotted with lakes and cabins. Angola serves vacationers as a shopping and service center. In addition, considerable farming and a small amount of manufacturing take place in the vicinity of Angola. The town population of about 6,000 includes 1,500 students and faculty members of a local college.

"Despite the fact that Angola is a small town, virtually every known service club is represented there. From this,
one may surmise that the town is unusually organization conscious...."most of the clubs in Anzola are very active in civic affairs and are almost continually involved in some substantial community project." (pp. 49-50)
GENERALIZATIONS AND HYPOTHESES

A. "It is to be expected...that a large proportion of persons suffering from staphylococcal enterotoxin poisoning would tend not to be able, or desire, to remove themselves from situations in which they might suffer injuries as a result of action taken by an outside agency." (P. 6)

B. "A rough and ready way to obtain an index of the energy demanded in coping with an epidemic of this sort is to compute the costs in terms of required manpower and money. Sufficient information along these lines may permit estimates of the degree of community incapacitation and disruption caused by staphylococcal enterotoxin." (P. 13)

C. "Physicians interviewed indicated that a larger community...would find it more difficult to develop a central co-ordinating authority because its administrative organization has intrinsic to it more relatively autonomous positions of authority and vested interests which offer potentially greater resistance to coordinating efforts." (P. 16)

D. "It is a well accepted fact in psychiatric practice that the expression of a wish to die must be taken seriously and that a watchful eye must be kept on such patients to forestall attempts at suicide. Because of the incapacitating effects of staphylococcal food poisoning it is unlikely that the danger of active attempts at suicide is very great; that is, evidence leads to the conclusion that afflicted persons are not physically able to make such attempts. Nevertheless, suicide or other self-damage as the result of the extreme lassitude produced by the illness is a distinct possibility." (P. 24-25)

E. "...it is to be expected that a large number of the persons suffer from staphylococcal enterotoxin poisoning would tend not to attempt to remove themselves from situations in which they might suffer injuries or other unpleasant experiences as the result of actions taken by some outside agency. However, if there are a sufficient number of well individuals among the afflicted (one third to one half of the number of those who are ill), it should prove relatively easy for them to remove the ill persons from the dangerous environment. The reason for this is that even during the most severe stages of the illness, as long as shock is not involved, afflicted individuals are believed capable of locomotion with assistance." (P. 25)

F. "Generally, one must expect that there will be a serious decrement in the energy available to victims for a period of 24 hours after the onset of the disease." (P. 26)

G. "Exaggeration of the seriousness of such a situation by public communications media can paralyze essential communications in the localities affected." (p. 39)
I. "It seems...that in a town of Angola's size no rigid preparedness plans are needed to cope with this kind of disaster, in fact, very detailed planning would probably hinder the speed and effectiveness of the town's reactions. It appears that effective improvisation in Angola was possible because (1) it's size facilitated personal acquaintance among town officials and community leaders and (2) an energetic and devoted Civil Defense chief had seen to it that these persons were kept informed about the general role and plans of the Angola Civil Defense organization. It is doubtful that such loose planning would be effective in communities much larger than Angola, although it is impossible on the basis of present knowledge, to predict a town's critical size in this respect." (P. 46)

J. "It is quite possible that a larger community, for example, Ulkhart, would find it more difficult to develop a central co-ordinating authority because its administrative organization has intrinsic to it more relatively autonomous positions of authority and vested interests which offer potentially greater resistance to co-ordinating efforts." (P. 47)

K. "Perhaps there is a critical mass of stress which is required to bring about a centrally co-ordinated control of facilities within a given community. One may speculate that the size of this critical mass has a positive covarying relationship with the size of the community and a negative covarying relationship with the compactness of the community's de facto structure of authority." (P. 47)
SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
1. Name of Organization: Angola Civil Defense
2. Type of Organization: Manifest, crisis

B. Organizational Description
1. Organizational Goals and Activities: no data
2. Organizational Character: no data
3. Organizational Complexity: There are a Civil Director, section
   chiefs, and various unidentified staffs. (P. 34) Angola
   Civil Defense has been organized into a number of district
   units with broadly specified functions. (P. 50)
4. Organizational Control: Each unit of the Angola Civil Defense
   organization is directed by an appointed individual whose
   responsibilities are specified in a "broad way." (P. 50)
5. Membership Recruitment and Orientation: "Angola Civil Defense
   is organized in such a way that each of its 125 members knows
   generally what his duties and responsibilities are in any kind
   of emergency." (P. 15) Membership consists of 55 persons,
   125 members, and 400 card-carrying members. (P. 51)
6. History of Organization: no data
7. Public Image of Organization: The CD Director is described as
   "able, energetic, and devoted." (P. 15)

C. Organizational Activity During Disaster
1. Resources of Organization during Disaster: Ten previous
   training exercises, which included both simulated disasters
   and paper exercises, have given CD members some experience.
   (P. 16) Resources include auxiliary police and physicians.
   (P. 35)
2. Special Problems to Organization: In handling patients, "the
   registration system operated on a hit or miss basis because of
   the heavy influx and the serious condition of many patients.”
   (P. 11) "Treatment schedules became confused because of a
   general shortage of patient identification tags. Some persons
   received duplicate treatments and others received none.
   Treatment schedules were further complicated by transfers of
   patients from one facility to another." (P. 12) "Civil Defense
   communications, especially those depending on radio, were
   seriously hampered by the lack of an adequate message priority
   system." (P. 12) Some insufficiency in radio communication
   was due, in part, by some persons to obtain information
   about or reach 'ill relations by Civil Defense radio. (P. 12)
3. Organizational Change during Disaster: Special disposal squads,
   equipped with shovels and bulldozers, were formed. (P. 35)
4. Evaluation of Disaster Activity: The successful handling of the
   operation is attributed "largely to (Angola’s) Civil Defense
   organization and its director." (P. 15)
D. Organizational Activities in Emergency Social System

1. Existing Plans for Cooperation with Other Organizations: An informal agreement states that the mayor will turn control over to the Civil Defense director in an emergency. (P. 10) But no formal plan had been drawn up to specify the exact circumstances under which such a transfer would take place. (P. 34) The mayor and the director had, however, discussed the role of Civil Defense on many occasions. (P. 46)

2. Communications Networks: Two-way mobile radio communications was established between the Civil Defense Center in the armory, the town hall, the two hospitals, and a traffic control point. (P. 34) Two additional telephones were installed at Civil Defense headquarters. (P. 34)

3. Competition and Conflict with Other Organizations: no data

4. Use of Non-Organization Members for Work of Organization: The mayor placed all city agencies, including police and fire, under Civil Defense. (P. 10) A number of non-Civil Defense personnel assisted in patient care and the cleaning of the facilities. (P. 41) The National Guard armory was used; county school buses were used to drive people home after their recovery. (P. 11)

5. - 7. No data

E. Other
None
I. BASIC INFORMATION

A. Characteristics of Disaster
1. Event: Earthquake (P. 3)
2. Date-Time: 11:37 p.m., August 17, 1959 (P. 5)
3. Location: Madison River Canyon, Montana (P. 5)
4. Damage:
   a. Number killed: 28 (P. 3)
   b. Number injured: no data
   c. Physical damage: damage to summer motels and residences (P. 9); cracked dam (P. 9); camping equipment and cars destroyed; highways destroyed.
5. Cause: dropping and tilting of huge blocks of earth (P. 8) which resulted in an earthquake, huge landslide, and seiche (backward and forward slooshing of the area's lake) (P. 3)
6. Unique aspects: This was one of the strongest earthquakes ever recorded in the United States. (P. 3)

B. Methodology
1. Research agency and principal research personnel: U. S. Forest Service; Dr. Irving J. Wettkind
2. Source of data: the author is a geologist who was camped in the area at the time of the disaster. The report is written "from his own notes and observations and later studies" and from eyewitness accounts. (P. 3)
3. Sample plan: none
4. Other Methodological Comments: "This is a non-technical version, in contrast to the many scientific professional papers and reports already published or in process." (P. 3)

C. List of All Organizations Involved and Their Activities During the Disaster
1. Forest Service smokejumpers: ("parachuted into the canyon to give first aid and to set up communications," P. 3)
2. 54 Federal, State, county, and local agencies and organizations: ("participated in the emergency work immediately following the earthquake", P. 3)
3. Neighboring states and Canadian Provinces: (offered assistance, P. 3)
4. Forest Service officers: (coordinated search and rescue efforts, P. 3)

D. Brief Description of Emergency Social System
"Hundreds of vacationers were asleep in tents, camps, trailers, and lodges near Hebgen Lake, along the Madison River. Forest Service campgrounds were crowded long before dark: other campers simply pulled off the highway and set up their own camps near the river... Followin" the main shock of the earthquake, escape routes were blocked. A huge landslide sealed the lower end of the canyon. Slipouts in the highway skirting Hebgen Lake effectively stopped escape in that direction. Hours of darkness--hours of ordeal--faced most of the trapped vacationers.

I-1
"Communications lines were out. First reports of the disaster came from a 'ham' radio operator in badly damaged West Yellowstone. He had little knowledge of what had happened in Madison Canyon. All that was known for sure was that there was chaos, there was a threat of flood, and there were trapped people desperately in need of help.

"Help was on the way before dawn. Rescue units from many agencies in Idaho and Montana were on the move. At dawn a plane made a reconnaissance flight. Forest Service smokejumpers parachuted into the canyon to give first aid and to set up communications. Men on foot, on horseback, and in helicopters moved in to give assistance to survivors. Among the refugees themselves there were many outstanding acts of brotherhood and mutual help. Rescue workers treated the injured and evacuated them to nearby towns and ranches, where other volunteers provided food and shelter. By evening, bulldozer roads had been built around highway slippouts; the immediate emergency was over, and all who wished to leave were able to get out of the canyon.

"Some 34 Federal, State, county, and local agencies participated in the emergency work immediately following the earthquake. Neighboring states and Canadian Provinces offered further assistance. The search and rescue efforts of all groups, coordinated by Forest Service officers, continued until there could be no doubt that anyone was still stranded or lost." (P. 5)

E. Community Context

"The earthquake area consists of two parts, separated by the newly formed earthquake lake. The eastern part, about 8 miles north of West Yellowstone, is reached via U. S. Route 191 and former highway 287. The western part, about 35 miles from West Yellowstone, is also reached via former State Highway 287." (P. 5)

"The eastern part, the heart of the earthquake area, includes the crudely circular West Yellowstone Basin. The basin is rimmed on the west and southwest by the towering, rugged Madison Range, and on the north by much less imposing mountains and hills. It is these heights that contain most of the features in the eastern part of the earthquake area. The Madison River, which drains the basin, flows westerly through a deep and narrow canyon out through the core of the Madison Range. In 1918, Hegben Dam was constructed by the Montana Power Company across the eastern end of the canyon, and Hegben Lake was formed. The lake is usually drawn far down during the winter, but is replenished and filled by spring runoff. The lake is maintained near its high-water mark during the tourist season, it was near this high level at the time of the earthquake."

(P. 6)
II. GENERALIZATIONS AND HYPOTHESES

None
II. SPECIFIC ORGANIZATIONAL ANALYSIS

No Data
I. BASIC INFORMATION

A. Characteristics of Disaster
   1. Event: False air raid warning
   2. Date-Time: September 22, 1959, at 10:30 P.M.
   3. Location: Chicago
   4. Damage:
      a. Number killed: None
      b. Number injured: None
      c. Physical damage: None
   5. Cause: Air raid sirens were set off in celebration of a Chicago
      White Sox victory. (P. 25)
   6. Unique aspects: None

B. Methodology
   1. Research agency or principal research personnel: Study was conducted
      by four graduate students and a professor in the departments of
      sociology and communication at the University of Chicago.
   2. Source of data:
      a. Number of interviewees: 241 (P. 26)
      b. Number of questionnaire respondents: None
      c. Time lapse: 5 weeks (P. 27)
   3. Sample plan: "The universe of the study was the population residing
      within the city limits of Chicago. The sample consisted of 250
      persons randomly distributed over the city. The sampling procedure
      involved ordering all census tracts within the city according to
      median income and systematically selecting 25 tracts from this
      array. Within each tract, two blocks were randomly selected and
      five dwelling units in each block were assigned to the interviewers.
      Male and female heads-of-household were alternately interviewed.
      Interviewers were authorized to substitute the next adjacent
      dwelling unit in case of refusal or in case of respondents not
      at home after two attempts for an interview." (P. 26)
   4. Other methodological comments: None

C. List of All Organizations Involved and Their Activities During Disaster
   1. Chicago City Council: (had"...resolved that bells ring, whistles
      blow, bands play and general joy be unconfined when the coveted
      pennant has been won by the heroes of 35th Street", P. 25).
   2. Telephone Company (name unspecified): (some operators instructed
      callers to take cover. Switchboards became jammed because of
      large numbers of callers trying to verify the air-raid signal.

D. Brief Description of Emergency Social System
   Insufficient data

E. Community Context
   No data

I-1
I. BASIC INFORMATION

A. Characteristics of Disaster
1. Event: airplane crash (P. 8)
2. Date-Time: 9:50 a.m., December 1, 1959 (P. 8)
3. Location: Montoursville (actual crash was on the side of Bald Eagle Mountain, 3 miles away) (P. 8)
4. Damage:
   a. Number killed: 25 (P. 9)
   b. Number injured: 1 (P. 9)
   c. Physical damage: airplane destroyed (P. 9)
5. Cause: unknown
6. Unique aspects: none

B. Methodology
1. Research agency and/or principle research personnel: Otto Sonder (Associate Professor of Sociology, Lycoming College), Robert Rowser, Judith Cramer and John Maroto.
2. Source of data:
   a. Number of interviewees: 65 (P. 9)
   b. Number of questionnaire respondents: none
   c. Time lapse between disaster and data collection: as late as two months (P. 10)
   d. Other: none
3. Sample plan: "Students known to have been present at the crash site during different intervals of the afternoon were asked to list others whom they had seen and in this way a final tally of ninety, representing one out of every ten students in the college, was secured. Sixty-five of these were interviewed and the average interview lasted for more than an hour." (P. 9)
4. Other methodological comments: The remaining 25 of the students who were at the crash site had been dropped by Lycoming for academic deficiency prior to the interviewing. (P. 9)

C. List of All Organizations Involved and Their Activities During Disaster
1. Four Williamsport radio stations: (asked people to volunteer as rescuers at a certain meeting place, P. 9)
2. Civil Defense: (not specified, P. 9)
3. Police: (guarded site to prevent looting, P. 9)
4. Rescue teams from fire departments in the surrounding boroughs: (not specified, P. 9)
5. Marine Reserve Unit: (guarded site to prevent looting, P. 9)
6. Lycoming College students: (helped bring down victims off the mountainside, P. 9)

D. Brief Description of Emergency Social System
The plane crashed against the side of Bald Eagle Mountain at 9:50 a.m. "During the next half-hour, the four local radio stations in Williamsport interrupted programs with the bulletin that the liner was overdue and was presumed to have crashed. However,
because of the lack of visibility resulting from the fog and the
tremendous difficulty presented by the icy, boulder-strewn, cliff-
like terrain of the roadless area where the crash had taken
place, it was shortly after noon when the first rescuers reached
the scene. During these two hours, the radio stations made num-
erous announcements urging available listeners to volunteer as
rescuers and to meet at Inn 15, a restaurant on the Montgomery
Pike which crosses the mountain not far from where the plane was
believed to be down. Civil Defense personnel, police, rescue
teams from fire departments in the surrounding boroughs, and the
Marine Reserve unit were alerted." (Pp. 8-9)

Several hunters arrived at the wreckage at the same time as the
first search party arrived. Four victims were still alive, but
three died on the trip down the mountainside. (P. 9)

At 12:35 p.m., a helicopter which had flown in to aid in the
search sighted the wreckage and lowered a Catholic Priest and a
physician. The others who had arrived began taking the victims
who were still alive down the mountainside. "Because the wreckage
and some of the bodies were still burning, no further removal
of victims was attempted for another half hour. From about one
o'clock until after four, the mountainside was a beehive of
activity. Volunteers carried bodies and personal effects of the
victims down to a point where they could be placed on a special
train and taken into the city; newsmen hurried about taking
photographs and reporting on the situation; officials began
checking to determine cause of the tragedy; large numbers of
spectators were on hand. Later the scene quieted down and was
guarded throughout the night by Marines and deputy police to
prevent looting." (P. 9)

E. Community Context
No data.
II. GENERALIZATIONS AND HYPOTHESES

A. The students' recall of objective data about what they had experienced was most accurate. (P. 10)

B. "Eighty-five per cent of those who went to the crash scene were boarding students as compared with 53 per cent of the college's male students who lived on campus during that semester...Only 3 per cent of those whom we interviewed were married as compared to 15 per cent for the whole college...Almost a third of those who went were job holders and nearly two-thirds were participants in campus extra-curricular activities. About half "cut" classes in order to go to the scene." (P. 10)

C. "Apparently the news traveled rapidly through the campus because a third of those whom we interviewed had already heard about it before eleven in the morning and the rest found out within the next two hours. Three-quarters heard about it directly from radios and half of these were with other students when the news came to them...One-third had first heard about the disaster directly from other students. Nearly three-quarters started with almost no specific information, knowing only that a plane was lost on the mountain. The others knew that searchers were being sought. But, their departure was not a hasty thing. About half of them finished whatever they were doing when they received the news before they started and over a third took the trouble to change clothes, a curious fact in view of their lack of information about the crash setting. Their initial reactions upon hearing the news were quite varied, but only a tenth recalled responses which could be called excitement and a mere 3 per cent said that they immediately desired to help. One-quarter felt immediate curiosity...Four-fifths of them journeyed to the scene in groups of three or more and most of the rest left with one companion." (Pp. 10-11)

D. "It may be that the taboo of joking actually represents an adjective mechanism at the same time that it produces guilt feelings in those who use it under circumstances of this sort." (P. 11)

E. There was a great difference between what the students expected to see and what they actually saw when they arrived at the crash site—"over four-fifths of those with whom we talked had no inkling until they arrived that the wreckage would be burning. Moreover, the matters of the smell and color of the victims were among the most disturbing reactions...Almost all of them found the disaster much more serious than they had anticipated." (P. 11)

F. Most of the students tended to perceive the scene "in bits, rather than as a whole." (P. 11)

G. "All saw bodies of those who had been killed and all reported varying degrees of emotional disturbance upon first seeing them..."
the disturbance was greater for those who saw living victims and
less for those who saw only the dead. Moreover, the emotional
upset was still less for those who saw only victims who were
so badly burned that they were hardly recognizable as human
beings." (p. 11)

H. "Only one-fourth volunteered on their own to help with the work.
The others were asked to help by other students or officials
directing the rescue. Even after being asked, many were reluc-
tant and joined in through fear of losing 'face' with their
fellow students... The moral here may be that spectators can be
turned into rescuers in disaster if they know others who are
present and are commandingly directed toward what to do." (p. 11)

I. "Over half felt that they became more emotionally disturbed as
they traveled back to the campus." (p. 11) Few experienced
any later reactions. (p. 11)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

No data.
BASIC INFORMATION

A. Characteristics of Disaster
   1. Event: Volcanic eruption
   2. Date-Time: January 13, 1960 to the "first week in February." (p. 1095)
   3. Location: Kapoho, Hawaii
   4. Damage
      a. Number killed: none (p. 1095)
      b. Number injured: no data
      c. Physical damage: "damage to property and crops was extensive." (p. 1095)
   5. Cause: not applicable
   6. Unique Aspects: none

B. Methodology
   1. Research agency and/or Principal Research Personnel: Roy Lachman and William J. Bonk
   2. Source
      a. Number of interviews: none
      b. Number of questionnaire respondents: number not given (p. 1095)
      c. Time lapse between disaster and data collection: no lapse of time (p. 1095)
      d. Other: none
   3. Sample Plan: "A questionnaire is being administered to most of the evacuees and to a control group in a similar rural community that is quite distant from any volcanic activity." (p. 1095)
   4. Other methodological Comments: none

C. List of Organizations Involved and Their Activities During Disaster
   1. Red Cross: (provided disaster shelters for 101 evacuees, p. 1095)

D. Brief Description of the Emergency Social System

"On 13 January 1960, eruption resumed near the village of Kapoho for the second time in 5 years. The resulting emergency was preceded by a sharp increase in the frequency and magnitude of earthquakes. More than 250 individuals left their homes prior to and during the first night of the eruption. One hundred and one individuals were relocated to the Red Cross disaster shelter. The remaining evacuees were sheltered by relatives or friends, or by means of house rentals. Most transportable belongings were removed during the first two days."

"On the fifth day of the eruption, the first dike was built to contain or divert the lava from the Warm Springs recreation area, which was destroyed the following day. A series of earthen dikes were constructed with bulldozers during the following weeks."
The lava circumvented, overran, filtered under, or pushed aside each of the dikes. Numerous buildings in the path of the flow were destroyed.

"During the 15th and 16th days, most of the village of Kapoho was covered by lava. The destruction of Kapoho was almost complete as of the first week in February." (P. 1095)

E. Community Context

"In 1955, a volcanic eruption occurred in the populated Puna District of East Hawaii. This renewal of volcanic activity followed a period of quiescence lasting well over 100 years." (P. 1095)
I. GENERALIZATIONS AND HYPOTHESES

A. "In times of stress and uncertainty, many individuals seek security in supernatural beliefs, rituals, and related behavior." (P. 1095)

B. "This behavior (rituals and offerings made to the Hawaiian Volcano Goddess, Pele) and especially the related beliefs are not limited to any one religious creed, ethnic group, age level, or degree of educational achievement." (P. 1095)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

Insufficient data on any organization.
I. BASIC INFORMATION

A. Characteristics of Disaster
1. Event: earthquake (p. 143)
2. Date-time: 11:40 p.m., February 29, 1960 (p. 145)
3. Location: Agadir, Morocco (p. 143)
4. Damage:
   a. number killed: estimated 15,000 (p. 146)
   b. number injured:
   c. physical damage: three quarters of the town totally destroyed. (p. 146)
5. Cause: none
6. Unique aspects: none

B. Methodology
1. Research personnel: David Middrie
   no other data

C. List of All Organizations Involved
1. British Red Cross: (sent 3 medicals plus a plastic surgeon, blood plasma, and equipment, p. 147)
2. French Navy: (aided in rescue operations, p. 148)
3. Moroccan Army: (soldiers did rescue work, p. 148, brought in supplies, buried dead, p. 152)
4. Prince Hassan: (director rescue work, p. 148)
5. Princess Lalla Yisha: (directed care of injured, p. 148)
6. U.S. Army Engineers: (brought in and operated bulldozers to clear wreckage, p. 148, razed the Casbah, p. 150)
7. French Air Force: (aerifted injured to hospitals, p. 150)
9. British Army: (set up tent colony for the homeless, p. 150, flew orphans out of town, p. 151)

D. Emergency Social System

"The main shock occurred at 11:40 on Monday evening, February 29, but already in the after noon there had been wild tremors subsequently commented on by English visitors who escaped. Hundreds of Arab workers living in shacks on the city outskirts took heed of this warning and so escaped death, for they collected their families and fled to spend the night camping in the open countryside." (p. 145)

"The headquarters of the Royal Moroccan Army collapsed, killing most of the three companies of men stationed there, but a French Moroccan airbase two-and-a-half miles from Agadir was fortunately untouched and able to send assistance."

I-1
The police barracks stood, but...most of the police were
home on leave of absence and perished with their families.
An orphanage for about a hundred children and the maternity
ward of the hospital were shattered, while the remainder of
the hospital sustained heavy damage... All the port crane
quaysides and cargo sheds were put out of action or totally
destroyed, as were the city's fire engines and the new city
market hall.... So complete had been the eliminating of
these best fitted to organize the survivors..." (p. 167)

"Among the first on the scene were a number of Red Cross
medicals who happened to be in Morocco attending to 10,000
victims of a paralysis outbreak. Britain sent a team of
three, under the direction of an eminent plastic surgeon,
who came with blood plasma and medical equipment. A French naval
squadron on a spring cruise in the vicinity was ordered to
Agadir and the aircraft carrier La Fayette, with its planes,
played a vital part in the rescue operations." (pp. 147-48)

"The organization of rescue work was a task which King
Mohammed entrusted to his son Prince Hassan, while the
succour of the injured became the special care of his daughter
Princess Lalla Ayousha. Soldiers of the Moroccan Army reinforced
the squad of citizens...who were desperately digging in the
rubble for surviving relatives." (p. 148)

"On March 3rd a company of United States Army Engineers,
equipped with bulldozers, was flown in from Germany....
On March 4th the American bulldozers went into action, though
each machine was accompanied by a squad of diggers whose task
it was to seek and to unearth trapped survivors." (p. 148)

"The town was divided into ten sectors, with a government
technician in charge. Teams of masked and gloved men set
out to disinfect the ruins with DDT and quicklime in all
places considered unsafe for humans, and to avoid the
risk of contagion these teams of workers were isolated
for four or five weeks." (p. 149)

A tent colony was set up outside the ruined city for the
homeless survivors. U.S. planes flew in food, medicines, and
supplies. (p. 149)
Recovered corpses were buried in mass graves
to the accompaniment of violent objections from the various
religions found in the city. (p. 151-52)

E. Community Content

"Before the earthquake, Agadir was a prosperous city of from
38,000 to 40,000 inhabitants, situated on a gentle bay in the
Southwestern corner of Morocco. The port is backed by a
narrow, fertile plain running along the foothills of the Atlas mountains, slightly to the north of the mouth of the Sous." (p. 144)

"The sardine fishing, always good along that coast, developed still further and led to the establishment of big sardine canning factories which are still important today. The port was also a useful outlet for the agricultural produce of the hinterland, in particular for the fruit and vegetables grown in the fertile Sous Valley. Minerals mined in the Atlas Mountains were sometimes exported here... Quite considerable cement factories have sprung up near the town in recent years."

"Since World War II Agadir had become increasingly popular as a tourist resort and giant new luxury hotels began to line the beach." (p. 144)
II. GENERALIZATIONS AND HYPOTHESES

A. A great deal of difficulty in rescue work, treating the injured, and burying the dead was encountered by local authorities because of varying religious practices.
III. SPECIFIC ORGANIZATIONAL ANALYSIS

No data
ORGANIZATIONS IN DISASTERS

I. BASIC INFORMATION

A. Characteristics of Disaster
1. Event: Tidal Wave
2. Date-Time: May 23, 1960, 1:05 a.m., EST (P. 1405)
3. Location: Hilo, Hawaii
4. Damage:
   a. Number killed: 61 (P. 1405)
   b. Number injured: "Several hundred" (P. 1405)
   c. Physical damage: "Completely destroyed an estimated 500 dwellings." (P. 1405)
5. Cause: Earthquake off the coast of Chile. (P. 1405)
6. Unique aspects: 10 hours warning was had. (P. 1405); the tidal wave warning siren sounded 4 hours prior to impact, but only 40% of the population evacuated.

B. Methodology
1. Research agency: Hawaii Division of the Hawaiian Academy of Science; Ray Lachman, Maurice Tatsuoka, and William J. Bank, principles research personnel. (P. 1405)
2. Source of data:
   a. Number of interviewees: 327 (P. 1406)
   b. Number of questionnaire respondents: None (interviews were based on questionnaire administered orally). (P. 1406)
   c. Time laps between disaster and data collection: Not specifically stated.
   d. Other: None.
3. Sample plan: "Quasi-random" with no artificial factors operant (P. 1405-6). Sample of 327 obtained largely from Red Cross disaster shelter, plus lists of displaced families obtained from churches and the Department of Public Instruction. (P. 1405). Lists of victims were compiled and interviewees selected in non-systematic fashion. (P. 1405)
4. Other methodological comments: Questionnaire was constructed on the basis of preliminary observations of the disaster area and impressions recorded prior to the impact. No questioning was done. The questionnaire was administered by interviewers who in many cases "were close acquaintances of the individuals they were to interview. Hence, open and frank discussions could be initiated almost at once." (P. 1405)

C. List of All Organizations Involved and Their Activities During Disaster
1. Red Cross: (disaster shelter, P. 1405)
2. Radio and Television stations: (pre-impact messages concerning tidal wave, mostly ambiguous in nature, P. 1407)
3. Firemen: (dug people out from wreckage, P. 1409)
4. Police: (dug people out from wreckage, P. 1409)
5. Civil Defense: (dug people out from wreckage, P. 1409)

D. Emergency Social System
The tidal wave warning siren sounded for 20 minutes more than four hours before the wave hit. (P. 1406) 91% of the sample said they knew what the siren meant, but further investigation showed that there were many different meanings attached to it. Only 41% of the sample evacuated prior to impact; the remainder either did nothing, waited for a further warning, or attempted to verify the signal by
other means. (pp. 1406-7) Investigation revealed the official explanation of the siren to be ambiguous: It was described as an "alert" in the telephone book (P. 1406). Radio and television messages were also ambiguous. (P. 1407)

All of the 59% of respondents were at home when the wave hit. 43% of these were asleep, 48% were awake and waiting for further information and/or instructions (pp. 1407-8). 4.3% of the total sample were at the shore line during impact, waiting to see the wave. (P. 1408)

57% of the non-evacuees were trapped in the wreckage (P. 1408). 60% of these got out by themselves or were pulled out by family or friends; the remainder were rescued by strangers, fireman, police, or Civil Defense.

E. Community Context

Hilo is an Hawaiian coastal city composed of a mixture of ethnic groups including Caucasian, Filipino, Hawaiian, Japanese, and Portuguese. (P. 1405-6) 69% of the Hawaiian respondents evacuated (compared to 40% of the overall population), a fact which the authors link to the "elaborate mythology pertaining to Hawaiian deities and geophysical events." (P. 1409)
II. GENERALIZATIONS AND HYPOTHESES

A. The sirens, radio, and television warnings were ambiguous with respect to the degree of danger and proper response to it. (P. 1407)

B. The bulk of the population (between 35 and 50 percent) may be expected to have a "wait and see" response to the ambiguous warnings. (P. 1407)

C. The large (68%) proportion of Hawaiian evacuees may be linked to the elaborate Hawaiian mythology pertaining to deities and geophysical events. These beliefs may have resulted in adaptive reactions. (P. 1409)

D. Despite a statistical significance at the 5% level, education is discounted as a determining factor of the difference between evacuees and non-evacuees, since the difference is of only .9 year of schooling. (P. 1409)

E. "Disaster experience increases the probability of adaptive behavior in subsequent emergencies." (P. 1409)

F. "Personality factors, such as chronic anxiety, loom large as a possible explanation of the (adaptive) behavior recorded." (P. 1409)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

Insufficient data on any organization.
I. BASIC INFORMATION

A. Characteristics of Disaster
1. Event: Exposure to a toxic gas (phosgene) (p. 1)
2. Date-Time: 9:30 a.m., August, 1960 (p. 2)
3. Location: small Southern city, "Bayview" (p. 1)
4. Damage:
   a. Number killed: None
   b. Number injured: None seriously (p. 1); 64 slightly (p. 13)
   c. Physical damage: None (p. 1)
5. Cause: Unknown (p. 6)
6. Unique aspects: The gas, whose source was never determined, caused people to feel dizzy and nauseated; it disappeared from the area by an hour and a half after it had appeared. (p. 4) Most people recovered within one-half hour. (p. 13)

B. Methodology
1. Research agency and/or principle research personnel: Institute for Cooperative Research; Peter T. Heshbacher and Louis Segaloff.
2. Source of data:
   a. Number of interviewees: Not specified
   b. Number of questionnaire respondents: None
   c. Time lapse between disaster and data collection: 10 days. (p. 1)
   d. Other: Newspaper clippings, demographic data, organizational data. (p. 1)
3. Sample plan: no data
4. Other methodological comments: "Officials, medical personnel, victims, and non-affected townspeople were interviewed at length." (p. 1)

C. List of All Organizations Involved and Their Activities During Disaster
1. Venson and James Clinics: (treated those affected by the gas, p. 3; reported gas victims to county air pollution office, p. 4)
2. County air pollution office: (sent two investigators to Bayview, p. 10; checked weather and wind conditions, p. 10; investigated source of gas, p. 5)
3. Special Oil and Refining Co., (sent investigators to Bayview to determine if their plant was at fault, p. 10)
4. State police: (established roadblocks on all roads leading into Bayview, p. 5)
5. Civil Defense: (local director notified county director, who alerted the ambulance corps, the county health office, the county air pollution office, and the sheriff's department, p. 9; investigated the source of gas, p. 5)
6. Sheriff's office: (notified state police, p. 9)
7. Fire department dispatcher: (ordered loudspeaker trucks to cover the town directing the evacuation of all persons, p. 10)
8. Bayview police: (handled calls and inquiries, p. 9)
D. Brief description of emergency social system
At 9:45 a.m. on the morning of the incident, a woman called the fire-department dispatcher to report a gas leak. People began pouring into two clinics near the City Hall. The Chief of Police went to the Bay Chemical Co. to see if they were at fault. Other people went to the City Hall and the County Building. (p. 10)

Two people called the county air pollution office, which promptly sent several investigators to Bayview. County health units, ambulance corps units, and CD units (sent by the county CD director, who had been notified by the head of the Bayview CD) from nearby Metropolis began arriving. (p. 4)
The sheriff's dispatcher radioed the state police, who set up a roadblock around Bayview. (p. 9) These were shortly removed, and the ambulance and health units left, as they were no longer needed. (p. 5) At 11:15 the fire department dispatcher, acting on what he thought were orders from the town CD director, ordered his loudspeaker trucks to cover the town directing evacuation of all persons. Only one family evacuated. (p. 10)

Since the gas had all disappeared by 10:45 a.m. (p. 4) the town quickly returned to normal, and several departments began investigation of the incident. (p. 5)

E. Community Context
Bayview is a town of 5,000 inhabitants, primarily a bedroom community for nearby Metropolis (p. 2). Recently the belt of industrialization reached Bayview with the location of two chemical plants on the northern and western edges. One of these, the Bay Chemical Co. manufactures phosgene, the gas that caused the incident (but was never proven to be at fault, p. 6) (p. 2)
The population of Bayview is civic-minded (p. 7) and in response to the gas scare, plans for a hospital were renewed, and the Bayview Emergency Corps revived. (p. 6)
The city is organized under a mayor and five commissioners, each of which heads a city department. All of these except the police have offices in the new City Hall. The police and several county functions are located in nearby County Buildings. (p. 8)

There are 7 doctors in Bayview, 3 of whom have clinics very close to the City Hall-County Building city center. (p. 11) There is no hospital but the clinics were adequate to handle the victims. (p. 12)

CD in Bayview has no equipment and is dependent upon other agencies for both communications and emergency equipment. (p. 14)
(See extensive demographic data and maps in Appendix)
II. GENERALIZATIONS AND HYPOTHESES

A. "The situation was obscured and the confusion heightened by the lack of an easily recognizable event to focus attention on exactly what was happening." (p. iii, 16)

B. "Both individual and official communications tended to follow traditional channels, ignoring those formal channels which were at variance with traditional patterns." (p. iii, 16)

C. "In no case did a community agency have a specific plan for coping with gas exposure or a general disaster plan which would have been adaptable to this situation." (p. iii, 16)

D. "Most of the physical conveyance activity involved official and semi-official assistance personnel and equipment, there is evidence of widespread attempts to verify the safety of friends and relatives by telephone." (p. iii, 16)

E. "Persons not immediately affected by the gas or involved in the recovery efforts were almost completely unconcerned; they continued their business as usual and ignored evacuation instructions." (p. iii, 17)

F. "The official investigations functioned mainly as a community catharsis." (p. iii, 17)

G. "Conditions of the exposure duplicated a covert chemical attack, and there is a high probability that such an attack would have been disastrously effective." (p. iii, 17)
III. SPECIFIC ORGANIZATIONAL ANALYSIS
Insufficient data available.
I. BASIC INFORMATION

A. Characteristics of Disaster
1. Event: Chlorine gas exposure (P. 1)
2. Date-Time: 9:15 a.m.-12:30 p.m., January 31, 1961 (P. 1)
3. Location: Morganza, Louisiana (P. 1 and Figure 1)
4. Damage:
   a. Number killed: 1 (P. 1)
   b. Number injured: 139 (P. 1)
   c. Physical damage: 75-80 hogs, 6 mules, 1 horse, 15 cows,
      250 chickens, 11 dogs, 50 ducks, and 4 cats killed (P. 23);
      crop damage (P. 25)
5. Cause: Part of a freight train derailed, and a tank containing
   80 tons of liquid chlorine was punctured. A slight wind
   spread the gas over an area 6 1/2 miles long and 3 miles wide
   (P. 3)
6. Unique aspects: none

B. Methodology
1. Research Agency and/or Principle Research Personnel: Institute
   for Cooperative Research (University of Pennsylvania):
   Louis Segaloff
2. Source of data:
   a. Number of interviewees: "as many victims, medical personnel,
      and rescue personnel as were available" (P. 1)
   b. Number of questionnaire respondents: none
   c. Time lapse between disaster and data collection: 6
      days (P. iii)
   d. Other: "a number of available documents...on the social
      structure, prevailing attitudes, economic patterns, and
      community resources in the area." (P. 1)
3. Sample plan: not specified
4. Other methodological comments: "Respondents were interviewed
   informally and at some length. Attempts were made to cross-
   check all information from several sources." (P. 1)

C. List of all Organizations Involved and Their Activities During the
   Disaster
1. New Roads Sheriff's Office: (contacted the New Roads Secretary-
   Treasurer and proceeded to the disaster scene with the fire
   department smoke masks, P. 7; alerted other agencies and sent
   ambulances to scene, P. 7; directed activity at disaster scene
   and maintained overall communications through the patrol cars
   system)
2. New Roads Volunteer Fire Department: (assisted in work at
   disaster scene, P. 8; sent one fire engine to disaster scene,
   P. 7)
3. Miland Funeral Home: (sent 2 ambulances to scene, P. 7)
4. Pointe Coupee Funeral Home: (sent 2 ambulances to scene, P. 7)
5. Baton Rouge Fire Department: (sent ambulance and six firemen
   to scene, P. 8)
6. State Police: (traffic control at scene, P. 10)
7. Louisiana National Guard: (traffic control at disaster scene, P. 10; search and rescue operations, watering-down operations, P. 26)
8. Louisiana Highway Department Maintenance Crew: (directed traffic at scene, P. 8, 10)
9. Solvay Process Co.: (sent caustic soda and workmen to decontaminate area, Pp. 8-9)
10. Mutual Aid System: (sent caustic soda for decontamination, P. 9)
11. Ethyl Corporation: (decontamination activity, P. 8)
13. St. Francisville Fire Department: (unspecified, P. 8)
14. Morganza Volunteer Fire Department: (unspecified, P. 8)
15. Morganza Town Marshal: (unspecified, P. 8)
16. New Roads Electric Plant: (sent emergency truck, P. 9)
17. Local Chapter of American Red Cross: (provided funds to cover the emergency feeding, P. 14)
18. Innis School: (served lunch to anyone who came to the school cafeteria, P. 13)
19. Humble Oil and Refining Company: (sent personnel and equipment for decontamination, P. 15)
21. Pointe Coupee Emergency Charity Council: (arranged to feed victims and evacuees at National Guard Armory, P. 22)

D. Emergency Social System

Several people witnessed the train derailment, but were not alarmed by the cloud which formed at the point of the pile-up (Pp. 5-6). A deputy from the New Roads Sheriff's office passed by the accident and reported to the office by radio, remaining on the scene to give assistance. Another man telephoned the Morganza town marshal and others. (P. 6) As the cloud became visible at a nearby lumberyard, the owner called the New Road Sheriff, and the Miland Funeral Home. The Sheriff contacted the town secretary-treasurer, and they proceeded to the accident scene with gas masks. The Fire and Police Chiefs of New Roads soon followed, on one of the town's two fire engines. The deputy in charge of communications at the sheriff's office notified local funeral homes, the National Guard, and CP; he continued to coordinate all communications during the duration of the emergency. (P. 7)

On the west side of the road running alongside the tracks, traffic was directed by a highway maintenance crew who happened to be there shortly after the accident. Later they were relieved by the State Police. On the east side, volunteers directed traffic until replaced by National Guardsmen. (P. 10)

Due to the multiple phone calls and alerts passed on, a large amount of equipment was on the scene--fire trucks, ambulances, gas masks,
and emergency repair trucks. (P. 9)

Most of the residents of the area approximately two miles west of the accident site were caught by surprise by the cloud. Their escape route was blocked by the freight train standing on the tracks (the road was on the opposite side of the tracks). This area had to be entirely evacuated. The Labarre Elementary School was evacuated when the principal was informed of what had happened; some children were taken home; others who lived in the threatened area were taken to Bachelor High School. (P. 11-12). The Morganza High School was also evacuated in fire-drill fashion, and the children were taken to Innis High School. Some parents came and got their children and drove them out of town. (P. 12) The town of Morganza was evacuated although there was uncertainty as to who ordered it. The evacuation itself was fairly orderly, and most people went to the small village of Bachelor and Innis. (P. 13) Shortly after noon the Sheriff's Deputy went to Innis and announced that it was safe to return, which most people did. (P. 14) Shortly after the derailment, railroad personnel had alerted the Mutual Aid System of Baton Rouge, which arranged to have caustic soda and decontamination personnel sent to the site. (P. 14-15) The first of these arrived before noon, and by 12:30 all traces of gas had disappeared from the entire affected area. (P. 1)

Fortunately, the derailment had missed the telephone wires which ran alongside the tracks, and telephone communication was not disrupted. (P. 15) The victims of the gas were taken to the Sisters of St. Joseph Hospital in New Roads, where they were treated, and most of them released. (P. 17) During the immediate emergency there was no segregation in the hospital. (P. 22)

Shortly after the victims began arriving at the hospital, the receptionist called the Parish Welfare Director and requested assistance. Several members of the welfare staff went to the hospital and assisted as they could. The director of the welfare office called the Pointe Coupee Parish Emergency Council and arranged to have the gas victims fed at the National Guard Armory. (P. 22)

E. Community Context

The accident occurred between New Roads and Morganza, in Pointe Coupee Parish, Louisiana. The railroad track is paralleled by Louisiana State Highway #1, a fairly heavily traveled route. (P. 33) All the population of this area is located along or adjacent to the highway-railroad line. (P. 34) The gas cloud was blown by an east wind toward the town of Morganza. (P. 6)

This area is predominantly agricultural, with several swampy areas. (P. 35) Morganza has a population of 937 (P. 36), of which approximately 54 per cent are Negroes and 95 per cent Catholics. (P. 35) The town of New Roads is more urban, and is modern and highly-organized. (P. 39) In the parish as a whole, the Negroes are a caste apart, and family and tradition rule the social classes.
among the whites. (P. 40) There is a fairly good relationship between the two castes, and those difficulties which occur seem to be a result of lack of communication, not the existence of the castes themselves. (P. 41)
I. GENERALIZATIONS AND HYPOTHESES

A. "The pattern of reaction to this emergency can best be described as cooperative, rather than directed. Persons accustomed to working together continued to do so without anyone giving orders or assuming control. Nearly all of the emergency activity was carried out by local inhabitants." (P. 30)

B. "The obvious technical competence of the Mutual Aid System, which performed the decontamination activities, might be made even more valuable through training in ways of cooperating with informally structured emergency activities encountered outside the metropolitan area." (P. 30)

C. "Individuals who were in responsible positions made a series of effective choices of courses of action." (P. 30)

D. "Victims of the gas experienced strong psychological reactions"—e.g., imaginary symptoms, feelings of anxiety and inadequacy. (P. 31)

E. Racial distinctions were completely disregarded during the emergency. (P. 31)

F. "There was a strong tendency for many people to accept rumors uncritically after the immediate emergency period was over, but no rumors of consequence appeared during the crisis." (P. 31)

G. "Civil defense is generally viewed by local residents as something connected with nuclear warfare." (P. 31)

H. "It has been suggested that there is a critical size for a town, above which unplanned and unstructured activity would be ineffective. There seem to be excellent grounds for suspecting that there is also a critical size below which a town cannot muster enough of the various skills necessary to be effective." (Pp. 31-32)
III. SPECIFIC ORGANIZATIONAL ANALYSES

Insufficient data available.
ORGANIZATIONS IN DISASTERS

I. BASIC INFORMATION

A. Characteristics of Disaster
1. Event: Ammonia Vapor Gas Release
2. Date-Time: August 1, 1961. "Shortly after midnight..." (P. 2)
4. Damage:
   a. Number killed: None.
   b. Number injured: "About 40 persons received treatment in local hospitals for ammonia poisoning and a few for nervous exhaustion." (P. 5)
   c. Physical damage: Loss of 350 tons of anhydrous ammonia. (P. iii) One field of tomatoes and tons of fish. (P. 5)
5. Cause: "A rupture occurred in a four-inch high pressure hose carrying liquid anhydrous ammonia from a river barge to a terminal." (P. iii)
6. Unique aspects: None relevant.

B. Methodology
2. Source of data:
   a. Number of interviewees: "As many officials, rescue workers, and evacuees as possible." (P. 1)
   b. Number of questionnaire respondents: None.
   c. Time lapse between disaster and data collection: Not stated.
   d. Other: None
3. Sample plan: Not stated.
4. Other methodological comments: None relevant.

C. List of All Organizations Involved and Their Activities During Disaster
1. Fire Department, North Pekin: Sounded the alarm and called the fire-police dispatcher in Creve Coeur requesting permission to send equipment to the dock. (P. 6)
2. Police Departments: Had to abandon some vehicles. (P. 4) Began to arouse and evacuate residents. (P. 6) Rescued some residents who could not get out. (P. 7-8) "Communicated by radio and by telephone as the need arose for assistance..." (P. 12)
3. Illinois State Police: Came to assist. (P. 6)
4. Tazewell County Sheriff's Deputies: Came to assist. (P. 6) Established road blocks to stop sightseers. (P. 16)
5. Civil Defense: Came in to assist. (P. 6) Moved through communities and area sleeping families. (P. 7) Ordered cots for shelters and then cancelled order. Coop-rated with the ARC in opening shelters. Provided a radio link in the Bradley University Field House. (P. 10)
6. Caterpillar Tractor Company: Sent in emergency crews. (P. 6)
7. Central Illinois Light Company: Sent in emergency crews. (P. 6)
8. Peoria County Sheriff's Deputies: Came in to assist. (P. 6)
9. Fire Department: Had to abandon some vehicles due to ammonia. (P. 4) Began to arouse and evacuate residents. (P. 6) Rescued some residents who could not get out. (P. 7-8) "Communicated by radio and by telephone as the need arose for assistance..." (P. 12)
10. Illinois Bell Maintenance Plant: "Supplied a sound truck during the later portion of the activity." (P. 7)

11. Radio Station WIRL: Warned people to evacuate. (P. 8) Announced reception centers in Peoria. (P. 9) Announced that all could return. (P. 9) Sent one mobile unit to Bartonville City Hall where it remained in constant contact with the mayor and the Peoria County Health Director. (P. 16)

12. Pekin High School: Sheltered from 250-400 people. (P. 6)

13. Bradley University: Opened a reception center in the Field House. (P. 9)

14. Kingsman School in Peoria: Opened emergency shelters. (P. 9)

15. Glen Oak School in Peoria: Opened emergency shelters. (P. 9)

16. Morton High School: Opened gymnasium as a shelter. (P. 10)

17. Hanna City Air Force Station: "Opened the base kitchen and restrooms." (P. 10)

18. American Red Cross: Opened and operated shelters jointly with Civil Defense. Served coffee, doughnuts and milk with the Salvation Army. (P. 10)

19. Salvation Army: Cooperated with the ARC to serve doughnuts, coffee, and milk. Assisted CD at the Glen Oak School shelter. (P. 10)

20. Middle States Telephone Company: Handled 103 outgoing long distance calls as compared with 38 normally. (P. 11)

21. Illinois Bell Telephone Co.: Handled 615 outgoing long distance calls as compared with 160 normally. (P. 11)

22. Radio Station WMBD: Sent mobile equipment to the east bank and broadcasted a report at 2:30 a.m. which concentrated on local official announcements and emergency activity coverage. (P. 16)

D. Emergency Social System

"No centralized authority pattern took shape during the emergency..." (P. 18) which saw 13,000 people evacuate (P. 11) due to danger from an anhydrous ammonia gas leak. Police and fire departments worked together (without direction from higher authority P. 18) in communication and warning. (P. 4 & 6) "Civil Defense organizations in both counties participated independently..." (P. 18)

The American Red Cross and the Salvation Army participated together in at least one shelter and feeding program among others they operated. (P. 10) "While cooperation between the Red Cross and Civil Defense seems to be automatic and complete, there was evidence that some confusion exists concerning the scope and degree of authority each organization enjoys." Also, "...the lack of any clearly identified authority figure to coordinate activities forced...communications personnel to assume authority beyond their normal functions." (P. 19) And finally, "...two of the evacuation centers filled within minutes of announcements that they were open and emptied very quickly when the "all clear" was announced over the radio." (P. 20) "Intercommunity official radio communication nets were not completely interconnecting..." (P. 22)

E. Community Context

Creve Coeur is a suburb of Peoria, Illinois, which extends along both sides of the Illinois River at a point where it flows between bluffs 125-150 feet high. The communities of Bartonville, Creve Coeur, North Pekin, and Marquette Heights were directly affected by the gas due to the wind direction and their location with respect to Creve Coeur. (P. 25) "...mobility of all the residents in the area was excellent, since most households owned automobiles." (P. 27) Bartonville has a high percentage of older people and is an older residential section. Marquette Heights is a newly developed community with a high percentage of young children. The Caterpillar Company employs over 21,000 people. (P. 26)
II. GENERALIZATIONS AND HYPOTHESES

A. "The investigators feel that the lack of real community ties was reflected in the lack of coordination displayed during the emergency in Marquette Heights. This suggests that a similar reaction pattern might be expected from the officials and residents of many other 'package development' communities springing up around the country." (P. 20)

B. "It is concluded that reliance cannot be placed on fire sirens to arouse sleeping communities for evacuation and that disaster plans should include effective warning systems." (P. 22)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

Insufficient data.
ORGANIZATIONS IN DISASTERS

I. BASIC INFORMATION

A. Characteristics of Disaster
1. Event: Hurricane and Peripheral Tornadoes (P. 47)
2. Date: September 3 - 14, 1961
3. Location: Coastal areas of Texas and Louisiana
4. Damage:
   a. Number killed: Total 48 - 5 in Kansas floods, 30 by hurricane, 13 by tornadoes (P. 49)
   b. Number injured: 276 injured in tornadoes (P. 47)
   c. Physical damage: Total $525 million --- $500,000,000 estimated damage in Texas (P. 49 & 60), $25,000,000 in Louisiana (P. 80)
5. Cause: Not applicable.
6. Unique aspects: "Carla’s winds, tides, and barometer readings were to break all records in coastal history." (P. 1)

B. Methodology
1. Research agency: Office of Civil Defense, Region 5, Denton, Texas.
2. Source of data:
   a. Number of interviewees: No data.
   b. Number of questionnaire respondents: Data were reportedly received from 128 officials, much of which were written reports.
   c. Time lapse between disaster and data collection: Unknown.
   d. Other: Account was based on reports submitted by Civil Defense officials as well as city, county and state public officials.
3. Sample plan: None.
4. Other methodological comments: None.

C. List of All Organizations Involved and Their Activities During Disaster
1. Weather Bureau: Tracked the hurricane, collecting data on the nature and scope of the storm, and elicited warnings to news media, civil defense, and other sources. The bureau also called briefing meetings with "local officials, civil defense, Red Cross, news media, and other community organizations." (P. 1 & 2)
2. News Media: Set up communication systems in weather bureau offices, organized hurricane teams, extensively printed and transmitted hurricane news around the clock, wrote reports just as weather bureau officials prescribed. TV stations showed damage and hurricane films. (P. 2)
   "These reports (radio and TV) served only to keep the people in a highly agitated state of mind. Keep them anxious and worried, and were a continual source of rumors." (P. 35) "Radio and TV announcements, more than any other factor, were credited with starting the stampede that endangered the success of the whole evacuation-reception operation." (P. 51) Major news media in U.S. wanted to interview people. (P. 86)
3. Office of Civil and Defense Mobilization, Region 5: Warned and informed other agencies of what to expect if relief measures were to be requested. (P. 6)
4. U.S. Department of Agriculture: Sent a representative to the area to release surplus food if needed. (P. 5) Put several programs in effect to aid the poor agriculture situation and assigned local committees to report on damage. (P. 88)
5. U. S. Department of Health, Education, and Welfare: Sent an employee to release cots, blankets, and medical supplies from a CD warehouse. (P. 5)

6. Housing and Home Finance Agency: Provided specialists in temporary housing. (P. 5) Assigned by Office of Emergency Planning "to determine the need for temporary housing and to estimate repairs needed by school buildings" and made available 450 MHA multifamily units to Red Cross for $1.00 per month per unit. (P. 66)

7. General Services Administration: Ordered government buildings open to refugees. (P. 5) "Has assigned surveys of other damaged public buildings and restoration of damaged records." (P. 66) Furnished 100 winterized tents for families in shelters. Assisted in determining best way to restore public records. (P. 66)


10. Small Business Administration: Assessed need for disaster loans. (P. 5)

11. U. S. Geological Survey: Provided the Texas State Control Center with contour maps of possible flooded areas. (P. 5)

12. U. S. Coast Guard: Dropped message warnings to isolated houses. (P. 5) Patrolled evacuated cities after hurricane to prevent looting. (P. 66) "Repaired aids to navigation, operated four mobile communication units and four aircraft on survey of the coast; and responded to local requests for communications surveys, and transportation of medical supplies." (P. 7) Was called on to judge availability of Army, Navy and Air Force equipment. (P. 73)

13. 6th U. S. Army at San Antonio: Coordinated military activities and prepared to begin shipment of supplies at the request of the Red Cross. (P. 5) Shipped 25,000 blankets, 10,000 cots, 4,000 mattresses, 22,000 rations and 7 field kitchens. (P. 72) Office of Emergency Planning requested the Army to in turn order in 100 trucks, 5 amphibious vehicles, 10 generators, 61 aircraft, 7 fire trucks, 50 gas masks, 15 radios and a Bailey Span. Called in 800 army men, 800 Air Force, and 1,000 Navy personnel. (P. 72) Received direct requests for aid and supplies that were not cleared through the Office of Emergency Planning. (P. 73)

14. National Guard: Handled all field requests for manpower and equipment. Dispatched units into coastal areas. (P. 5) Checked to see that all residents evacuated. (P. 9) Held back people who wanted to return prematurely. (P. 51) Provided about half of the military assistance. Provided 3,000 men and 500 trucks and planes. Guard was requested by local officials. (P. 74) Set up task forces with gasoline tankers, water purification units, field kitchens and radio. (P. 6) Conducted most of the rescue attempts. (P. 44)

15. Louisiana State Civil Defense: Coordinated government action. "Alerted other state agencies with disaster missions, and established contact with local CD directors, Federal agencies, the Red Cross, power and telephone companies, and news media." (P. 5) Notified parish officials to evacuate. (P. 9) Was in radiotelephone communication with local CD agencies, employed a RACES amateur radio net, used police private-line telegraph, and used the radio nets of the National Guard, Forestry Commission, Highway Department, and Wildlife and Fisheries Commission. (P. 83)
15. Radio amateurs. (RACES): Opened a communication net. (P. 5). Used by local and state organization for communication in selected areas. (P. 62)

17. Louisiana State Health Department: "Prepared equipment and men for insect-vector control and water purification." (P. 5) Removed contaminated foods from restaurants. Checked wholesale houses, drugstores, grain elevators and breweries. (P. 64)

18. Louisiana State Welfare Department: "Activated its shelter management plan." (P. 5)


20. Louisiana Forestry Commission: "Provided mechanized crews, trained in bulldozing, rescue, debris clearance, and firefighting." (P. 5)

21. Louisiana Wildlife and Fisheries Commission: "Called up mobile radio-equipped units, including boats and airplanes, and manned 15 radio towers on a 24-hour basis to relay messages." (P. 5)

22. Texas State Division of Defense and Disaster Relief: Coordinated State agencies. (P. 6) Coordinated the attainment of federal aid. (P. 62) Had a pre-planned emergency plan which was used during hurricane. (P. 93)

23. Texas Department of Public Safety: Cancelled leaves and summoned outside units. (P. 6) Set up traffic control points. (P. 17)

24. Texas State Health Department: Formed food and drug inspection teams. Alerted engineers who assisted in water and sewage plant repairs. Prepared 200,000 doses of typhoid vaccine and administered vaccine. (P. 6) Inspection teams checked food houses and food storage areas. (P. 62)

25. Texas Highway Department: Made available their radio net. Got roads back in operation. (P. 66)


27. Texas Welfare Department: "Aided the Red Cross in food and shelter management." (P. 6) Made 60 workers available to the Red Cross during rehabilitation. (P. 71)

28. Texas Aeronautics Commission: Made available air transports. (P. 6)

29. American Red Cross: Set up state offices and six field districts in advance of hurricanes. Functioned as staging points to channel in workers and supplies. (P. 6) Assumed responsibility for public shelter operations. (P. 37) Requested supplies from the Army. (P. 27) Approved shelters and paid bills for them. (P. 50) Opened local shelters for those whose homes were untenable. Set up canteens and feeding stations till local supplies were restored. Initiated casework and rehabilitation on an individual family basis. Made outright gifts to people out of work and grants for repair of houses, furniture, or for occupational supplies and equipment. Grants were made on basis of need. Established 41 area officers with registration points in every town and employed 500 disaster workers. Established warehouses to receive carload lots and break them into shipments. (P. 71)

30. Local Civil Defense Organizations: "Activated practiced plans, opened control centers and communications, and took action to make sure that public and private agencies knew their roles." (P. 6) Provided radio communication to shelters. (P. 39) Took calls from those who wanted rescued. (P. 42) Called radio stations to correct erroneous reports. (P. 52) Supplied emergency generators to many hospitals. (P. 76) Some had elaborate lists of locally available equipment. (P. 77)
31. Civil Air Patrol: Provided plane with loudspeaker to order evacuation and provided buses for evacuation. (P. 10)
33. State Police: Patrolled evacuation routes. (P. 10) Helped restore communications. (P. 87)
35. La Marque, Texas, Fire and Police Departments: Set off fire sirens and utilized public-address cars for warning. (P. 19)
34. Calhoun County Organization: Set up a radio watch and operating center. (P. 19)
35. Calhoun County, Texas, Hospital: Sent critical cases out and returned others to families with staff and equipment remaining in case of business. (P. 22)
36. Aransas County, Texas, Volunteer Fire Dept.: Spread warning to evacuate. (P. 22)
37. A transportation company in Corpus Christi: "Furnished buses and drivers for those who lacked automobiles." (P. 22)
38. Radio Stations: Informed evacuees of adequate shelter areas. (P. 28) Received the last sources of power available so they could keep operating. (P. 87)
39. Public Schools: Populated served as shelters, complete with superintendents, cafeteria and cooks, nurses, janitors, and administrative help. (P. 28)
40. Local Governments: Ran shelters. (P. 30) Set up road blocks through legal officials. (P. 53) One issued multitudinous bulletins as to why reentry was not feasible. (P. 53) Loss of tax revenue due to hurricane left budgets in poor shape. (P. 60) Devirtual communication systems. (P. 83)
41. Salvation Army: Operated shelters. (P. 30) Offered food from 22 mobile canteens. (P. 31) Served 582,000 people with food, clothing, furniture, bedding, or housing. (P. 72)
42. Seventh-Day Adventist Churches: Operated shelters. (P. 30) Provided nursing services for an evacuated nursing home. (P. 31) Brought in 8 vans of clothing. (P. 72)
43. Texas State Parks: Harbored 25,000 evacuees in 12 state parks. (P. 30)
44. Churches in Refkin, Texas: Alternated serving meals. (P. 31)
45. Local Dairies in Austin, Texas: Supplied free water. (P. 31)
46. Barbecue House in Austin, Texas: Fed evacuees military style. (P. 31)
47. City Police: Patrolled shelters. (P. 31) Contributed rescue workers. (P. 87)
48. Manned roadblocks. (P. 87)
49. University of Texas Medical School: Provided men for medical care. (P. 81)
49. Veteran Administration Hospitals: Cared for nursing home patients who were evacuated. (P. 38)
50. Fire Departments: Contributed rescue workers. (P. 42)
51. Marine Reserve: Provided amphibious tractors. (P. 43)
52. Texas City Council: Attempted rescue operations and sought larger equipment. (P. 42)
53. Texas Rescue Training School: "Sent a rescue truck and faculty members to help direct the search for bodies." (P. 47)
55. Federal Communications Commission: Warned radio stations against unclear and unfounded reports. (P. 52)
56. State Governments: Assessed damage to state. (P. 62)
57. Federal Office of Emergency Planning: Allocated federal funds for repair or public properties and for removal of health hazards and debris. (P. 62) gave housing repair missions to Housing and Home Finance Agency and General Services Administration. (P. 63)
50. *City Sanitary Division:* Checked water, supplies, and immunization. (P. 62)
59. *Local Health Departments:* Ordered necessary insecticide and gave free Typhoid Shots. (P. 63)
60. *U. S. Public Health Service:* Assisted in surveying insect problem. (P. 62)
61. *Associated General Contractors:* Supplied bulldozers for cleanup. (P. 66)
62. *Agricultural Stabilization and Conservation Service:* Shipped 67 railcars of grain to Louisiana and 79½ railcars to Texas from Commodity Credit Corporation stocks. (P. 68)
63. *Farmers' Home Administration:* "Offered emergency loans to farmers in 30 counties." (P. 68)
64. *Agricultural Extension Service:* Gave advice on salvaging flooded homes, food, clothing, and farm equipment. County agents helped with injured or scattered cattle. (P. 68)
65. *Federal Housing Administration:* Offered loans on special terms for building and repair and was subject to an unprecedented demand for these loans. (P. 68)
66. *Federal Home Loan Bank Board:* Extended credit to savings and loan companies who could, in turn, offer more mortgages. (P. 69-70)
67. *Internal Revenue Service:* Sent agents to acquaint areas as to how damages could be tax deductible. (P. 70)
68. *Veterans' Administration:* Sent teams to inspect damage on VA mortgaged homes and assist in repair. (P. 70)
69. *U. S. Postal Service:* Set up inspector headquarters to handle transportation problems and protection. Moved records and accountable papers to higher ground. Used radio to notify residents of general delivery mail. (P. 70)
70. *Federal Power Commission:* Was in constant touch with local power companies. (P. 70)
72. *Telephone Companies:* Imported 1,000 employees from surrounding states to help restore 152,000 phones; shipped in dry batteries, 17,000 telephone sets, and 23 truckloads of cable. Replaced 1,500 downed poles, 91 miles of cable, 29,190 exchange drops, and 1,100 cable terminals. (P. 71)
73. *National Defense Transportation Association:* Furnished trucks and drivers for Red Cross shipments of supplies. (P. 71)
74. *Business and Professional Women's Clubs:* Contributed funds. (P. 72)
75. *Baptist General Convention of Texas:* Contributed funds or goods. (P. 72)
76. *Harrington Park, New Jersey:* Contributed funds or goods. (P. 72)
77. *Churches of Christ:* Contributed funds or goods. (P. 72)
78. *Navy Task Force 135:* Operated off the Texas Coast for 8 days with 8 ships and 619 personnel. Furnished fresh water barges for Freeport, transported supplies, handled typhoid shots and sick calls in 7 communities, flushed the sewage system in Freeport, charged batteries for C-9 units, furnished search teams and cleanup teams, and coordinated efforts through local officials. (P. 72-73)
79. *Jefferson County, Texas, Rescue Corps:* Loaned its communications bus to the State Highway Patrol. (P. 73)
80. *Local Hospitals:* Generally not busy, but a few were evacuated. Usually kept a skeleton staff. (P. 85)
81. *Civil Defense Emergency Hospitals:* Was moved since it was in danger of being flooded. (P. 85)
D. Brief Description of Emergency Social System
As the threat of Hurricane Carla became imminent, the weather bureau, news media, civil defense agencies, and state government committees who functioned as emergency authority - Adjutant General in Louisiana who commanded the National Guard, State Civil Defense Agency, and State Police, and in Texas the Governor who headed a division of defense and disaster relief and a state agency defense council, (P. 3 & 5) - combined efforts to warn the various agencies and organizations in the danger areas to prepare for a hurricane. Soon, people were urgently directed to evacuate to homes of family or friends, motels, or shelters. The ghost cities and counties were left with a few diehards, skeleton staffs, key workers, and rescue teams.

After the hurricane, many inaccurate news releases facilitated a mass premature return in contrast to the orderly and successful evacuation. During rehabilitation, a multitude of federal, state, and private organizations moved to facilitate the cleanup and rebuilding. People returned to find flooded or wrecked homes, factories, and businesses, many times without adequate power, sewage or supplies.

Data were not available for any descriptive statement of specific emergency systems within the organizations or communities.

E. Community Context
The hurricane was so widespread that specific communities were not described. However, a unique political factor of the South - namely the conflict between individual, local, and state rights - resulted in agencies and organizations asking people to behave rather than forcing them. Individuals seemed to be very cognizant of their "rights" and forcefully complained when they thought their rights were being infringed on.
II. GENERALIZATIONS AND HYPOTHESES

A. Why People Went (evacuated): (P. 24)
   1. Experience with a previous hurricane (Audrey).
   2. News media communicated threats of the hurricane.
   3. Local officials’ examples of moving their own families.
   4. Uniformed officials were most successful in facilitating evacuation.
   5. Women influenced their families since they had had ample opportunity to be
      communicated to.
   6. Unanimous requests by local officials. "Those local governments force-
      fully requesting it (evacuation) achieved...from 90 to 100 percent success.
      Where people were given a choice...less than 50 percent success was achieved
      in spite of unexcelled radio-TV coverage and the example of previous dis-
      asters." (P. 24)

B. Why People Refused to Leave: (P. 24 & 25)
   1. "Afraid of Looting." (P. 24)
   2. "Decided Too Late." (P. 25)
   3. "Pride in Remaining." (P. 25)
   4. "Refuse to believe the situation will be as bad as officials believe." (P. 25)
   5. Sneak back to see how things are going.

C. "The Texas CD coordinator said, 'The theory that people would not go, or would
   kill themselves on the way, had been effectively disproved'." (P. 25)

D. If a whole city evacuates, about one-third of the people will need care
   (shelter). (P. 27)

E. "In some 10 or 12 shelters out of the 650, serious difficulties were noted.
   These appeared directly related to two factors: (1) lack of skilled supervision
   and (2) failure to evacuate disaster areas completely." (P. 31)

F. "Possibly the greatest nonmaterial need of evacuees, in and out of shelters,
   appeared to be news." (P. 34)

G. "There is a definite behavior pattern change after the first 7 days...people
   are inclined to think that rehabilitation should be based on personal loss rather
   than need." (P. 71)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
1. Name: Weather Bureau
2. Type: Latent

B. Organizational Description
1. Goals and Activities:
   a. To prevent a storm from catching the population unprepared. (P. 2)
   b. "In 1960, the Weather Bureau had sponsored a series of meetings along the Texas coast to explain to government officials its model hurricane plan for a coastal community." (P. 2)

2. History: "The Weather Bureau since that storm (Audrey) had strengthened its operations in many ways." Including better equipment and communications. (P. 2)

7. Public Image: "There came nothing but praise for the part the U.S. Weather Bureau had played in preparing local officials..." CD directors praised the Weather Bureau very highly. (P. 2)

C. Organizational Activities During Disaster
1. Resources: Automatic weather station, new radar equipment, meteorological satellite Tiros III, and Navy reconnaissance planes. "The most meticulous tracked hurricane in history." (P. 2)

2. Special Problems: No data.
3. Organizational Change: Called in more specialists. Had news media set up equipment in weather stations. (P. 2)

4. Evaluation: "There came nothing but praise for the part the U.S. Weather Bureau had played in preparing local officials..." CD directors praised the Weather Bureau very highly. (P. 2)

D. Activities in Emergency Social System
1. Existing plans: "Model hurricane plan" (P. 2)
2. Communications Networks: "Circuits had been developed to feed forecasts direct to news media, CD, and other subscribers." (P. 2)
3. Competition and Conflict: Private weather bureaus of private oil firms put out conflicting reports. (P. 2)

4. - 6. No data.

7. Relation of organization to governmental units: "On Friday, Weather Bureau offices along the coast called meetings of local officials, CD, Red Cross, news media, and other community organizations." (P. 2)

E. Other: No data.
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
1. Name: American Red Cross
2. Type: Manifest

B. Organizational Description
1. Goals and Activities: RC set up state offices 50 hours before expected hurricane. (P. 6) Responsible for shelter and accommodations for evacuees. (P. 27) Rehabilitate families. (P. 71)
2. Character: RC organized 10 districts in order to be flexible and prepared wherever hurricane hit. (P. 6) Efficient since RC set up 656 shelters in 2 days. (P. 28) Gifts or grants were given on the basis of need to tide over families. (P. 71)
3. Complexity: Behind 10 districts in disaster area were staging points to channel workers and supplies. "By Saturday, September 9, both state and district offices were fully staffed..." (P. 6) RC set up 656 shelters. A RC shelter manager's staff included a nurse, medical officer, and specialists in feeding, registration, communications, and transportation. (P. 28) RC established 41 area offices and had over 500 workers. (P. 71)
4. Control: RC had authority to call in the Army. (P. 28) RC workers usually assumed control of the shelters. (P. 30)
5. Recruitment and Orientation: Managers for the shelters were previously recruited from the local community. (P. 28)
6. - 7. No data.

C. Organizational Activities During Disaster
1. Resources: "The American Red Cross put into effect its "Hurricane Watch" plan..." (P. 6) Requested supplies from the 4th Army and civil defense warehouses. (P. 23) RC had enough money to finance, man, and stock shelters. (P. 30) RC gave grants to families and facilitated the allocation of "abnormal quantities of donated material" (P. 71)
2. Special Problems: Some shelters were either partially filled or overcrowded. (P. 28) Some shelters lacked skilled supervision which resulted in disorder and violence. (P. 31 & 32)
3. Organizational Change: No data.
4. Evaluation: "The ARC was in authorizing and opening so many shelters in so little time was highly praised by state and local officials." (P. 28) 99 percent of the shelters were successful (P. 30) Some didn't have enough workers to feed the people (P. 31)

D. Activities in Emergency Social System:
1. Cooperation Plans: Welfare Department workers served under ARC managed shelters. Could call or Army for help. (P. 27) Had a shelter plan which counted on doctors, nurses, law officers, and other specialists. (P. 28)
2. Communications Networks: Radio stations relayed RC information on available shelters. (P. 28) ARC state headquarters was near Texas state control center. (P. 6)
3. - 6. No data.
7. Relation to Governmental units: Had headquarters near Texas State Government. (P. 6) The only organization that could call on the Army. (P. 28) Cooperation with state welfare workers. (P. 27)

E. Other: No data
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
   1. Name: 4th U. S. Army at San Antonio. (Division)
   2. Type: Latent

B. Organization Description
   1. Goals and Activities: Charged by regulations with coordinating its
      5 state activity in disaster with the Navy and Air Force. (P. 5)
   2. Character: No data,
   3. Complexity: Covered a 5 state area.
   4. - 7. No data.

C. Organizational Activities During Disaster
   1. Resources: Contributed 25,000 blankets, 10,000 cots, 4,000 mattresses,
      22,000 rations, 7 field kitchens, 130 trucks, 8 amphibious vehicles,
      10 generators, 61 aircraft, 7 fire trucks, 50 gas masks, 15 radios, and
      a Bailey Span. (P. 72)
   2. Special Problems: "Numerous out-of-channel requests were received
direct from cities" and had to be confirmed. (P. 72) "Local officials
felt that on-the-scene military coordination might have solved their
problem (of too many offers of help and requests for help)." (P. 73)
3. - 4. No data.

D. Activities in Emergency Social System
   1. Plans for cooperation: Red Cross or Office of Emergency Planning
      had to request aid. (P. 72) Army coordinated Navy and Air Force. (P. 5)
   2. - 6. No data.

E. Other: None.
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
   1. Name: Salvation Army (Texas Division)
   2. Type: Manifest

B. Organizational Description
   1. Goals and Activities: No data.
   2. Character: Operated kitchens in danger areas. (P. 31) Dispersed food on a no questions asked basis without asking for donations. (P. 72)
   3. Complexity: Operated eight centers before the storm. (P. 31) Had 100 staff officers on duty. (P. 72)
   4. - 7. No data.

C. Organizational Activities During Disaster
   1. Resources: 182,000 people were served food and 500 tons of clothing were dispensed. (P. 72)
   2. - 3. No data.
   4. Evaluation: "It was a magnificent accomplishment." A CD director said, "I've heard praise up and down the coast...they're unobtrusive." (P. 72)

D. Organizational Activities in Emergency Social System
   1. Cooperation plans: Seem to cooperate with all. (P. 72)
   2. - 7. No data.

E. Other: No comments.
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
1. Name: National Guard (36th Division and Texas, State Level)
2. Type: Latent

B. Organizational Description
1. No data.
2. Complexity: Texas Guard called in commanders who set up task forces. (P. 6) 3,000 guardsmen were used in Texas.
3. Control: Guard was under Adjutant General in Louisiana. (P. 5)
4. No data.

C. Organization Activities During Disaster
1. Resources: Had gas tankers, purification units, field kitchens, and radios. (P. 6) Texas Guard used about 500 pieces of equipment and oil and gas. (P. 74)
2. Special Problems: Louisiana areas felt Guard did not arrive soon enough. (P. 74) Houston employers tried to fire guardsmen who left plant and went on duty. (P. 44)
3. Change: No data.
4. Evaluation: CD director praised heroic deeds of guardsmen. (P. 44) The commander of the local guard was a smooth operator and the men worked well also. (P. 74)

D. Organizational Activities in the Emergency Social System
1. Cooperation: Worked with Adjutant General of Louisiana to take all requests for manpower. (P. 5) In Texas, the Guard was obtained by local request and acted under local authority. (P. 74)
2. No data.
7. Relation to Government: Guard under the Adjutant General along with Civil Defense. (P. 5) Guard referred any problems to the local police. (P. 74)

E. Other
"We need a National Guard unit to be assigned to certain areas to move out on the request of the city or county - so we'd know we had a unit on call..." (P. 74)
I. BASIC INFORMATION

A. Characteristics of Disaster

3. Location: "Gulf coast from Grand Isle to Corpus Christi." (A p.xi)
4. Damage:
   a. Number killed: 45 (A p.2)
   b. Number injured: no data
   c. Physical damage: property damage in excess of $400,000,000.
5. Cause: A mass of cold air from Canada blocked the eastward swing of the hurricane as it entered the gulf, forcing it westward toward the Texas coast. (A p.1)
6. Unique aspects: "The death toll, high as it was, ran well below the number predicted. This was largely due to the extended warning period, and to the detailed organization of evaluation plans which had been undertaken shortly after Hurricane Audrey had devastated Cameron Parish, Louisiana, five years earlier." (A p.1)

B. Methodology

2. Source of data:
   a. Number of interviewees: 1,594 (A p.7)
   b. Number of questionnaire respondents: none
   c. Time lapse between disaster and data collection: 3 days (A p.xi)
   d. Other: Texas Department of Safety and Texas State Division of Defense and Disaster Relief allowed project members to sit in control center in Austin and later gave them access to its message files; American Red Cross, and other state agencies gave researchers information; newspapers and broadcast stations supplied photos and other materials. (A p.xii)
3. Sample plan: "Since eight Louisiana parishes and 13 Texas counties felt the force of the hurricane to some extent, a careful sampling plan was necessary. Populations of these units ranged from 7,000 to as high as 245,000, and from all rural to 96 per cent urban...First, it was desired that both rural and urban areas be studied, since it seemed likely that the evacuation behavior in the cities would differ from that in farming areas. Second... It was decided that both areas of high and low evacuation should be studied. Third, because Cameron Parish, Louisiana, was already under study when Hurricane Carla struck, and because it represented an area with recent disaster experience, it seemed desirable to include it in this study. In order to obtain a maximum amount of information from knowledge of Cameron Parish, it was decided to seek a matching area sample in Texas. Finally, in order to test the effects of the degree of threat on evacuation behavior, it was decided to select areas with varying degrees of impact from Hurricane Carla. "Five sample areas were finally selected on the basis of these criteria: Calcasieu Parish, Louisiana; Chambers County, Texas; Baytown, Texas; Galveston, Texas." (A p.7)

"In each of these sample areas a systematic sampling procedure (see A, Appendix, p. 145) was used. In every case it consisted of selecting households according to a predetermained set of instructions. In each household an adult household member—usually husband or wife—was
interviewed. A series of structured interview guides, so designed the
different schedules were specified on the basis of whether the family
was evacuated or remained at home, was employed on the schedules. The same
questions were asked both evacuees and non-evacuees about the warning
experience and about their personal background characteristics."
(A p. 151-9)

4. Other methodological comments: "The samples are concentrated in the
home-coming, married, child-bearing sections of the population." (p.150)
"Interviewing was done primarily in households, during the day. Obvious
result of this procedure was that more women were interviewed than men.
Another result of day-interviewing in households was an over-representation
of married couples with children. With the exception of Galveston,
middle-aged couples with children were over-represented in the samples.
The major flaws, besides the two just mentioned, are as follows. In
Baytown and Calhoun County, the Spanish-speaking population was probably
under-represented. In Chambers County, the Negro population was under-
represented. In Galveston, the Negro population was over-represented." 
(A p. 156)

1981-0911 B-B.

Methodology

1. Research Agency and/or Principle Research Personnel: Evelyn Konrad
2. Source of data:
   a. Number of interviewees: not specified
   b. Number of questionnaire respondents: none
   c. Time lapse between disaster and data collection: "within three weeks
      of Hurricane Carla" (B, p.7)
   d. Other: article is a press release of a symposium on "The Role and
      Responsibility of Television in a National and Regional Emergency.
      In the course of the symposium, the role of KNOU-TV, Houston, during
      Hurricane Carla, is discussed, and a study conducted afterwards is
      cited. (B, pp.1-2)
3. Sample Plan: not specified
4. Other methodological comments: none

C. List of all Organizations Involved and Their Activities During the Disaster
1. KNOU-TV (Houston): "During the 48 hour peak of the Hurricane, from
   9 through 11 September, KNOU-TV actually turned itself into the
   communications arm of the US Weather Bureau, telecasting right from the
   Weather Bureau's Galveston Head Quarters and bringing the official US
   Weather Bureau radar map and experts to the public on TV. " (B, p.2)
2. Weather Bureau: (tracked hurricane, A p.11P) "Issued numerous bulletins
   and advisories which served to alert the Gulf Coast to the possibility
3. TV and radio stations: (reported Weather Bureau advisories and bulletin, 
   A p.21)
4. Red Cross: (operated shelters, A p.21)
5. Civil Defense: (operated shelters, A p.21; warned people in Cameron
   Parish to evacuate, A p.40)
6. Governor of Louisiana: (ordered evacuation in areas of severe threat,
   enforceable with police power, A p.42)
7. National Guard: (patrolled against looting, A p.120)
8. Texas State Division of Defense and Disaster Relief: (acted as a
   coordinating office during disaster, A p.140)
D. Brief Description of Emergency Social System:
The Weather Bureau had been watching Carla ever since her inception in the
Caribbean, and as she grew to hurricane proportions, began to issue warnings
to people in threatened areas to evacuate. (A p.20) The governor of
Louisiana ordered evacuation in areas of severe threat. If people did not
want to evacuate the order could be enforced with police power. (A p.42)

"Estimates are that approximately 200,000 refugees spent at least a part of
their time away from home at one or more of 650 shelters where some 20,000
persons sought to aid them. But the activity quickly shifted from the
shelters to the roadblocks that prevented the wolves from returning to their
homesites, and to the temporary quarters many of them occupied for a period
time. Red Cross and other social agencies did what was possible to aid
these displaced persons to plan for resumption of their pre-disaster lives.
Local committees and contractors were enlisted to assure the greatest possible
compliance with personal and local norms." (A p.2)

"Civil and military authorities undertook the tasks of clearing debris and
restoring public facilities. In this they were aided by an allocation of
$8 million by the Federal Government acting through Public Law 375, plus
a large but undetermined amount added by local political units. Some large
corporations made direct contributions to Red Cross and at least one company
paid its taxes several months in advance in order to alleviate the financial
strain imposed by the hurricane. Heavy equipment privately owned was made
available for reconstruction purposes, sometimes at an agreed price, often as
a gesture of good will." (A p.2-3)

"Expenditures of the huge amounts for rehabilitation by Red Cross and govern-
mental units and from the savings of families gave to the devastated area a
spurious air of high prosperity which did much to lessen the suffering of the
business community and provided work for many whose regular employment had been
interrupted." (A p.3)

E. Community Context:
Calhoun County, Texas was an area of maximum impact, with a high evacuation
rate. The eye of the storm passed over it. The county contained both
isolated, rural population, and urbanized population in Port LaVaca. (A p.8)

Cameron Parish, Louisiana was almost totally evacuated. Almost entirely rural,
its parish seat is an unincorporated village of approximately 1,200 inhabitants.
(A p.8)

Chambers County, Texas is also entirely rural. Like Cameron Parish, it is
dependent economically on cattle, rice, fishing, and petroleum, as well as
the tourist trade. Evacuation was medium-high. (A p.8)

Daytown, an industrial city of approximately 30,000 is one of the oldest
petroleum-processing centers on the Gulf Coast. It adjoins Houston and is a
considerable distance from the Gulf proper. Evacuation was in the 60-70
percent range. (A p.8)

Galveston had high threat characteristics and a relatively high evacuation rate,
in addition to past experience with disasters. An evacuation of 60-70 percent
took place in this area. (A p.8)
II. GENERALIZATIONS AND HYPOTHESES

A. Hypotheses of the Project

1. Hypotheses Related to the Warning Problem
   a. The source of warning information is associated with the decision to evacuate. Warnings given by local authorities are more effective in stimulating evacuation than those emanating from a) the Weather Bureau, b) the Red Cross, c) radio-television weather and news reporters.

   1. Local elected officials are reluctant to associate themselves with an order to evacuate, or even with specific advice to evacuate. As a consequence, responsibility is shifted to non-elected officials where there was a definite local plan for issuing warnings and evacuation advice or orders, and where this plan was executed, evacuation was more orderly and complete.

   2. The knowledge or belief that some areas have been ordered to evacuate while others have only been advised to evacuate will weaken the advice as an effective means of accomplishing evacuation. This is due to the fact that the situation in the area where only advice to leave was given will be adjudged less dangerous.

   3. Warnings accompanied by information concerning the location of shelters are more effective than those not accompanied by such information.

2. Hypotheses Associated with Decision-Making
   a. Evacuation decisions are arrived at by families or other primary groups. Families will move as units and remain together, even at the cost of overriding dissenting opinions. Groups of families will form spontaneously in public shelters and remain intact, even though this means declining the offered comforts of private homes.

   1. Since arguments for and against evacuation are most clearly developed in geographic areas where opinion on the matter is most evenly divided, the decision-making process can be studied most profitably in such areas. (A devise for locating such communities was developed and used.)

   2. Role conflict tends to abate after the decision to evacuate has been made and acted upon, but will begin to increase with plans for returning to the danger area. That is, during the early period of evacuation, the refugee tends to discard other roles and become for the time being a refugee only.

   3. Role conflict is intense for such persons as physicians, governmental officials, and welfare workers, who are forced to weigh their own safety against the functions of their occupations. These
persons will be found to be active in seeking support from their peers for their ultimate decisions.

4. Warnings and other relevant information from known and trusted persons in informal relationships will be accepted and acted upon more readily than information from formal sources via the mass media. Those who evacuated will have discussed the danger with others more than did non-evacuees.

5. A "snowball" effect will result from increased discussion and the visual awareness of friends, relatives, and neighbors evacuating, and comprise a strong inducement toward conformity. This will result in ecological patterns, roughly corresponding to "natural areas" with significantly differing percentages of evacuation. These differences will obtain even though the populations of these areas were subjected to the same formal warnings and to the same danger from the storm.

6. Sex, age, and socio-economic status are factors involved in the decision to evacuate; females will be more ready to evacuate than males; families with small children will be more ready to evacuate than childless families; older people will be less prone to evacuate than younger people; upper and middle socio-economic groups will be more prone to evacuate than the lower groups.

7. The distance travelled in evacuation will be associated with (1) socio-economic status, (2) stage in the family life cycle.

3. Hypothesis Associated with the Shelter Problem

a. The choice of shelter area will be strongly influenced by sociological patterns in the evacuated community. People from the same neighborhood or community will tend to select the same shelter or shelter area.

1. The type of shelter used will depend upon (1) accessibility of friends or relatives in a shelter area, (2) socio-economic status, (3) neighborhood or community factors.

2. People will tend to go to public shelters where known friends or relatives are also going, and to form groups or cliques within the shelters. Attempts will be made to perpetuate the interpersonal communications network which existed in the evacuated area.
3. Within the public shelter, rumors will present a major morale problem because of the lack of a systematic feedback of information from the evacuated area.

4. Less media of communication tend to exaggerate the dramatic aspects of disaster. This distortion is an important factor in promoting high anxiety and low morale among evacuees. This situation is aggravated by the failure or inability of agencies to supply reliable information from the devastated area. The ill-defined conditions of the "home" area will result in premature attempts to return by evacuees, even in face of danger from health and/or accident hazards. This indicates that the task of achieving evacuation is not as great as that of controlling return to the devastated area.

B. The Warning Process
For an extensive theoretical discussion of the warning process, see App. 13-19; for specific findings see A, pp. 19-54.

C. Decision-Making Processes in Evacuation Behavior
for specific findings, see A, pp. 57-88

D. Shelter and Return Period
for specific findings, see A, pp. 89-119

E. Summary of Findings
Some of the findings of this study, indicated with sufficient clarity to warrant acceptance, may be stated in abbreviated form:

Evacuation decisions are made by family groups; not by individuals. Any feasible plan must win assent of all "voting members" of the family group. Dissent is likely to be overridden.

Because of neighborhood discussion of the danger, it is to be expected that groups of neighbors will travel together to the same shelter area and, perhaps, will find shelter together in public or commercial facilities.

Groups of families tend to form spontaneously in shelter, in addition to groups formed on the basis of age, place of residence, and occupation.

Official statements concerning danger appear to be less persuasive than family discussion. The function of official pronouncement seems to be to serve as a basis for discussion in family and other primary groups.

Members of the larger and more authoritarian institutions appear more likely to seek and accept official advice.
Role conflict, or the presence of conflicting obligations is an important consideration for some persons, but not for others. An expected high correlation between professional status and refusal to evacuate was not found in those data. After a decision has been made, role conflict tends to decrease or disappear. However, in many cases there will be no conflict of responsibilities. In other cases, responsibility may dictate evacuation, as illustrated in the case of a physician whose patients have joined a mass exodus, leaving no one in need of his services.

During Hurricane Carla, word-of-mouth was of little importance as a source of initial warning, even in rural areas. But it must be remembered that broadcasting of warnings began almost a week before the hurricane struck, and there was extensive discussion within and outside of the family during that period. Word-of-mouth was probably the most important factor in evaluating formal warnings and developing attitudes toward evacuation.

Most families accepted the advice or orders of officials with good grace. When officials spoke clearly, there was a tendency for discussion to give way to action.

Not only were elderly persons less likely to evacuate; they were also more likely to express a desire not to evacuate.

Those persons who earned higher emotionality scores at the time of interview, seven months after evacuation, had been more eager to evacuate at the time of the hurricane, and had indicated a higher perception of danger.

The higher the income, the greater the likelihood that the family would remain in the home. This probably is related to possession of sturdier houses by higher income families. The low-income group was more likely to remain in the home community, as was the high-income group, than were the middle-income families. The empirical action is similar between low- and high-income groups; the probably explanations are entirely different. In general, the poor went to public shelters. Middle-income families went to private homes, or motels. The high-income families remained in their own homes, or went to homes of friends or relatives, or to motels or hotels. The rich had access to all types of facilities; the middle- and lower-income families had fewer choices open to them.

Local police and the American Red Cross emerged as the two most active agencies in this disaster. The Red Cross, however, rated below most other agencies on the quality of the relationships established with collaborating institutions. Red Cross leaders rated highest in the community power structures. Stereotyping and class structure are both explanatory factors for this finding.

Weather bureau performance was the most highly rated in this disaster situation.
Some evidence indicates that the more authoritarian the institution, the better its relationships with other agencies. However, it should be pointed out that authoritarian institutions have their procedures and their goals explicitly defined, and these definitions are well known to the other institutions with which they deal. This probably implies a high degree of consensus between the agencies involved. This point is crucial and is discussed at length later in this chapter.

Evacuation during Hurricane Carla was undoubtedly favored by the fact that the storm came within dangerous range on Friday; subsequent evacuation took place on Saturday and Sunday. This meant that the husbands and fathers were not at work, and less likely to be out of the town of residence or to be engaged in work that could not be interrupted or postponed. Likewise, there was no necessity for gathering the children from their schools. In some cases it was necessary to retrieve husbands from the golf course.

It seems generally true at present that our disaster culture is best developed for dealing with warning prior to impact. This point is given further consideration in the following pages.

The greatest reliance for warning was placed on radio and television (91 percent), and most respondents (92 percent) followed the course of the storm carefully.

If Calhoun County, which received the greatest impact is removed from the total sample, the rate of evacuation and the extent of knowledge about evacuation plans bear a direct relationship to one another.

Women were more anxious to evacuate than men.

Most people thought the full force of the storm would strike them. Moreover, a greater proportion of those who thought it would (42 percent) than of those who thought it would not (36 percent) left the community.

Previous disaster experience is associated with evacuation. Examination of the figures shows that persons with previous disaster experience evacuated more frequently than did those without such experience.
Reactions to approaching danger of persons with prior disaster experience tended to polarize. In Cameron Parish evacuation was virtually complete; in Galveston it was very light. Both areas have long and tragic histories of disaster. Prior experience seems not to be the critical factor.

There was a significant difference between ethnic groups in their opinions of danger. A significantly lower proportion of Negroes than of any other group believed that the storm would strike their area.

Spanish speaking respondents had a higher proportion who expressed the positive "yes" opinion; but a lower proportion who expressed the "right" opinion, about this question of impending danger.

Distances traveled by evacuees were short. In three of the five sites more than half the evacuees traveled less than 25 miles. Only in the case of Calhoun County were the distances traveled often more than 100 miles. This was made necessary by the relatively sparse population pattern over the area. In the case of Cameron Parish, the modal distance reported as traveled would put the evacuees in the Lake Charles area. Swampland occupies most of the terrain between Lake Charles and the ridge along the Gulf Coast.

The small percentages of refugees from Carla who used public shelters should be scrutinized carefully by military planners. In Cameron Parish, where 24% of the refugees left their home community, only six per cent went to public shelters. Similarly, in Calhoun County approximately 8% of the population left their homes, but only 19% went to public shelters.

By contrast, in Galveston, the number of persons waiting out the storm in the city, but not in their homes, was greater than the number who went to the mainland. Public shelters were used by 26% of those interviewed. An additional 12% took refuge in the homes of friends or relatives.

The low percentage of refugees using public shelters indicates need for planning a far more extensive program of public care of displaced persons in case of total evacuation of an area for a considerable period of time, as in case of military attacks. A part of such planning might well take into account the willingness of citizens to take refuge in their homes, thereby reducing the need for public facilities.

No evidence of widespread panic was observed. This research would once more refute the belief that people abandon their inhibitions as a drowning man sheds his hampering clothing - when faced with disaster. This belief is an exaggeration of man's inability
to apply cultural definitions to the situation; it ignores man's ability to extemporize, a process of finding and using action patterns belonging more appropriately to other stages of his life history.

Newspapers display a rapidly rising interest in disaster, but lose interest very quickly as the dramatic aspects of the situation are replaced by the prosaic activities of replenishing and rebuilding. Because of the slowness with which newspapers operate, relative to broadcast media, they could not compete as sources of warning in the Carla situation and certainly would be of limited use in more rapidly developing crises.

Evacuation orders and advice to evacuate served to increase discussion in the family and with non-family members about what to do. That is, if a family was contemplating leaving or was ordered to leave, its members were more likely to discuss their action than if they remained at home.

Urban areas do not have the same kinship structures as do rural areas, and need more public shelters.

The order of priority for shelters desired for any future hurricane is: private homes, commercial shelter, public shelter.

Only 25% of the people in public shelters heard rumors about the progress of the storm.

According to respondents, news was reliable.

Rural residents made more efforts to return home early than did those in urban areas.

Political boundaries in some instances serve as impediments to effective service. The Red Cross, for instance, served the Tri-city Beach area, just outside the corporate limits of Baytown, from Anahuac, seat of Chambers county in which those residents lived, although each visit or shopping trip required driving some 75 miles. At the same time, social workers and supplies were available a few miles away, in Baytown.

The evacuation effort was facilitated by the miraculous appearance of a high-pressure area northward from the storm center, which had the effect of blocking the forward movement of Carla. This delay of the storm enabled the people along the coast, in most cases, to use as much time as they felt was needed to make preparations for leaving their homes; to collect and evaluate information; to discuss the situation with friends and relatives; and finally, to come to a decision about evacuation. The high-pressure area also meant that the expected point of impact was steadily moved westward, so that the orderly evacuation noted above was more to be expected in the Louisiana and eastern Texas sites than in Galveston County; our data

II-7
indicate that this occurred. Cameron Parish and Jefferson County had the most effective evacuation programs of any of the areas for which data were secured.

"Evacuation decisions are made by family groups..."

F. Theoretical Implications
1. "Emotionally disturbed persons are likely to show improvement when they are given the feeling that they are doing important work or taking part in an important enterprise." (p. A126)

2. "If personal suffering or property loss can be rationalized as a sacrificial contribution to some prized value, as to national survival during warfare, the impact appears to be greatly mitigated. This may be an essential difference between the reaction to warfare and to disaster." (p. A129)

3. "The fundamental function of culture is to provide the individual with a set of values that define his life experiences. When values are applicable to disaster situations, they are implemented in an interpretation of them, but inappropriate action after results, since the disaster is outside of the cultural definition. When, however, disaster is incorporated into the culture - when a "disaster culture" is developed - definitions of the situation obtain and are applied. The effect of these definitions is a substantial reduction of the impact of the disaster both emotionally and physically, and in terms of the value of property destroyed." (p. A130)

4. "Above all, this strictly demonstrates that great masses of people can be moved with a minimum of injuries or panic. Highway accident rates actually decreased during the period of evacuation." (p. A131)

5. "Civil defense planning was shown to have had high value in meeting the emergency and in keeping the number of casualties at a minimum." (p. A131)

6. "Newspaper content indicates that the American Red Cross and the federal government are the primary and most powerful forces in dealing with disaster." (p. A132)

7. A need exists for a post-disaster warning system. "The type of warning needed in this instance would pertain to conditions in the devastated areas, and the dangers to be found therein which made immediate return impossible or so hazardous that the public welfare demanded that it be prohibited." (p. A134)
8. Community Problems
   a. "A need is indicated for further and specialized consideration of essential community functions in disaster planning. Determination of the conditions under which such persons should or should not evacuate, or whether some members of the occupational category should and others should not evacuate, should become a part of planning of emergency action at the community level." (p. A135)
   b. "A recurrent observation was made of confusion about the proper channels for request for assistance." (p. A136)
   c. "Local officials pointed out that if requests were to be quickly met, specific instructions were needed as to the type and destination of machinery desired." (p. A130)
   d. "Police power to order and enforce evacuation in face of grave danger is badly needed." (p. A137)
      "In general, local officials were reluctant to force people to leave their homes." (p. A11)
      Police were much less reluctant to forbid re-entry than they had been to enforce evacuation." (p. A141)

9. Function of norms: "The dichotomy between imposed authority and local/personal responsibility is not solely a matter of whether or not socially accepted norms are present in the culture. In cases where the situation has not been culturally defined, or no norms have been established, the person is necessarily forced to assess the situation by any means available to him, and to arrive at a decision on the basis of this assessment." (p. A143)
   The implication of this finding for military planning is entirely clear. In emergencies where there are norms, or where the prevailing norms are not in accord with public policy, authority must be promptly imposed. Further, it would appear that the most efficient way of meeting a situation approximately normative would be to utilize the services of existing institutions, wherever this is at all feasible." (p. A143)

10. "Democratic, permissive leadership is effective, and desirable from the viewpoint of traditional American values, in those situations where conditions are well understood, where culture has provided a set of norms from which may be chosen one, or several, acceptable modes of action; and where the actors are aware of these alterations - that is, where there is an acceptable social definition of the situation. But where there conditions are not present, the actornlack the customary guidance on which they depend in making decisions, and it becomes incumbent on the leadership to act on behalf of others by imposing authority and making decisions." (p. A144)
11. "Perhaps the imposition of an outside authority is essential to overcome the frustrations resulting from the feeling that nothing can be done, that the situation is hopeless. These feelings are a natural consequence of the disruption of the social fabric and of individual behavior patterns. When autonomy is impossible an outside authority must step in and initiate a new course of action. By submitting to such an outside authority persons whose sense of direction has been destroyed may regain their ability to act purposefully. The social system may begin an acceleration that will restore a state of dynamic equilibrium at a level equal to, or even higher than, the one destroyed." (p. A144)

C. Conclusions From 1961-0911 B study: (B, p. 12-13)
1. Some two-thirds of the respondents rely on television rather than other media for their regular weather news.
2. Nine out of ten respondents saw the direct telecasts from the Galveston Weather Bureau.
3. As the storm cirrus increased in intensity, respondents switched overwhelmingly from other media to television.
III. SPECIFIC ORGANIZATIONAL ANALYSIS
insufficient data
I. BASIC INFORMATION

A. Characteristics of Disaster
   1. Event: Fire
   2. Date-Time: November 6, 1961 at 8:10 a.m.
   3. Location: Los Angeles, California
   4. Damage:
      a. No. killed: none (P. 270A)
      b. No. injured: No serious injuries (P. 3B)
      c. Physical Damage: 434 homes and 21 other structures were
totally destroyed, 29 houses and 3 other buildings were damaged
more than 30%.
$24,135,000 loss in the fire (P. 270A)
15,810 acres of brush land were burned. (P. 4B).
   5. Cause: Undetermined (P. 4B).
   6. Unique Aspects: The area had experienced a long dry period (P. 243A).
Wind velocity was 29 mph with gusts to 35. (P. 254A). The area in-
volved in the fire was mountainous and covered with a brush, which
under low humidity conditions is thought to be the most combustible
brush in North America, (P. 245-246A).

B. Methodology (1961-1106A)
   2. Source of Data:
      a. No. of interviewees: no data
      b. No. of questionnaire respondents: no data
      c. Time lapse between disaster and data collection: 1 day (P. 242A)
      d. Other: Information gathered from various city, county and
federal officials (P. 242A).
   3. Sample plan: none
   4. Other: none

B. Methodology (1961-1106B)
   1. Research agency: Los Angeles Fire Department (P. 2B).
   2. Source of data:
      a. No. of interviewees: no data
      b. No. of questionnaire respondents: no data
      c. Time lapse between disaster and data collection: no data
      d. Other: none
   3 & 4. No data.

B. Methodology (1961-1106C)
   1. Research agency: Santa Monica Local Office, California Department
   of Employment. (P. 3C).
   2. Source of Data
      a. No. of interviewees: none
      b. No. of questionnaire respondents: none
c. Time lapse between disaster and data collection: no lapse of time.
d. Other: Report written by the manager of the organization involved.

3. & 4. No data.

C. List of All Organizations Involved and Their Activities During Disaster
1. Los Angeles County Fire Department (Took command of and fought the Santa Ynez Fire, P. 263A).
2. Los Angeles City Fire Department (Took command of and fought the Los Angeles conflagration, P. 254A-263A).
4. County Camp Crews (Trustees from juvenile work centers were used in patrolling fire breaks, running hose, and working the flanks of brush fires, P. 253A).
5. U. S. Forestry Service (Provided aerial tankers to drop a borate flurxy on the brush fires, P. 253A. Also provided additional equipment, P. 15B).
6. California State Division of Forestry (Provided fire-fighting equipment, P. 15B).
8. Military Forces (unnamed) (Supplied 250 men for ground operations, P. 15B).
10. Los Angeles County Flood Control District (Supplied 130, 000 burlap bags for use in diking and diverting water, P. 18B).
11. Los Angeles Department of Public Works (placed 1, 300 tons of sand in strategic location for use in these bags, P. 18B).
12. Santa Monica Local Office, California Department of Employment (Provided men for hire to the residents of the fire-stricken area to fill, transport, or place sand bags, clean up debris, or help with temporary or permanent repair work, P. 3, 4C).
13. Los Angeles Police Department (Traffic control, P. 257A. Responsible for implementing evacuation of the affected fire area, protection against looting and restriction of access to authorized persons, P. 15B).

D. Brief Description of Emergency Social System
At noon Phase III recall for the entire A-platoon that had gone off-duty on Sunday was initiated. Phase III is a manning of all equipment and reserve equipment plus a total recall of one or more divisions or Platoons (P. 262A).

A second fire was reported 6 miles to the west spreading south in the Santa Ynez Canyon area - another major emergency. The County Chief took over command of this fire. Because of the new western fire, general headquarters was now moved to Mountain Patrol No. 2 headquarters. (P. 263A) At 1:40 p.m., third brush fire was reported about 1/2 mile east of the conflagration. This fire was quickly put out by responding engines and a borate pilot (P. 265A).
The first of 20 Civil Defense units, activated by the mayor's office, arrived at 3:13 p.m. (P. 265A).

Phase IV was initiated at 8:00 a.m. the following morning. Phase IV is a total departmental recall. By noon the conflagration was declared officially contained. On November 8, the conflagration was officially controlled at 4:00 a.m. (P. 266A).

The threat of a flood of water and mud from the burnt off mountains had to be dealt with. Annual rye grass was sown and residents were furnished with sand bags. (P. 183). The Santa Monica Employment Office provided emergency stand-by or labor (P. 3C).

Between 7 a.m. and 8 a.m., wind velocity was 29 mph and humidity was 4-9%. The Los Angeles City Fire Department declared a "high hazard" in the mountainous brush regions of the city, initiating the pre-planned move up of companies into the mountainous area to reinforce the initial striking companies for this section. (P. 254A).

Just after 8:10 a.m., fire started at the end of Stone Canyon Avenue. The fire was seen by a grading contractor and was reported by telephone from a near-by house to the Van Nuys Signal Office at 8:15 a.m., from whence the alarm was sounded. (P. 254A).

At 8:26 a.m., Chief Sawyer declared a "major emergency" calling for 15 additional engine companies, 2 borate six tankers, tractors, and 6 sector chiefs. (P. 256A).

At 9:30 a.m., Phase I recall was instituted. "Phase I is a call for full manning of available reserve engines and 2 piece engine companies which can be split. Both radio frequencies being used in fire department communications were beginning to show signs of crowding." (P. 257A).

When school children were evacuated from endangered school buildings, news media were notified. (P. 258A).

The fire changed character and forced a general shift in technique at about 10:50 a.m. The fire started jumping into a populated section. Communications were overloaded. "At this point the planned defensive strategy broke down and operations became a local defend-what-you-can-and-move-on operation." (P. 260A).

E. Community Context
The mountainous area of Los Angeles, about 25 percent of the LA area, is covered with a particular type of brush which, under low humidity conditions is considered to be most combustible brush in North America. At the time
of the conflagration, Los Angeles had been experiencing a long, dry period, with very low humidity. The roads in the mountainous area are very narrow with extreme curves. Some of the homes in this area are in the $700,000 range, but the majority are $35,000 to $60,000 ranch type homes. Most of the houses were built 50 feet from the brush and many were within 10 to 15 feet, creating a definite fire hazard. (P. 245A-247A).
II. GENERALIZATIONS AND HYPOTHESIS

No Data.
III. SPECIFIC ORGANIZATIONAL ANALYSIS

A. Organizational Information
1. Name of organization: Los Angeles City Fire Department (P. 249A).
2. Type of organization: Municipal.

B. Organizational Description
1. Organizational goals and activities: "Public relations, publicity, planning, research, fire prevention and investigation, building construction and water supply." (P. 249A-250A).
2. Organizational character: "Recall of off-duty personnel is set up in 5 phases again to allow flexibility in response." (P. 251A).
3. Organizational complexity: The Chief Engineer is the administrator of the department. He "delegates control to seven Deputy Chiefs, Assistant chiefs in charge of 3 platoons and 6 divisions, and battalion chiefs in charge of the 15 battalions make up the rest of the fire-fighting command force." (P. 249A-250A).
4. Organizational control: "The policy making body consists of a five-man Board of Fire Commissioners appointed by the Mayor, with the Chief Engineer as an ex-officio, non-voting member." (P. 250A).
6. History of organization: no data.
7. Public image of organization: no data.

C. Organizational Activities During Disaster
1. Resources of organisation: The L.A. City Fire Department maintained 97 land stations, 2 mountain patrol stations, and 2 fire boat stations, housing 320 pieces of fire fighting apparatus, 260 of which were in first line service and approximately 200 autos, pick-ups, service, supply and fire prevention vehicle. (P. 249A).

Emergency operating procedure was developed in 1957. The plan allows the field commander to designate a "major emergency" which brings automatic response of a mobile communication truck, reserve utility, and emergency units. (P. 251A).

Recall of off-duty personnel is set up in 5 phases to allow flexibility in response. Phase I calls for a full manning of available reserve engines. Phase II calls for Phase I plus full manning of available reserve trucks. Phase III is a Phase I & II plus recall of one or more divisions or platoons. Phase IV is a total department recall. Phase V is a total recall of the off-going platoon. (P. 251A, 253A).

"The procedures for the major emergency were followed smoothly indicating good training and practice." (P. 279A).
2. Special problems to organisation: "Swamping of the two tactical radio channels. Difficulty in transmitting through the smoke column" (P. 279A). Water pressure failed in certain portions of the area because of the demands placed on the water system. (P. 261A). Some locations in the conflagration area could not be protected because of lack of men and equipment. (P. 263A).

3. Organization change during disaster: Changes in the organization came about only in the following of their emergency operating procedures, see III. C. 1.


D. Organisational Activities in Emergency Social System

1. Existing plans for cooperation with other organisations: "Informal, but extremely effective, mutual aid agreements exist with the Los Angeles County Fire Departments and the departments of the neighboring municipalities that surround the city. . . . Many agencies, both public and private, furnish direct and indirect support at large fire emergencies." (P. 6B).

2. Communications networks: The Chief Engineer directed all fire department operations from Mountain Patrol No. 2. (P. 263A).

3. Competition and Conflict with other organizations: None noted.

4. Use of non-organization members for work of organization: "County Camp crews, trustees from county-operated juvenile work centers were valuable assets to work details for patrolling fire breaks, running hose, and working the flanks of brush fires. (P. 253 A).

5-7. No data.

E. Other: None
I. BASIC INFORMATION

A. Characteristics of Disaster
   1. Event: Avalanche
   2. Date-time: January 11, 1962, at night.
   3. Location: Mountains in Callejon de Huaylas section of Peru.
   4. Damage:
      a. Number killed: "The papers reported figures varying
         from 3,500 to as high as 7000. Up there they estimated
         between 1,500 and 2000, the highest estimate that I
         heard was 2,500. Whatever the actual figure it was
         a terrible disaster." (p. 1)
      b. Number injured: "There were only 4 wounded found,
         All the rest were dead and buried." (p. 1)
      c. Physical Damage: "The paper claimed
         that the town was completely wiped out along with a
         number of smaller places.... I found there still
         remained some twenty houses on the northern side
         of town." (p. 1) Part of another town (Hushuascuchu)
         and most of the kind of its inhabitants was lost in
         the avalanche. (p. 2) "The depth of the slide had
         been estimated at 15 meters." (p. 1) "Engineers
         estimated that some ten million square meters of ice
         must have broken off the mountain. But how they arrived
         at that nice round figure is beyond me." (p. 3)
         "The entire area was completely buried. Even such
         large structures as the local church vanished
         completely. It is not yet known whether or not the
         people will be able to re-open the land to agriculture."
         (p. 3)
   5. Not applicable
   6. Unique aspects: "Only at the edges could you see any of the
      wrecked houses. All the rest of our walls of 12 kilometers
      (across the slide) we saw only huge boulders, dried mud,
      water and mud. Some of the boulders were as much as 15-20
      feet in diameter. If they were that big on the surface,
      the mud must be covering a much larger number of them." (p. 1)
      "Many spots were dry on top but still spongy.... Then the
      rains started, and the ice began to melt. The next day when
      the sun came out it melted even faster and the whole area
      was a sea of mud and stone. The ice that had been buried
      continued to melt for many days afterwards. They reported
      that many of the pieces of ice were larger than the largest
      boulder, even after bouncing down a twelve mile course
      at an approximate speed of 50-80 miles an hour." (p. 2-3)

B. Methodology
   1. Research agency and/or principal research personnel:
      Stillman Ford.
2. Source of data
   a. number of interviewees: "I spent the afternoon on Sunday down by the edge of the slide interviewing the survivors of Huchuscucho." (p. 2) "When many of the people began repeating themselves about their problems, I decided that it was time to head back to Yungay to talk to the people in charge of the aid program." (p. 4) (no numbers given)
   b. Number of questionnaire respondents: no data
   c. Time lapse between disaster and data collection: 10-11 days later.
   d. Other: Also talked with people responsible for the administration of aid that arrived from outside. (p. 2)

3. Sample plan: not used
4. Other methodological comments: none

C. List of all organizations involved and their activities during disaster
   1. Oficina Nacional de Planeamiento y Urbanismo (National office of Planning and Urbanism): (officially charged with the responsibility of making a survey of the possibilities for relocating the town) (p. 1)
   2. Prefect of Department: (Gave misleading information in distance from town to mountain overlooking landslide, p. 1)
   3. Peruvian Air Force: (Flew Bradford over slide to take pictures. Flew many officials who used their rank to get a free look at the slide. After emergency period, continued to fly materials, although peasants could have been hired more cheaply, p. 5)
   4. Red Cross in Yungay: (Received medicines from Brazil; clothing, blankets and mattress stuffing from Argentina; ponchos from Chile; blankets, ponchos, and clothing from Colombia; blankets, gas and kerosene from Peruvian Red Cross; American powdered milk through Peruvian Red Cross; had received nothing from the U.S. Also identified applicants for aid hoping to weed out those not affected, p. 4)
   5. Group of American Priests from Boston: (Arrived few days after slide, were saddled with responsibility of doing everything, p. 4)
   6. Presidential Palace: (Sent social assistants who were working hard to get all the "desnificados", ones suffering damage, registered, p. 4)

D. Brief Description of Emergency Social System:
   "Doctors rushed up there to help, but returned saying there was nothing to do. Only four were wounded and the rest were dead and buried." (p. 1) "The people reported that the first aid arrived the second day after the avalanche in the form of..."
shots to prevent an epidemic. After that came food and blankets and clothes." (p. 4)

E. Community Context: no data
III. GENERALIZATIONS AND HYPOTHESES

A. "My general impression was that once the aid got to Yungay it was well handled. How much was sent that never arrived I have no idea." (p. 4)

B. "The aid that was given was on an emergency basis. In time everyone will tire of giving aid. What they need now is to get resettled quickly before the aid runs out." (p. 5)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

Insufficient data on any organization
I. Basic Information

A. Characteristics of the Disaster
   1. Event: Earthquake
   2. Date-time: 3:10 p.m., August 21, 1962 (p. 4)
   3. Location: Southern Italy, Atripalda in the province of Avellino (p. 3)
   4. Damage:
      a. Number killed: 18 (p. 5-6)
      b. Number injured: no data
      c. Physical Damage: One large church destroyed, 30% of the houses of one small village damaged, minor damage elsewhere (p. 6)
   5. Cause: not applicable.
   6. Unique aspects: none

B. Methodology
   1. Researcher: Leonard J. Moss
   2. Source of Data:
      a. Number of interviews: number of interviews not given.
      b. Number of questionnaires: none
      c. Time-lapse: none, on the scene at the time of the disaster
      d. Other: Participant observer
   3. Sample plan: none
   4. Other: none

C. List of Organizations Involved
   1. RAI television (Carried first accounts of the earthquake) (p. 6)
   2. Italian Army Engineers (Moved into a town reported leveled, but found only one building destroyed and 30% of the houses damaged.) (p. 6)
   3. Red Cross (Disaster team moves to the same town which had been reported completely destroyed.) (p. 6)

D. Emergency Social System
   "The early evening of 21 August, 1962, was typical of the hot, dry weather that had enervated the populace during the long, intense summer. While the women busied themselves with the chores of the household, the males stood clustered in the shade of the farm buildings. At 1910 hours (7:10) I had a sensation of mild vertigo and felt a quivering of my calf muscles.... About 15 seconds later, one of the women rushed out of the house hollering, "Terraroto!" (earthquake). Only then did the others react; everyone came running out of the house, primarily as a reaction to the proclamations of "Earthquake! At this point, there was no panic. There were queries as to what had happened. At 1920 hours a second shock was felt, its duration was approximately five seconds."

"A series of mild tremors were felt by some at several times during the evening. We drove to Atripalda and Avellino, the provincial capital, immediately after the mild panic at
the farm had subsided. In both towns the streets were overflowing with people. It appeared that the entire populace had taken to the streets with bed clothing to sleep in the open piazzas and park areas."

"Two deaths were attributed to the quake in Avellino..... Aside from the loss of plaster and one broken cornice stone there was no further damage done to Avellino or Atripalda. Sixteen deaths occurred in and around Naples, almost all due to the panic which followed the earthquakes." (pp. 5-6)

E. Community Context

Before the occurrence of the earthquakes the informants of the investigator denied any earthquake activity within the memory of living man. (p. 4) However, after the earthquakes "the memories of farmers suddenly came alive as they recalled the quakes of July 7 and 23, 1930, and December 28, 1908." (p. 7)
II. Generalizations

A. "Although the South Italians reaction to the earthquake contains elements peculiar to that culture, the behavior seems to differ little in the kind from similar panics following natural disasters elsewhere. (p. 6)
III. Specific Organisations

Insufficient data on any organisation
I. BASIC INFORMATION

A. Characteristics of Disaster
   1. Event: Operation Chlorine
   2. Date-Time: September-November, 1962 (P. 1)
   3. Location: Louisiana and Mississippi
   4. Damage:
      a. Number killed: None
      b. Number injured: None
      c. Physical damage: None
   5. Cause: The potential hazard posed by the corrosive effects of a steel barge—containing chlorine gas—which had been lost in the Mississippi River near Natchez.
   6. Unique aspects: Although this was only a "disaster threat" a full scale emergency plan was put into operation during the "threatened period". (P. 1)

B. Methodology
   1. Research Agency: Disaster Services—American National Red Cross, Washington, D.C.
   2. Source of data:
      a. Number of interviewees: None
      b. Number of questionnaire respondents: None
      c. Time lapse between disaster and data collection: None
      d. Other: Participant observation.
   3. Sample plan: None
   4. Other methodological comments: None

C. List of All Organizations Involved and Their Activities During Disaster
   1. The American National Red Cross: (assisted the Department of Health, Education and Welfare in the initial planning for Operation Chlorine, P. 4); maintained operational relationships at various levels with the U.S. Public Health Services and the Corp of Engineers, P. 4; assigned Red Cross staff members to the Mississippi National Guard to coordinate shelter efforts; set up headquarters in Vidalin, Louisiana, P. 6; provided mobile canteen service for emergency workers around the clock, P. 6).
   2. The United States Public Health Services: (stationed a unit on the levees adjacent to the barge site—equipped to treat chlorine poisoning, P. 12; issued daily bulletins for all developments and plans for each tank lift, P. 14).
   3. Corps of Engineers: (undertook the job of locating and removing the Wycham II and its deadly cargo, P. 4).
   4. Louisiana Department of Public Safety: (responsible for implementing plans for the safety of the "threatened residents of Louisiana", P. 5).
   5. Louisiana Department of Health and Welfare: (duties not specified, asked by the Dept. of Public Safety to assist in any way, P. 5).
   6. The Louisiana State Police: (was assigned a tank force to the operation, P. 5).
7. The Louisiana Fish and Game Service: (was asked to cooperate with other agencies—specific duties not outlined, P. 5).

8. Mississippi State Civil Defense Council: (was responsible for directing the plans for public safety in Mississippi, P. 5).

9. Mississippi State Department of Public Welfare: (was requested by the Mississippi Civil Defense Council to be responsible for shelters, feeding facilities, first aid stations, etc. This agency declined and delegated the responsibility to the Red Cross, P. 5).

10. The U.S. Coast Guard: (with the cooperation of the Louisiana State Police—set up communication centers immediately adjacent to the Vicksburg headquarters, P. 6). (patrolled the river at all times, stopping all river traffic thirty miles away, P. 12).

11. The National Guard: (designated to implement evacuation plans, P. 6).

12. The Mississippi State Highway Department, the Mississippi Highway Safety Patrol, the State Welfare Department, the State Board of Health, the Forestry Commission and the State Game and Fish Commission: (were asked by the Governor to cooperate in the emergency efforts—but were not given specific duties, P. 6).

13. Army Chemical Warfare supply depots: (made some 50,000 gas masks available to the Civil Defense for public distribution, P. 11).

14. A special Weather Bureau team: (headed by an expert on air pollution—set a twenty-four hour weather station at the Vicksburg headquarters, with “sub-stations” at the barge site and other locations to provide information on all weather conditions and wind speed and to give direction in relation to the salvage operations and the “danger areas”, P. 11).

15. Chlorine Institute: (sent a specialist on pulmonary illnesses and chlorine poisoning to train all medical personnel in hospitals and health agencies and private doctors, P. 12).

16. The local telephone company: (installed special phones in the emergency headquarters, P. 12).

17. Superintendent of Parish Schools: (ordered all School Principals and lunch room managers to make their facilities available, P. 17).

B. Brief Description of Emergency Social System

During the summer of 1962, official agencies of the state of Mississippi became concerned over the potential hazard posed by the corrosive effects of the water where the steel tank Wychem 112 had been submerged. A meeting of interested parties was held in Jackson by the Coast Guard, and the matter was brought to the attention of the U.S. Public Health Services Division of Air Pollution and the Office of Emergency Planning. (P. 3)

Although the barge could probably have remained under water for years without mishap and without being hazardous to river navigation, President Kennedy directed that it be removed as quickly as possible to avert any future danger to the public health. He assigned to the Office of Emergency Planning the responsibility for initiating and coordinating a plan to insure the safe removal of the chlorine during the period of low-water. (P. 3)
The Director of the Office of Emergency Planning immediately delegated to the United States Public Health Services the primary responsibility for public health and public information aspects of this operation, defining this assignment as "responsibility for all operational aspects other than the actual removal of the barges and contents and federal governmental relationships with affected State political authority and Congressional representatives". (P. 4)

Through the American National Red Cross Liaison officer assigned to DNEW, the Red Cross Disaster Services was invited to assist in planning for the safety and care of people living in the areas which would be endangered if the chlorine gas escaped during the salvage operations. (P. 4)

Headquarters for the "threatened area" were set up in Vidalia, Louisiana, and this building served as focal point for all operations.

Disaster staff members were assigned to each of the counties or parishes concerned, to contact local Red Cross Chapter officials and to work with the chapters in marshalling community resources, volunteers, etc., to implement the shelter and feeding plans. (P. 5)

The Mississippi National Guard, working with appropriate state agencies, developed a detailed evacuation plan, designed specific routes for evacuees from various sections to take and posted the evacuation routes. Guard units were assigned to traffic control posts. In addition, the Guard set up what amounted to a block warden with a uniformed Guardsman on duty at all times to make certain that people did not evacuate if the gas began to escape. (P. 9)

Special warning arrangements for persons in outlying areas were developed, utilizing Army Special Warfare helicopters equipped with loudspeakers and flying red flags. These helicopters were permanently stationed on the levees at the site of the salvage operations, prepared for instant take-off to sound the warning over pre-designated areas. In addition, all broadcast news media were tied into an emergency warning network. (P. 10)

B. Community Context
Approximately 95,000 people lived in the threatened area. Among them were school children, seriously or chronically ill persons, the hospitalized, and people living or working on isolated tenant farms, oil rigs or at hunting and fishing camps. There was a considerable cattle farming industry behind the levees on the Louisiana side of the river. Largest single community was Natchez, with a population of 22,000. Other larger population concentrations included Vidalia, Jonesville, Jena and Sicily Island, Louisiana. (P. 9)
II. GENERALIZATIONS AND HYPOTHESES

A. That Operation Chlorine served to re-emphasize the need for all local Red Cross chapters to do pre-planning. (P. 1)

B. That mutual planning will strengthen working relationships between federal, state and local agencies. (P. 1)

C. That the working relationships established before a disaster strikes is a good index for measuring the degree of cooperative, effective disaster relief efforts in a community when the disaster actually occurs. (P. 1)

D. That the experiment—Operation Chlorine—will be a useful tool for all communities throughout the United States. (P. 1)

E. Panicking can be avoided during a salvage operation period if sirens and alarms are kept silent on all vehicles until the actual disaster occurs. (P. 13)

F. That the general public will show little concern when the first news is released regarding a possible disaster. (P. 13)

G. Rumors of all kind will spread during a disaster preparedness period. (P. 14) And that all possible efforts of informing the public will not eliminate most of the rumors. (P. 14)

H. That the Red Cross Disaster Preparedness Committee should take the lead in initiating discussions in local communities, emphasizing the need for pre-planning evacuation routes and for providing a disciplined body of manpower for implementation. (P. 22)
III. SPECIFIC ORGANIZATIONAL ANALYSIS

Insufficient data on any one organization.
I. BASIC INFORMATION

A. Characteristics of Disaster
1. Event: Recovery of four tanks of liquid chlorine (1100 tons) from the Mississippi River. (P. 1)
2. Date-Time: September 1962.
3. Location: Mississippi River near Natches, Mississippi (P. 1).
4. Damage:
   a. No. killed: none
   b. No. injured: none
   c. Physical damage: none
5. Cause: Sinking of a barge carrying four tanks of chlorine, possibility of chlorine leaking from tanks and causing sickness and death in surrounding area. (P. 1)
6. Unique Aspects: No damage was actually incurred, however, a threat of danger was present.

B. Methodology
2. Source of data:
   a. No. of interviewees: none
   b. No. of questionnaires: none
   c. Time lapse between disaster and data collection: none
   d. Other: data was from planning reports, operation reports, correspondence and communication logs of all agencies involved.
3. Sample plan: none
4. Other Methodological Comments: none

C. List of All Organizations Involved and Their Activities During Disaster
1. President of the United States (assigned to the Office of Emergency Planning the responsibility of "Operation Chlorine", P. 2)
2. Office of Emergency Planning (Responsibility of overall direction and coordination in removing the hazard and protection of the public, P. 2).
4. Wyandotte Transportation Company (Made attempts to locate the barge but were unsuccessful, P. 2).
7. Triple "C" Boats, Inc. of Morgan City, Louisiana (Salvaging of chlorine tanks, P. 8).
8. The Red Cross
   a. The American National Red Cross (Requested to assume major responsibility for sheltering, reception and care of evacuees outside of the potential disaster area, P. 12).
b. Southeast Area Office of Red Cross (Director from this office placed in charge of Red Cross disaster activities at the site of operations, P. 12).

9. Veterans Administration Hospital, Alexandria, Louisiana (Received patients from the potential danger zone, P. 17).

10. Veterans Administration Hospital, Shreveport, Louisiana (Received patients from the potential danger zone, P. 17).

11. Veterans Administration Hospital, Biloxi, Mississippi (Received patients from the potential danger zone, P. 17).

12. Veterans Administration Hospital, Jackson, Mississippi (Received patients from the potential danger zone, P. 17).


14. Army Chemical Center (Reported estimated danger that would result in the release of the chlorine, P. 1).

15. Third Army Headquarters (Assigned a liaison officer to PHS Emergency Operation Headquarters, P. 17).

16. U.S. Air Force (Specific activities not mentioned, P. 17).

17. 22nd Special Warfare Aviation Detachment (Specific activities not mentioned, P. 17).

18. 19th Psychological Warfare Company (Specific activities not mentioned, P. 17).

19. Chlorine Institute (Provided consultant services and scientific materials, P. 17).

20. Department of Public Safety, Louisiana ("Overall responsibility of formulating emergency plans and preparing for the safety of the population in that area of Louisiana which might be affected by an escape of chlorine gas during the recovery operation," P. 18).

21. Louisiana State Police ("Establishing an area-wide warning system; arranging methods of communication; organizing a program for prompt effective traffic control; maintaining sufficient means of transportation for all evacuees; providing assistance to local officials and to the State Board of Health during evacuation of chronically ill and handicapped patients; adopting security measures for the safety of the population and for the protection of all property; maintaining public information services; obtaining Federal and State assistance in the acquisition of necessary supplies and equipment," P. 18).

22. Louisiana State Department of Wildlife and Fisheries ("Assisted in establishing a warning system by furnishing mobile radio units and assuming responsibility for warning the population of a given sector," P. 18).

23. Louisiana State Board of Health ("Responsible for: assisting local authorities in providing for the care of the sick and injured, and for sanitation and health problems of evacuees; conducting a survey of the danger zone to determine the total number of chronically ill and handicapped patients; determining how many of these patients would need assistance in being evacuated from the danger area; obtaining permission..."
and medical records from physicians of patients to be evacuated; arranging transportation for patients to be evacuated prior to lifting of tanks, and for their return after completion of operations; providing monitoring teams to monitor the danger area if a disaster occurred." P. 18, 21).

24. Louisiana State Department of Public Welfare (Assisted the State Board of Health in conducting a survey to determine the total number of chronically ill and handicapped patients in the danger zone; provided special services for beneficiaries who required assistance, and welfare staff cooperated with the American National Red Cross in the program for the care of evacuees, P. 21).

25. Louisiana State Civil Defense Office (Provided assistance to the State Police in the development of the emergency plans, and a liaison officer was assigned to the State Police, P. 21).

26. Louisiana State Adjutant General's Office (Was on stand-by to assist in the operation if necessary, P. 21).

27. Mississippi State Adjutant General's Office (Responsibility of overall control and coordination of authority for State agencies assisting local authorities in warning and evacuation procedures; and preserving law and order, P. 21).

28. Mississippi National Guard (Provided personnel and transportation equipment to assist the State Board of Health in the evacuation and liaison personnel were assigned and located at PHS Emergency Operation Headquarters, P. 21).

29. Mississippi State Civil Defense Council (Provided necessary liaison and emergency planning for the various State agencies involved. A public information officer was detailed to PHS Emergency Operation Headquarters, P. 21).

30. Mississippi State Board of Health ("Providing for the care of the sick and injured; managing sanitation and health problems of evacuees; making a complete survey of the danger zone to determine the total number of chronically ill and handicapped patients; determining how many of these people would need assistance in evacuation of the area; obtaining the necessary medical records and authorization from physicians and families of patients to be evacuated; arranging transportation for patients out of the area prior to the raising of the tanks and for the return of evacuees after termination of the emergency; providing staff for monitoring the danger zone in the event of disaster; instructing area physicians and hospital personnel on medical aspects of chlorine gas," P. 22).

31. Mississippi State Department of Welfare (Emergency planning for reception and care of evacuees. This department signed a memorandum of understanding with the Red Cross giving them the major responsibility for the reception and care of evacuees in shelters, P. 22).
32. Mississippi State Highway Department (Arranged and coordinated transportation from the evacuation area and established effective traffic controls to and from the reception centers, P. 22).

33. Mississippi State Public Safety Commission ("The Highway Patrol was responsible for assisting with communications and traffic control." P. 22).

34. U.S. Coast Guard (Furnished one communications truck and two 40-foot boats used for keeping all river traffic in the area informed of the progress of the operation, and to issue gas masks to river traffic in the danger area, P. 24).

D. Brief Description of Emergency Social System

On March 23, 1961 an open-deck barge, WYCHEM 112, carrying four steel tanks of liquid chlorine sank in the Mississippi River, 7 1/2 miles below Natchez, Mississippi. (P. 1).

"Experts of the U.S. Army Chemical Center estimated that the release of the sunken cargo could result in 40,000 to 50,000 casualties within a 30 mile radius, with 10,000 to 25,000 fatalities." (P. 1)

"Early in September of 1962, the President of the United States assigned to the Office of Emergency Planning the responsibility of overall direction and coordination in removing the hazard." (P. 2).

Before dredging or lifting operations began the Public Health Service and Corps of Engineers held a press conference to which newspapers, radio and television station representatives and business and civic leaders of the area attended. Operation Chlorine was briefly described at the conference. (P. 25)

An emergency plan in case of a chlorine gas leak consisted of the following five parts: (1) warning, (2) evacuation, (3) relocation and reception centers, (4) medical preparedness, (5) security and post-evacuation. (P. 28)

Warning: Two separate short-wave radio systems were established to transmit warning from the recovery site. Also flares and red smoke grenades were kept at the salvage site. Had the potential disaster become a reality the PHS Emergency Operation Headquarters would have notified the Louisiana State Police, Mississippi National Guard, Police Department, and the U.S. Coast Guard. These agencies would have in turn notified the citizens in the danger zone. (P. 28-31)

Evacuation: The evacuation would be along pre-assigned routes. Public and private transportation would be used. In addition National Guard vehicles and railroad equipment would be used. Seriously ill or handicapped citizens could not be easily and safely evacuated with the general population in an emergency. Therefore, these persons were evacuated at an early date by airplane to various VA Hospitals outside the danger area. (P. 27, 32)

Relocation and Reception Centers: PHS Emergency Operation Headquarters would relocate to Camp Beauregard, a distance of 80 miles. The American National Red Cross undertook the assignment of all matters pertaining to the reception, sheltering and feeding of evacuees. (P. 36)
Medical Preparedness: Every hospital in the support area was briefed on the preparation and execution of an emergency preparedness plan. The method adopted for treatment of chlorine poisoning was the one recommended by Dr. Joseph T. Nee, Medical Consultant to Wyandotte Chemical Company. Gas masks were available for use by security, fire and other key personnel who would be delayed in the event of mass evacuation. (P. 38-39).

Security and Post Evacuation Activities: "After general evacuation was completed, the Louisiana State Police would manage road blocks to keep anyone from returning to the disaster area. The State Police were prepared to send troops back into the disaster area with masks to form a roving patrol. Their responsibility would be to guard against theft and fire." (P. 46).

The Mississippi National Guard was responsible for the protection of Natchez and outlying areas. (P. 47).

The emergency was terminated at 10:24 a.m. November 5, 1962, with the lifting and dispatch of the fourth chlorine tank out of the area. Immediately the plan for the return of the chronically ill and handicapped was put into effect. The return was completed by November 8. (P. 48).

E. Community Context

"An area within a radius of 30 miles from the sunken chlorine barge could have possibly been endangered by an accidental release of chlorine. This area is located in southwest Mississippi and northeast Louisiana. The area is dominated by one fairly large city - Natchez. It has a population of approximately 25,000. The remaining population of 55,000 is scattered among small towns, villages and rural communities in both Louisiana and Mississippi." (P. 7)

As a result of a 17-car derailment, an accidental exposure to chlorine gas occurred on January 31, 1961, near New Roads, Louisiana, a small rural town south of the Operation Chlorine area. A tank car containing liquid chlorine was punctured allowing 30 tons of chlorine to escape. In its path, which covered an area 3 1/2 by 6 1/2 miles, humans sickened and vegetation and animals were destroyed. Seventy-five persons were treated at the local hospital and one of them, a child, died. Five hundred animals perished as a result of the chlorine poisoning. (P. 6).
II. GENERALIZATIONS AND HYPOTHESES

A. "A prerequisite to effective working relationships (between Federal and State agencies) is the establishment of the chain of command at the very beginning of preparedness planning and strict adherences to it." (P. 49).

B. "Equally important (as A above) is the central coordination of all activities (P. 49).

C. "The responsibility of each agency and its staff must be clearly delineated to avoid misunderstanding of the program authority vested in each organizational unit." (P. 49).

D. "In an emergency operation, the application of good management procedure is more important perhaps than in normal operations because there is no time for trial and error." (P. 49).

E. "Some of the basic management principles important in emergency operational planning are: effective communications; delegation of responsibility to the proper authorities; agreement on internal policies prior to public announcements; and concentration of efforts on key elements in the program (P. 49-50).

F. "Operation Chlorine supported civil defense theory that capabilities will have to be built into a community." (P. 50).

G. "Too often in civil defense planning the potential of the people in a community or a region is grossly underestimated." (P. 50).

H. "Apathy of the public has often been listed as one of the major problems in civil defense planning."

I. "Another problem in communicating with the public develops when rumors circulate that are fictional or a distortion of fact. Countering the resulting confusion and misconceptions is best accomplished by using all available news media to issue the facts - simply stated and frequently restated." (P. 50).

J. "Operation Chlorine points up the urgency for communities to attain self-sufficiency by increasing local manpower capability and material reserve." (P. 50).
III. SPECIFIC ORGANIZATIONAL ANALYSIS

No Data.