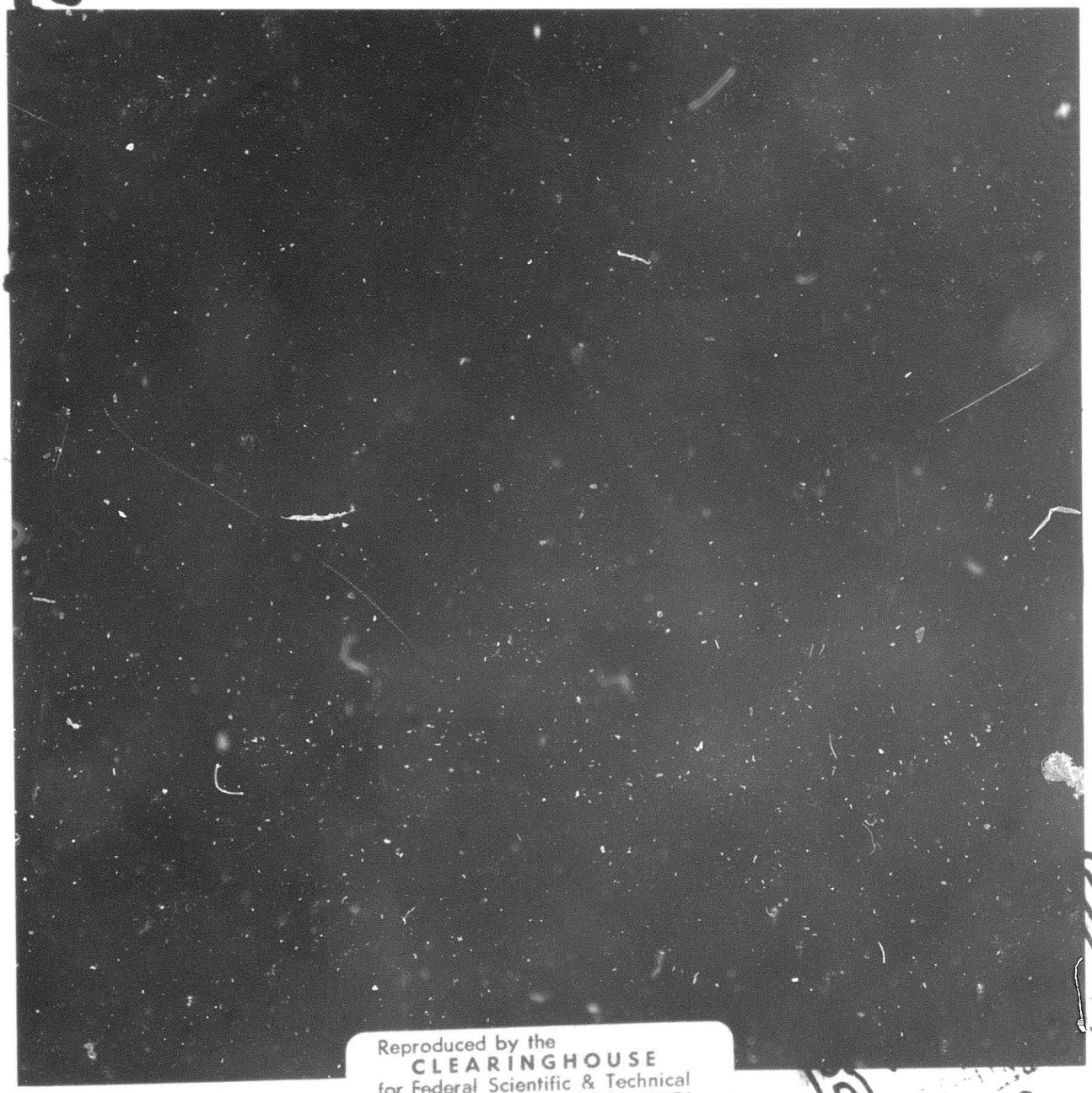
DRC DISASTER RESEARCH CENTER SERIES

DISASTER IN AISLE 13

A CASE STUDY OF THE COLISEUM EXPLOSION AT THE INDIANA STATE FAIRGROUNDS, OCTOBER 31, 1963

THOMAS E. DRABEK



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Summary of

DISASTER IN AISLE 13:
A CASE STUDY OF THE COLISEUM EXPLOSION AT THE INDIANA STATE FAIRGROUNDS, OCTOBER 31, 1963

by

Thomas E. Drabek

for

OFFICE OF CIVIL DEFENSE
OFFICE OF THE SECRETARY OF THE ARMY
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Summary

This is a study of twelve emergency organizations heavily involved in the community response to the Indianapolis Coliseum explosion on October 31, 1963 when 81 persons were killed and nearly 400 injured. It was the worst disaster in the history of Indiana.

A description and analysis of the structure, disaster activity, and operational problems of each of the following organizations is presented: Indianapolis Police Department, Indianapolis Fire Department, Indianapolis and Marion County Civil Defense, Indianapolis Area Chapter of the American Red Cross, Indiana State Police, Marion County Coroner's Office, Indiana Salvation Army, and five Indianapolis hospitals. Organizational problems ranged from insignificant to serious.

Major inter- and intra-organizational changes occurring in the year after the disaster are also discussed. In the main, few changes in the structure or functioning of organizations occurred.

The monograph concludes with a more general discussion about organizational environment, mobilization, communication, coordination and control, as they pertain to disaster responses. These are related to problems of pre-planning for community disasters.

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By

Thomas E. Drabek

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OCD REVIEW NOTICE

This report has been reviewed in OCD and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the OCD.

ACKNOWLEDGEMENTS

This report represents the work of many DRC staff members. The original field team was composed of Russell R. Dynes, James R. Hundley, John Quast, and myself. A second trip was made by Hundley, Quast, and William A. Anderson about a week after the initial one. Anderson and I returned to Indianapolis one year after the explosion to study organizational change resulting from the disaster.

Interviews which were tape-recorded, as well as several hours of recorded material from police and fire department logs, were transcribed by Miss Melzia Flowers, Miss Kathie Griffin, and Miss Susan Richards. Typing of numerous drafts and final copy was done by Mrs. Elinor Shubick, Miss Susan Razor, Mrs. Thelma Corbett, and Mrs. Joyce Cross.

After initial data collection, I prepared a first draft of this report with the assistance of John Quast. Drs. R. R. Dynes, E. L. Quarantelli, and J. E. Haas provided many valuable criticisms of the draft. After the one-year follow-up trip, additional revision was done and new material was added. Numerous stylistic changes were made to this draft by Dr. E. L. Quarantelli, for which I am grateful. His editorial ability greatly reduced excess verbiage and added much clarity to the thoughts expressed. While we have made an extremely conscientious effort to present as accurate a report as possible, responsibility for final interpretations remains with me.

The excellent cooperation of local officials who relinquished valuable time to be interviewed, who supplied many documents and numerous additional materials such as written disaster plans and public relations brochures, is duly acknowledged. Their motivation, as ours, was that others might benefit from what was learned through the Indianapolis tragedy. Without such cooperation this research effort would have been greatly impaired.

Finally, my appreciation for assistance in final publication is extended to the Publications Committee and the Division of Research, College of Administrative Science, and especially to Dean Carroll L. Shartle and Miss Diane Poulton.

T. DRABEK

PREFACE

This is one of a series of sociological monographs on disaster behavior issued by the Disaster Research Center (DRC) of The Ohio State University. The monographs will range from detailed case studies of specific organizations in a particular disaster to theoretical analyses of abstract variables involved in all extreme stress situations. This monograph is primarily a case study of the responses of the major emergency organizations in Indianapolis to the Coliseum explosion.

Although the first systematic account of a disaster by a social scientist appeared as early as 1920 in Prince's depiction of the Halifax explosion,[1] there are few scholarly reports available even today.[2] There are, of course, innumerable journalistic descriptions of disasters. However, the vast majority simply serve to reinforce mythological beliefs about disaster behavior and give the illusion that we know, at least at the descriptive level, the range of human and group responses to large-scale emergencies.[3] The simple fact is that our verified knowledge of social reactions to disasters is quite limited. The present monograph, case study though it is, therefore contributes to the small body of factual description we currently have about disaster behavior.[4]

Furthermore, there is very little in the disaster literature about the activation, mobilization, and responses of organizations in disasters. Most accounts depict the reactions of individuals rather than complex groups.[5] This monograph is almost exclusively fo-

[1] Samuel Henry Prince, *Catastrophe and Social Change* (New York: Columbia University, 1920).

[2] The limited number of studies available can be seen by examining Disaster Research Group, *Field Studies of Disaster Behavior: An Inventory*, No. 14, (Washington, D.C.: National Academy of Sciences—National Research Council, 1961).

[3] For a discussion of some of the myths see E. L. Quarantelli, "Images of Withdrawal Behavior in Disasters: Some Basic Misconceptions," *Social Problems*, 8 (Summer, 1960), pp. 68-79.

[4] The best single summary is by Charles E. Fritz, "Disaster," *Contemporary Social Problems*, Robert Merton and Robert A. Nisbet (eds.), (New York: Harcourt, Brace and World), 1961), pp. 651-696.

[5] This is noted in William Form, Charles Loomis *et al.*, "The Persistence and Emergence of Social and Cultural Systems in Disaster," *American Sociological Review*, 21 (1956), pp. 180-185.

cused on the latter aspect. It does not pretend to deal with all aspects of the disaster. There is very little in the monograph, for instance, about the specifically medical aspects as such, including treatment and care of the injured, although other hospital activities are discussed. Likewise, the actions of volunteers are examined only to the extent that they affected in some way organizational functioning. Similarly, the psychological reaction of spectators at the Coliseum is only alluded to in passing as part of the environmental context of organizational operation. In short, this is a study only of organizational responses and not of all activities which resulted from the disaster.

Naturally, not all organizations involved in the disaster are discussed, and of those examined, some are considered in more detail than others. Singled out for attention are the 12 organizations which appeared to be most active in the emergency activities. They represent the kinds of complex groups inevitably involved in community response to a large-scale disaster in a metropolitan area. The differential attention paid to various organizations in this monograph is in part a reflection of their degree of involvement in post-disaster activities, as well as the fact that some groups seemed to provide more insight into the operations of organizations in disasters than did others.

The materials upon which this monograph is based were collected in various ways in three different visits by DRC teams to Indianapolis.[6] Data were obtained through tape recorded interviews with organizational officials, tapes of communication transmissions, agency logs, post-disaster group critiques, field observations, administrative documents, disaster plans, and mass communication accounts. Some material was obtained with the understanding that it could be used only for background purposes and nowhere identified or even directly alluded to in the monograph. The confidentiality of such data has been strictly maintained even though this has sometimes required a limited discussion of a few topics. We have also changed the names of almost all nongovernmental or-

[6] The first visit to Indianapolis, the morning after the explosion, was used by the DRC primarily as a training trip for new members of the staff. Consequently, this study was not as systematic nor did it involve as many interviews as have later field studies.

ganizations as well as the names, addresses, and telephone numbers which appear in various transcribed logs.

In any study of this kind there will be discrepancies in reports of participants regarding the same incidents or situations. Indianapolis was no exception to this problem. Much of the variation of this kind can be attributed to different vantage points for observation, different values placed on the activities engaged in, and different interpretations of perceived behavior. Some of the differences in account are simply the result of faulty memory; in very rare instances, of a possible desire to conceal some specific item or other.

The author has made the best effort possible to reconcile discrepancies. In general, he presents the overall version of the event which is most in harmony with all the available data. In two or three instances it was impossible to reconcile different accounts or reports. In those few cases the seemingly most reliable version has been used.

In no sense is this monograph a criticism of the activities of any group or person. What is contained here is not in any way an "investigation" to assign blame. Such a search is a frequent reaction after a "man-made" disaster[7] and did occur in Indianapolis. However, for research purposes the concept of blame is useless. Blame is, in fact, a phenomenon that has to be studied, rather than a conceptual tool which can be used for analytical purposes.[8] This monograph attempts to understand what happened in the organized response to this particular disaster. In seeking this understanding the author had the full luxury of hindsight and the advantage of reflection, and this is undoubtedly reflected in the descriptive account set forth. Descriptions, of course, can be read in different ways. If any read the descriptive accounts as assigning blame, however, we believe it indicates more about the values the reader is bringing to the account than it does about the intent of the author in setting forth the description.

[7] See Rue Bucher, "Blame and Hostility in Disaster," *American Journal of Sociology*, 62 (1957), pp. 467-475.

[8] See Thomas E. Drabek and Enrico L. Quarantelli, "Scapegoats, Villains, and Disasters," *Transaction*, 4 (1967), pp. 12-17.

Finally, it should be noted that this monograph is actually the first of the series of case studies to be issued by the Disaster Research Center. As such, the author, Dr. Drabek, now a member of the Sociology Department at the University of Denver, has had a much more difficult task than the writers who will follow him. Later studies will have the advantage of building upon this one which clearly represents a step in the direction of developing not only knowledge about the functioning of organizations under stress, but in helping to contribute to an eventual sociology of complex organizations.

E. L. QUARANTELLI
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1

INTRODUCTION

On October 31, 1963, a violent explosion suddenly ended the performance of the "Holiday On Ice" show which was being presented in the State Fairgrounds Coliseum at Indianapolis, Indiana. Fifty-four persons were killed immediately, either from the charring burst of flames or from the tons of concrete which, after being thrown high into the air, fell with crushing impact. Nearly 400 others were injured.[1] Twenty-seven of the injured later died raising the final death count to 81, the highest single death toll ever to occur in an Indiana disaster.[2]

Indianapolis, with a population of 476,288, is the capital of Indiana and is geographically situated almost directly in the center of the state.[3] The Indiana State Fairgrounds is located approximately four miles north of the downtown area. The grounds are bounded on two sides by highways number 36 (38th Street) and 37 (Fall Creek Parkway); these roads intersect near the main entrance of the Fairgrounds. (See Diagram 1.) The Coliseum, located about 200 yards from the main entrance, has an oval shape with a dome-like roof. The building is 358 feet long and 251 feet wide; the arena area is 270 by 120 feet with a reported total seating capacity of 7,839.[4]

It was raining very hard in Indianapolis the night of October 31, 1963. Several hundred extra-duty and auxiliary police were active throughout the city to prevent Halloween vandalism. It was Shrine Night at the Coliseum where 4,327 spectators were enjoying the final minutes of the "Holiday On Ice" show. The show had started

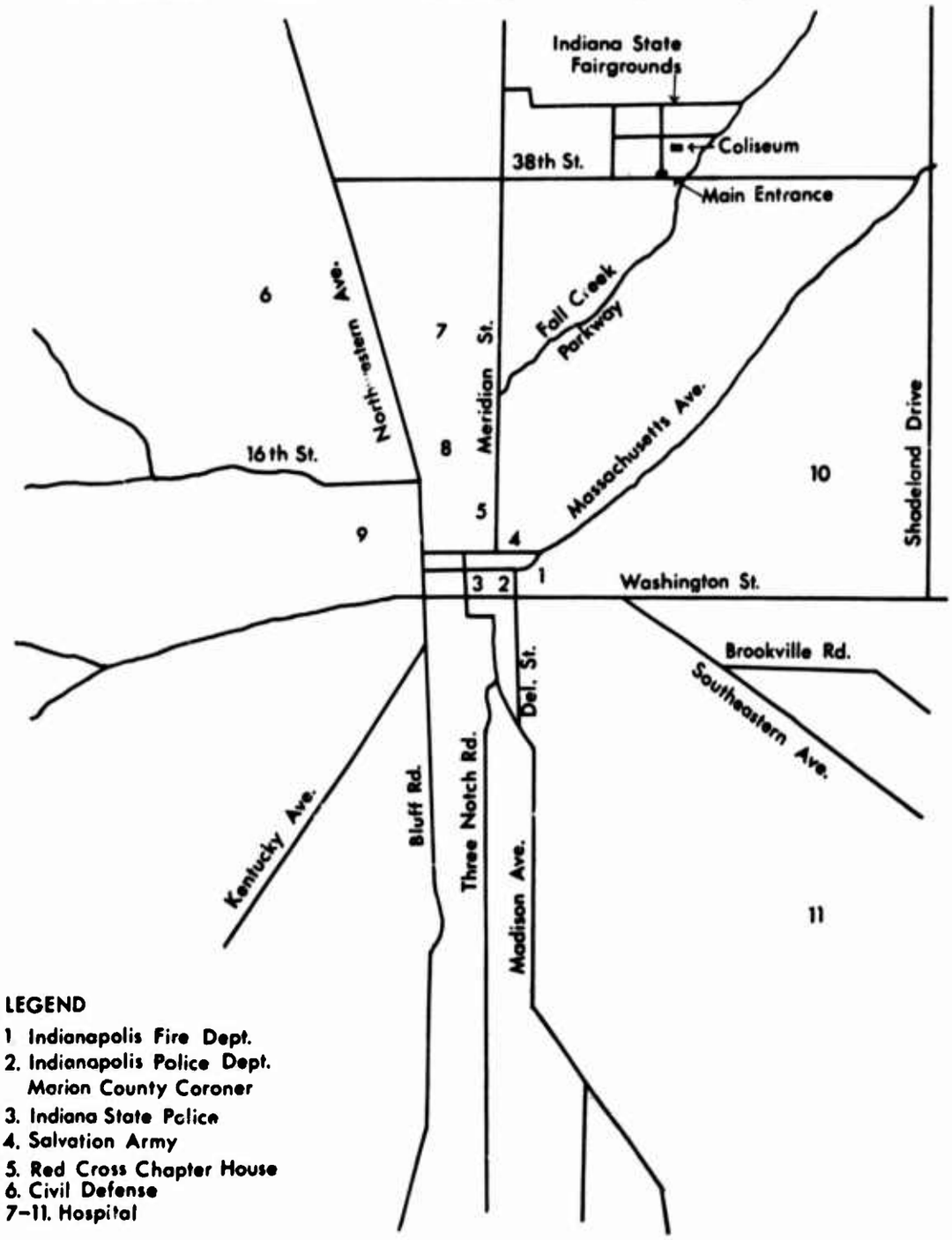
[1] There are minor discrepancies in casualty figures given in different reports particularly as to the number of injured. For purposes of consistency, only the injured figures obtained from the Indianapolis Area Chapter of the American Red Cross are used in this report. See Table 1.

[2] The highest previous disaster death toll in Indiana was recorded on October 1, 1869, when a boiler exploded at the Indiana State Fairgrounds. UPI News Release, November 1, 1963.

[3] These population figures are from the 1960 census; population at the time of the disaster was somewhat higher.

[4] Wilbur L. Walls, "Indianapolis Coliseum Explosion," *Quarterly of The National Fire Protection Association*, 57 (April, 1964), pp. 392-398.

DIAGRAM 1—Location of Indianapolis Emergency Organizations



about 10 or 15 minutes late and the last act was ending. Most of the skaters were preparing to enter the rink for the grand finale.

At 11:06 p.m., an explosion rocked the Coliseum. It uplifted about 700 square feet of floor at the east end of the building, throw-

ing spectators, concrete, and seats upward and outward toward the ice rink. A supporting wall under the permanent stands also dislodged at the top causing another 500 square feet of floor to cave in.[5] Although a few spectators seated at a distance initially appeared to have thought that the noise was part of the show (since there had been small "explosions" of flash powder in some of the comic acts), most persons quickly recognized something serious had happened.

Fortunately the lights remained on and the small band continued to play. Though one or two cases of slight panic flight were reported, most people immediately moved toward exits in an orderly manner. A second explosion of much lesser intensity occurred minutes after the first.[6] It was accompanied by a fireball which flared 40 feet high. (See Plate I.) Fear of additional explosions probably encouraged many of the persons still milling around to leave as quickly as possible. Assisted by Coliseum personnel and Shriners, the audience was well-behaved in evacuating the building.

The focus of activity of persons remaining in the building was the pit more than 50 feet wide that had been created by the initial explosion which occurred directly below the box seats along Aisle 13. In a tangled pile there were a mass of rubble, pieces of masonry, splintered wood, twisted girders, and human bodies. After the second explosion, a small fire also burned in the crater.

Dead and injured victims lay beneath pieces of concrete ranging from the size of a fist to slabs weighing 5 to 10 tons. Burns were suffered by many; some bodies were so charred that later identification could only be confirmed through indirect methods such as dental records. Burns occasioned about one-fourth of the deaths on the scene. Aside from burns, the other casualties were primarily caused by the massive chunks of concrete. Head injuries appeared to have been responsible for perhaps half of the total killed.

Within a minute after the explosion, the incident was reported to Indianapolis Fire Headquarters, which precipitated a mobilization of community groups and agencies to cope with the crisis. In the

[5] The footage figures are from Walls, *op. cit.*, p. 394. For a discussion of the physical cause of the explosion see Appendix 2.

[6] Time estimates of from three to eight minutes after the first explosion are given by different sources. The shorter time span is probably more accurate but no definite evidence is available.

PLATE I—MINUTES AFTER THE EXPLOSION. Mr. Carl Defenderfer left the Coliseum with the crowd, then remembered the camera around his neck. Upon returning inside, he obtained this picture which was published in *Life*, November 15, 1963, and is the only picture taken showing the fire.

following chapter is presented a description of the immediate organizational response to the emergency.

In Chapter III, specific organizational analyses are presented of 12 of the organizations most heavily involved in the immediate response. Each organization is analyzed with regards to structure, disaster activity, and operational problems incurred in the emergency. Chapter IV presents an overview of major disaster-linked events that occurred in the subsequent year. Both the community response and organizational changes taking place throughout the year following the explosion are discussed. Following those chapters, in which a social history of the disaster is presented, so to speak, observations of a more sociological nature are presented. Two appendixes containing supplemental information conclude the report.

II

THE COMMUNITY EMERGENCY RESPONSES

This chapter presents a global reconstruction of the activities of those organizations which compose the emergency social system[1] of the Indianapolis community. The sequence of events is sketched from the time of the explosion until 17 hours later (at 4:00 p.m. Friday) when the Coliseum was vacated and placed under Indiana State Police security. A detailed description of the activities of each separate organization is presented in the following chapter; this broad overview is offered first so that the specific analyses might be more easily placed into a larger context.

THE INITIAL RESPONSE

News of the explosion reached almost all the major crisis organizations[2] in the community very rapidly. Alerted, these groups began immediately to mobilize their personnel and resources. Most followed standard operating procedures or emergency plans. There was little delay in either initial notification or mobilization (except in the case of some hospitals).

For example, within a minute after the explosion, an off-duty fireman who was in the audience telephoned the dispatcher at Fire Headquarters. He stated only that a large explosion had occurred. This report started the first emergency equipment to the scene and also alerted the Indianapolis Police radio dispatcher of the event. (Police and fire radio dispatchers monitor each other's

[1] The term is from Barton. See Allen H. Barton, *Social Organization under Stress: A Sociological Review of Disaster Studies* (Washington, D.C.: National Academy of Sciences—National Research Council, 1963) and Allen H. Barton, "The Emergency Social System," *Man and Society in Disaster*, George W. Baker and Dwight W. Chapman (eds.), (New York: Basic Books, Inc., 1962), pp. 222-267.

[2] By the term "major crisis organizations" we refer to those which have major components or plans for the total organization which are activated in community disasters. Both the activities of these components and the orientation of these plans are toward minimizing community damage and disruption. The intent is toward the maintenance of the community system rather than the maintenance of the operating organization, e.g., Police and Fire Departments, Civil Defense, Red Cross, The Salvation Army, general hospitals, and public health departments (in the case of disasters involving health hazards such as epidemics).

calls.) Seconds later another off-duty fireman, who was also in the audience, telephoned Fire Headquarters. He too was brief but did state: "I don't know how bad it is, I imagine we need some ambulances too."[3] A fire department dispatcher then called Samaritan Hospital and requested that all three of their ambulances be sent to the scene. One of the dispatchers also checked with Police Headquarters to ensure that they were aware of the disaster. This was at 11:11 p.m.

Two minutes before, the radio dispatcher at the Indianapolis Police Headquarters had already requested information as to how soon radio cars 404 and 405 could leave the small fire with which they were then occupied. An officer with Unit 404 replied that he would check and notify the dispatcher immediately. Car 50, overhearing the exchange, called in to say that it was near the Coliseum and would report on the situation there, momentarily. Unit 404 then notified the dispatcher that it would be occupied for some time at the local fire scene. At 11:15 p.m., Car 50 provided the first police report from the explosion site: "There's quite a few injured people up here and there is quite a bit of bedlam. We could use whatever assistance you have." No more than 10 minutes after the explosion additional police cars were dispatched to the scene.

However, before these police units arrived, firemen on Engine 28, housed near the main entrance to the Fairgrounds, were moving in through the massive exodus of spectators. The fire in the blast area was quickly attacked. Rescue efforts were immediately initiated.

The first fire department report from the scene was from a fireman on Engine 28. He requested ambulances and the gas company emergency squad. When asked how many were hurt, the fireman replied: "Oh Hell! I imagine around 50. 75, maybe 100!"

The fire dispatching office immediately radioed the Indianapolis Fire Chief, the Assistant Chief, the Fire Prevention Chief, and

[3] The Indianapolis Police and Fire Departments tape-record most official radio and telephone conversations. Quoted passages in this report were extracted from such tapes with only names, addresses, telephone numbers, and other personal information being changed.

also sent another engine and a rescue squad to the Coliseum. Police Headquarters was again contacted and given this information. Using the Civil Defense "call list," fire dispatchers notified local CD officials of the explosion. Almost immediately after his arrival, the District Chief (No. 5) who responded to the initial alarm called back from the scene. He emphasized that additional manpower, not fire fighting equipment, was needed. He also requested that all hospitals be alerted. A fire squad and two trucks were dispatched.

While driving his own sound and communications truck in downtown Indianapolis, a Civil Defense staff officer heard the police and fire radio reports and immediately started for the Coliseum. En route, he radioed the dispatchers of three major crisis organizations, as well as other persons, to notify them of the disaster and to let them know he was en route. Other staff members of the local CD unit, alerted at home, went directly to the local Headquarters.

Since the Coliseum is located on State property, custodial police on duty at the building followed prior instructions on emergency procedure and telephoned the Indiana State Police. Three State Policemen were sent to the scene.

Both the Red Cross and The Salvation Army initially learned of the disaster through information coming to the attention of a volunteer in each of the organizations. Each volunteer, upon learning of the explosion, contacted an official in his own group who in turn mobilized his agency. Mobilization partly involved the immediate sending of some organizational personnel to the disaster site.

Inside the Coliseum, it became apparent that first aid supplies, blankets, and transportation for the injured were badly needed. Many victims were also trapped under the heavy concrete rubble. (See Plate II.) Electric hack saws were tried but proved too slow in cutting through the heavy slabs reinforced with steel rods. The District Fire Chief thereupon called for heavy equipment.

PLATE II—BLAST AREA. Note the size of concrete rubble and the LP gas tank in the lower right hand corner of the picture. Courtesy of *The Indianapolis Times*.

CONVERGENCE AT THE FAIRGROUNDS

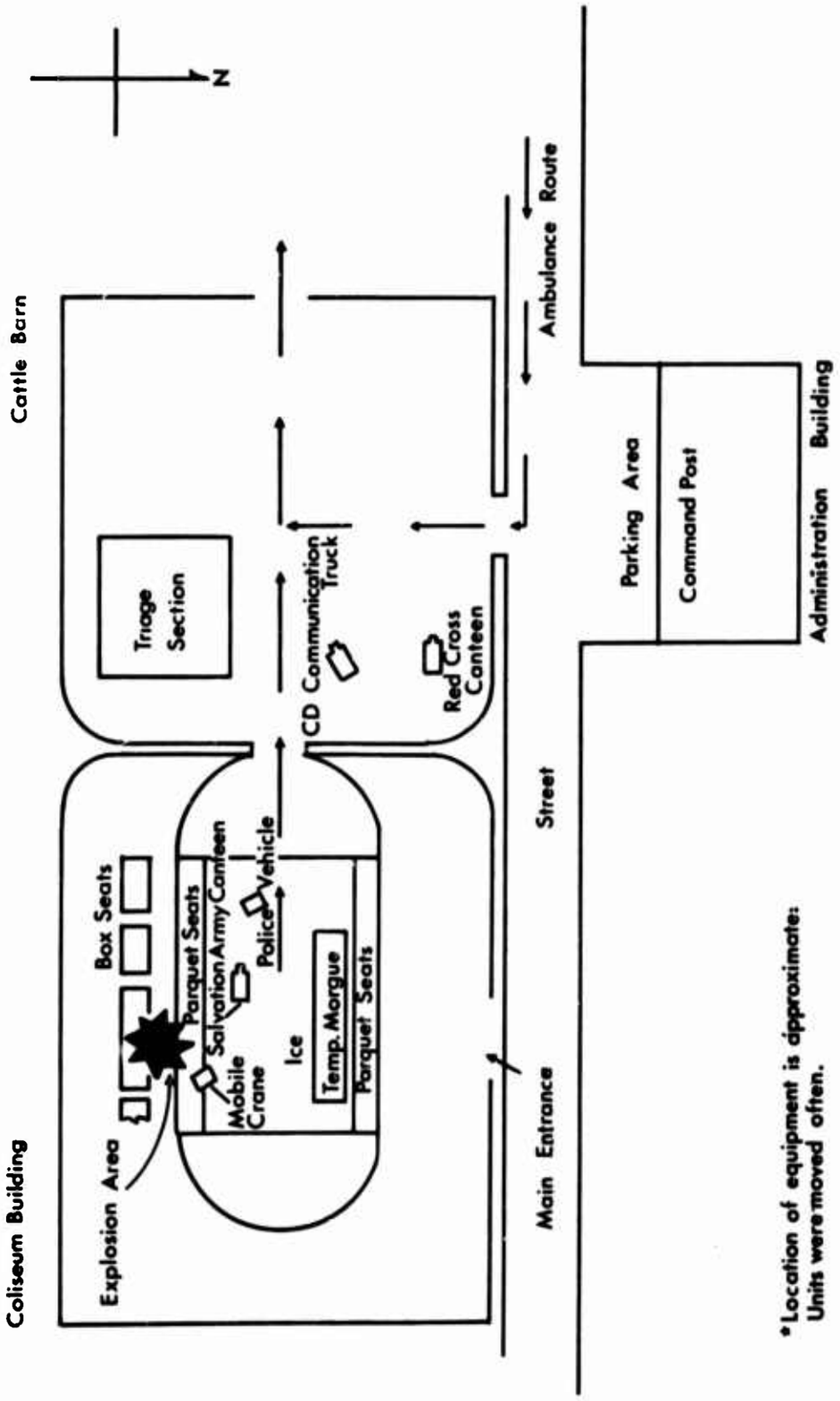
Organizational mobilization resulted in rapid personnel and material convergence at the disaster scene. Since it was Halloween night, extra City Police, Sheriff's Deputies, and CD Police were on duty. Upon learning of the explosion, large numbers of such persons began to converge at the Fairgrounds. In addition, many volunteers with station wagons, buses, and heavy equipment started to arrive at the Coliseum. A massive ring of traffic congestion soon surrounded the Fairgrounds which hindered removal of the injured and other emergency operations of organizations.

After the first report from Car 50, the Indianapolis Police Department dispatcher began dispatching several police units to the scene. At 11:23 p.m. a police car issued the first request for equipment. The police radio dispatcher immediately sent all available police wreckers. Other police cars continued to be sent in at varying times for different purposes.

Civil Defense officials telephoned both the Indianapolis Police and Fire Headquarters to let them know that the CD office was open and to find out what was needed at the disaster scene. Fire Headquarters indicated that some type of lift was needed. Using the CD inventory of emergency equipment, a lift was quickly located and directed to the Coliseum. In response to the call from CD, the officer at Police Headquarters who was stationed at the complaint telephone replied, "We need everything we can get." Individuals with house jacks, acetylene torches, large wrecking bars, etc. were located by CD officials and sent to the scene. The County CD Director issued orders that the boxes of burn dressings stored at the Red Cross Chapter House be brought to the Coliseum. Seeing that his staff was well organized, the Director loaded his station wagon with medical supplies and drove to the Fairgrounds.

The CD communications staff officer who had heard the initial fire and police radio calls while driving in the downtown area arrived at the Coliseum about 11:20 p.m. He parked his truck where the cattle barn joins the Coliseum so that he could see activities in both areas. (The cattle barn, contrary to what its name might imply, is a large, open, and clean area about 50 yards west of the Coliseum.) At this time much of the emergency equipment was beginning to

DIAGRAM 2—The Disaster Area*



arrive. However, as individuals drove up, they would stop, jump out, and run directly into the Coliseum leaving their vehicles in the street. Within a short period of time cars and trucks completely

blocked the road in front of the building. Car 50, the first police unit on the scene, had upon arrival requested that police cars following it block off the main gate of the Fairgrounds to "Keep as many people out of here as possible," but its plea had not been immediately heeded.

About 11:25 p.m. the CD communications staff officer "took things into his own hands." Utilizing the PA system on his truck, he requested that the Indianapolis Police officers and State Fairgrounds Traffic Division personnel work on control of traffic in and around the north side of the cattle barn. With his PA system and radio, he instructed all ambulance drivers to come in the north entrance of the cattle barn, load the injured, then exit through the west entrance. (See Diagram 2.)

The cattle barn thus rather quickly became a sort of triage section where victims were held until transportation arrived to take them to the hospitals. One of the several cars relaying requests and information to the police radio dispatcher asked him to broadcast this information to all police units which he did.

An appeal for station wagons was aired over police and fire radios, and also over several commercial radio and TV stations, some of which had sent mobile units to the Fairgrounds. These appeals, of course, sent much additional traffic to the scene. Several funeral homes contacted Police and Fire Headquarters and were instructed to send all available ambulances to the Coliseum.

The Division Secretary of the Indiana Salvation Army unit and the staff officer who had telephoned him arrived at the Coliseum about 11:25 p.m. Upon seeing the size of the disaster, the Division Secretary immediately telephoned all other staff officers in the city. One staff officer (a Captain) called one of the local Salvation Army missions where the mobile canteen was stored. He informed them of the disaster and instructed them to start making coffee and to get the canteen ready. He then left for the mission building.

The CD communications staff officer was able to get little information on hospital conditions but did get word from the Marion County Sheriff's Office that Fort Thompson Hospital (a nearby military base) could take several patients. He directed some ambulance drivers to go to Fort Thompson, Indianapolis, and other

such distant hospitals anticipating that they would take patients only to the closest hospitals.

During this time officials at Indianapolis Police, Fire, and Civil Defense Headquarters were continually dispatching wreckers, trucks, buses, first aid equipment, acetylene torches, house jacks, large wrecking bars, etc. to the Coliseum. Two fire trucks were ordered to take all available blankets and sheets from their fire house. Two police cars were sent to Samaritan Hospital to get additional blankets.

The Red Cross field worker radioed back to the Chapter House (where many committee chairmen were organizing their emergency groups) that blankets, cots, stretchers, and plastic sheeting for those bodies charred by the blast were needed. Motor Service personnel loaded several station wagons with such items and rushed them to the scene

By the time the three Indiana State Police officers originally dispatched had arrived, it was apparent to them that the explosion was larger than first reported. They called back to the dispatcher at State Police Headquarters who telephoned the Superintendent of the Indiana State Police, and an identification expert. The troopers had initially reported that there were 12 to 15 dead. Subsequent reports kept adding to the total number of known casualties so that additional State Police were continually being sent to the scene.

The County CD Director arrived at the Coliseum about 11:35 p.m. He checked with his communications officer, urged him to continue his coordination efforts, and assigned a doctor to assist him in directing ambulances. Word came from inside the Coliseum that a mobile crane was needed. The CD communications officer radioed the County Sheriff dispatcher and asked him to contact the police at Speedway, a suburb of Indianapolis. The Speedway Police were requested to contact the owner of the Midwest Heavy Equipment Company and borrow one of their mobile cranes. In a few minutes the dispatcher radioed back that the crane was on its way with a police escort.

During this time the Indianapolis Fire and Police radio dispatchers were also attempting to locate a crane. Numerous telephone calls were received concerning the need for a crane, and all callers were instructed to send cranes to the Coliseum.

At 11:40 p.m. the Executive Director of the local Red Cross chapter received a telephone call from the Eastern Area Field Representative for Central Indiana, who had just heard of the explosion on her radio. She asked if she was needed; the Executive Director suggested that she come directly to Indianapolis. However, before leaving her home in Lebanon, Indiana, she telephoned the Disaster Duty Officer for the Eastern Area and informed him of the event.

Upon hearing of the disaster, the Colonel in charge of the hospital at Fort Thompson telephoned the Indianapolis Police Department to find out if assistance was needed. After being told of the urgency of the situation, he contacted his superior, requesting authorization to send Army ambulances and to open the Fort Thompson Hospital for civilian use. Army ambulances were immediately sent to the scene.

When final word was received from Fort Thompson that the hospital had been opened, the police officer at the complaint telephone checked with the radio dispatcher to see if the hospital facilities were still needed. The radio dispatcher relayed the information he had just received from the scene. The officer at the complaint telephone then requested that the Fort Thompson official dispatch the medical unit directly to the Coliseum. Almost simultaneously, however, a call was received at Fort Thompson from the County Sheriff's Office stating that patients were on their way to the base hospital. As a result, only part of the medical unit was ever sent to the Coliseum.

The Marion County Coroner was notified of the disaster by the Doctors' Exchange. He went directly to the Coliseum and arrived there at 11:45 p.m. Since the Coroner was one of the first physicians to arrive, his immediate concern was with the living injured still trapped under the rubble. These victims could not be removed until heavy equipment arrived, so he obtained identification from several of them and administered injections of morphine.

More and more groups arrived. The Midwest Pharmaceutical Company, a large drug manufacturer, released doctors and nurses from their regular schedules to assist at the Coliseum. They also sent 7 trucks, 2 buses, as well as drugs. Emergency crews from

the local gas company, called by the Fire Department dispatchers, inspected their facilities in the Coliseum. Supervisory personnel from the telephone company arrived to restrict some phone lines to outgoing calls only. Several dozen ambulances came and went. In addition, individual volunteers of all kinds poured into the area.

The police had by now established some security restrictions about four blocks from the main entrance as well as at all gates leading into the Fairgrounds. Thus, a little after 11:46 p.m., the Chief of Police, en route to the Coliseum, came upon the first police units four blocks from the Fairgrounds. However, the officers were slowly losing their attempts to keep the main roads open for ambulances, buses, station wagons, and other rescue vehicles that were taking victims to hospitals. Traffic was matted almost into a solid ring around the disaster area.

ESTABLISHMENT OF THE COMMAND POST

Gradually, the center of the ring of congestion surrounding the Fairgrounds began to fill up, greatly constricting movement within the Coliseum and the immediate outside area. In an effort to halt this increasing "choking effect," the Indianapolis Chief of Police assumed overall command, established police security at all entrances to the Fairgrounds, and finally issued orders to "shut off everything coming in." This was done.

When the Chief of Police and his Deputy had first reached the Coliseum about 11:50 p.m., they were almost immediately confronted by the County CD Director who suggested that a command post be established. Seeing the extremely unorganized conditions within the building and having just fought his way through the congested traffic outside the Fairgrounds, the Chief of Police decided that such a post should be established at the Administration Building across the street from the Coliseum. This post, in operation by midnight, was controlled by five officials: the Indianapolis Chief of Police, the Director of Civil Defense, the County Sheriff, a representative of the Indiana State Police, and the County Coroner. The Chief ordered that portable radio equipment located at Police Headquarters be set up at this command post.

By this time, most of the injured had been removed except for those trapped beneath rubble. One Deputy Police Chief (Operations Division), utilizing police portable loudspeakers and the Coliseum public address system, attempted to coordinate the continuing rescue efforts. He was assisted by the Indianapolis Fire Chief. There was an attempt to use wreckers, but they were of little value since the rubble had to be lifted, not dragged.

A large mobile crane from the Midwest Heavy Equipment Company arrived about 12:50 a.m., and gradually began to lift pieces of rubble and place them out of the way. For obvious reasons, all rescue personnel were instructed by the Deputy Police Chief to move out of the damaged area of the Coliseum. Rescue workers were closely directed by the Deputy Chief. Five LP gas tanks were found in the rubble and taken to Indianapolis Fire Department Headquarters.

In the meantime, the other Deputy Chief of Police established police security at the entrance of the Coliseum. He then assisted the County Coroner in the establishment of a temporary morgue.

Since the number of victims far exceeded first estimates and since the ice could form a "natural" morgue, the coroner decided that the dead should not be removed. The Deputy Chief instructed police to rope off a section of the arena to serve as a morgue. Bodies were separated by sex, and all personal belongings removed by Deputy Coroners. All items taken from bodies were listed on "Coroner's slips," typed by clerical help from the County Coroner's Office. The dead were laid on sections of plywood stored in the arena; badly burned bodies were covered with plastic sheeting supplied by the Red Cross. Identification experts from State Police and the Indianapolis Police assisted the Coroner throughout this operation. (See Plate III.)

Shortly after midnight the Superintendent of the Indiana State Police arrived. After an appraisal of the situation, he immediately ordered that portable radio equipment be brought to the Administration Building. A State Police identification expert had agency identification forms (i.e., missing persons reports) brought to the scene.

PLATE III—PANORAMIC VIEW OF ARENA. This photograph was taken early Friday morning. Note the temporary morgue and the mobile crane. Courtesy of *The Indianapolis News*.

About 12:20 a.m. the Salvation Army canteen truck arrived. It was parked outside the Coliseum, and the Salvation Army officers immediately began to distribute hot coffee. Later, a grill inside the Coliseum was also operated by personnel from this organization.

The Red Cross Motor Service personnel who previously had been transporting first aid supplies, blankets, cots, stretchers, etc. arrived with their canteen shortly thereafter. Red Cross nurses, initially assembling at the local Chapter House, also began to reach the scene soon afterwards.

By this time a massive amount of assistance was being dispatched to the Coliseum by the Indianapolis Fire and Police Departments, Civil Defense, local radio and television stations, and the numerous other groups responding to the emergency. Literally hundreds of nurses, doctors, first aid volunteers, wreckers, cranes, station wagons, etc. outside the Fairgrounds made efforts to get inside the Coliseum. A mass of humanity and equipment had converged and filled almost all the space within and just outside the building.

Officers at the Indianapolis Police Headquarters alone received numerous telephone calls from volunteers and sent to the scene at least 16 station wagons, 14 wreckers or trucks, 5 buses, 6 ambulances from funeral homes, and 16 cars with nurses or first aid personnel.[4] In addition, many volunteers telephoned the Fire Department, State Police, or Civil Defense, and were also sent to the Coliseum. Many others responded to radio or TV appeals without first checking with any other source. All helped to compound the congestion that completely surrounded the Fairgrounds, and which now was greatly constricting movement within the Coliseum itself.

Finally, at 1:47 a.m. the Chief of Police instructed the police radio dispatcher to inform all police units to bar any further traffic, including ambulances and first aid personnel, from entering the Fairground.

[4] In many cases, organizational records made reference to more than one unit, such as several trucks, but we counted these as one unit since a definite figure could not be ascertained. Therefore, the figures represent an extremely low estimate of the equipment sent to the scene by the Police Department.

AN ORGANIZATIONAL MEETING

Officials from the major emergency organizations represented at the scene met at the Administration Building where the command post had been established. Procedures for identification of the dead were outlined and questions of authority were resolved.

Prior to the meeting, however, contact was made by the Chief of Police with a committee member of the State Fair Board. This Board official authorized organizational use of all administrative offices, telephones, and office equipment in the Administration Building.

Shortly before 2:00 a.m. the Chief of Police had heads of different organizations informed that a general meeting was to be held at the command post as soon as possible. The Chief also ordered that notification of the meeting be given to both Deputy Chiefs of Police. The meeting was held about 2:00 a.m. A representative from the State Police, the Indianapolis Fire Chief, the County Coroner, Sheriff, and Civil Defense Director were also present at the meeting.

The Chief of Police, acting as "general coordinator," stressed the need for an orderly system for the identification of the dead. The Coroner reported that immediate identification had been possible in only 21 cases; of these the next of kin were to be immediately contacted by chaplains (four local priests and ministers) affiliated with the Indianapolis Police Department.

The Chief of Police suggested that the following procedure be instituted: All relatives wishing to make an identification would first be escorted to the Administration Building, which was to continue to serve as the command post. After preliminary information was obtained on the "missing person or persons," the relatives would be escorted across the street to the Coliseum. There they would be allowed to look at the bodies.

At this point the question of jurisdiction was raised by the Superintendent of the Indiana State Police. Since the Fairgrounds and the Coliseum were state property, it was noted that the State Police should be in charge. Until this time, the Indianapolis

Chief of Police had directed most coordination efforts, aside from the actual rescue activity which was directed by the Indianapolis Fire Chief and his District Chief. The decision was reached that the change in command should take place, but that it would be done gradually.

HOSPITAL ACTIVITY

Most hospitals received no official notification of the disaster. However, when they learned of it, either through victims coming into the hospital or indirectly as a result of radio or television broadcasts, emergency disaster plans were activated. Inability to communicate with officials at the Coliseum prevented hospital administrators from learning the extent of the disaster or the possible number of victims they could anticipate receiving. One consequence was an extremely uneven distribution of victims in the different hospitals. At all institutions much time and effort were spent in preparing additional bed space. It was early Friday morning before most of the hospitals returned to normal procedures.

Initially, when personnel at local hospitals received word of the disaster, they immediately activated their disaster plans. Physicians, nurses, and other members of the medical staff reported to their institutions (in most cases without being called). Off-duty non-health staff members such as dietary, housekeeping, and maintenance personnel arrived at their hospitals almost as soon as the first victims. No hospital reported any shortage of personnel. In fact, one hospital reported that with staff members and volunteer medical personnel, it was able to staff shock areas with a ratio of two or more nurses to each patient.

The uneven distribution of victims resulted from three factors. First, many ambulance drivers apparently ignored the instructions of the CD communications officer and took victims only to nearby hospitals. Presbyterian Hospital, located near the Coliseum, received 120 victims, whereas Samaritan Hospital, the one best prepared to handle emergency cases, received only 27 patients. Second, officials at the Coliseum and elsewhere had

little information as to actual involvement of the hospitals in the emergency. For example, officers at Police Headquarters informed several callers that most of the victims were being taken to Samaritan Hospital. Third, many victims left the disaster scene with friends or relatives who, in many cases, took them immediately to the nearest hospitals. First word of the disaster at St. Luke's Hospital, closest to the Coliseum, was received from victims who arrived in taxi cabs.

Some victims who arrived at the hospitals had only minor lacerations and were released after treatment in emergency rooms. Others had serious multiple injuries and were admitted. The burden of diagnosis, treatment, and care fell primarily upon five local hospitals: Presbyterian Hospital, St. Luke's Hospital, Indianapolis Hospital, Samaritan Hospital, and St. Anthony Hospital. (See Table 1 for a detailed summary of hospital treatment and admission statistics.) Some victims went to hospitals outside the metropolitan area. In one or two instances, persons drove nearly 60 miles to their local hospitals. Geographical locations of nearby towns where disaster victims were treated and/or hospitalized are presented in Diagram 3.

Not all hospitals in the Indianapolis metropolitan area received patients. Williams University Medical Center, for example, has no emergency facilities, so no patients were sent there. However, the Medical Center functioned in a very important supporting role, supplying more than 70 pints of blood plus many medical students and professional nurses. The Indiana Hospital, where only one patient was admitted, performed a similar function.

There was little communication between rescue workers at the Coliseum and officials at the hospitals. Thus, hospital officials could not learn the extent of the disaster and consequently did not know whether to launch a full-scale disaster effort. Attempts were made to obtain information from various disaster agencies, such as the Indianapolis Police Department, as to how many additional patients might be anticipated. These agencies had little information and therefore could provide little guidance.

Personnel at several hospitals prepared extra beds in areas not normally used for such purposes. At St. Anthony 30 cots were set up in the auditorium. Staff members at Presbyterian Hospital moved a second bed into private rooms, set up beds in the corridors of each nursing unit, installed beds in the post-anesthesia recovery room, and filled the beds in the intensive care unit. Corridors and similar space were used at St. Luke's to house patients, and at Indianapolis Hospital all 14 patients admitted were temporarily kept in the recovery room.

A doctor at St. Luke's Hospital (one of the hospitals that was overloaded, receiving 87 patients) became greatly concerned

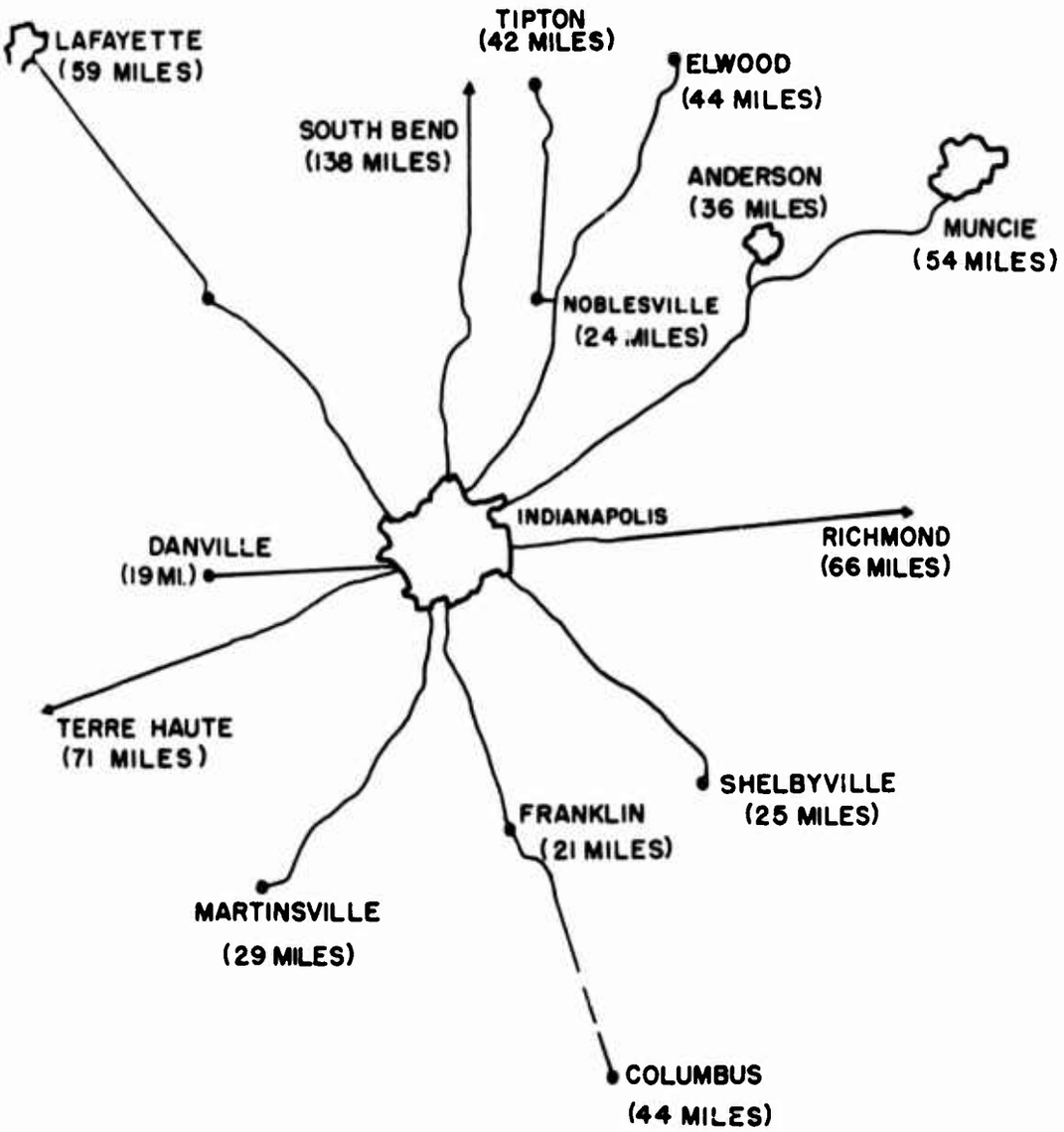
TABLE 1—Summary of Hospital Statistics

Hospital	Total Number of Disaster Victims Treated (includes those hospitalized)	Number of Disaster Victims Hospitalized	Total Bed Capacity*
Indianapolis Metropolitan Area			
Highland Clinic	5	1	42
Indiana	1	1	727
Indianapolis	70	14	360
Presbyterian	120	65	816
St. Anthony	20	4	NFA**
St. Luke's	87	43	265
Samaritan	27	15	611
Outside Metropolitan Area			
Elwood	8	2	70
Fort Thompson	7	5	50
Franklin	1	1	128
Lebanon	5	3	84
Noblesville	4	0	NFA
Tipton	4	4	79
Anderson	3	3	257
Columbus	2	1	180
Danville	2	2	NFA
Lafayette	1	0	338
Martinsville	3	3	75
Muncie	2	2	450
Shelbyville	2	1	110
Total	**374**	**Total**	**170**

*Source: Guide Issue, *Journal of the American Hospital Association*, August 1, 1962, Chicago, Illinois.

** No Figures Available.

DIAGRAM 3—Indianapolis and Nearby Towns



about a possible blood shortage. He contacted the Executive Director of the local Red Cross chapter and urged that an appeal for blood donors be made over radio and TV. To avoid additional congestion at the hospitals, donors were requested to go to the Red Cross Chapter House. This announcement was aired about 2:00 a.m. In a short time, over 200 would-be blood donors had converged at the Chapter House. At most hospitals the reserve blood supply proved to be adequate. Also many donors went directly to hospitals. As a result, the prospective donors

assembled at the Chapter House were sent home after a short wait without having donated any blood.

Numerous telephone calls were received at Police Headquarters from individuals asking where to go to give blood, and if any type of age limit existed. Unaware of the decision to send them to the Red Cross Chapter House, police officers instructed such volunteers to go directly to the nearest hospital. Many went, although some who went to hospitals undoubtedly were persons who had heard the appeal for blood donors over the mass media.

However, even prior to the radio and television announcements, Red Cross personnel were telephoning potential blood donors. The calls, using the chapter's special files, were made to known type "O" blood donors. Twenty persons, following upon a request, were sent to Samaritan hospital.

Since there had been near full occupancy before the explosion, steps were taken to free beds for the victims that remained in the hospital. Surgery for the following day was cancelled and physicians determined what patients could be discharged early. However, it soon became apparent that these steps would not be necessary. At Presbyterian Hospital, for example, all emergency surgery was completed by 6:00 a.m. and all scheduled operations, except tonsillectomies, were performed. Indianapolis Hospital was ready for the Friday surgery scheduled by 7:00 a.m. Samaritan Hospital, which received far fewer victims than it could readily have handled, had no problem meeting its regular schedule for the following day.

REMAINING CONCERNS: THE DEAD, THE PRESS, AND THE CAUSE

Meanwhile, officials at the Coliseum were working on three major problems. At the meeting of emergency organizational heads, held at the command post established by the Chief of Police, a procedure was established for processing the bodies in the temporary morgue. Later a press conference was held and questions were answered by officials from various organizations operating in the disaster. Investigations into the cause

of the blast were begun and were greatly intensified as the legal implications became evident.

Immediately after the meeting at the command post, the County Coroner and identification experts from the Indianapolis Police Department and the Indiana State Police returned to the Coliseum to continue preparing the bodies for identification. They were assisted by Red Cross nurses and doctors associated with CD. Faces were cleaned, and mangled, twisted limbs were straightened as much as possible. Rubber runners were laid on the ice to facilitate walking and to cover pools of blood.

The CD communications staff officer moved his sound truck into the Coliseum where it was used by the Coroner and others engaged in identification of the dead. Through the use of this radio equipment many messages related to casualty identification were transmitted to the various emergency organizational headquarters. Later, temporary telephones were installed in the truck to facilitate communication efforts.

A few relatives who wished to attempt identification began to arrive about 3:00 a.m. They were escorted to the Administration Building where police interviewers obtained the necessary data describing the person being sought. This information was obtained through the use of State Police identification forms. The relatives were then escorted across the street to the temporary morgue. Here they were met by an official from either the Coroner's Office, the State Police, the Sheriff's Office, or the Indianapolis Police Department, who reviewed the information in the written report. After asking a few additional questions, this official took the relatives to view those bodies which best fitted the description. As a body was identified, State Police telephoned the funeral home designated by the relatives.

Several organizations attempted to construct casualty lists. Indianapolis Police, State Police, and Red Cross nurses were all independently sent (apparently without knowledge that other personnel were making similar efforts) to each of the hospitals to obtain lists of injured. However, the local Red Cross Chapter House eventually became a clearing house for such information.

After much cross checking, about 5:30 a.m. a complete casualty list was constructed, dittoed, and sent from the Chapter House to the command post at the Fairgrounds. This list was revised twice during the day.

Additional telephones, earlier requested by the Red Cross Executive Director, were installed by the telephone company. Radio and television announcements were broadcast which stated that all inquiries about casualties should be made at the Red Cross Headquarters. It was also announced that the Red Cross switchboard would open in the morning. When opened at 6:00 a.m., the switchboard immediately "lighted up like a Christmas tree" and remained that way until about noon.

At 6:30 a.m. the Indianapolis Police officially turned control over to the Indiana State Police. Except for those assisting the County Coroner, all remaining city police left the area. State Police established security at all entrances to the Fairgrounds, the Administration Building, and the Coliseum.

About 7:00 a.m. relatives desiring to make identifications began to arrive in large numbers; by 7:30 a.m. so many had arrived that lines started to form. However, no serious problems resulted and by 3:00 p.m., Friday afternoon, all but two of the bodies had been identified. Confirmations of several identifications were made through matching fingerprints appearing on identification cards found in purses, dental x-rays, and in one instance through the examination of scar tissue on muscle fibers beneath the badly burned skin.

As ordered by the Chief of Police, a press conference was held at 3:30 a.m. Heads of each emergency organization were present. The Chief of Police first summarized the activities that had taken place, gave an overall summary of the number of dead and injured, and explained the procedures which were being used to identify the dead. Questions were then permitted and were answered by various organizational heads, whoever had the most current information directly related to the question.

Investigation into the cause of the disaster was begun by the State Fire Marshal, the Indianapolis Fire Prevention Chief, and

the State Police soon after the injured were removed from the Coliseum. As previously indicated, the five LP gas tanks found in the rubble were immediately taken to Indianapolis Fire Department Headquarters where they were placed under security by the Indianapolis Police. The name stenciled on the tanks was the Midwest Gas Corporation, a local LP distributor. Once it became public knowledge that LP gas tanks were suspected to have played a role in the explosion, the Fire Marshal was put under pressure to answer several questions. The following interview was typical:

Reporter:	Is it against the code to have liquid gas inside a public building?
State Fire Marshal:	Yes, sir.
Reporter:	Then apparently there is some kind of violation here somewhere?
State Fire Marshal:	I would think so; it indicates that at least.
Reporter:	Is this dependent upon a permit in any way?
State Fire Marshal:	They make an application to us when they want to install any volatile liquids including gas and they ask for a permit and we issue permits and then we inspect to see that it is done properly or installed properly.
Reporter:	Now, who is supposed to ask for this?
State Fire Marshal:	Anyone who wished to use it or install it.
Reporter:	Would this be a concessioner or something like that?
State Fire Marshal:	I would think so.
Reporter:	My information from the Governor's Office, sir, that there were two checks made from that office and no permit had been asked for or had been issued.
State Fire Marshal:	We made a hasty search of our records today and we find no application on file for such permit nor no permit having been issued. Mr. Wayne Boyd, the structural engineer from the Indianapolis Building Council, and I went out and made a hasty check of the structure this afternoon. We went over the structure as near as possible and it is our finding that it is not in immediate danger; however, when the debris is all cleaned away, we plan on making another more extensive investigation of the entire structure.[5]

[5] Extracted from a television news report presented on WISH-TV, Indianapolis, Indiana, November 1, 1963, 9:30 p.m.

About 3:30 p.m. Friday afternoon, the County Coroner ordered the two remaining unidentified bodies be taken to Samaritan Hospital. They were identified on Saturday. He also ordered the Coliseum to be closed. An announcement to this effect was broadcast by the CD communications officer over the loud speaker system on his sound truck. Shortly after 4:00 p.m., nearly everyone had left the Coliseum except the State Police stationed at the entrance.

A summarized time sequence of major events from the time of the explosion until the Coliseum was closed at 4:00 p.m. Friday is presented in Table 2. More detailed descriptions of activities of each group are a part of the specific organizational analyses which appear in the following chapter. With this overall description in mind, however, these separate analyses can more readily be placed into context.

TABLE 2—Time Sequence of Major Events

Time	Event
11:06 p.m.	The explosion occurred.
11:06	Off-duty fireman telephoned Indianapolis Fire Department.
11:10	Indianapolis Fire Department District Chief arrived at Coliseum.
11:10	Executive Director of Red Cross notified of disaster.
11:15	First Indianapolis Police car reported from Coliseum.
11:20	Civil Defense office opened.
11:20	CD communications staff officer arrived at Fairgrounds.
11:30	Indianapolis Fire Chief reached Coliseum.
11:35	Marion County CD Director arrived at Coliseum.
11:45	Marion County Coroner reached explosion site.
11:50	Indianapolis Chief of Police arrived at Coliseum.
11:55	Command post established at Administration Building.
12:05 a.m.	Superintendent of State Police reached Coliseum.
12:20	The Salvation Army canteen arrived at disaster scene.
12:50	Crane from Midwest Heavy Equipment Company arrived at Coliseum.
1:47	All incoming traffic was shut off into Fairgrounds.
2:00	Meeting of organizational heads in Administration Building.
3:30	Press conference in Administration Building.
6:00	Red Cross switchboard opened.
6:30	Indianapolis Chief of Police turned control over to Superintendent of Indiana State Police.
7:30	Large numbers of relatives arrived to make identifications at temporary morgue in Coliseum.
3:00 p.m.	All but two bodies identified.
4:00	The two unidentified bodies were taken to Samaritan Hospital; the Coliseum was vacated and placed under State Police security.

III

ORGANIZATIONAL ANALYSES

Analyses of the 12 organizations most directly involved in the Coliseum disaster are presented in this chapter. These include: Indianapolis Police Department, Indianapolis Fire Department, Indianapolis and Marion County Civil Defense Office, Indianapolis Area Chapter of the American Red Cross, Marion County Coroner's Office, Indiana State Police, The Salvation Army and five hospitals: Presbyterian, Samaritan, St. Luke's, St. Anthony, and Indianapolis. First, the pre-disaster structure of each organization is very briefly outlined, followed by a more detailed description of its disaster activities. Each final section presents a discussion of operational problems incurred by that organization. This format is followed for all organizations except the five hospitals which are analyzed collectively rather than individually.

INDIANAPOLIS POLICE DEPARTMENT

The Police Department played an important role in the immediate post-disaster period. Shortly after he arrived at the scene, the Chief of Police established a command post and assumed overall command of the rescue effort. However, many operational problems resulted from the inadequate information that Police Headquarters was getting from the actual disaster scene. Since only limited communication facilities existed at the Fairgrounds, the Headquarters was flooded with telephone inquiries requesting information about the conditions at the Coliseum, as to needed assistance, and about relatives and friends who were thought to have been attending the ice show. The Indianapolis Police formally relinquished overall control after most emergency tasks at the explosion site had been accomplished.

Pre-Disaster Structure

The Indianapolis Chief of Police is appointed by the Mayor of the city. Two Deputy Chiefs assist the Chief in the direction of the

other 909 men employed by the Police Department. Each Deputy Chief directs one of the two major divisions, which together contain over 80 per cent of the total work force of the organization. Diagram 4 presents a structural overview of the Department as it existed on the night of the explosion. The pattern of functions was that typical of any large American police department.

In addition to paid personnel, the Department had, in conjunction with the Indianapolis and Marion County CD, developed a CD Police Unit. The city is divided into regions and each region has a volunteer "captain" who has direct charge over all of the volunteers in his region. In the event of an emergency, the Police Department contacts the appropriate regional captains, and they in turn contact those officials assigned to them. Many of these officers were on duty throughout Indianapolis the night of the disaster, since it was Halloween. Several went directly to the Coliseum after hearing of the disaster. A total of 250 such volunteers were estimated to have participated in the activities around the Fairgrounds.

The "disaster plan" of the Indianapolis Police Department was quite limited in scope but did include an inventory of special materials that might be needed in an emergency, e.g., dump trucks, cranes, etc. There seemed to be considerable uncertainty about the currency of the plan at the time of the explosion and also about the details of its specified emergency procedures (e.g., if and how the police hierarchy was to be notified in a large-scale disaster). In general, officials indicated that they regarded police activity in disasters as routine and did not seem to perceive a distinction between normal organizational activity and police functioning in a community catastrophe.

Disaster Activities

The Police Department communications system enables the radio dispatcher to monitor all radio calls of the Indianapolis Fire Department. (The fire department dispatcher likewise monitors the police radio, but the dispatchers cannot directly communicate with each other except by telephone.) The police radio dispatcher became aware of the explosion when he heard the original Fire Department radio calls concerning the explosion.

As indicated earlier, Car 50 sped to the scene when the first units contacted (404 and 405) indicated they were occupied. At almost the same time Car 50 reported it was on the way to check the situation, another unit (Adam 3) radioed in, inquiring whether it should go to the Coliseum. The dispatcher replied: "Go by there and see if you are needed."

At 11:11 p.m. a radio dispatcher from the Indianapolis Fire Department telephoned Police Headquarters:

Fire Dispatcher:	Listen! Box 2137, there's been an explosion at the field house. We've got two rescue squads going on that box.
Police Officer:[1]	At the field house?
Fire Dispatcher:	Yes! I don't know how bad it is, but you'd better get some cars up there.
Police Officer:	You've got three rescue units on the way?
Fire Dispatcher:	No! We hit a box on it and sent two squads other than what the box called.
Police Officer:	OK Partner.

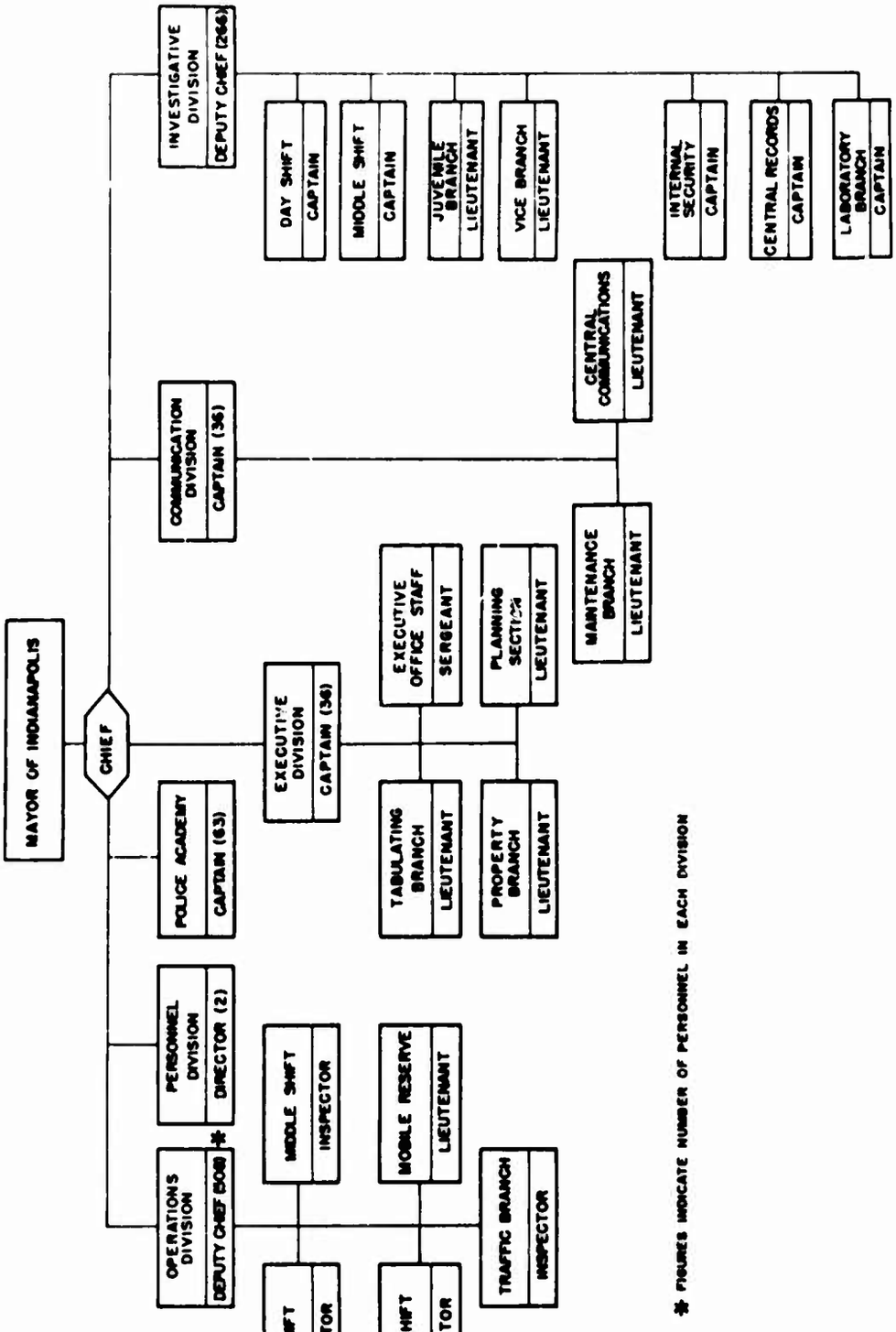
Seconds later the fire department dispatcher called back. He had just gotten a report from Engine 28, the first emergency unit to arrive. The fire department dispatcher stated, "We've got three ambulances going and there's over a hundred hurt out there, got a couple, three doctors on the way--. The CD units, we're sending them out there." The officer at the complaint telephone phoned the police radio dispatcher and gave him this information.

A few minutes later, after the first police report from the scene by Car 50, additional cars radioed the dispatcher asking permission to proceed to the Coliseum. A little after 11:15 p.m., Car 50 radioed a preliminary report that there were 10 to 15 dead. As additional police cars arrived, each requested more aid such as ambulances, to which the dispatcher could only reply, "I have ordered all available ambulances." At 11:19 the dispatcher directed all reserve mobile units to proceed to the Coliseum. Car 30 requested that all available blankets be sent to the scene. Seconds later Car 19 asked that all police wagons be sent, as there were insufficient ambulances;

[1] This officer was located at one of the "complaint" telephones. Normally three men are assigned to the three complaint positions (a fourth telephone is available but is used infrequently). These officers are located in a room separate from the radio dispatcher but can communicate with him by way of telephone.

the dispatcher so ordered. Car 50 again checked with the dispatcher and requested that the coroner and chaplains be notified as soon as possible. The dispatcher indicated that these notifications had already been made.

DIAGRAM 4—Organizational Chart of the Indianapolis Police Department



At 11:23 p.m., Car 33 radioed the first request for cranes. "There are people trapped in the concrete and seats at the Coliseum. We need wreckers, cranes or something." The dispatcher replied that he would send all available *wreckers* within the next half hour. No attempt was made to ascertain which of the two different kinds of equipment mentioned in the ambiguous message was most needed, namely, cranes or wreckers.

Another car radioed in, requested information on the Coliseum, and asked if they should go there. The dispatcher replied, "We're not sure yet what the conditions are." Immediately another Car (Frank 6) contacted the dispatcher and suggested that the dispatcher "set up one car as a command car and relay radio transmission through him." This suggestion was relayed to one of the cars at the Coliseum; they were told to advise the dispatcher immediately which car would serve as the command car. No answer was received on this.

At 11:27, Car 50 notified the dispatcher that all ambulances, wagons, and wreckers should come in at the rear of the Coliseum. The dispatcher immediately aired this order. Seconds later, Car 50 again requested more first aid supplies. First Aid Unit 405 was ordered sent to the scene. Two cars were ordered to Samaritan Hospital to obtain blankets. Four additional cars were sent to the scene. Car 50 requested that cars be sent to remove the many children wandering throughout the area. All Juvenile Division cars were ordered to the Coliseum. Almost without exception and with very little questioning, the dispatcher was complying with all requests radioed in from the disaster site.

About 11:30 p.m. the officer (Frank 6) who had originally suggested the establishment of a single command car so as to reduce the confused communications requested that his unit be sent to the Coliseum. "May we have permission to go out there and set up communications so we can stop some of this confusion?" Permission was granted for this initiative undertaken by one of the cars in the field.

The first request for information about conditions at a hospital was made at 11:34 p.m. "Can you advise me if Samaritan's filled up yet?" A car at Samaritan Hospital, upon hearing this request for

information, radioed back immediately that no patients had yet arrived.

Several additional radio calls requested ambulances, oxygen, buses, doctors, flares, permission to go to the Coliseum, and permission to leave the Coliseum with injured victims. Interspersed among these calls was the announcement that the cattle barn had been set up as a first aid station. Within minutes of each other, three units specifically asked the dispatcher, "We've got a load here, can we take them to Presbyterian?" Permission was granted as it had been for practically every other request made.

The dispatcher sent motorcycle patrolmen (11:45 p.m.) to direct traffic in the general vicinity of Samaritan Hospital; he had been informed that the ambulances were being delayed by traffic.

At 11:46 p.m. the Chief of Police (Car 1) announced he was en route to the Fairgrounds accompanied by his Deputy Chief (Investigation Division). The Chief had telephoned his Deputy Chief earlier (about 11:30 p.m.), told him of the disaster, and stated that he would pick him up in a few minutes. Since reports at that time indicated 14-15 dead, the Deputy Chief telephoned Police Headquarters from home. He issued instructions for them to telephone his captain, an identification specialist, and also asked if Wagon 21 (a police identification truck) was in service. It was.

The Chief asked the dispatcher if all law enforcement agents in the area had been notified; they had. He asked about Car 2, the other Deputy Chief (Operations Division), whose home he had not been able to reach by telephone. The dispatcher radioed a call for Car 2 to contact Headquarters. Seconds later the reply came; Car 2 was on the way.

During this time numerous telephone calls were received at the Indianapolis Police "complaint" telephones. Initially three calls were received within seconds of each other about the Coliseum explosion. Two of these came from the Fire Department, and a third one was placed by an unidentified person at the Fairgrounds. Almost immediately, calls requesting information on the disaster began to come in. These were interspersed with numerous calls concerning routine police activity, e.g., prowlers, domestic problems, and stolen cars. Each "complaint" officer replied to requests for

police assistance that it would be delayed "because the Coliseum just blew up." Shortly after the blast occurred, one police officer telephoned the complaint desk and suggested that Car 50 should be designated as a central control point. The officer at the complaint desk said he would relay the suggestion on to the radio dispatcher. However, as indicated earlier another car eventually assumed this function.

As word of the explosion spread throughout Indianapolis, officers answering police complaint telephones were flooded with calls. Many callers, particularly representatives from radio stations and newspapers, requested information about the explosion. Numerous citizens, including several off-duty policemen, had heard requests for station wagons aired over police and fire radios. These people telephoned Police Headquarters to see if such vehicles were needed. The standard police reply was that all the help that could be obtained was needed.

These officers at Headquarters were continually asked questions about what had happened, who was out at the Coliseum, and whether additional help was needed. Since, at this time, they had no current information, they could only reply that they did not know. The following interchange was typical. Outside caller: "I was wondering, could they use any private station wagons out at the Fairgrounds?" Police complaint telephone officer: "Sir, I don't know; I couldn't give you an honest answer. We don't know anything about it here. I don't know what the circumstances are because it is just a bedlam. Just do whatever you think is best."

About 11:23 p.m., one officer operating a complaint telephone called the local Red Cross Chapter House to make sure they had been notified. A very confused conversation took place; the call was taken by a person with the telephone answering service utilized by the Red Cross when the Chapter House is closed. She attempted to check with someone and then said she would call back. During this critical time, one line was "tied up" for about 3 minutes and 15 seconds.

At this point, call after call was coming to the police dispatcher. The Coroner requested, via a police car that had been moved into the Arena, a large closed truck to be used for storing valuables scattered

throughout the Coliseum. Just as the radio dispatcher received this message, he received a call on an attempted suicide elsewhere in the city. The officer making the call asked for an ambulance and was told by the dispatcher that he would try to send one. This was followed by a request from the scene for loudspeakers that were located in the property room at Police Headquarters. Cutting torches were next asked for by another car at the scene. This was followed by an announcement from the dispatcher (which he had just received from one of the officers at a "complaint" phone) that Fort Thompson was prepared to receive 40 patients. An officer at the disaster scene replied, "We'll try and send all we can to Fort Thompson, but it would be better if they could come out here." The dispatcher replied, "OK, they're on the way." (A later call indicated that Fort Thompson officials had afterwards been advised by the County Sheriff's Department that victims were being transported to the base hospital, so part of the medical unit stayed at the Fort.) A second call for cutting torches was made, followed by the first specific request for a crane. "This stuff has to be lifted up." The hour was now 11:55 p.m.

The officer with the attempted suicide case called back to find out where the ambulance was. The dispatcher replied that probably it would be some time before the ambulance would get there. Later the officer again called: "We have a man here with a truck that we could put her in and take her to the hospital." The dispatcher replied, "Well that's advisable. It would be some question of when we could get over there for you."

Numerous calls came in from several cars wanting to know, where were the cranes? Where were the cutting torches? To what hospital should they take injured victims? The dispatcher could only reply he had no current information. Occasionally a car called in about locating needed equipment. For example, at one point Unit David 2 radioed in; they had a man with a portable cutting torch; was he needed at the scene? The dispatcher replied, "Take him out."

Realizing that the radio dispatcher was experiencing difficulty in locating a crane, an officer at the scene notified the dispatcher that he had a personal friend who drove a mobile derrick owned by

Willard Transfer. He spelled out the name of this individual and told the dispatcher to consult the telephone book. An officer in another car, overhearing this conversation, stated, "We'll go get Willard—we know where he lives."

Shortly before midnight, the following report came from the scene. "Sir, do you have a crane on the way out here? We're going to need a crane badly here. The wreckers are here now—we've got to have a crane out here—mobile crane if you can get one." The dispatcher replied that one was en route. A request came about 10 minutes later for a police escort to pick up a mobile crane coming from Fort Thompson. As the crane neared the Fairgrounds it hit electrical wires supporting a street light. The light was knocked out of order and officers were sent to the intersection to direct traffic.

The Chief of Police and his Deputy arrived at the Coliseum shortly before midnight. They found police officers attempting to keep the main road outside the Fairgrounds open for the mass of emergency vehicles that were converging on the scene. However, the congestion was tremendous and traffic was almost at a standstill despite the efforts of the police.

Shortly after he arrived, the Chief of Police had been met by the County Civil Defense Director, who suggested that a command post be established. The Chief agreed and decided that it should be located in the Administration Building across the street from the Coliseum. He contacted and obtained authorization from a committee member of the State Fair Board for use of all offices, telephones, and office equipment in the building.

The two Deputy Chiefs of Police worked inside the Coliseum. One Deputy Chief (Operations Division) utilized the police portable loudspeakers and the Coliseum public address system. With the assistance of District (5) Fire Chief and the Indianapolis Fire Chief, he directed rescue operations which at this time were aimed at removing those trapped beneath debris too large to be lifted except with the crane.

The other Deputy Chief (Investigation Division) concentrated on establishing security both at the entrance to the Coliseum and inside the Arena. His major efforts were to assist the County

Coroner. This Deputy instructed police officers to rope off a section of the Arena that served as a temporary morgue, as designated by the Coroner.

The radio dispatcher continued to relay instructions (e.g., ambulance routes) and continued to send additional equipment to the scene (e.g., flares). About 1:30 a.m. he began to tell inquirers that additional aid was not needed. He received instructions at 1:47 a.m. from the Chief of Police to "notify all traffic units on all gates around the Fairgrounds to cut off all incoming traffic. There will be no more emergency vehicles even. They have ambulances in abundance. They need no more first aid men. Shut off everything coming in."

Numerous inquiries as to the need for ambulances, doctors, nurses, and first aid men continued to follow this announcement. The dispatcher suggested that such assistance might be needed at the hospitals. However, no direct communication had ever been established with any of the area hospitals.

A request was issued by the Chief for heads of certain emergency organizations to report to the Administration Building. He telephoned this request to Police Headquarters, where the officer relayed it to the radio dispatcher, who announced it over the police radio. The request also was relayed and aired over State Police and County Sheriff radio communication systems. Various leaders of the different organizations assembled and held a short conference at about 2 a.m. The meeting was directed by the Chief of Police, who stressed that a more orderly process for identifying the dead and notifying the next-of-kin must be established before the news media released any names. He suggested that the Administration Building be used as a central command post, and that all who were to identify bodies be initially assembled in that building. A conference with police chaplains, the Salvation Army officials, and other clergy was also held and they were informed of the identification procedure.

Police radio communications were established at the command post. The Chief of Police contacted the Indiana Bell Telephone Company and requested that additional telephones be installed in the Administration Building. Four additional lines were fed into the

building with company personnel helping to man them until the following morning.

Gradually, since many police officers were about to go off-duty when the explosion occurred, the Indianapolis Police Department units at the Coliseum who had worked overtime were relieved. The dispatcher began to order some cars out of the Fairgrounds, sent replacements into the area, and instructed others to return to their usual patrol locations. Police cars were also dispatched to several of the hospitals to obtain casualty lists.

At 6:30 a.m. the Chief of Police officially handed over control to the Superintendent of the Indiana State Police. At that time, the city police remaining at security positions were replaced by State Police. Except for those assisting with the identification of the dead, all city police then left the area.

Operational Problems[2]

The following discussion is divided into two major categories: intra- and inter-organizational problems. Within each of these divisions an examination is made of certain operational problems associated with such matters as the exercise of overall control and coordination, the adequacy of the information available about the disaster, the communication[3] between different

[2] It should be noted that the extensive nature of the data available on the police permits a more detailed analysis of operational problems of this organization than of the other formal groups we studied. This more detailed analysis does not mean that the Police Department was necessarily less effective than the other organizations, but in part only reflects the greater amount of data obtained by the DRC teams. However, it is also probably true that in one sense, the police were more heavily involved in the emergency than any of the other groups studied in that they were the foci of much communication and assumed general control at the disaster site.

[3] As standard procedure, the police tape-record both telephone calls made over "complaint telephones" and cruiser radio communication. All material on these tapes between the hours of 11:00 p.m., October 31, 1963, and 3:00 a.m., November 1, 1963, was transcribed by the DRC. These recordings were extremely valuable in reconstructing the events that occurred the night of the explosion since specific time references could in almost all instances be established.

Approximately 500 calls were recorded, i.e., came in or went out of Police Headquarters over the phones to which all public "complaints" are channeled. About 50 of the calls, because of inadequate recording, were too garbled to understand or transcribe. Of the 450 intelligible calls, 35 were initiated by the complaint clerks and 109 dealt with routine police matters. There were 14 auto accident reports and six family disputes. The other 89 calls dealt with widely varying matters such as reports of vandalism, illness, stolen automobiles, and so forth.

The remaining 306 calls precipitated by the disaster provided a unique opportunity to analyze public response to the event as it happened, not as remembered. These calls

groups, and the use of disaster plans. These are analytical rather than empirical distinctions; in actuality, all problems were intricately interwoven.

Intra-organizational problems:

1. An analysis of recorded police telephone calls shows that none of the top police officials was notified immediately of the disaster by communications officers on duty at Police Headquarters. As a result, it was nearly an hour after the explosion occurred before the Chief of Police and his two Deputy Chiefs arrived on the disaster scene. Thus, those officers with the greatest authority to assume overall control and establish coordination were not personally present at the height of the emergency in the immediate post-impact period.

This problem was explicitly recognized by the Indianapolis Police. As will be noted later, steps were taken the following day to ensure that in any comparable disaster thereafter, all top officials would be immediately notified of the event. Communications personnel were ordered in the event of a future large-scale emergency, to contact immediately all officers named on a master "call list." Such a procedure was in existence at the time of the explosion, but the call list had been removed to be revised and was never replaced. If such a call list had been available

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were analyzed and coded into 14 categories. Each call was coded in only one category. The following distributions were obtained; both number and per cent are listed. (Seeming inconsistency with some figures cited in the text stem from the fact that a number of calls could be coded into more than one category. The tabulations below, for ease of reporting, reflect only the major theme of each call.)

A. Caller offers assistance, accepted by police—85—27.8%
   1) Individual—52—17.0%
   2) Organization—18—5.9%
   3) Off-duty police, firemen—15—4.9%
B. Caller offers assistance, rejected by police—52—17.0%
   1) Individual—36—11.8%
   2) Organization—16—5.2%
C. Information requests—107—35.0%
   1) General—51—16.7%
   2) Casualty—23—7.5%
   3) Blood Donor—15—4.9%
   4) Wife of Police officer—9—2.9%
   5) Police officer requesting information on disaster—9—2.9%
D. Disaster notification—3—1.0%
E. Request that a message be relayed—14—4.6%
F. Requests for police assistance—10—3.3%
G. Caller provides police with disaster information—35—11.4%

at the time of the explosion, the delay in the mobilization of key organizational personnel would have been less.

2. A detailed analysis of recorded police conversation revealed that a total of 17 different cars at the scene continually made requests to the dispatcher, but seldom provided him with details about what had been and was occurring. The two-way communication system provided mostly a one-way information flow. As a result, officers at Police Headquarters seldom had current knowledge about the disaster scene and ongoing operations.

Off-duty police officers who heard about the explosion telephoned to see if they were needed, but officers at Police Headquarters could offer little guidance because of the lack of information. The following conversation was typical:

Police Officer:	Police desk.
Outside Caller:	Who is this?
P.O.:	Wade.
O.C.:	Hey, Phil, this is Williams. What is that thing out there at the Coliseum?
P.O.:	An explosion.
O.C.:	What kind?
P.O.:	That we don't know! The last information we had there were 20 dead and maybe a couple hundred injured.
O.C.:	Twenty dead!
P.O.:	That's what they say.
O.C.:	God Damn. Who's helping, State Police?
P.O.:	Well, everybody right now. And we're sending everything that calls in here and volunteers to go . . . we send them. The Army just volunteered.
O.C.:	Well, you want me to go?
P.O.:	Well, I don't know, I imagine they could use you. If you do, the emergency first aid station is at the cattle barn.
O.C.:	Well, I'll get dressed and go on up there.
P.O.:	O.K.

Sixteen calls were received between 11:30 p.m. and 2:00 a.m. from the wives of police officers. Their husbands had been scheduled to go off duty at 11:30. Nearly all the wives had heard

about the disaster via radio and TV and were checking to see if their husbands had remained on duty. Some were apparently worried about the possibility of their husbands being injured or killed by the blast. Officers answering the complaint telephones had no news for them, except that everyone was needed and that they did not have time to explain.

Hence, the absence of adequate information concerning disaster operations prevented officers at Police Headquarters from being as effective as they might have been in releasing knowledge about the event to organizational personnel or their wives.

3. The problems discussed above resulted from the initial failure to centralize the information flow from the scene of the explosion. There was much delay in establishing a single police car as a communications center. After several cars had requested emergency materials (at the suggestion of an officer not at the scene), the dispatcher issued orders to one car to act as the command car in relaying information from the disaster site. These orders were not followed and finally the officer in the unit who made the original suggestion to the dispatcher requested and obtained permission to use his own car for that purpose.

It is unclear as to why the original orders were not followed. Why the first sergeant to reach the Coliseum did not assume command and channel information to Headquarters is also an unanswered question. Clearly if information had been relayed from a central point, overall communication would have been greatly facilitated.

4. The above examples indicate that an adequate disaster plan covering intra-organizational activities was not available. As each police unit arrived at the disaster scene, its personnel tended to work somewhat independently in rescue efforts, directing traffic, transporting victims to hospitals, making requests for equipment, etc. It was not until the Chief and his two Deputies arrived at the Coliseum that the Department became effectively organized, whereupon officers were directed to establish security at key points, sent to hospitals to obtain casualty lists, etc.

Thus, it was more than an hour before the police began to act as a coordinated unit. Had adequate disaster procedures been

previously established, the mentioned difficulties might have been avoided. Realistic and operative plans would have, at least, increased the speed and unity of the organizational response.

Inter-organizational problems:

1. The rescue and clearance efforts at the Coliseum were greatly complicated by the influx of unnecessary and unusable equipment, as well as unneeded volunteers. A part of this multi-group convergence can be traced to the action of officers operating the police radio and police complaint telephones. In the absence of any initial overall control or coordination, these men were doing their best to meet an emergency, sometimes inadvertently dispatching much non-police equipment, material, and personnel to the disaster scene.

When the first call came for equipment to remove debris, so that trapped victims might be removed, the police radio dispatcher was told, "We need wreckers, cranes or something." The dispatcher replied, "Okay, I'll send all available wreckers within the next half-hour." Since the slabs of concrete had to be lifted up and not dragged, wreckers did little but add to unnecessary traffic. Others who had heard the dispatcher send police wreckers also attempted to help by sending additional wreckers from auto repair shops to the scene. Actually, due to the limited working area, one crane was all that could be used.

Similarly, the officers at complaint telephones received calls from individuals who wanted to know if "help" was needed. They were told, "We need all the help we can get." Individuals with station wagons, buses, wreckers, cranes, first aid experience, etc. were all instructed to go to the main gate of the Coliseum. These instructions were continued until about 1:30 a.m. In actuality, nearly all of the injured were removed by midnight and the massive amount of volunteers and material only served to intensify the traffic congestion.

Officers at both positions (radio and telephone) did not have sufficient information to judge adequately what was needed; they knew only that an explosion had occurred. Therefore, no discrimination was possible as to whether or not a particular piece

of equipment, volunteer, etc. could be used at the disaster scene. As requests continued to be made from the 17 different cars that had converged on the Coliseum, the dispatcher had no recourse other than to attempt to send the additional items requested e.g., first aid supplies and blankets), until the supply of some things, such as ambulances, was exhausted.

The "mass assault"[4] would have been much more effective if there had been some early inter-organizational control and coordination. In fact, much of the individual and group convergence at the Coliseum probably could have been avoided if the police had been able to discriminate and select quickly "who and what" in Indianapolis needed to be mobilized. However, having only an inadequate informational feedback from the disaster site itself, there was little that Police Headquarters could do to direct and slow the mobilization of other organizations and individuals in the area.

2. Police Headquarters was flooded with requests for information since only limited communications facilities existed at the Coliseum. Different types of questions were asked. Shortly after the explosion, several callers, notably newspaper and radio reporters, requested information as to the scope of the disaster. Other callers wanted to know whether their skills (e.g., first aid training) or equipment (e.g., station wagons) were needed. Still other persons telephoned to see if the police could supply them with additional details about what had happened. As was previously indicated, officers had little knowledge with which to answer such queries.

Calls requesting information about the location or condition of a relative or friend also left police officers without a reply, other than "We don't know." However, callers were frequently explicitly told that they could telephone for information at a later time. The following conversation illustrates typical difficulties the police had in giving callers specific information:

Police Officer:	Police Desk.
Outside Caller (female):	Why, ah, I was wondering. I have a friend out at the Coliseum. Is there any way possible I could find out if they were caught in it?

[4] The term is from Barton: see Allen H. Barton, *Social Organization Under Stress: A Sociological Review of Disaster Studies* (Washington, D.C.: National Academy of Sciences—National Research Council, 1963), pp. 75-83.

P.O.: Not for a couple hours yet, ma'm. We have, — the only thing we're doing is loading them and sending the load to the hospital. We have no list whatsoever as yet.

O.C.: Well, this particular person was doing the lighting there, he was working there at the Coliseum.

P.O.: Well, it's still the same as I just said. We have no names whatsoever.

O.C.: Well, how can I find out? I mean, I don't want to go out there.

P.O.: Well you won't for a couple of hours yet. We have 49 dead out there and we have 250 injured.

O.C.: Oh dear.

P.O.: So, as for your friend, I can't say. He may be okay, he may be dead, he may be injured.

O.C.: Well, the lighting is up high. Is that near the corner that blew up?

P.O.: Well, one entire end of the building blew out. So, it would include part of the lighting.

O.C.: Oh dear.

P.O.: So, I don't know.

O.C.: Oh, you say you should know in a couple of hours?

P.O.: In a couple of hours we should have a list.

O.C.: Can I call here to find out?

P.O.: You can call here, but what relation is this?

O.C.: Well, he is—married to a relative of mine.

P.O.: Well, the relative will be notified as soon as we can—as soon as we get a name, we will start notifying relatives.

O.C.: I see.

P.O.: Does this relative have a phone number that is listed?

O.C.: Yes, she does; however, she's pregnant and very nervous, and—alone, I wanted to go over there with her.

P.O.: How far along is she?

O.C.: Due any time.

P.O.: Oh, my goodness. Well, it would be advisable for somebody to be with her, because like I said, I can't give you any information at this time. I wish I could but I can't.

O.C.: I see.

P.O.: We're getting hundreds of calls just like yours, and we have to tell them all the same thing. Because, like I say, we have no information as far as names are concerned.

O.C.: Okay, well I think I will call back later though.

P.O.: Okay, if we have information we'll give it to you.

O.C.: Thank you very much.

P.O.: You're welcome.

Inquiries concerning possible victims increased in intensity and frequency shortly after 1:30 a.m. Officers at Police Headquarters had no official death lists at this time, but incoming callers made references to radio or television reports they had just heard. Some radio and television stations had released names of known dead. It is unclear whether or not authorization had been obtained, and if so, from whom it was obtained. The lack of information at Police Headquarters, however, is clearly expressed in the following conversation as an officer at one of the complaint telephones attempted to locate additional information being transmitted by another organization. At this time Headquarters had a "known dead" list consisting of six names.

Outside Party (male): Now the wire service, especially Associated Press, has the—I'm looking right now at a very long list of persons they say, quote '—this is a partial list of known dead in the explosion at the State Fairgrounds at the Coliseum.'

Police Officer: No kidding! About how many of them are there, do you know?

Outside Party: Well, let's see, one, two, three, four, five, six—hold it just a moment, I've got a mobile unit coming in here—now, let's see, 5, 10, 15, 20, 25, 30, 35—well, they've got about 50—.

Police Officer: Okay.

As persons telephoned Police Headquarters desiring to confirm reports they had obtained through the mass media, the police officers were without accurate information. At times, the police tended to question the information being circulated by other groups. Or as in the following typical conversation, the position was taken that the Police Department would be the organization eventually making the official announcement of casualties.

Police Officer:	Police Desk.
Outside Caller (male):	Yes, I'm inquiring about one of the persons who was listed as dead at the Coliseum.
P.O.:	They were sent to all parts. Part of them were sent to Fort Thompson, part of them were sent to Samaritan Hospital, part of them died en route to Indianapolis, part of them in Presbyterian . . . .
O.C.:	No, I'm just inquiring as to how they determine the age.
P.O.:	Pardon me?
O.C.:	How did they determine the age?
P.O.:	The age?
O.C.:	Yes, you see I have this fellow working for me. His son is with my brother right now and they listed it as 55 and Joe is not that old. Joe Williams.
P.O.:	Well, actually, they have no way of . . . .
O.C.:	Do they guess or what?
P.O.:	They guess, sure. That's the only thing they have to go on unless they have papers in their pockets.
O.C.:	See, I didn't want to break the news to my brother and have him break it to the son until I'm positive. I have no way of—he's not home—both Mr. Williams and Mrs. Williams went to the—
P.O.:	Williams?
O.C.:	Williams.
P.O.:	Wait just a moment. Where did you get this notification?
O.C.:	It just came over WEAN-TV.
P.O.:	Oh, don't go by that.
O.C.:	You mean don't go by the age?

P.O.: No, don't go by any names given to you on the news. I don't know where that—where they got it, but don't go by this. It is not official. They are just guessing or telling whatever information that they can gather from sightseers or anybody else that's on the scene. The official notice will come from us.

O.C.: Oh. How can I find out? Is there any place?

P.O.: No. Did they tell where the body is?

O.C.: No, I was kind of dozing—sleeping, you know—and getting the news. And the wife woke me up and my sister-in-law just called and said she had heard, and—

P.O.: No, don't deliver any death messages from the news reports. I don't know where they got it, but I just checked, and we don't have it yet.

O.C.: Well, then, I think the best thing for me to do is to call them and tell them—

P.O.: I don't know where they got it, because they just checked from us and we don't have it yet.

O.C.: Well, I think the best thing for me to do is to call them and talk to—he went to Samaritan to give blood.

P.O.: You mean the relatives of this deceased?

O.C.: Well, my brother and his son did, yes. And I wanted to tell them to get him home and give him a shot or something . . . just tell him to be prepared in case it does come through. I just called their home, Joe's home, and there's no answer there yet.

P.O.: Well, there's some 40 to 50 dead out there, this we know, but as for the names, we only have so far about 5 or maybe 6 . . . .

O.C.: That's how many they listed on the television, was five.

P.O.: Yeah, but what were the other names?

O.C.: I didn't recall, I just heard that one and it was such a shock that . . . .

P.O.: Well, I just talked to the other officers on this deck and it should come from us and Williams

	was not one of the names that we have, so it wasn't.
O.C.:	Well, wonderful.
P.O.:	No, we don't have that name yet.
O.C.:	Okay.
P.O.:	It could be that this person is dead, now don't get me wrong. I'm not saying that he's not, but we don't have it yet.
O.C.:	Okay, well I'll go ahead and call him and tell him that . . . I'll tell him something, I don't know.
P.O.:	Okay.
O.C.:	Okay, thank you very much.
P.O.:	Yes, sir.

A few minutes later the same individual called back. He claimed to have checked two other sources, both of which apparently confirmed the death. Still, the police officer had no definite information. (Mr. Williams was dead at this time. Mrs. Williams had been taken to Presbyterian Hospital where she was treated; she suffered a fractured skull and hip, and was suffering from shock.)

Police Officer:	Police Desk.
Outside Caller (male):	Is there any where out at the Coliseum that I can find out about Mr. Williams and possibly Mrs. Williams?
P.O.:	No, there isn't . . . whenever it's official, we'll have the word . . . . Why? Who's asking?
O.C.:	Well, I am . . . you see, Mr. Williams works for me, and his son is with my brother, they're down at the Samaritan Hospital giving blood . . . .
P.O.:	You called a few minutes ago.
O.C.:	And I've called two places since then and they tell me it's so. But I was just wondering if there wasn't some place out there I could check and make sure . . . I'm worried about her now.
P.O.:	Well, no, we're supposed to be the first ones to get it, I don't know where this information is coming from, but we don't have anything on Williams.

O.C.: Well, I called. I'll just have to do like I did before, I'll just have to forget it until we know for sure.

P.O.: That's about . . . .

O.C.: There's no one at his house, how the heck they going to notify him?

P.O.: Well . . . .

O.C.: That's just it. You've got difficult problems, haven't you?

P.O.: Yes, we've got a lot of difficult problems tonight.

O.C.: I think mine are small. I'd better let you . . . .

P.O.: If we did come up with something on Williams, could we contact you and you could . . . .

O.C.: You could, it's Victor 19540 or at Chapel 17452.

P.O.: Victor 19 . . . .

O.C.: 540.

P.O.: 540 or?

O.C.: Or Chapel 17452, that's where their son is at.

P.O.: Chapel 17452.

O.C.: Yes, and call the Chapel number if I don't . . . ask for Mr. Billings.

P.O.: Mr. Billings?

O.C.: Yes, Billings, that's my brother. Rather than the son, because it might be best to let him break it to him.

P.O.: Okay, what's Williams' first name?

O.C.: Joe Williams, his address is on High, now it's in the 24 . . . yes, I think it's between 25th and 24th Streets, that's where he lives.

P.O.: 2400 North High. Okay, if we get anything, we'll try these two numbers that you gave me.

O.C.: Okay, thank you very much.

P.O.: Yes, sir.

Shortly after 2:00 a.m. the content of the calls began to change. Inquiries asking information about donating blood suddenly began to come in. This was probably due to appeals through mass media. Questions about the age limit, location of a donor station, etc. were

asked; but since the police officers had no relevant information, they suggested to each caller that he telephone one of the hospitals.

It is clear that other organizations were giving out some information not totally consistent with that being issued by the police. It is also apparent that the police by their replies to queries were at least implicitly questioning the reliability of information transmitted by other groups. Both of these things stemmed in part from the inadequate feedback to Police Headquarters from the disaster scene, and from the lack of communication between different organizational headquarters and the police.

3. The lack of an inter-organizational communication system created a number of difficulties for the police. Ambulances could not be directed as to where to take patients. Police wagons called to the dispatcher to find out where they should take patients, or to ask about specific conditions at a hospital. The dispatcher had no information. Similarly, someone from St. Anthony Hospital telephoned the Police Department to find out how many more patients they could anticipate, but the officer at the complaint telephone had no information other than that persons were still being removed from the Coliseum.

Sometimes as a result of lack of communication with other organizations, the police gave out incorrect information. For example, a woman telephoned Police Headquarters and asked where additional blood was most badly needed, St. Luke's or Samaritan? The officer replied, "Samaritan—we have the most injured at Samaritan." However, hospital statistics indicate that St. Luke's received 87 patients and Samaritan Hospital received only 27. Furthermore, blood was later transferred from Samaritan Hospital to Presbyterian Hospital. The radio dispatcher sent at least three separate wagons "loaded" with patients to Presbyterian Hospital, which eventually received a total of 120 patients, about one-third of the total injured. Such misdirecting of activities, of course, was not intentional; the dispatcher simply had received no information as to hospital conditions.

Eventually police cars were sent to hospitals to obtain lists of the injured. Had they been dispatched immediately, and had

ambulance drivers been properly directed as they passed through police security, the uneven distribution of patients could have been minimized.

Radio and TV announcements urged blood donors to go to the local Red Cross Chapter House, where they would be sent to the hospitals as they were needed. This was done to prevent further congestion at the hospitals. (If such a plan had been devised and made public earlier, much confusion probably would have been eliminated.) Police Headquarters was not informed of the plan and as a result instructed all interested individuals who telephoned to go to "any hospital . . . . They're all asking for blood!"

The poor communication system between the police and other groups intensified as well as created intra- and inter-organizational difficulties. Questions could not be answered, the giving of incorrect information was almost unavoidable, and mass personal convergence was generated. Many of these problems would have been less serious if there had been an adequate two-way information flow between the police and other organizations.

4. There were no operative inter-organizational plans involving the police. For example, requests were made to the police radio dispatcher for such items as a mobile crane and cutting torches. Indecision and confusion were apparent in attempts to ascertain what other organizations might have such equipment. At one point, a patrolman offered the name of a friend who was a driver of a mobile crane; he suggested that the police dispatcher check the telephone book, find the number, and telephone this individual at home.

Had inter-organizational disaster plans been available, the radio dispatcher could have referred the request for a crane and cutting torches to the local CD office, where detailed lists of such equipment were available. (In fact, it was through the CD communications officer that the mobile crane was finally obtained.) CD officials had contacted the Police Department to "notify" or "remind" them of this service. Two factors probably account for the police failure to take advantage of the offer. CD officials only asked, "Do you need anything from our office?"

The police officer at the complaint telephone to whom they were talking may have been unaware of the CD equipment inventory. Second, the radio dispatcher had limited communication with officers at the complaint telephone, so it is possible that he was unaware that CD had even called.

INDIANAPOLIS FIRE DEPARTMENT

Units from the Indianapolis Fire Department were the first emergency groups to arrive at the Coliseum. They played a primary role in the rescue operation. In general, standard Fire Department procedures were followed and no serious organizational difficulties resulted. There was some delay in getting the equipment necessary to dig into the rubble for victims, and numerous calls flooded the dispatcher at Fire Department Headquarters. These features seemed to be the only two which might distinguish the response of the fire organization to this disaster, compared with any other emergency to which they normally responded.

Pre-Disaster Structure

The formal organizational structure of the Fire Department is as follows: The city is divided into six districts with a chief in charge of each one. All promotions up to this level are based on a merit system which includes written examinations. The Mayor of Indianapolis selects the Chief of the entire city Fire Department. The Chief picks two Assistant Chiefs, one from each political party. The Mayor and Chief are limited in their selections; only individuals currently serving as District Chief or above are eligible. Diagram 5 summarizes the major structural features.

A total of 646 firemen man 32 fire stations housing 53 companies of equipment. These men are assigned on a two-shift basis to 32 engines, 18 trucks, and 3 rescue squads. The remaining 124 men on the Fire Department payroll (total of 770) serve as chiefs, mechanics, dispatchers, fire prevention personnel, and so forth.

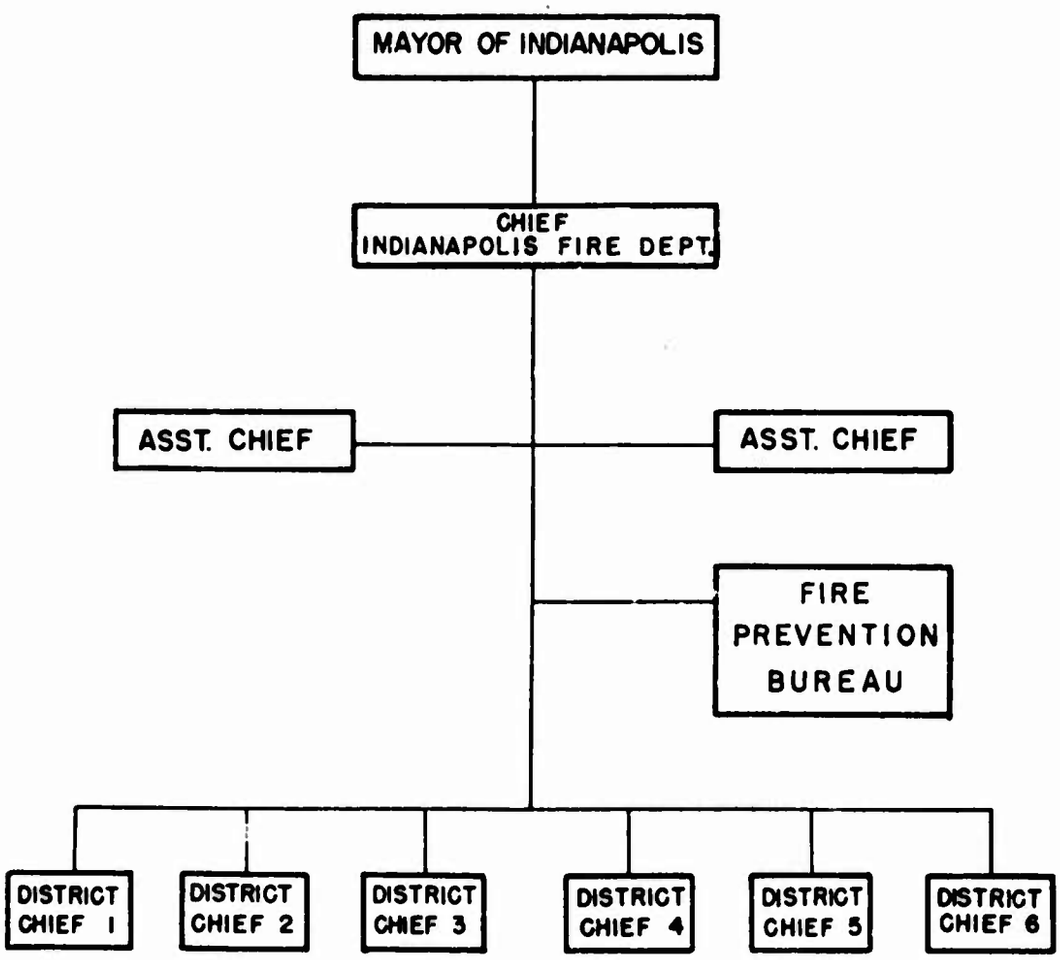
A typical fire emergency coverage system is used in Indianapolis. When units in one district are occupied with an emergency, appropriate units in nearby districts are put on a standby alert in case of another emergency in the first location. In the event of a large fire,

men are actually sent to the vacated fire stations, so as to be in the immediate area should a second fire occur. In this way, the Fire Department attempts to prevent the internal organizational stress which would result in the event of multiple emergencies in the same district.

Fire officials indicated that they had no special internal organizational plans for community disaster or for departmental involvement in a largely non-fire emergency. The department felt that routine fire procedures would clearly specify its role in any kind of community catastrophe. These procedures, which emphasize the authority of the Fire Chief, are as follows:

a. The first District Chief who is called into the area has complete authority over both intra- and inter-organizational personnel and equipment.

DIAGRAM 5—Organizational Chart of the Indianapolis Fire Department



b. Should the District Chief decide that additional assistance is needed, he can "hit second," but firemen called on the second alarm signal will not "put a foot on a hose" until they report to the District Chief.

c. If the District Chief has been relieved by his superior, men called on second, third, or general alarms are directed as to exactly what to do by the highest ranking fire official at the scene.

d. However, men under the District Chief who were the first to arrive at the scene remain an autonomous unit and continue to work "on their own judgment" regardless of how many other units might be called to the scene.

To assure the availability of authority figures, the city Fire Chief has a direct line from Fire Department Headquarters to his home and is "on call" 24 hours a day. When he is needed, such as in the Coliseum disaster, "My driver would get it (the alarm) by radio. He'd just automatically start for the house. Well, by the time he got there, I was out in front waiting for him."

Location of personnel and emergency equipment is facilitated by telephone call lists. Lists of home telephone numbers for all firemen in the city are available at Fire Department Headquarters and at each station house. Lists of telephone numbers for key emergency organizations, e.g., Civil Defense, public utilities, etc., are also located at Headquarters.

Disaster Activities

An off-duty fireman who was attending the ice show telephoned the fire dispatcher with the first news of the disaster; he reported only that a big explosion had occurred. The conversation was as follows:

Fire Department Dispatcher:	Fire Department.
Off-duty Fireman:	The Coliseum just had a big explosion up here, fire and everything.
Dispatcher:	The Coliseum?
Off-duty Fireman:	Yes!
Dispatcher:	What's on fire in the Coliseum?
Off-duty Fireman:	Well, they had a gas explosion.
Dispatcher:	Okay, thank you.
Off-duty Fireman:	Get some help.

The dispatcher (two dispatchers are on duty at all times and a third man records calls on a teletype machine) "hit" Box 2137 at 11:06 p.m. This automatically activated Engines 28, 31, and 32; Truck 31; (rescue) Squad 14; and District (Chief) 5.

Almost immediately a second telephone call came from another off-duty fireman who was also attending the show. He was told by the dispatcher that help was already on the way. When asked for additional information as to the enormity of the explosion, the off-duty fireman replied that he could not tell yet, but that ambulances should be sent to the scene. One dispatcher telephoned Samaritan Hospital and requested that all three of their ambulances be sent to the Coliseum. This was the first notice received by any hospital. A fire dispatcher also telephoned the Indianapolis Police Department: "I don't know how bad it is, but you'd better get some cars up there right away." Such notification of other organizations was what fire department personnel anticipated would be undertaken in a disaster of major magnitude.

By this time, the first fire unit had arrived at the Coliseum. Engine 28 is located in a firehouse near the main entrance to the Fairgrounds. After going into the Coliseum, the fireman in charge of the engine radioed back to the dispatcher:

Engine 28:	You better send some ambulances and doctors and the gas company out here too.
Dispatcher:	I tell you what I got three ambulances on the way, Billy.
Engine 28:	I tell you there's a hell of a mess out here!
Dispatcher:	How many hurt, do you know?
Engine 28:	Oh Hell! I imagine around 50, 75, maybe 100.
Dispatcher:	Jesus Christ! What caused it, do you know?
Engine 28:	Gas blowed up. You got the gas company on the way?
Dispatcher:	No, we'll send them right away.
Engine 28:	Okay.
Dispatcher:	What else could you use out there, Billy? (The dispatcher's voice was trembling.)
Engine 28:	All we can use is ambulances and doctors, mostly.
Dispatcher:	Well, I tell you what I got. I got two squads on the way, and I got three ambulances on the way.

Engine 28: Get as many as you can get.
Dispatcher: Okay.

The dispatcher immediately called Car 1 (Indianapolis Fire Chief) and Car 3 (Fire Prevention Chief). Engine 14 and Squad 7 were also dispatched to the scene. A call was put out for an emergency unit from the gas company to go directly to the Coliseum. One of the fire dispatchers again telephoned Police Headquarters to let them know of the urgency of the situation.

The District Chief (#5) and the remaining units that were activated by the initial alarm were housed about one-half mile from the Fairgrounds. The Chief went directly into the Coliseum. After seeing the immense amount of rubble and hearing the cries of the victims trapped beneath, he immediately returned to his car and began to request aid. He emphasized that he needed "manpower" and first aid squads, but not additional fire fighting equipment. The dispatchers sent Squad 17, and Trucks 14 and 22. Minutes later the chief requested some type of wrecker, lift, or other heavy equipment to remove debris from the victims.

Simultaneously a report was received of a telephone pole on fire in one of the shopping centers. Several other calls reporting this fire followed, momentarily tying up the dispatchers. In between these calls, the Assistant Deputy of Civil Defense called, requesting information as to what was needed at the disaster scene. He was instructed to obtain a lift somewhere; he said he would get one from the Park Department and have it sent directly to the scene. In a few minutes the CD official called back stating that the lift was on its way, that a wrecker was also being sent, and that he would continue trying to locate additional light cranes and similar kinds of equipment. He gave the CD number to the fire dispatcher and told him to telephone for additional items that might be needed.

Individuals representing the State Fair Board and the State Fairgrounds called in requesting information on the explosion. Several off-duty firemen also called in stating that they had station wagons and asked if they were needed. They were told they were.

Engine 19 was sent to the telephone pole fire. It checked back with the dispatcher to obtain information on potential power in

electrical lines at that location. The dispatcher checked the location, told them that there were 60,000 volts in the line and not to wet it! Due to excessive overflow of calls at Headquarters, the dispatcher instructed them to telephone the electric company and gave them the emergency telephone number.

Inside the Coliseum the fire was extinguished rather quickly. With rescue work initiated, three treatment centers were set up by the rescue squads of the fire department. However, some victims were trapped beneath the concrete rubble. Major efforts were made by firemen and other rescuers to get them out. Electric hacksaws were first tried, but cutting through the heavy concrete slabs reinforced with steel rods proved too slow.

The District Chief returned to his car and requested heavy equipment such as lift trucks and some type of high-speed cutting device, all hospitals to be notified, and that material with which to cover the dead be sent. At 11:31 p.m. the dispatchers ordered Trucks 7 and 27 to the disaster site and instructed the men to take all available blankets and sheets. A fire dispatcher then alerted other fire units, and indicated that they might be sent outside their district should the situation require it.

Units with acetylene torches arrived at the Coliseum. The District Chief (#5), using a detector gage (part of the standard fire equipment), tested the air before allowing the torches to be lit. The air was found to be safe and the cutting of the debris into manageable sizes was greatly facilitated. However, most of the wreckers that had arrived were of the type used for automobiles. These could not be used effectively as they could only drag the slabs of concrete over entrapped victims, which would result in further injury.

Finally, about 12:50 a.m. when the large portable crane arrived, the District Fire Chief requested that the Deputy Police Chief who was using a police PA system order everyone back out of the immediate blast area. This part of the Coliseum had become heavily crowded with rescue personnel, but until the large pieces of concrete were moved, they were of little assistance. The crane operator removed the rubble by lifting it high into the air and out of the explosion area. Although most of the injured had been sent to hospitals

by midnight, some bodies were not removed from the blast area until much later. Fifteen to 18 bodies were eventually removed from this area.

At Fire Headquarters, a telephone call was received from the Chicago Fire Chief who offered to rush by jet plane, special concrete cutting equipment. He stated that the material could be there in an hour, but by this time the equipment was not needed.

A total of five 100-pound LP gas bottles were found in the rubble as rescue efforts continued. These were taken to Fire Department Headquarters and placed under police guard since they seemed relevant to the cause of the explosion. By three o'clock all fire and rescue units had left the Coliseum. About 4:00 a.m. the Indianapolis Fire Chief requested that the Midwest Heavy Equipment Company bring in a "clam shell" to deal with the massive piles of rubble. This equipment arrived about 6:00 a.m. The Indianapolis Fire Chief left the Coliseum about 11 o'clock, nearly 12 hours after the explosion. However, the Assistant Chief in the Fire Prevention Bureau continued to work at the scene investigating the cause of the explosion.

Operational Problems

The Fire Department, although it had to deal with a somewhat unusual event even for a disaster-oriented organization, had few problems. The operative structure and standby emergency procedures of the Department allowed it to cope with most demands in the situation. There was only one internal problem, that of handling a communications overload; and two external problems, that of alerting other organizations and obtaining specialized equipment. The latter two seemed to reflect some weaknesses in inter-organizational planning.

1. Fire Department Headquarters experienced an overload on its communications system. Dispatchers were flooded with outside calls requesting information. (As was indicated in the previous analysis of the Police Department, lack of adequate communication feedback from the disaster scene caused an informational convergence to occur at various organizational locations away from the Coliseum.) Some callers sounded rather annoyed that the dispatcher was "short"

with them. Even off-duty firemen, who should have been able to understand the situation, seemed compelled to ask for details about the disaster. Though they indicated they were going right out to the Coliseum, most inquirers, nevertheless, asked about the cause, how many were injured, how much equipment had been sent, and so forth. Such calls delayed the dispatchers in their communication activities, creating a degree of stress on the entire Department.

2. While no difficulties were incurred in the mobilization of Fire Department personnel, efforts by the dispatchers to mobilize other organizations were not so effective. The dispatcher received specific orders from the first District Chief to arrive at the Coliseum to notify all hospitals of disaster. Analyses of taped telephone communications indicated that this order was relayed in very specific terms to the switchboard operator at Samaritan Hospital. The conversation was as follows:

Switchboard Operator:	Hello.
Dispatcher:	Hello, listen, would you see to it that all the hospitals are alerted to stand by for an emergency? This is very important. And then after you've got as many as you can, do you have a list of the undertaking establishments with ambulances that you can call?
Switchboard Operator:	Yes.
Dispatcher:	Send all the ambulances that you can possibly get in there and all the doctors that you can get on the way.
Switchboard Operator:	Okay.

As will be indicated in the section of this chapter dealing with the hospitals, many were not notified of the disaster. It is probable that the operator called was herself too overloaded with organizational demands to make efforts to notify other hospitals of lower priority than the notification of the medical personnel of her own institution (as well as 17 private ambulances). Therefore, the attempt of the Fire Department to mobilize quickly the organized medical facilities in the community was not highly successful.

One of the dispatchers attempted to locate heavy equipment of certain private organizations to send to the Coliseum. He did not

succeed. It was apparent that the emergency call list prepared for such purposes was not adequate. After some delay the dispatcher was instructed to "look up in the yellow section of the phone book under crane and see if you can find unit cranes, cause that is what we need." The specialized equipment of other organizations needed by the Department was not obtained as quickly as it otherwise might have been.

The local CD unit attempted to assist the dispatchers by sending certain equipment to the disaster scene. Taped Fire Department communications indicate that CD personnel left specific information that they were prepared to locate additional special equipment as it was needed. They even gave one of the fire dispatchers the CD office telephone number. Apparently the Fire Department made no attempt to utilize this possible source of aid.

INDIANAPOLIS AND MARION COUNTY CIVIL DEFENSE

While the disaster was not of sufficient scope to require the organization to assume control, the local CD unit performed several crucial activities. Among the more important of these were the location of heavy rescue equipment and efforts by the County Civil Defense Director and a communications officer to coordinate the many organizations at the scene of the disaster. However, other emergency organizations appeared to lack a clear image of the responsibilities of the local CD unit in such a situation. As a result, there were several areas of overlapping responsibility which were the major source of problems for the local CD group. The somewhat unique structure of the Civil Defense organization in Indiana also created some difficulties.

Pre-Disaster Structure

Comprehension of the legally authorized structure of Indiana Civil Defense is crucial in understanding the behavior of the local CD unit. On March 6, 1951, the General Assembly of the state passed a "Civil Defense Act." Section 3 of the law indicated that both *man-made* and *natural* disasters were included in the definition of civil defense.

> As used in this act the term 'civil defense' shall mean the preparation for the carrying out of all emergency functions other than functions for which military forces or other federal agencies are primarily responsible, to prevent, minimize, and repair injury and damage resulting from disasters caused by enemy attack, sabotage, or other hostile action, or by fire, flood, or other causes. The functions include, without limitation, fire-fighting service, police services, medical and health services, rescue, engineering, air raid warning services, communications, radiological, chemical, and other special weapons defense, evacuation of persons from stricken areas, emergency welfare service (civilian war aid), emergency transportation, plant protection, temporary restoration of public utility services, and other functions related to civilian protection, together with all other activities necessary or incidental to the preparation for and carrying out of the foregoing functions.

The general statement of the need for such an act and the major provisions to meet said need, were outlined in Section 2, paragraph (a) as follows:

> Because of the existing and increasing possibility of the occurrence of disasters or emergencies of unprecedented size and destructiveness resulting from enemy attack, sabotage or other hostile action, and in order to insure the preparations of this state will be adequate to deal with such disasters or emergencies, and generally to provide for the common defense and to protect the public peace, health and to preserve the lives and property of the people of the state, it is hereby found and declared to be necessary: (1) to create a state civil defense department, and to authorize the creation of local organizations for civil defense in the political subdivisions of the state; (2) to confer upon the governor and upon the executive heads of governing bodies of the political subdivisions of the state the emergency powers provided herein; and (3) to provide for the rendering of mutual aid among the political subdivisions of the state, and with other states, and with the federal government with respect to the carrying out of civil defense functions; and (4) to authorize the establishment of such organizations and the taking of such steps as are necessary and appropriate to carry out the provisions of this act.

In a fashion similar to that applicable at the state level, Section 9, paragraph (a) of the law provided that each county in the state was to establish a civil defense organization. Furthermore, each political subdivision within counties was also to develop a local civil defense unit under the direction of the county organization. This last group was to be comprised of county, city and town officials,

and such representatives of private and public agencies as could be of assistance to civil defense operations. Diagram 6 outlines the major structural features of the civil defense organization which had developed in Indianapolis and Marion County.

As a result of the wide responsibilities specifically assigned to the local units, the County Director had attempted to establish working relationships with other emergency organizations. For example, welfare activity (section 9 of the organizations chart in Diagram 6) was assigned to the local Red Cross, which was thus regarded as a branch of CD. Certain publications by the two organizations refer to the "Red Cross-Civil Defense team." Similarly, an organization of Civil Defense police is maintained in cooperation with the Indianapolis Police Department.

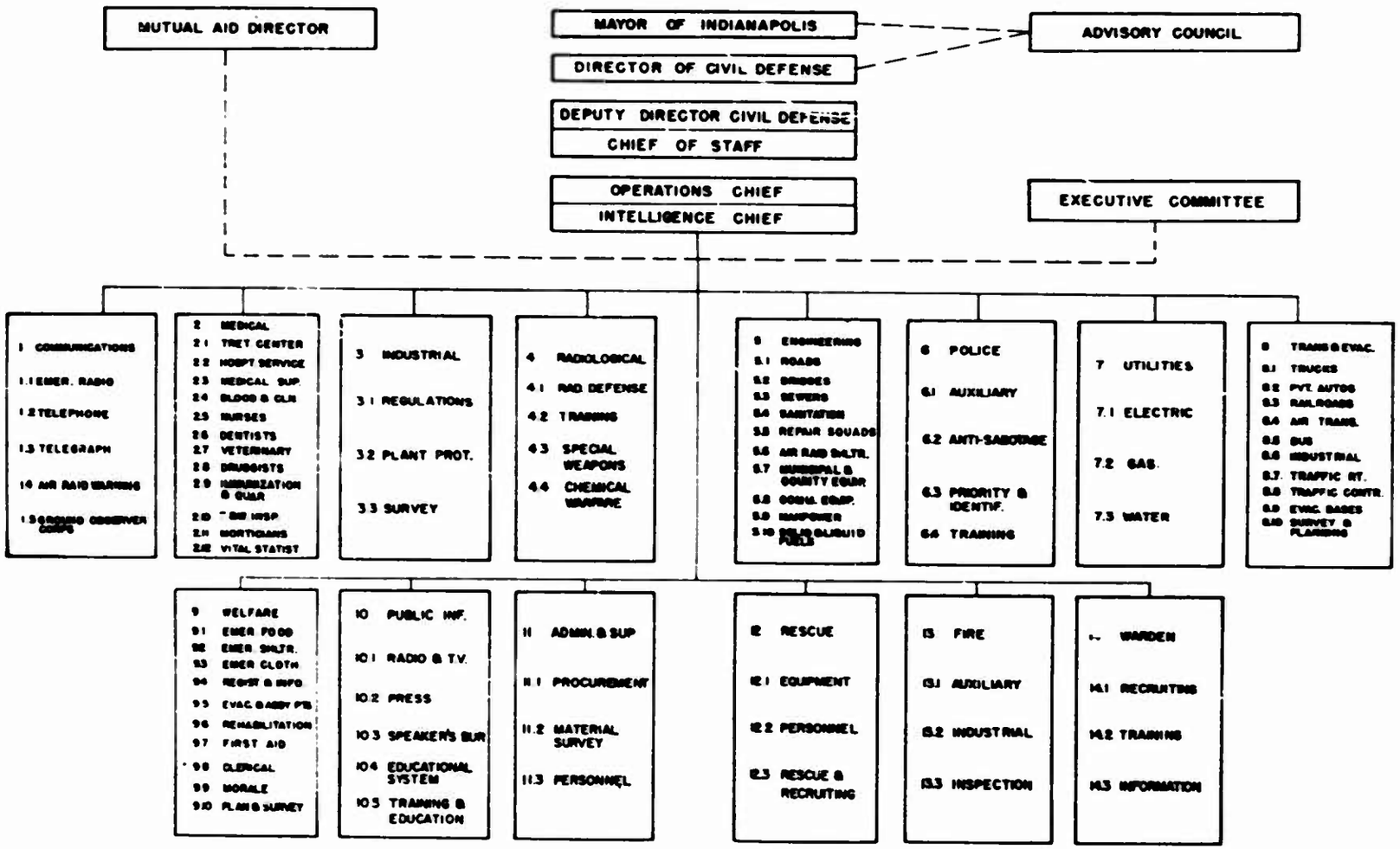
Among the major disaster resources of the local CD unit were the following:

a. A portable 200-bed hospital, the equipment for which was stored in semi-trailers.
b. A detailed inventory of emergency supplies available in the community, name of emergency contacts, and emergency telephone numbers.
c. An elaborate description of community fallout shelters located in 300 buildings which were shortly to be stockpiled with emergency supplies. (Recruitment of "shelter managers" was in process at the time of the disaster.)
d. Detailed outlines of available emergency communication networks such as those of police, fire, and sheriff departments, the electric and gas companies, taxi cab companies, and so forth.
e. A detailed set of intra- and inter-organizational disaster plans to be implemented when a state of emergency is declared by the local mayor or in the event of a larger disaster, by the governor.

Disaster Activities

The Indianapolis and Marion County CD unit received immediate notification of the disaster. According to the CD "Emergency Call System," dispatchers from the Indianapolis Police Department and the Indianapolis Fire Department notify all key CD personnel in the event of a disaster. This was done. Upon being notified of the Coliseum explosion, CD staff members, following their emergency plans, assembled at the local headquarters.

DIAGRAM 6—Organizational Chart of the Indianapolis and Marion County Civil Defense



The CD staff officer who heard the first calls for police and fire equipment over his radio, while driving in the downtown area, immediately drove to the Fairgrounds. On his way, he radioed for an electrician to start to the Fairgrounds at once and checked with dispatchers at the County Rural Fire Department, the County Sheriff's Office, and the Indianapolis Fire Department to let them know he was en route. Before arriving at the Coliseum at about 11:20 p.m., he also requested that the County Sheriff's dispatcher notify the Executive Director of the Indianapolis Red Cross Chapter.

In the meantime, the County Civil Defense Director arrived at local CD Headquarters, from where he immediately telephoned the Indianapolis Police Department. He told the desk Lieutenant that CD Headquarters was open and asked if any type of command post had been established. He was told only to go to the main gate at the Fairgrounds. With his staff well organized at the local headquarters, the Director drove to the Coliseum with his station wagon loaded with medical supplies and volunteers. He left his assistant, the Deputy Director, in charge after making him responsible for obtaining additional emergency equipment as it was requested from the disaster scene. However, before leaving, the Director issued orders for CD medical supplies stored at the Red Cross Chapter House to be sent to the Coliseum.

The CD staff officer who had earlier arrived at the scene in his communications truck notified the Sheriff's Department, County Fire Department, and Indianapolis Fire Department so that they could contact him direct for further information. He saw that personnel from many organizations were arriving and that traffic was quickly becoming congested. Many persons drove up, left their cars in the middle of the street, and ran into the Coliseum.

At this point (approximately 11:25 p.m.) the CD communications officer took the initiative. Using his truck's PA system, he requested that city police officers and Fairgrounds Traffic Division personnel control traffic in and around the north side of the cattle barn. He instructed, through his PA system and by radio, all ambulance drivers to enter at the north entrance of the cattle barn, load the injured, then exit through the west side. In this way, he tried to

solve the traffic bottleneck and establish a definite pattern of rescue and removal of injured.

This CD official attempted to find out conditions at different hospitals. He received word from the Sheriff's Office that Fort Thompson Hospital could take a number of patients but would, however, prefer ambulatory patients to litter cases. Fearing that most drivers would go only to the well-known hospitals, he advised them to go elsewhere, such as Fort Thompson and Indianapolis. Many drivers apparently disregarded his instructions.

Meanwhile, personnel at the CD office telephoned Fire and Police Departments and learned of requests which were being made from inside the Coliseum for heavy rescue equipment and additional ambulances. To meet these requests, personnel from the CD office called the Indianapolis Park Department, City Engineers, Street Commissioner's Office, the Board of Flood Control, and local funeral directors. The detailed inventory of emergency supplies was useful in quickly locating additional jacks, acetylene torches, large wrecking bars, and other emergency items which were sent to the scene.

The CD Director arrived outside the Coliseum at 11:35 p.m. He checked with his communications staff officer, who at this point expressed concern for the authority he had assumed in attempting to create order out of confusion. The Director urged him to continue his coordination efforts, assigned a doctor to assist him in the direction of ambulances, and then went into the Coliseum. Upon finding the Indianapolis Chief of Police, the Director suggested that some type of command post and communications center be established. The two men met momentarily with the County Coroner and decided to set up a command post in the Administration Building. The CD Director remained at the command post and assisted in the general activities there.

About 250 Civil Defense police arrived at the scene. They engaged in rescue and first aid activity, helped to direct traffic, and assisted in the establishment of security at various points around the Fairgrounds.

Word was sent from inside the Coliseum to the CD communications officer that since many people were still trapped under heavy pieces of cement and debris, a large crane was needed. As indicated earlier, through the initiative of the CD communications officer, working with the County Sheriff dispatcher and the Speedway police, a mobile crane was quickly borrowed from a heavy equipment company. The crane arrived on the disaster scene approximately an hour and three-quarters after the explosion, although less than an hour after CD initiated the request.

By 12:30 a.m. many nurses were arriving but the need for them at the scene had already begun to diminish. Consequently, the CD comunications officer began to call for volunteer vehicles to transport teams of nurses to the hospitals where they probably would be needed. Two Red Cross nurses assisted him in relocating the nurses. Later, several of the physicians were also sent to hospitals. The effort made by the CD communications officer was the only attempt made by anyone at the disaster scene to ensure that there was, to some degree, a distribution of nurses and doctors among the available hospitals.

About 3:00 a.m. the CD staff officer drove his communications truck into the Coliseum where it could be used by the Coroner and others who were engaged in identification of the dead. Workers from the telephone company installed two telephones in a truck about 6:00 a.m. for use by those attempting to identify the dead.

After this point the operation at the Coliseum became rather routine. A variety of messages, both incoming and outgoing, were handled through the communications truck. At 3:30 p.m. on Friday, the Coroner requested that the CD communications officer announce that the Coliseum was to be closed and everyone should leave. CD officials left the scene shortly thereafter.

Operational Problems

CD problems were of two kinds. There was some overlap in functions with those being carried out by other groups. In addition, personnel from other organizations apparently had an unclear picture of the potential resources and services that the local CD unit

could provide. That the Civil Defense organization was as able to coordinate and direct many disaster responses as well as it did stemmed from the initiative of its personnel and their personal relationships to other agency officials.

1. While Red Cross representatives were compiling lists of the dead at the explosion site, the County Civil Defense Director insisted that all welfare inquiries should be directed to the Coliseum, since that was the location of the command post. However, the Executive Director of the local Red Cross Chapter thought that all such inquiries should be handled at its own headquarters. The conflict was quickly resolved when the Executive Director telephoned the CD Director and indicated that the public expects the Red Cross to handle such activity. He declared that a casualty list would be sent out only when it was completed and that CD could do whatever they wanted with it at that time. In a sense, organizational priority of function was claimed on the basis of traditional allocation of tasks.

While this conflict was quickly resolved, it indicated potential sources of disagreement between the two organizations. As long as the two groups had a large overlap in functions some disagreement was inevitable. The next section on the Red Cross will note further sources of difficulties between it and CD.

2. Prior to the explosion, the local CD unit concentrated its major effort on developing inter-organizational plans which would clearly specify the responsibilities of each emergency organization in the event of disaster. Frequent mention was made by heads of various emergency organizations of informal contact with the County Civil Defense Director. However, neither the responsibility of each group, nor particularly the role of CD in emergencies, ever became fully clear. This was illustrated by the fact that:

a. The Fire Department had to be "reminded," or perhaps explicitly told of the willingness and ability of CD to locate special emergency equipment.
b. Similarly the Police Department was twice telephoned and asked if they needed any CD equipment.
c. Several hospitals were never officially notified of the disaster, by CD or by any other organization so specified by CD.

d. There was confusion as to which group would handle welfare inquiries, with an abortive attempt by the CD to locate this function at the command post.
e. Ambulance drivers did not follow the direction of the CD communications officer, suggesting that the coordinating function of CD was not recognized.
f. The County Coroner was relegated to an insignificant role in the CD disaster plans. However, under Indiana law the absolute authority resides with the Coroner in a disaster area where a death has occurred.

All of these examples (and others could be cited) were specific cases of actions which reduced the effectiveness of the CD organization that could have been avoided had adequate inter-organizational plans been constructed, disseminated, discussed, and rehearsed before the disaster. While much cooperation occurred between the heads of the emergency organizations, most of it was of a personal nature rather than being due to previous agreements or expectations. The inter-personal structure of relations rather than any official pattern allowed CD personnel to initiate action and operate as they did with respect to other groups.

THE INDIANAPOLIS AREA CHAPTER OF THE AMERICAN RED CROSS

While the Red Cross did assist in immediate rescue operations and provided other services, the major activity of the organization was in handling all welfare inquiries. In part, this is a traditional task of the agency. However, the Red Cross does require a period of time to mobilize since it is largely composed of volunteers, and this did contribute to its immediate post-disaster focus on welfare activity. The activation and mobilization of the organization generally followed its disaster plans but there was some improvisation especially in communicative activity.

Pre-Existing Structure

An understanding of the structure of the Indianapolis Red Cross Chapter requires an explication of its relationship to CD and an examination of the local unit's internal organization. Actually, jurisdiction of the Indianapolis Area Chapter includes three counties,

Marion, Hendricks, and Hancock. This area is about 60 miles long and 20 miles wide, almost evenly divided by U.S. Highway 40.

As previously indicated, a unique relationship exists between this Red Cross Chapter and the local CD unit. Under the 1951 Act the Civil Defense Director in each county has the *legal responsibility* for the administration of emergencies, *either natural or man-made*. It is the obligation of the County Civil Defense Director to coordinate the work of governmental, private, and voluntary agencies, such as the Red Cross, so that relief in an emergency will be as effective as possible. However, if it is a natural disaster, the Red Cross has its usual financial responsibilities.

As a result of this law, the Indianapolis Area Chapter of the Red Cross is integrated into a broader Civil Defense program, composing the welfare division. Hence, many of the volunteer personnel act in a dual capacity. For example, the CD County Emergency Welfare Services Director and the Red Cross Disaster Chairman is the same individual. This is not an accidental overlap, but complies with a written plan agreed upon by the two organizations.

The attempt to merge the two organizations can also be seen in the community shelter program. Under this plan, 300 buildings were to be designated as "Marion County Fallout Shelters." These buildings were to serve as "Natural Disaster Shelters" for use by the Red Cross. Soon after some of the buildings were stocked with a variety of supplies, it became evident that the actual lines of authority were not clear. The local Red Cross as a volunteer agency did not deem as one of its responsibilities the inventory or policing of governmental supplies.

In October, 1963, it was decided that a manager would be appointed for each shelter and be directly responsible to the County Civil Defense Director. The Red Cross would strongly urge its volunteers to accept positions as shelter managers, but as an organization, would not be responsible for the supplies. Selection of specific buildings was in progress at the time of the disaster.

The internal organization of the Indianapolis Red Cross Chapter clearly shows the "volunteer nature" of this unit. The Chapter had nine paid supervisory staff members and about 500 active volunteers. The total paid staff, which includes part-time clerical help, janitorial

workers, etc. was about 30. In actuality, the ratio of paid personnel to volunteers is probably that to be found in any "typical" large-scale local Red Cross organization.

The following are among the many groups and committees into which the volunteers are organized:

A. Service Groups
   1. Arts and Skills
   2. Canteen
   3. Disaster Service
   4. Entertainment and Supply
   5. Gray Lady
   6. Home Service
   7. Motor Service
   8. Nurse's Aide
   9. Production
   10. Staff Aide

B. Health and Safety Services
   1. First Aid
   2. Nursing Service
   3. Water Safety

C. Blood Service

D. Educational Activities
   1. College
   2. High School
   3. Junior Red Cross

E. Public Information
   1. Radio and TV
   2. Speakers' Bureau
   3. Public Interest

The local chapter had prepared emergency procedures for use in two- or three-alarm fires and general disasters. The plans included specific instructions as to priority, sequence, and procedures as to who should be notified in the event of emergencies. Personnel in the chapter had had little experience with these procedures in actual disasters for which warning was absent.

Disaster Activities

A volunteer Red Cross worker (Vice Chairman of Motor Service) was listening to her police radio at home. Upon hearing the report of the disaster, she immediately telephoned the Executive Direc-

tor of the Chapter. Thus, by 11:10 p.m. the unit's disaster plan had been activated.

The Executive Director began immediately to follow the planned procedure. He called the appropriate field worker (Assistant Director of First Aid and Water Safety) for the indicated geographical location of the disaster. He sent him in a mobile unit directly to the Coliseum. The Executive Director next telephoned the Director of Disaster Services who went to the Chapter House to activate the communication network through the operation of the two-way base radio station located there.

Before going to the Chapter House himself, the Executive Director made several additional phone calls: 1) to the Chairman of the Motor Service and Canteen Committee—to alert her assigned volunteer workers; 2) to the First Aid and Water Safety Director—sent directly to the Coliseum; 3) to the Director of Nursing Services—to alert nurses and send them to the Chapter House; 4) to the Wheeler Mission for Men—to alert five men in case emergency manpower was needed to load cots, blankets, etc. stored in the Chapter House; and 5) to students residing in the Chapter House—to start heating water for coffee.

The Director received a telephone call from the Eastern Area field representative for Central Indiana at 11:40 p.m. It was suggested that she come directly to Indianapolis. However, before leaving her home in Lebanon, Indiana, she telephoned the Disaster Duty Officer for the Eastern Area who in turn was in a position to contact the Disaster Service of the national office.

At the Coliseum, the First Aid Director and his assistant kept advising personnel at the Chapter House of the changing situation. Using a "walkie-talkie" unit, they were able to leave the mobile radio unit alternately and still communicate with one another. This additional flexibility was helpful in assessing needs throughout the Coliseum area where the communication system was in operation throughout the night.

Upon receiving their first radio reports from the field worker on the scene, the initial concern at the Chapter House was to provide emergency treatment material. Cots, blankets, and stretchers were immediately dispatched to the Coliseum. Boxes of burn dressings

stored in the Chapter House by CD were ordered to the scene by the County Director. Also plastic sheeting was soon delivered after reports that many of the dead were badly burned.

The Chapter's Motor Service equipment, after delivering first aid supplies, was used to transport several victims from hospitals to their homes. It was also used to initiate the unit's feeding operation. Red Cross officials estimated that a total of 72 gallons of coffee, 100 sandwiches, and rolls, doughnuts, etc. contributed by local bakeries were served to the 800 fire, police, medical, and other personnel who were at the Coliseum. This feeding operation, which began after midnight Thursday, was discontinued about 4:00 p.m. Friday when the Fairgrounds were vacated.

After gathering at the Chapter House, Red Cross nurses were sent to the Coliseum. By the time they arrived, practically all of the injured had been taken to hospitals. As was pointed out previously, removal of the injured took place very rapidly; within an hour after the explosion all of the injured were out of the Coliseum.

Some Red Cross nurses then went to hospitals to offer their services; others stayed to assist the Coroner cover the dead on the ice covered floor of the ring being used as a temporary morgue. These nurses assisted a volunteer CD doctor to make the bodies as presentable as possible. Clean sheets and blankets were used, broken limbs were straightened, and pools of blood were covered first with grocery bags and later with rubber runners. Red Cross nurses then helped escort and console relatives who came to identify the bodies.

About 2:00 a.m. a doctor from St. Luke's Hospital called Red Cross Headquarters and requested that an appeal be made over radio and TV for blood. Fearing that the hospitals might get too congested, he urged the Red Cross to request that all donors go to the Chapter House from where they could be sent to whatever hospital needed them. However, because prospective donors went to hospitals nonetheless (and also because no shortage developed), no blood was obtained from the more than 200 would-be donors who came to the Chapter House.

Even before radio and television announcements were aired, five Red Cross personnel began telephoning known type "O" blood donors whose blood without further processing could mix safely

with any of the other three types, A, B, or AB. Using the Chapter's special file of such donors, several were contacted and 20 were sent, upon request, to Samaritan Hospital.

Shortly after 1:30 a.m. Red Cross nurses were sent to all hospitals except Fort Thompson to compile casualty lists. The nurses, in relaying information to the Chapter House, listed the following information: the hospital from which they were reporting, the name, address, age, and condition of each victim. Names of the identified dead at the Coliseum were obtained by a Red Cross nurse and the County Civil Defense Director.

Personnel at one hospital refused to release the casualty list to Red Cross nurses. This led the Executive Director to telephone the hospital administrator. The list was then released without further difficulty.

Seven patients were treated, five actually admitted at Fort Thompson. A Red Cross nurse telephoned to obtain the list of disaster victims who had been treated there. She was told that such a list could not be released except by a Colonel who had gone to bed. Again this necessitated a telephone call from the Executive Director. He telephoned a high ranking officer at the Fort and obtained the list with little further delay.

Names of all victims were placed on duplicate 3 x 5 inch cards. One set of cards was arranged alphabetically by last name of the victim. The second set was arranged first by cities and towns and then alphabetically by last name, within each city. Based on the original card file, separate lists were typed on spirit duplicator stencils. These initial casualty reports were ready by 5:30 a.m. and were distributed to the command headquarters at the Fairgrounds, radio and television stations, newspapers, police departments, and other organizations which requested them, such as Admiral Allison Plant and Midwest Pharmaceutical Company. They were revised twice during the day as additional data became available.

Early Friday morning it was broadcast that the Red Cross was compiling information on the disaster victims and that its switchboard would open at 6:00 a.m. From previous experience the Executive Director knew that the existing Chapter House telephone sys-

tem would not be adequate to handle all of the incoming calls. (This system is normally limited to nine trunk lines and two independent lines.) He contacted the telephone company about 3:00 a.m. Shortly before 5:30 a.m. they completed the installation of three additional trunk lines. That was the mechanical limit of the switchboard at the Chapter House.

The Executive Director remembered that in the 1948 Coatesville tornado, additional switchboards had been used at the Indianapolis Chamber of Commerce and the Marion County Department of Public Welfare. He thought of the possibility of also broadcasting the telephone numbers of these organizations. However, neither of these two agencies would be open at 6 a.m., so the possibility of using their switchboards was not followed through.

About 4 a.m. the Executive Director called for advice an official of the telephone company who had previously served on the Red Cross Committee on Disaster Communication. This person first suggested that announcements be broadcast requesting individuals to call the telephone company if Red Cross lines were busy. However, in a few minutes the telephone company official called back. He stated that it could be electronically arranged to transfer automatically all "excess" incoming calls at the Chapter House to the telephone company without the individual having to dial a second number.

However, initially there were some difficulties with the system. In fact, it was about 11 a.m. before all problems had been solved in the automatic transfer operation. Prior to that time, two Red Cross workers went to the telephone company office and supervised the 10 company operators who received the "excess" calls. This procedure had apparently not been planned, but nevertheless worked well.

As previously indicated, the Red Cross switchboard opened at 6:00 a.m. and remained fully in use, "lit up like a Christmas tree," until about noon. All calls were handled by home service volunteers. Gradually the number of inquiries decreased so that by Friday night, the rate had dropped to two or three per hour. By the end of that day, Red Cross officials estimated they had received over 2500 phone

calls from all over the world. It was also estimated that about 150 Red Cross volunteers had been utilized up to that time.

The following day, Saturday, the Home Service Department telephoned over 250 families of the victims to inform them that they could utilize the Red Cross in case of any emergency needs. Letters were sent to those without telephones. The Eastern Area Field Representative for Central Indiana contacted all Red Cross chapters in whose jurisdiction disaster victims resided. She thus coordinated the efforts of the more distant chapters by instructing them to notify families and offer assistance. Further and later help was provided by the Red Cross according to its standard, long-run rehabilitation procedures.

Operational Problems

The Red Cross actually had no major problems in this disaster. However, a number of potential areas of difficulty appeared, which under a somewhat different set of circumstances could have produced serious operational consequences. There were minor problems as to official notification and speed of mobilization, and also some questions developed regarding legitimacy and clarity of Red Cross procedures.

1. Recorded police communications showed that a dispatcher from the Indianapolis Police Department telephoned the local Red Cross Chapter House to make sure it had been notified of the disaster. This occurred soon after the explosion at approximately 11:23 p.m. However, as already indicated, the call was taken by an operator at a telephone answering service with ensuing confusion and delay. Emergency organizational plans apparently did not include procedure for notifying such operators or how such persons were to proceed in the event of a disaster requiring Red Cross response. If Red Cross personnel had not quickly learned of the explosion through mass media accounts, it might have taken some time before other organizations could have contacted them.

2. There was also some delay in the mobilization of Red Cross equipment and personnel to the disaster scene. First aid supplies were sent, but since they arrived so late, many went unused. Nurses were dispatched to the Coliseum after first being briefed at the

Chapter House, but by the time they arrived, nearly all of the injured had been taken to hospitals. Such delays were not due to the failure to follow organizational plans; rather they were artifacts of the basic structure of the organization which emphasizes the use of volunteers who require time to be alerted and mobilized.

3. Red Cross personnel were somewhat hindered by actions questioning the legitimacy of their activities. Certain of the hospitals at first refused to provide Red Cross workers with casualty lists and the County Civil Defense Director originally demanded that all welfare inquiries be directed to the command post at the Fairgrounds. As already indicated, both of these problems were rather quickly overcome by the Red Cross Executive Director, but he did have to take time from other activities to legitimize his organizational authority regarding such matters. This had not been automatically recognized by other organizations.

4. Also, other organizations were apparently somewhat uninformed as to Red Cross plans. Officers at the Police Department sent prospective blood donors directly to hospitals rather than to the Chapter House. About 200 blankets were stored at Red Cross Headquarters; those could have been quickly moved to the scene upon request by the Fire Department instead of ordering the last group of firemen to first "strip their beds" before going to the Coliseum. These and other organizational actions did not bespeak any great understanding of typical Red Cross procedures.

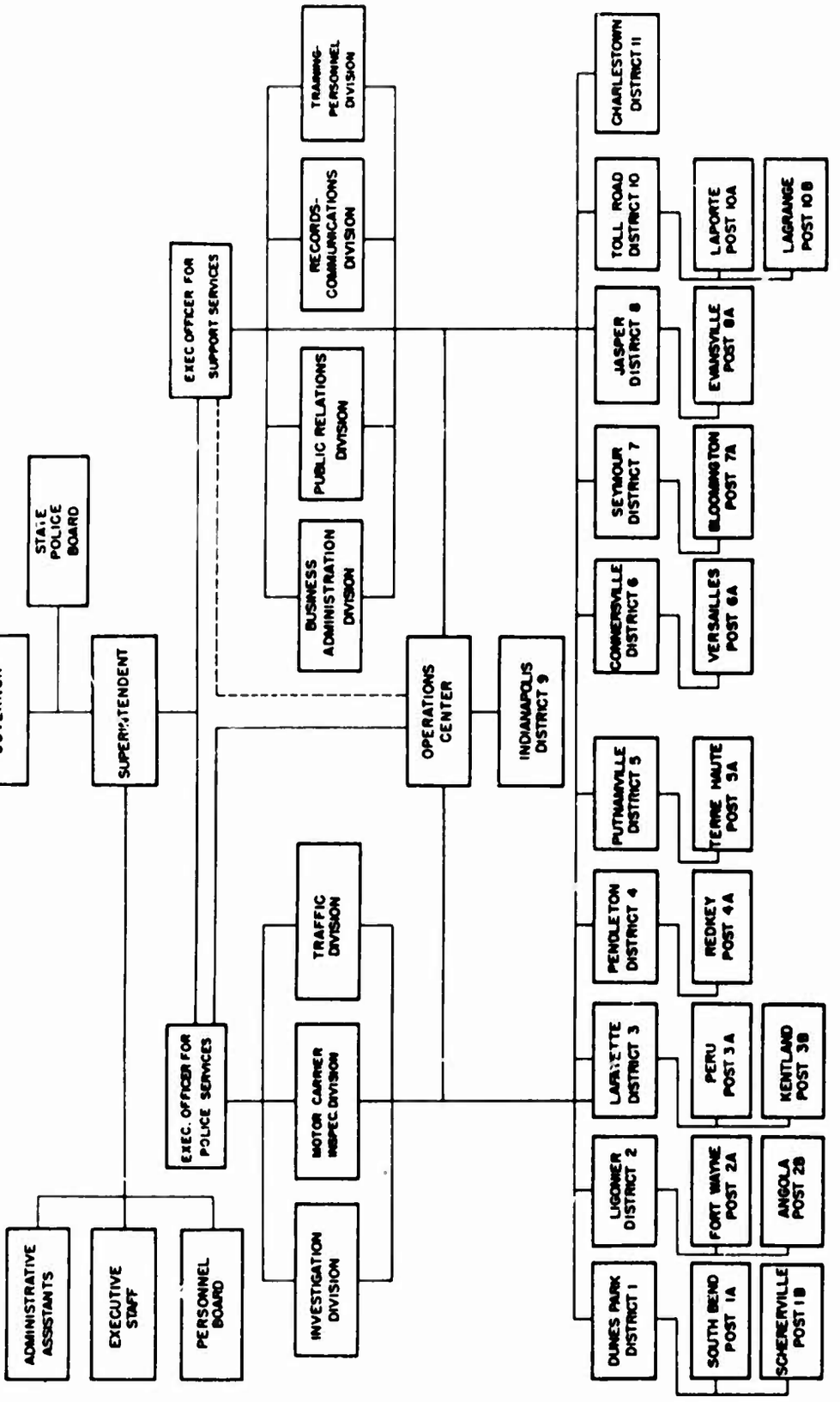
INDIANA STATE POLICE

State Police assisted Indianapolis Police during the emergency period. The troopers played an important part in assisting the Coroner to identify the dead. Although the Coliseum was on state property, the State Police did not take over control of the area from the city police until early Friday morning.

Pre-Disaster Structure

The State Police were officially organized in 1933, although rudiments of the organization can be traced back to July 21, 1931, when 16 men were assigned to enforce the state motor vehicle registration law. The basic organizational structure established in 1933

DIAGRAM 7—Organizational Chart of the Indiana State Police



is still in use at the present time. The agency is directed by a state Superintendent who is appointed by the governor. This is the only direct political appointment. The remaining police and civilian employees, totaling about a thousand, work under a bipartisan merit law. The entire unit is responsible to a State Police Board, the members of which are also appointed by the governor for staggered four-year terms. Diagram 7 outlines the major structural features of the organization.

All troopers are selected on the basis of competitive testing, character investigation, physical examination, interview, and performance in an eight-week competitive recruit school held at Indiana University. Approximately twice as many men attend recruit school as are selected for appointment. Compared with personnel in most other organizations, members of the State Police are a select group.

A general disaster plan had been prepared which was "submitted not as a hard and fast set of rules, but as a guide in solving problems encountered in the recovery, identification, and release of bodies."[5] The guideline included forms for reporting missing persons and describing bodies, and a dental chart. Other possible disaster activities for troopers were not specified in the plan.

Disaster Activities

Upon receiving initial reports of the explosion from the custodial officers on duty at the Coliseum, the State Police dispatcher sent three troopers. Later, when these troopers informed the dispatcher that the disaster was of greater magnitude than initially indicated, he notified the highest ranking officer of the force, the Superintendent. When a little after midnight, the Superintendent reached the command post at the Administration Building, he found other state troopers arriving and police activities in general being directed by the Indianapolis Chief of Police.

The troopers assumed a variety of duties, depending on the immediate need at the time of their arrival. Some took over traffic control in a particular area or established security at a specific gate

[5] Unpublished material obtained from the Indiana State Police, "Disaster Plan: Recovery, Identification, and Release of Bodies," p. 1.

entrance. An identification expert, who had arrived with the Superintendent, assisted the Coroner in setting up a temporary morgue. Some troopers went to each hospital to obtain the names of the injured and dead. This information was sent back to the command post where a temporary State Police radio center had been set up. During this time also, officers from the Investigation Division worked with personnel from the Fire Marshal's Office in an attempt to determine the cause of the explosion.

State Police identification forms (i.e., missing person reports) were sent to the Administration Building as ordered by the identification expert. A few relatives who wished to attempt to identify victims began to arrive about 3:00 a.m. They were taken to the Administration Building where police interviewers from city, county, and state organizations obtained the necessary information describing the person for whom they were searching. Individuals who were to make direct identification were then escorted across the street to the temporary morgue. After reviewing the information provided on the written report and sometimes asking a few additional questions, one of the officials working with the bodies (Coroners or identification experts from Indianapolis and State Police) took them to view those bodies he felt best fitted the description. As a body was identified, troopers telephoned the funeral home designated by the relatives.

At 6:30 a.m. the Superintendent of the State Police officially took over operations from the Chief of the Indianapolis Police. Troopers established security at all entrances to the Fairgrounds, the Administration Building, and the Coliseum. Shortly thereafter, about 7:00 a.m., relatives desiring to make identifications began to arrive in large numbers; by 7:30 a.m. lines began to form. However, by late afternoon all but two bodies had been identified so the State Police, at the request of the Coroner, closed the Coliseum.

Operational Problems

The State Police, as an organization, had no major problem. However, their operations did somewhat deviate from what might have been expected according to their emergency plans and traditional responsibilities. The failure of troopers to adhere fully to

emergency procedures partly stemmed from having to work with other organizations. Why the State Police delayed their legal claim to authority over the disaster area is less clear, but in part probably resulted from the initiative taken by other police groups to meet immediate emergencies. A potential source of difficulty in inter-organizational authority also came to the fore.

1. In addition to troopers, personnel from other agencies, primarily the County Coroner and identification experts from Indianapolis Police Department, were working with the bodies removed from the debris. Certain State Police procedures were not followed during this process which made the identification of the dead more difficult. The State Police "disaster plan" emphasizes that all bodies not identified upon recovery should be tagged and the exact location and positions of the body when found indicated. Miscellaneous items found near the bodies should also be tagged as to exact location, with reference to nearby bodies. In this disaster, instead, items and even personal effects (e.g., jewelry, watches, etc.) found on the dead were taken to the Coroner's office before the majority of inquiries occurred and thus were not available for use by those making identification at the Coliseum.

Given the circumstances of the disaster, it is doubtful that the actions called for by the plan would have been taken even if State Police had been in command of the rescue activity. Since some victims were still alive under the rubble, no one probably would have taken time to write down the location and positions of corpses while victims were still trapped. While relevant to many situations, e.g., an automobile accident, it is questionable that these procedures could effectively be followed in a large-scale disaster.

2. While the disaster occurred on state property, there was little hesitancy by the Indianapolis Chief of Police to assume control. The small number of troopers and the delay in time before sufficient organizational members were at the scene, helped to determine this action by the Chief of Police who was faced by immediate problems of traffic, security, and other matters that had to be quickly solved. However, no major problems or conflict between members of the two organizations were reported. In fact, it was only after the

major confusion had been eliminated (at 2:00 a.m.) that the question of jurisdictional authority was even raised.

3. The Coroner decided independently to send all valuables taken from victims to his office. This decision did not comply with written State Police procedures which state that personal effects should be left at the temporary morgue to aid identification. However, under existing local laws the Coroner has complete authority for bodies under the given circumstances. While no specific problems developed along this line, it is clear that an overlap in authority existed.

MARION COUNTY CORONER'S OFFICE

The Coroner and his deputies assumed positions of major responsibility in efforts to identify the dead. They were assisted by officials of other agencies, but final authority throughout the identification process resided with the Coroner.

Pre-Disaster Structure

The County Coroner is an elected office holder. The present Coroner has a full-time paid staff consisting of three individuals: two clerks and one chief investigator. He also appoints and supervises several deputy coroners. Four medical doctors (deputy coroners), who are paid monthly salaries, are responsible for processing all death cases within the County. For example, any death encountered by the Fire Department is reported to the Coroner's office as either white or Negro and the "appropriate" deputy is sent to the scene. Under existing local laws, the Coroner is the absolute authority in a disaster area where a death has occurred.

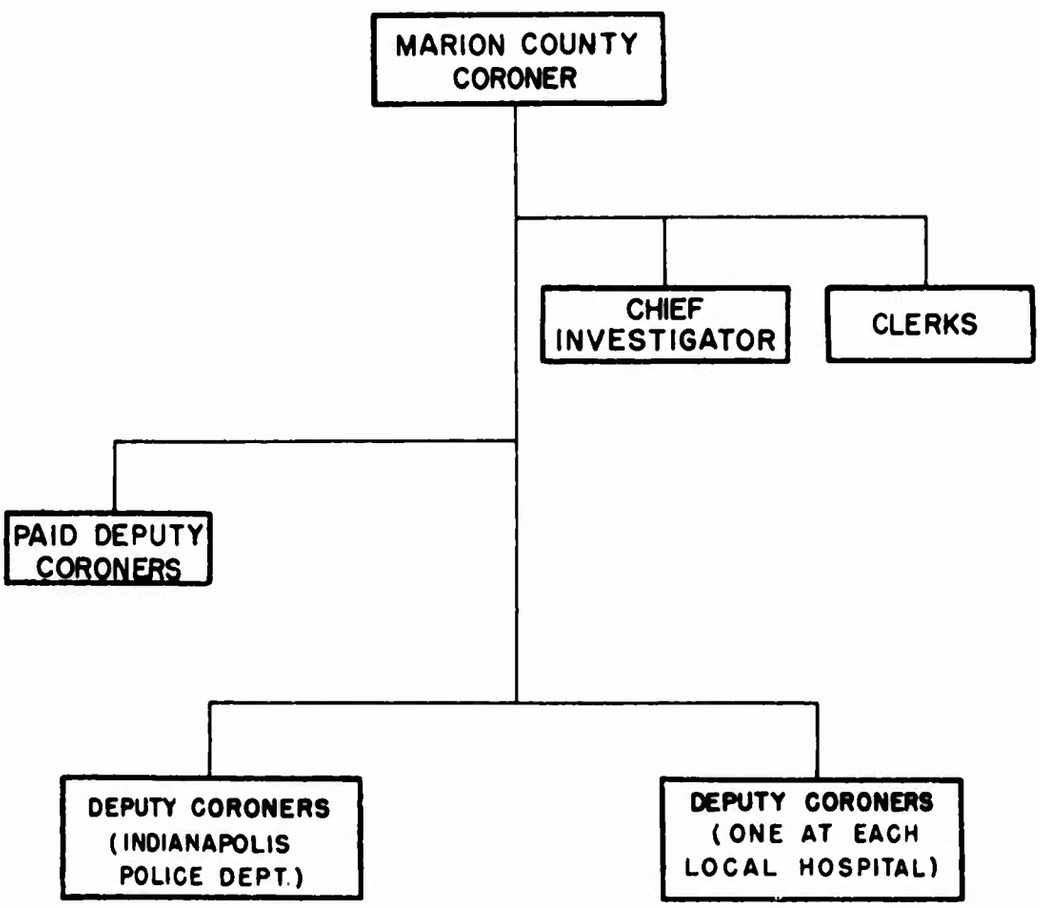
Each local hospital has a deputy coroner who handles all deaths that occur within that hospital. The County Coroner also appoints as deputies four traffic investigators in the Indianapolis Police Department.

They are responsible for handling any death encountered by the Police Department. This group of deputy coroners, police, and doctors within each local hospital perform their services without compensation. Diagram 8 outlines the major components of the County Coroner's Office.

Disaster Activity

Doctors' Exchange notified the Coroner, who went directly to the Coliseum. He arrived at the scene about 11:45 p.m. Since he was one of the first doctors to arrive, his first concern was not with the dead, but with the individuals still trapped beneath the rubble. Most of these could be reached, but not removed due to the size of

DIAGRAM 8—Organizational Chart of the Marion County Coroner's Office



slabs which pinned them. Because he had no idea of how long the victims would be forced to remain in such a condition, the Coroner obtained identification from them and administered an injection of morphine.

When it became evident that the number of dead would considerably exceed the first estimate of a dozen or so, and since the ice formed a natural morgue, the Coroner decided that all bodies

should be held at the Coliseum and notified the police of this decision. As soon as all of the injured were removed from the blast area, he requested the police to secure that area.

The temporary morgue was set up under the direction of the Coroner. Bodies were separated by sex and all personal belongings were removed by deputy coroners. All items were listed on "coroner's slips," typed by clerical help from the Coroner's Office. The bodies were laid on sections of plywood stored in the Arena; badly burned bodies were covered with plastic sheeting supplied by the Red Cross. Attempts were made to make the bodies as presentable as possible. Identification experts from the State Police and the City Police assisted the Coroner throughout this operation.

After the 2:00 a.m. meeting at the command post, an orderly process for the identification of the dead was established. Only about 21 bodies were identified at once; all were men whose billfolds had remained intact. Since loose objects such as purses were widely scattered by the explosion, no female bodies were immediately identified. When bodies were identified, chaplains affiliated with the City Police quickly contacted next of kin. Upon the arrival of a representative from a funeral home, an identified body was checked and released. The Coroner also directed some Red Cross nurses and Salvation Army personnel who attempted to provide comfort to bereaved relatives.

Several of the badly burned and crushed bodies were identified through indirect means. Identification cards containing fingerprints found in purses were matched with fingerprints taken from the more mutilated bodies. Identification of one badly burned body was confirmed through discussion with a doctor who it was believed had performed surgery on the victim. Scar tissue on muscle fibers underneath the skin from an operation in 1930 was exactly as indicated by the physician. In this case and others, dental X rays were obtained from dentists to confirm identification.

Two bodies, badly charred, remained unidentified as of Friday afternoon. The Coroner had them taken to Samaritan Hospital where they were identified the next day. A little while after the last bodies were removed, he ordered the Coliseum closed and kept under police security.

On November 6, the Coroner announced that refunds would be made for towing and storage charges billed to relatives of seven victims whose cars were hauled from the Fairgrounds parking lot. Since a state law requires impoundment of any auto involved in a fatality, the Coroner had earlier ordered that the cars be towed away. He also stated that any valuables not claimed by relatives would probably be eventually turned over to Goodwill Industries.

A newspaper story which also appeared on November 6, stated that amid the confusion immediately following the explosion, looters and pilferers began stealing the widely scattered personal items, even in some cases, removing items from bodies. The alleged stealing ceased when police authorities and deputy coroners arrived. The Coroner was quoted as stating, "Yes, I suspect pilfering and looting took place before I got there. With bodies lying around moments after the blast, the opportunity presented itself to certain people to steal. I don't know what you can do in disasters to prevent it." (Reference to possible looting was also made by a Deputy Chief of Police in an interview with a DRC staff member. Although the extent of looting remained unknown, the Deputy Chief felt it was probably minimal.)

As to the causes of death, the Coroner stated that although there were several cases of severe burns, most of the persons died as a direct result of skull fractures and crushed chests. Chunks of concrete that were blown into the air were the obvious cause of multiple fractures suffered by almost every victim. After a more complete analysis of the death records, the Coroner specified that about one-third of the deaths were due to burns.

Operational Problems

The Coroner and his deputies were faced with a somewhat unusual situation. Normally, this organization has to process at any given time only a few bodies, in a clearly defined context such as an official morgue, and where the legal responsibility of the office is unquestioned. In this disaster, the Coroner suddenly had to handle large numbers of dead in a makeshift morgue while trying to cooperate with other groups who only partly understood who was the authority in the situation. A failure to grasp the dif-

ferences between a normal and this emergency operation led to some difficulties, although no major problems occurred.

1. As soon as the temporary morgue was established, deputy coroners, following usual procedures, removed all valuables from bodies, e.g., rings, billfolds, and so forth. Then, these items were taken to the organization's office downtown after being listed on "coroner's slips." However, the absence of the removed items made identifications on the scene that much more difficult, especially given the large number of cases involved. Furthermore, in several cases victims involved entire families, leaving no immediate relative to make an identification.

2. Lack of uniforms or armbands for the men from the Coroner's office created some difficulties when security of the area was being established. Since the police had no way of immediately identifying such personnel, some confusion resulted when all unauthorized persons were moved out of the Coliseum. In a makeshift rather than a regular morgue, some ready means of official designation were necessary but not available. However, it is interesting to note that this difficulty was reported by the police rather than the Coroner.

3. Local law specified that the Coroner was to assume complete authority in any disaster where a death occurred. However, specific plans usually did not exist between other emergency organizations and the Coroner's office. Plans in existence were vague as to matters of legal responsibility. In fact, in some plans such as those of Civil Defense the Coroner was assigned a rather insignificant role. Although the failure of other organizations to recognize fully the legal authority of the Coroner created no major problems, a potential for inter-organizational difficulties was clearly present.

THE SALVATION ARMY (STATE AND LOCAL UNITS)

The Salvation Army personnel performed three standard tasks after the disaster: (a) providing consolation to some victims soon after the explosion, (b) serving coffee, rolls, and sandwiches from the Salvation Army canteen and one of the grills inside the Coliseum, and (c) ministerial counseling to individuals who came to

identify the bodies of their relatives. However, the major effort of the Salvation Army officers was directed toward the feeding operation and because of this somewhat isolated role, little coordination with other organizations occurred or was necessary.

Pre-Disaster Structure

In contrast to the Red Cross which is primarily composed of volunteers, The Salvation Army has mostly paid personnel and does not ordinarily attempt to organize large groups of volunteers. All officers are ordained ministers, and military titles indicative of the line of authority are used. For example, a "Colonel" is in charge of the state unit (division) who is assisted by a "Major" (division secretary). Likewise, titles of "Brigadier," "Captain," etc. are also used. Parallel to the chain of command indicated by the use of military titles, the Salvation Army personnel are organized into a series of hierarchical units. The state unit, a division, is sub-divided into zones, which are in turn sub-divided into regions.

A "Manual for Emergency Disaster Service," issued by the national office, provides an overview of the procedures to be followed by the Salvation Army officers. Officers in the Indiana Division Headquarters had prepared a condensed version of the more crucial aspects of this manual. The shorter report had been issued as "Instructions for Guidance of Officers In Disaster Emergency Service."

The instruction plans consisted of a series of suggestions organized into the following categories: Preparation (e.g., all police departments, radio stations, etc. are to be notified of the Salvation Army officer responsible for disaster work); Organization at local headquarters (e.g., Divisional Headquarters is to be contacted by the local unit concerning any disaster in the state); Procedures at the scene (e.g., local authorities at the scene are to be informed that the Salvation Army services are available so they can better coordinate all such activity); and the Disaster Emergency Service Daily Report (a form is suggested to be used in keeping a record of the Salvation Army activities at the scene, e.g., how much clothing, food, furniture, etc. were provided). Such instructions were intended to be general guidelines for local units throughout the state.

The personnel at Indianapolis had also made previous arrangements with the Indianapolis Fire Department and the Indiana State Police for notification of The Salvation Army in the event of a local disaster (e.g., all three-alarm fires). In most cases, only officers assigned to the canteen are notified. However, in the event of a larger disaster, the Salvation Army procedures indicate that the Division Commander should be immediately informed.

Disaster Activities

A Salvation Army staff member who lives near the Coliseum heard the fire engine sirens and telephoned the city police to find out what had happened. Upon being informed of the explosion, he telephoned the Division Secretary, the second in command since the Division Commander was in Chicago that night. This staff member and the Division Secretary (Major) went directly to the Coliseum; they arrived about 11:25 p.m.

After arriving at the Coliseum, the Major telephoned all other staff officers in the city. After receiving a call from the Division Secretary, one officer (Captain) telephoned one of the local Salvation Army missions where the agency canteen was stored. He instructed the personnel there to start making coffee and to get the canteen ready. He went directly to the mission and with the help of a volunteer from the mission took the canteen to the Coliseum. They were on the scene, serving coffee by 12:20 a.m.

Before the canteen arrived, the Major contacted the individual who managed the grill inside the Coliseum. This person suggested that The Salvation Army might operate the grill if they wished. After all the injured and most of the bodies were removed from the debris, the Salvation Army officers and volunteers began serving from the grill.

The Division Secretary telephoned his superior in Chicago to provide him with a first-hand report. The Colonel immediately asked if additional men needed to be sent, but was assured that the local personnel were sufficient. Since the disaster was so focalized, most facets of the organizational plans did not have to be implemented.

Aside from the feeding service they performed, many of the officers offered advice and words of comfort to victims. Since organizational personnel were readily identifiable through their uniforms, individuals were readily able to locate them. Some of the officers aided relatives who came to view the bodies at the temporary morgue in the Coliseum.

About three o'clock, after all rescue efforts were completed, the Salvation Army canteen was moved inside the Coliseum. Later in the morning officers from nearby counties such as Shelby and Hamilton were telephoned and asked to come to the city; they relieved those officers who had been at the Coliseum all night. This second shift consisted, in part, of husband and wife teams who stayed at the Coliseum until about 3:30 Friday afte. oon. In total, twenty Salvation Army officers were utilized.

Operational Problems

The Salvation Army had practically no problems or difficulties in this disaster. There was a slight delay in organizational mobilization. However, this stemmed from the failure of the Fire Department or the State Police to notify The Salvation Army of the explosion. Furthermore, since Police Headquarters had little information as to the extent of the disaster, the Salvation Army officials had to go to the Coliseum before mobilizing their organization. Otherwise, group activities proceeded fairly well according to the emergency disaster plans of the agency.

INDIANAPOLIS HOSPITALS

Due to the similarity of fuctions performed by the hospitals, the structure of the organizations was rather similar. Also, many of the problems incurred were common to all of them. Therefore, to avoid repetition, there is but a single discussion of the five hospitals which received the most disaster victims. However, brief individual descriptions of the different "disaster activities" performed by each hospital are presented. Certain problems encountered by only one or two of the institutions are likewise indicated.

Pre-Existing Structure

The structural complexity of a large metropolitan hospital is readily observable through even a cursory analysis of an organizational chart. For example, Diagram 9 presents an outline of the

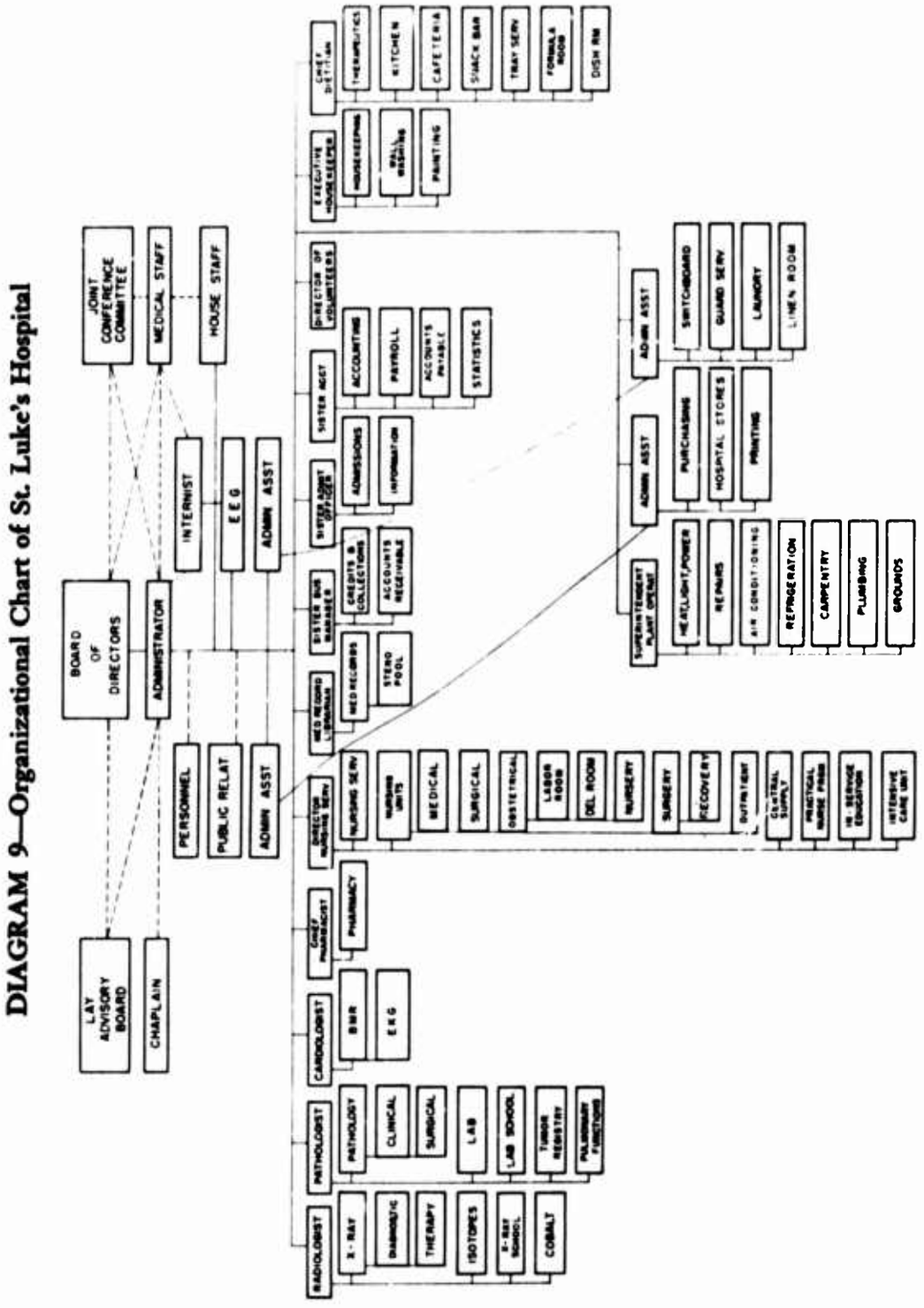


DIAGRAM 9—Organizational Chart of St. Luke's Hospital

structure of St. Luke's Hospital. It simplifies the actual situation, for the medical and house staffs are merely noted rather than detailed on the chart.

Table 1 indicated the normal bed capacity of each hospital. Local hospital officials estimated that by utilizing all hospitals in Marion County plus those outside the county that did take patients, about 1,600 patients could have been admitted. As indicated in Table 1, only 170 were admitted due to the explosion.

All five Indianapolis hospitals had disaster plans. In general, the plans were rather straightforward, clear and simple. It was the opinion of some hospital administrators that major consideration had to be given to a few basic points of preparedness rather than to a complicated framework complete to the last detail. It was indicated by the administrators that the types of emergencies which a hospital might face vary so widely that a plan effective for one emergency might actually confuse the handling of another. A highly detailed plan designed always to be put into effect the same way could be ineffective because of varying circumstances; a massive food poisoning incident would have to be handled differently than a disaster involving a large number of orthopedic injuries. Furthermore, it was felt that hospital personnel could be depended upon to respond well, but that their activities needed to be coordinated.

The hospitals differed somewhat in how often they rehearsed their plans and in the prior experiences they had had in handling mass casualties. Samaritan Hospital, for example, the only Indianapolis hospital with an emergency service staffed 24 hours a day, is always partially prepared to respond to a disaster. The disaster plan, which is rehearsed twice yearly, had been partially implemented on two recent occasions. On Memorial Day, 1961, a section of seats at the Indianapolis Speedway collapsed during the annual 500-Mile Race. At that time, the hospital received 60 patients within an hour. A second activation of the plan had occurred in winter, 1962, when an explosion had occurred in a local housing area.

Similar to Samaritan Hospital, Presbyterian Hospital activated its disaster plan in the 1961 Memorial Day incident. This disaster was of much value in preparing Presbyterian Hospital since it was pri-

marily orthopedic in nature. That experience clearly showed the importance of preparing for obtaining X rays and also the need for an automatic and processing machine. It appeared, in fact, that the Presbyterian disaster plan was geared somewhat to a possible disaster at the 500-Mile Race. The hospital furnishes the track with doctors and nurses, and victims of track accidents are directed to it. A run-through of the disaster plan is even held during the week preceeding the race.

Disaster Activities

Presbyterian Hospital

Presbyterian Hospital had no advance official warning that it was going to receive patients. The first alert was given by an obstetrician who heard the explosion while passing the Coliseum on his way home from the hospital. He tuned in his car radio where he immediately heard a news bulletin about the explosion and then notified the hospital and its administrator, who, in turn, immediately called the institution placing the disaster plan into effect.

Presbyterian received 120 victims, x-raying 110 and admitting 65. There was one dead on arrival. Since Presbyterian was in the process of remodeling its emergency department, no patients were treated there; however, this location was used as a triage (sorting) area, where patients were tagged and screened. From this area patients were sent either to the outpatient department for minor treatment and discharge or to the x-ray department and shock areas for extended treatment. All victims were closely scrutinized to make certain that only those requiring inpatient service were admitted. Of the 65 admitted, 23 were sent, after being given X rays, to surgery for major operative procedures. These were all operated on before 6 a.m. The other 42 were sent to shock treatment areas established in the post-anesthesia recovery room and the intensive care unit.

Presbyterian has a major resource for disaster responses in that it has a house staff of 50 intern and resident physicians and over 350 student nurses on the hospital campus. Apartment housing for the interns and residents makes them available to a far greater extent than indicated by the one-third on overnight duty in the hospital.

These physicians immediately went into action in the emergency department and the outpatient clinic. As called for by the disaster plan, the senior resident surgeon on duty served as the physician-in-charge of the triage area, and the senior medical resident as the physician-in-charge for assignment throughout other areas of the hospital. In addition, the attending physician staff numbers more than 700 and many of these voluntarily reported for duty when they heard of the disaster through radio or television. The hospital called for such specialists as neurosurgeons, orthopedic surgeons, and radiologists. (In addition, at 1:25 a.m., the city police were requested to and did bring several physicians from Samaritan to Presbyterian.)

Presbyterian Hospital has a chronic shortage of beds; consequently all available facilities were put into use, including the placing of extra beds in private rooms and corridors. Patients were retained in the recovery rooms overnight. Tonsillectomies scheduled for the following day were cancelled so that victims could be assigned beds which would have otherwise been used for those undergoing this elective surgery.

When news was received (thought to have originated from the County Coroner) that it might be necessary to set up a morgue at Presbyterian, furniture was cleared from the library and two conference rooms for this purpose. The administrative staff was greatly relieved when they were later notified that the Coroner had decided to establish the morgue at the Coliseum instead.

To maintain security after the disaster plan was in effect, all driveways were barricaded, all doors were locked; guards were posted at them and in parking lots. Maintenance personnel and regularly employed members of the Pinkerton Service were used as guards; off-duty members of the Service were called to supplement those on duty. This "buttoning up" was done primarily to keep relatives, visitors, and the curious from jamming patient care areas.

As called for in the disaster plan, relatives of the injured were sent to the White Cross Service Center which had been set up under the supervision of the Assistant Director in an auditorium-type facility immediately behind the hospital. Coffee and sandwiches were provided by the hospital dietary division and information for-

warded to keep these persons aware of what was happening in the main hospital facility. Patients treated but not admitted were sent to this Center before discharge so that they could join relatives who had arrived. Physicians and nurses were also present in this area. Only two public telephones are normally available in this Center. At 12:30 a.m. a request was made to the telephone company for more facilities; within a half-hour four additional phones were installed which proved sufficient for inter-hospital and administrative purposes. The Center and telephones were manned by some of the 300 student nurses at Presbyterian. Resident hospital chaplains and the hospital Medical Social Service Department also offered aid to the families in the Center.

Members of the hospital personnel department and its administrative and medical records staff were assigned to handle patient information. All patients were tagged on admission and a log was kept of those leaving the emergency area. Additional information was obtained in the various treatment areas and forwarded to the hospital administration office where detailed records were compiled. Mechanically reproduced copies were sent to the Service Center for relatives and periodically to the police and news media.

Junior and senior nursing students were assigned to major areas of need by the medical officer in charge. However, some were immediately returned by the nursing administration to their quarters and requested to be available at 7:00 a.m. in order to handle the essential nursing care in the immediate aftermath of the disaster. Classes also were cancelled for the following day so that the students would be available. Public Health nurses and nurses from the Indiana Hospital volunteered their help. This was largely unneeded because the Presbyterian nursing staff, which thoroughly knows the hospital's internal system, was sufficient; several of these volunteers did assist in the White Cross Service Center.

When the disaster plan was placed into effect, the housekeeping department opened the linen and laundry rooms. Housekeeping personnel who had not yet gone off duty remained throughout the night. The laundry division began operating at 3:00 a.m. The dietary department served 55 gallons of coffee in six different areas. Two

bakers on the night shift prepared extra rolls and coffee. The controller's office gathered patients' valuables for safekeeping. White Cross Pink Ladies assisted in some of these activities, as well as in the Service Center.

Usually between 150 and 200 pints of blood are stored in the hospital blood bank. Initially, Presbyterian was concerned over the availability of blood; the request for blood over the radio and television generated a large response. A call was also immediately placed to a commercial blood center in Chicago, requesting that an order be sent by a morning plane. However, the initial concern over blood was largely unfounded. Still 18 people worked between midnight and 7 a.m. preparing 60 pints of blood. It was necessary to obtain from the Williams University Medical Center a few rare types of blood which Presbyterian did not have in quantity. Additional blood was received from Samaritan Hospital; it was delivered by the Indianapolis Police at 1:25 a.m.

The emergency response was ended by 8 a.m. Normal activities and most previously scheduled surgery were performed as expected.

St. Luke's Hospital

No official notice of the disaster was received at St. Luke's Hospital, which is the nearest hospital to the Coliseum. About 11:15 p.m. a woman brought her injured husband, who was bleeding from the head and holding his chest, into the emergency room. She asked if a doctor was available and was told by the nurse on duty there was. The admitting clerk took the patient into the treatment room and the nurse on duty telephoned the house doctor. Before the nurse had hung up the receiver, a second victim, a woman with a broken leg, arrived in a taxi with her husband. She stated that an accident or explosion had occurred at the Coliseum and that the hospital should be prepared to receive a large number of victims. Since the nurse had not ended her telephone conversation with the house doctor, she passed this information on to him and told him to alert the rest of the staff. She then telephoned the night supervisor; it was now 11:20 p.m. Almost immediately more victims began arriving by taxi and automobiles; the first ambulance arrived at approximately 11:30 p.m.

Normally, when the disaster plan would be put into effect, an announcement would be made over the hospital PA system. But since no formal word had yet been received and the staff was now alerted, no announcement was made in order not to wake the patients in the hospital. Since St. Luke's is a compact hospital, word of the disaster quickly spread. The 3-11 shift was going off duty when the first victims arrived. Consequently, two shifts of personnel were available to aid in the response. In some cases, personnel on the 3-11 shift (e.g., the radiologist and the head nurse) were in the hospital parking lot when they saw the victims beginning to arrive and heard the ambulance sirens. They immediately re-entered the building. The radiologist also assisted in telephoning doctors. Many staff physicians came in automatically when they heard of the disaster on radio or television.

The hospital administrator and her assistants, all nuns, live in the hospital convent. They were alerted and were in the emergency room within five minutes, beginning to coordinate all necessary activities. Since they felt the situation was under control, the hospital director was not notified; he did not arrive until the following morning.

Also according to the plan, alerted members of the hospital were to report to the personnel office where they would be assigned duties. But since the patients arrived without any prior warning, the administrator and her staff assigned duties from the emergency room.

A triage with a team consisting of a clerk, a nurse, and a doctor was set up in the emergency room. The clerk first tagged a victim. This consisted of giving a victim a numbered tag, on which an attempt was made to list essential information such as name and address. Having these tags numbered prevented problems from arising when ordering supplies or blood for an unconscious victim whose name had not been recorded. In this case blood or drugs could be ordered by the victim's number. This tag was also used by the doctor to record medical information. The doctor and the nurse screened the patients in the triage, sending them to an appropriate care (e.g., shock ward, burn ward, x-ray).

St. Luke's normally has 130 beds for use by patients. In order to set up extra beds, furniture was removed from three hospital classrooms. Because the recovery room is normally not used on a 24-hour basis, it was opened. Since St. Luke's has unusually wide hallways, some were also prepared for possible bed space. (With the use of cots, St. Luke's could have made room for over 100 disaster victims.)

For better distribution, those patients who were already in the hospital were sometimes moved to a different room so that all beds within a single room might be used for disaster victims. Often an extra bed was placed in such location making a single into a double and a double into a triple room. An attempt was also made to put victims with similar type injuries in the same room.

The disaster plan specified that relatives would be sent through the main lobby into the library. This was not done. Chairs instead were placed in the first floor corridor. When relatives entered they were asked to wait there. Although near the emergency room, the presence of these persons seemed to present no problems. One explanation given by the administrator for this was that many of those waiting had been present at the Coliseum and were still somewhat "shocked" over what they had seen. In addition, she felt that they were able to see that the hospital staff was doing everything possible for injured relatives and friends.

St. Luke's had nearly all the equipment and supplies needed. One of the doctors contacted the local Red Cross Chapter House and suggested that an appeal be made for blood since it was not known how many victims were going to arrive. To avoid additional congestion at the hospital, he suggested that donors be requested to go to the Chapter House. However, the hospital had sufficient blood. In fact, blood was later sent to Samaritan Hospital. The only thing needed which the hospital lacked was a respirator. One was borrowed from Williams University Medical Center. The Medical Center also offered the services of student nurses for the following day. Several Public Health and Red Cross nurses also provided help.

Officials at Highland Clinic, a small nearby private hospital, called officials at St. Luke's offering drugs. Although the drugs

were not immediately needed, they were accepted and held as a reserve supply. St. Luke's also called upon student nurses at its school of nursing. An unidentified man arrived at the hospital and volunteered his service. He was used to maintain a list of victims which he continually revised to ensure that visitors and the press would have current data.

Within two and a half hours after the first patient arrived, 87 victims were received. A total of 43 were admitted. Word was received at the hospital that it had been announced at the Coliseum that St. Luke's was filled and no more patients should be sent there. No official word to this effect was initiated from the hospital. Other hospitals upon learning of the large number of patients that were sent to St. Luke's telephoned and volunteered some of their own staff. However, additional help was not needed.

The day following the disaster, each patient was again thoroughly examined to make certain that nothing had been overlooked. One patient was found who had not been specifically assigned a doctor. Another who had been unconscious when earlier examined was found to have additional, initially undetected injuries. This second examination also offered an opportunity to complete the medical forms for each patient.

Samaritan Hospital

First notice of the disaster was received at Samaritan Hospital at about 11:09 p.m. when the radio dispatcher from the Indianapolis Fire Department telephoned. The conversation between the dispatcher and the nursing supervisor on duty in the emergency room was as follows:

Fire Dispatcher:	Hospital?
Head Nurse:	Yes.
Fire Dispatcher:	Call about three ambulances to the Coliseum at the Fairgrounds, they've got a big explosion out there, will you?
Head Nurse:	My God, what is it?
Fire Dispatcher:	Don't know, lady, just got an explosion is all that I know.
Head Nurse:	Okay, I'll get them on the way.

Fire Dispatcher: All three of them.
Head Nurse: Thank you.

Stored near the emergency room are special boxes which contain blankets and disaster supplies. Three of them were immediately loaded into the hospital utility truck and taken to the Coliseum.

After this initial alert, no immediate further information was directly received from other organizations. Hospital officials, forced to rely on radio and television in determining the extent of the catastrophe, did not know the extent to which the disaster plan should be implemented. The chief medical resident was on duty when the alert was received. (Samaritan Hospital has a medical officer of the night, a position which is alternated among the chief medical resident, chief surgical resident, and orthopedic resident.) He cleared the receiving ward and began mobilizing available personnel and supplies. Although the disaster plan was not then fully implemented, preparations were begun to receive 100 patients.

The Director of Medical Education soon arrived, took charge, and the hospital was fully prepared to receive patients by 11:25 p.m. Upon arriving, his first action was to tell the switchboard operator to give priority to orthopedists and neurosurgeons rather than merely following the recall list of key personnel posted on the hospital switchboard. The two emergency receiving wards and the nurses' gymnasium had been prepared and proved sufficient for the limited number of patients who began arriving at about 11:30. Preparatory steps to ready other areas were taken but had not been completed before the flow of patients ceased. A total of 27 victims were received, of which 15 were admitted to the hospital as patients.

Since news of the explosion was received as the 3-11 shift was being relieved by the 11-7 shift, the temporary overlap of shifts made many more nursing and service personnel immediately available than would otherwise have been the case. By 11:45 p.m. it was apparent that sufficient personnel were present. The administrator attempted to get word to the chief of the ambulance division who was at the Coliseum as a deputy coroner, that Samaritan

could handle many more patients. (The deputy coroner had gone to the Coliseum in a hospital car that could contact the ambulance radio net; as a result, some communication between the hospital and the Coliseum was possible.) This message was never received. When the administrator realized that no more victims would be arriving, he began releasing personnel who would be needed the following day.

When the public appeal for blood was made, about 125 volunteers arrived and began milling around the lobby waiting to have blood taken. However, the blood stocked in the hospital laboratory was ready for use and was found to be sufficient in quantity.

Shortly before 2:00 a.m. the administrator received word that his hospital might have to handle a number of the dead bodies. He sent a crew with blankets, sheets, and tags to the ambulance garage to begin setting up a temporary morgue for 75 bodies. However, at 4:00 a.m. further word was received that the Coroner had decided to keep the bodies at the Coliseum.

In addition to sending emergency boxes of supplies to the Coliseum, officials at Samaritan sent several doctors and nurses and 32 pints of blood to Presbyterian. The administrator had called Presbyterian, offering help, and was told that 25 pints of blood were needed and doctors and nurses might be needed later. The blood was transported by the city Police and the doctors and nurses by hospital ambulance and the Police.

Since Samaritan Hospital could have handled more patients than it received, it had no trouble meeting its regular schedule for the next day.

St. Anthony Hospital

Officials at St. Anthony Hospital first learned of the disaster through a telephone call from the Indianapolis Police Department at approximately 11:30 p.m. As specified in the institution's disaster plan, the hospital administrator, a nun who lives in the attached convent, was immediately notified. (In the absence of the administrator, the person highest in a formal chain of command is authorized to implement the plan.)

One of the first actions taken by the hospital administrator was to telephone the chief-of-maintenance. She instructed him to begin setting up cots in the auditorium which is close by the emergency room. About 30 cots and 20 stretchers were made available.

The chairman of the hospital disaster committee was in the building when the news of the disaster was received and took overall command of the institutional mobilization. He immediately alerted all doctors and interns who were in the hospital; he also made certain that the 72 doctors listed in the plan were being telephoned by the switchboard operator using a master "call list." However, many had already heard of the disaster over radio and television and had departed for the hospital without being called.

The first victims did not arrive until about 12:30 a.m. (St. Anthony was one of the more distant medical facilities to receive patients; therefore, hospital personnel had nearly an hour in which to implement their disaster plan.) The hospital was well prepared when about a dozen victims arrived at nearly the same time. There also appeared almost simultaneously six casualties from a local automobile accident; these were handled as part of the Coliseum response.

Although most of the victims arriving at St. Anthony were ambulatory, five or six were placed on carts when they entered the emergency room and the remainder in wheelchairs. A problem soon developed in the emergency room; due to the physical structure of the room a bottleneck was created. This slowed the process of tagging and admitting of patients. In previous exercises of the disaster plan, it had been decided that victims would be first segregated according to type of injury (e.g., fracture, burn, shock), then tagged, and if necessary, their admittance papers would be filled out at a later time. However, this was not done. The people on duty in the admitting office attempted immediately to fill out papers, thus delaying the flow of patients to the treatment areas. The convergence of relatives and spectators on the emergency room further hampered initial handling of patients.

A police car from the Sheriff's Department which had earlier brought several victims to the hospital remained stationed outside.

The deputy in the car overhearing radio messages occasionally informed hospital officials about the transportation of victims to other institutions. However, this was about the extent of the information that St. Anthony was able to obtain about what was happening at other hospitals.

On the basis of the initial report, St. Anthony was prepared to receive between 30 and 40 victims. But because of its distance from the Coliseum and because of the lack of systematic distribution of casualties, only 14 victims (plus the six from the automobile accident) arrived. Therefore, more doctors and nurses than actually needed were available. When it was realized that no additional patients would be received, consideration was given to the possibility of sending some of the medical staff to other hospitals. Administrative personnel checked with doctors and nurses to find out how many would be willing to go.

Although St. Anthony had no formal agreement with other institutions pertaining to such circumstances, administrators at Samaritan and St. Luke's Hospital were notified that nurses and doctors from St. Anthony could be sent if they could be used. Administrators at both hospitals indicated that additional help was not required at that time. Likewise, officials at St. Anthony Hospital were not sure of medical needs at other hospitals. Ten or twelve volunteers appeared and offered blood. They were requested to wait until hospital personnel had sufficient time to check if they could be used elsewhere.

Seven Public Health nurses from the Red Cross arrived. They had been sent from the Coliseum, where they were no longer needed, to St. Anthony. Their services were not required, but since direct communication between the hospital and the Fairgrounds was nearly non-existent, personnel at the Coliseum had no way of knowing what conditions were at the hospital. About 4:30 a.m., when it became apparent they were not needed at St. Anthony or other hospitals in the city, off-duty personnel began to return to their homes.

Indianapolis Hospital

Officials at Indianapolis Hospital received no advance official news of the disaster. The chairman of the hospital disaster com-

mittee happened to be working late in his office. Upon hearing of the explosion by radio, he alerted the emergency room and called the hospital administrator, who came immediately to the building. Since the hospital disaster plan designates the Disaster Committee Chairman as Disaster Medical Director, he assumed responsibility for directing and coordinating the triage teams, shock teams, surgery teams, holding teams, and in-patient evaluation teams. The administrator, upon arriving, began directing the efforts of the administrative and service staffs. Shortly afterwards, an ambulance arrived with the first victims.

Eventually 37 doctors and an unspecified number of nurses came to the hospital. Many, including certain physicians who are assigned to specific teams in the disaster plan, immediately headed for the hospital when they heard the news of the explosion over radio or television. Certain specialists, primarily orthopedic and neurosurgeons, were called by the resident administrator. Specific nursing needs were determined and assignments made by the on-duty nursing supervisor. Numerous administrative and service employees called in volunteering their services. When a sufficient number for the apparent needs had volunteered, the other hospital personnel were asked to remain at home as a reserve force.

Shortly after the public appeal for blood was made, a large number of donors arrived at Indianapolis Hospital. Fourteen pints of blood were eventually obtained. Since sufficient blood was on stock for current needs at Indianapolis and since telephone conversations with other hospitals made it evident that they also had sufficient blood, the remaining donors were sent home.

Offers of aid were received from various sources. Several other hospitals called offering blood or to take patients if facilities at Indianapolis became overcrowded. Red Cross and CD offered unspecified personnel and supplies. Williams University Medical Center sent four student nurses who assisted Indianapolis Hospital nurses in setting up beds and cots and in general nursing. The State Police provided two men who were responsible for notifying the families of three victims who were dead on arrival. A Red Cross representative was present who kept her Headquar-

ters informed of the names of victims at Indianapolis so that a central list could be maintained.

Eventually 65 victims were received, 14 of whom were admitted. Although all admitted patients were kept in the recovery room, the hospital was prepared to set up temporary units. Like the other hospitals, Indianapolis Hospital returned to normal procedures early Friday morning.

Operational Problems

The hospitals had a number of problems and difficulties. While all had disaster plans, these were not always followed in all respects. In some instances, either the plan was difficult to implement or proved inadequate. In addition, the hospitals had problems communicating both internally and with other organizations. Finally, there were some minor difficulties with equipment. All of these matters not only were manifest the night of the emergency, but most were also made rather explicit in the post-disaster critiques of organizational activities conducted by each of the hospitals.

1. In some instances, certain aspects of disaster plans were not followed.

As previously noted, at one hospital the disaster plan clearly stated that it might be initially necessary to admit victims solely on the basis of tag numbers and sex designations. In earlier practices of the plan, patients had been tagged as they entered and admittance papers were filled out later. Yet on the night of the disaster, an attempt was made to get the papers completed as the victims entered.

At another hospital it was suggested at a critique meeting that the disaster plan be revised so that physicians coming to the hospital "should report to a central location where they will be assigned to an area of activity. The same might well be considered for the nursing staff who are not in the hospital at the time the plan goes into effect." This post-disaster review implied that there was some confusion when doctors arrived at the hospital. Yet the existing plan stated that all physicians arriving at the hospital for help in the disaster situation were to report to the telephone office where "they will be informed as to the location of the medical officer in charge who will make assignments to the physician."

At a third hospital, the disaster plan specified that policemen, if available, were to be stationed at all parking lot entrances to challenge vehicles and to allow only hospital employees, doctors, and news reporters to enter. If policemen were not present, hospital maintenance personnel were to be used to turn away unauthorized persons. This procedure was not followed after the Coliseum disaster. In this same hospital, activity in the admitting room was hampered by an influx of relatives and spectators, who, contrary to the disaster plan, were not sent to a nearby church to wait.

Similarly, there was deviation from plans in another hospital in the handling of DOA's received. The Coroner signed the death certificates, but they were not filled out completely. The bodies were then released to undertakers without the hospital ever obtaining the additional information needed to fill out the certificates fully.

It is unclear why disaster plans were not followed in all of the above incidents. However, except in the first case mentioned, it is probable that the relevant parts of the plan had never been exercised.

2. Some weaknesses and deficiencies still appeared even when there were attempts made to follow disaster plans.

Hospitals experienced some difficulty in their initial mobilization efforts. Since most of the institutions had no warning of the explosion, before they could implement their disaster plan they were confronted with casualties. Both personnel and resources had to be mobilized even while victims were beginning to be processed. Most plans assumed a warning period.

In one hospital there were difficulties because the disaster plan did not clearly specify lines of authority. Its plan failed to designate who would be in charge of certain medical areas. Several times this produced confusion with a physician not knowing whom to see for answers to questions or solutions to problems. This confusion seemed to be a result of the disaster plan being geared primarily toward utilizing the house staff and leaving the role of the attending staff somewhat undefined. The plan was written this way as a result of earlier practice; it had been found that the house staff was more familiar with the facilities than the attending staff. As a consequence, the role of the attending staff, especially the senior physicians, was left somewhat ambiguous.

Another hospital had planned for use of volunteers. However, when they arrived, not being familiar with the building layout and emergency procedures, the volunteers required explicit direction. This proved troublesome since hospital personnel themselves were quite busy. The hospital plan apparantly had not forseen this difficulty in the use of volunteers.

3. The hospital had a variety of communications problems. Internal hospital communications were overloaded so alternative means had to be innovated. Since some hospital telephone systems were flooded with outside calls, telephone messages within the organization were often delayed. For example, at one hospital the Director of Medical Education felt he might have better coordinated the overall response had he some type of telephone (perhaps a closed circuit or special private line) which would have allowed him to make undelayed calls to any part of the hospital. Medical students were pressed into service as runners, but it would have been easier and faster to assess needs in the various emergency areas by telephone. At another hospital, one innovation in intra-hospital communications was the establishment of a second communications center. The x-ray department used runners to take film from the developing machine to the appropriate doctor. As it was, a central communications center was not established in this hospital until about an hour after the first victims arrived.

There was considerable lack of information because of poor communication with other groups. Since most of the hospitals received no official word about the disaster, even after they had implemented their emergency plans, they remained uncertain about how many victims might be dispatched to them. Likewise, since conditions and resources at other institutions were unknown, administrators were unsure of how or where they could be of most assistance elsewhere. There were delays in ascertaining if blood donors were needed anyplace. In general, hospitals had difficulties in obtaining feedback from the disaster scene or in learning what other organizations were actually doing.

There were also some failures to communicate with organizational personnel not initially present. "Key" officials were not noti-

fied of their own hospital involvement. At one institution, the Associate Director, Administrative Assistant, and the hospital pharmacist were not contacted. At another, the Director of the hospital was not notified. It was thought that if any of these persons had really been needed, they could have been called. In several other instances, "key" personnel reported to their hospitals on their own initiative; whether they otherwise would have been notified is a moot question.

4. There were some minor difficulties with availability of equipment.

At one hospital, a shortage of hospital carts occurred following the disaster although there were enough for normal operations. Stretchers might have been used but there was not a sufficient supply. Post-disaster critiques also suggested that all useful supplies and equipment were not always stored in easily accessible and centralized locations in certain of the hospitals.

The prior descriptions of the responses of 12 organizations to the Coliseum explosion, and how they attempted to solve the problems that emerged, is far from a complete account. It is impossible, even given far more extensive data than was available,[6] to depict in totality all details. However, we have attempted to indicate some of the major activities engaged in as well as the more important operational problems encountered by these organizations.

Following the immediate response by the Indianapolis emergency organizations, community interest shifted focus as new problems emerged. The next chapter presents a descriptive account of ensuing disaster-related events. It too is selective in emphasis.

[6] As indicated in Appendix A, our reconstruction of events that occurred in different localities in Indianapolis as well as at the Coliseum the night of the explosion is based on relatively limited data. In certain instances, personal observations were obtained only from one or two organizational representatives, although indirect information was almost always available from other sources.

IV

THE DISASTER AFTERMATH

This chapter discusses selected community and organizational responses in the ensuing year after the explosion.[1] Efforts by the Indianapolis community to cope with longer-run, non-emergency problems generated by the disaster, such as assignment of blame, will first be discussed.[2] The second section of the chapter outlines the major organizational changes precipitated by the explosion which the DRC team found when it returned to the community one year after the disaster.[3]

COMMUNITY RESPONSE

A great amount of community activity was generated by the disaster. Out of this variety of social behavior three central themes particularly stood out: 1) the attempt to restore the Coliseum to normal operations and activities, 2) a search for the "guilty," and, 3) an effort to compensate victims for their losses. A year after the disaster, the latter two matters were still not resolved.

Restoration of the Coliseum

A year after the explosion the Coliseum was clearly back to normal operations and activities. Recovery started about three months after the disaster and appears to have accelerated after six months. Publicly, at least, there were few manifestations of any lingering doubt about the safety of the building.

Some people initially believed that public confidence in the general safety of the Coliseum had been shaken. In the days immediately after the explosion, a few expressed their opinion that the

[1] On some specific points, DRC does have data bearing on activities more than a year after the disaster. However, for purposes of maintaining consistency, only matters that occurred within the first year are discussed in the body of the report. The somewhat selective information bearing on a later time period is treated only in footnotes.

[2] Much of the description in the first part of this chapter is based on material contained in the local Indianapolis newspapers in the first three months after the disaster.

[3] See Appendix B for a list of persons interviewed and reinterviewed in the 1964 follow-up trip.

building should never be reused for exhibition purposes. Predictions were also made that if it were reopened, there might be problems in attracting full audiences. Others suggested that the building would remain closed at least until fall, 1964, when the Indiana State Fair was to begin.

The Coliseum remained closed for 41 days after the explosion during which time a series of inspections were made by engineers who found that the building remained structurally sound. The State Fair Board was interested in getting the Coliseum back into public use as quickly as possible. Early in December it gave a "vote of confidence" to the corporation holding the franchise to continue operations until May 1. The Coliseum general manager and his attorney also discussed the elevation of the insurance liability to $3 million "in an effort to restore the public's confidence."[4] Although permanent repairs were not to be finished for several months, the building was reopened on December 12, for a two-day show of Polled Hereford cattle. Some tentative plans to use the installation in late December for ice skating apparently never materialized.

On January 8, the Indiana Coliseum Corporation President asked the State Fair Board to terminate his contract for operation of the Coliseum. He said he made the request because he had been indicted for involuntary manslaughter by the County Grand Jury and did not want to chance incurring any further liability. If the Board did not terminate the contract, the Coliseum would be kept closed until May 1 even though a $6,000 deposit would be forfeited. The following day the Board agreed to a termination. They also purchased $55,000 of equipment needed in running the Coliseum which was personal property of the Coliseum Corporation President. At the same time it was announced that the building would be reopened for skating on January 10, and that if no satisfactory bids were received for a new lease agreement, the Board itself might continue to operate the Coliseum.

On January 15, an $82,000 bid was accepted for repairing of damage to the building, this cost being entirely covered by insurance. Six or seven groups at this time also indicated an interest

[4] *The Indianapolis News*, December 2, 1963.

in bidding on a Coliseum franchise. Negotiations were conducted with different entertainment shows to use the Coliseum on their tours. In fact, the State Fair Board announced, on February 13, 1964, that they were holding 14 days in the fall of 1964 open for the "Holiday on Ice" revue.

In the months that followed, different entertainment groups were booked into the Coliseum. Evening shows ranged from "The Dave Clark Five" (a rock-and-roll troupe) to female roller derby contests. The Indiana State Fair in September, 1964, was highlighted with a performance by "The Beatles" (an English rock-and-roll group) at which time the Coliseum was filled for the first time since the explosion.

On November 9, 1964, the "Holiday on Ice" show opened again at the Coliseum. Contrary to some predictions that few would attend the show, opening night attendance was 5,130. This was actually an increase over the 1963 opening night, when attendance was only 4,327. Coliseum officials reported that a total of 43,328 paid admissions were obtained during the seven-day run, yielding a $92,000 gross. There was no evidence of any community doubt about the normality of operations.

Search for the "Guilty"

Blame assignment was an immediate concern of the Indianapolis community. After five weeks of inquiry, seven individuals were indicted by a County Grand Jury. A full year later, however, all cases except one which was dismissed remained pending.

After the immediate emergency period was over, attention was focused by the mass media on various public officials, each of whom sought to relieve their organizations of blame. The State Fire Marshal disclosed that no permits or requests for the use of LP gas in the Coliseum were on file in his office. State and city officials noted that the use of propane gas in the public building was a violation of fire regulations. The sports promoter who had leased the Coliseum from the State indicated that he did not have permits for the bottled gas tanks used in heating popcorn. He further declared that such tanks had been openly used for 10 years, during which time no one had said anything to him about a permit.

The Indianapolis Fire Chief stated that it had been the custom for many years to detail firemen to large public gatherings when requested to do so. However, city firemen were not asked to inspect the Coliseum before performances of the "Holiday on Ice" show. Although firemen were assigned to the 1961 show, "no request for fire safety protection"[5] had been received since then. The general manager of the Indiana Coliseum Corporation stated that he could not remember when he last asked for firemen; he had just assumed "it was the habit of the Fire Department to send men out."[6]

The Fire Chief argued that although the Coliseum is located within the city, it is a state-owned building and thus not the legal responsibility of his Department. Men had been detailed there in the past to check for fire hazards when invited to do so by show promoters, but it was impossible to honor all requests for firemen because of a shortage of manpower. The Fire Chief observed: "Since the shorter work week went into effect in 1960, we have been hard pressed to man our fire apparatus. When the work week was reduced from 70 hours to 63 hours, no additional firemen were added to the fire force. The city decided to cut our company strengths to the minimums."[7]

Press accounts in the months following the disaster ran stories on reports of earlier difficulties with LP gas. For example, on November 2, 1963, one of the local newspapers[8] stated that according to official records, the State Fire Marshal's inspectors had been warned of leaking propane gas in the Coliseum four years previously, but took no action to halt the dangerous practice. At the same time, the paper reported, a glaring weakness in the inspection procedure was brought to light. The Coliseum, which houses a variety of sporting and entertainment events viewed by hundreds of thousands of spectators during the year, was inspected only during the brief period when the State Fair was held each year. Although it is against State fire regulations to install bottled gas inside a school, church, hospital,

[5] *The Indianapolis News*, November 16, 1963.
[6] *Ibid.*
[7] *Ibid.*
[8] *The Indianapolis Star*, November 2, 1963.

or other place of public assembly, this had been openly done in the Coliseum for years.

The newspaper article further stated that on September 3, 1959, during the State Fair, inspectors were called to the Coliseum because of a complaint of leaking gas. They found that the gas came from a propane gas tank used to heat a stove and immediately stopped its use. The following day inspectors were again called to investigate a leaking LP gas tank at a popcorn stand at an unspecified locality within the Fairgrounds. At this time, the Fire Marshal's Chief Inspector stated that his staff of 15 inspectors would have to be doubled in size to police properly all fire regulations in the Coliseum during occasions when it was used. Because of this shortage of personnel, reliance had to be placed on the gas industry to take proper precautions.

A later article in *The Indianapolis Times* on November 10, 1963, commented on current problems encountered by the State Fire Marshal's office:

1. There is "so much economy in state government that fire inspectors are afraid to use state cars after 5 p.m. or on week-ends when most public gatherings take place. One inspector is on notice that one more complaint of seeing his state car in use after 5 p.m. or on Saturday will cost him his job."
2. There are "twelve fire inspectors to cover the whole state. One has a district of 4000 square miles."
3. There are "laws giving taverns more fire inspection service than it is possible to provide for schools, hospitals, and institutions."
4. The "state fire regulations provide no penalties for violation. The legislature gives the Fire Marshal's office power to make rules which have the force of law but gives him no authority to set punishment for those who break the rules."
5. The "red tape (is) so involved that it took weeks for the Fire Marshal's office to get money to buy more printed copies of its regulations. At the start of the Halloween disaster probe, only one copy of the regulations was available in the state office."
6. There has been "a long feud between Fairgrounds users and the Fire Marshal's inspectors" with inspectors consequently having difficulty gaining admission to events in order to inspect.

Apparently in response to increasing public pressure, the Fire Marshal announced that he would soon recommend that changes be

made in existing procedures so as to permit more rapid enforcement of recommendations made by his office. Under the present system, after an inspection has been completed and recommendations made, the Fire Marshal's Office can only evoke sanctions through the institution of legal proceedings. Requests for enforcement are made through a prosecuting officer. Since this process is usually very slow, the Fire Marshal stated that he would ask the General Assembly to pass laws giving his office direct powers of enforcement.

Newspapers continued to focus community attention on those agencies investigating the disaster. For example, on November 17, *The Indianapolis Times* cited the following examples of "ineptness, lack of cooperation, and just plain bad luck" which had been plaguing the investigation.

1. The temporary breakdown of State Police security at the Coliseum immediately after the disaster allowed private interests to examine certain physical evidence before public investigators did. Thus, "there will always remain a question of whether some important item of evidence might have been lost."
2. The inclusion of representatives of the LP gas industry by the Fire Marshal in his official investigating team raised a question about the objectivity of the probe.
3. Purdue University was reluctant and slow in accepting responsibility for the technical side of the investigation.
4. The State Police and Fire Marshal failed to provide Purdue immediately with written instructions explaining what the tests should include.
5. One gas tank had been emptied before being sent to Purdue.
6. "Communications between Purdue and the Prosecutor's office broke down."

On November 20, the Fire Marshal proposed a program to the Legislative Advisory Commission that would give his department legal power to back up orders; he also asked an end to the practice of diverting funds collected for his office to other purposes. He stated a need for more inspectors, engineers, and additional funds for public education about fire and explosion hazards; and also proposed partial removal of his office from politics by adoption of a bipartisan plan. It was pointed out that the Fire Marshal's Office operated under a 1913 law and had only 12 field representatives to cover Indiana's 92 counties.

The Fire Marshal's suggestion that a larger budget with an opportunity to hire better qualified personnel would increase the effectiveness of his department was immediately challenged by a state senator (a member of both the State Budget Committee and the Legislative Advisory Commission). The senator pointed out that the department is financed through a special fund from ½ of one per cent of premiums paid to out-of-state fire insurance companies. Since there was a surplus in the fund he suggested that the Fire Marshal could have received more money by merely asking for it. *The Indianapolis Times,* however, in a December 1st article, stated that the realities of Indiana politics were such to make it doubtful that additional funds would have been given.

As previously indicated, the LP gas tanks recovered from the debris after the explosion had been taken to the Indianapolis Fire Department Headquarters. They were later sent to Purdue University for analysis. On December 4, 1963, a technical report was released by Purdue engineers in which they specified that LP gas, leaking from one of the recovered tanks, was the probable cause of the explosion.[9]

After five weeks of inquiry during which repeated trips to the scene of the disaster were made and 32 witnesses were questioned, the Grand Jury completed its investigation on December 9, 1963. Its judgment was that liquid petroleum gas, illegally stored inside the Coliseum, was the cause of the explosion. Seven persons were indicted, five of whom were charged with involuntary manslaughter: three officials of the Midwest Gas Corporation, the General Manager of the Indiana Coliseum Corporation, and the concession manager of the Indiana Coliseum Corporation. The State Fire Marshal and Indianapolis Fire Chief were charged with misdemeanor for their failure to provide proper inspections.

The Grand Jury report stated that the Midwest Gas Corporation bore the "primary burden" of warning its customers of the danger of improperly installed propane, but was "impelled by the profit from the sale . . . without any regard for the safety of persons."[10]

[9] A more detailed discussion of the physical cause of the explosion is presented in Appendix B.

[10] *The Indianapolis Times,* December 10, 1963.

The Grand Jury found it "incredible" that the Midwest Gas Manager, who said that he knew and had read "many times" the State fire regulations prohibiting installation of 100-pound gas tanks indoors, had no objection when the Coliseum concession manager asked him to install the tanks in the pit underneath box seats. It was "unconscionable," the Grand Jury stated, that Midwest Gas did not give training manuals to employees.

The Grand Jury castigated the Coliseum Corporation for its "steady build-up of indifference and carelessness in the unlawful handling and use"[11] of LP gas.

The State Fire Marshal's Office was also severely criticized. ". . . the Fire Marshal was considered (political) patronage and he acted the part. Had it been otherwise, a detailed and minute inspection would have been made of the Coliseum building before October 31, because it is one of the largest of its kind holding class 'A' (entertainment) permits. Regardless of the personnel difficulties, the biggest and the closest could have been examined . . . . any proper inspection would have found the propane cylinders in the Coliseum."[12] The Fire Marshal was also blamed for the delay in providing Purdue University officials with instructions for testing the tanks found in the debris and for leaving them for five days in an "alley outside fire headquarters."

The Grand Jury report also stated that the Fire Chief in cities of the first four classes is legally required to inspect public buildings. Therefore, the Indianapolis Fire Department was legally responsible, even though the Coliseum was located on State property. The Jury indicated that the Fire Chief or the inspector should have found the gas tanks and known their dangers.

The Grand Jury said of the Indiana State Fair Board: "We do not accept the cries and the protests that 'no one told us it would do this.' If the public is invited into the premises in such numbers as were involved here, we deem it the absolute duty of the owner or promoter to know and find out what danger is even possible. The State Fair Board and all its numbers must accept their portion of this holocaust."[13]

[11] *Ibid.*
[12] *Ibid.*
[13] *Ibid.*

The State Police were also criticized for the lack of security which permitted outsiders to get into the Coliseum and tamper with evidence after the blast.

The Grand Jury made five principal recommendations:[14]

1. Although there was no wish to impede the use of LP gas, which has an over-all good safety record, some control over the industry was needed to guarantee that "the desire for profit on the part of a few will never again relegate the matter of public safety to a point of reckless indifference."
2. Consideration should be given to legislation which would require "the operator of an arena to request and obtain an on-site inspection on the day of the performance, for the primary purpose of public safety, and possibly with standby inspection during the performance."
3. Emergency steps "should be taken by the General Assembly, if necessary in special session, to completely and totally overhaul the State Fire Marshal's Department, from top to bottom. It may be worth considering to abolish the department entirely."
4. It appears that "the system of permits now in use is archaic and useless. It deludes both the permittee and the public who observe it into feeling they are safe, whereas the fact is now that a secretary has performed a mere perfunctory mailing task upon receipt of $15.00 and no one derives benefit from the possession of the permit. The real need is actual inspection by qualified and professional men who have tenure and receive salaries in keeping with their abilities."
5. There should be adopted specific (fire) statutes with specific penalties. "We (the State of Indiana) need a law which requires the owner, manager or employee of any place of public amusement to comply with State Fire Marshal's regulations or be punished appropriately for violation and declaring it to be a crime."

The Chief of the Indianapolis Fire Department expressed shock and amazement at his indictment. The charge was for failing to inspect the Coliseum for six months prior to July 1. He admitted ignorance of the State fire law that gave chiefs in major Indiana cities inspection responsibilities on State property as Deputy State Fire Marshals. Most city officials expressed surprise at the indictment of the Chief who had received much praise for the way his department had implemented its disaster plan in the Coliseum disaster.

The State Fire Marshal described his indictment as "shocking," denying its charge that he had been lax in inspection of the Fair-

[14] *Ibid.*

grounds Coliseum. He was charged on two counts of misdemeanor for failure to inspect the Coliseum within a year and for failure to inspect it before issuing an entertainment permit. The Fire Marshal told reporters that he had testified before the Grand Jury "that not only was the Coliseum inspected by this office in June of 1963 but, in addition, I had 14 representatives of this office on 18 hours duty during the Fair, making inspections of all buildings, including the Coliseum. At no time during these inspections was there any evidence of liquified gas inside any of the public buildings."[15]

The Governor of Indiana immediately declared that the indictment of the State Fire Marshal was unfair. The Governor stated that the Jury had used public officials as scapegoats and that the current Fire Marshal had actually improved the operations of his office and was going to remain in his position. These remarks about the Grand Jury were immediately countered by the Marion County Prosecutor who said that the Governor had no right to criticize the Jury, whose members often served at great personal inconvenience and expense.

On December 24, the Governor created a five-man Evaluation Committee to study the Fire Marshal's office. The Committee's purpose was "to review the organization and operation of the office of State Fire Marshal and make recommendations."[16] On January 10, the Committee recommended to a legislative study committee that a bipartisan board be created with power to veto the Governor's appointment of a Fire Marshal. This board would also oversee operations of the office. The committee urged that the Fire Marshal's office adopt a merit system of non-partisan nature and thus remove it "from the present method of political appointments."[17] It was further recommended that the staff be doubled, the training division expanded, and that additional funds be made available. The report also suggested a complete review of all State Fire laws, codes, and regulations, implying that not all of them were "up to recognized standards."[18]

In the months that followed, the indictments precipitated a series of complicated legal maneuvers. For example, on January 31, the at-

[15] *Ibid.*
[16] *The Indianapolis Times*, December 24, 1963.
[17] *The Indianapolis Times*, January 10, 1964.
[18] *Ibid.*

torneys for the three Midwest Gas Company officials charged that the County Grand Jury which returned the indictments had been illegally selected. It was contended that the procedures by which the panel was drawn were not recorded properly in the Criminal Courts and thus that all indictments should be quashed. Other efforts were made to dismiss the indictments charging the Coliseum Corporation general manager with involuntary manslaughter.

In part because of the various legal steps and countersteps, no trials still had been held more than a year after the explosion. The misdemeanor charge against the Indianapolis Fire Chief for failing to inspect a state-owned building within the city limits was dismissed. However, all charges remained against the other indicted individuals. In this sense, it can be said that the community "search for the guilty" was inconclusive.[19]

Compensation for Victims

As might be expected, numerous victims sought to obtain compensations from the consequences of the explosion. While the State Fair Board was protected from damage suits by "sovereign immunity," the Indiana Coliseum Corporation did have liability insurance. At first it appeared that damage suits might be awarded on a "first come" basis, but later legal action prevented this as it soon became clear that the insurance money available would be far insufficient to settle all claims. There was an indication also that the State Legislature might provide some direct compensation. However, more than a year after the explosion no legal settlements had been made. Only a few victims had received limited funds from Red Cross contributions.

It was on October 30, 1964, 365 days and 12 hours after she was first admitted, that the last of the nearly 400 victims injured in the explosion, returned to her home.[20] Numerous other victims had

[19] On July 28, 1965, the manager of the Midwest Gas Corporation was brought to trial, found guilty, and sentenced to 150 days at the Indiana State Farm. Originally charged with involuntary manslaughter, the jury convicted him of the lesser charge of assault and battery. Carrying out of the sentence, however, was delayed as an appeal was made to the State Supreme Court. See *The Indianapolis Times* and *The Indianapolis News* of July 28, 1965. In February, 1967, the County Grand Jury declined to re-indict four of the seven persons charged. One case had been dropped much earlier, and the trials of the other two cases had failed to bring major convictions. See *Columbus Dispatch*, February 14, 1967.

[20] *The Indianapolis Times*, October 30, 1964.

been readmitted throughout the year, a few of whom had died. Certain of the readmissions and all of the deaths were attributed to injuries not directly caused by the explosion. While not the direct cause of mortality, the disaster nevertheless was associated with the death of some other victims. For example, a 69-year old woman who died from a heart ailment in April, had been hospitalized four different times due to injuries resulting from the explosion. Similarly on November 11, 1964, a 64-year old man died of a heart attack. Both he and his wife had been critically injured in the Coliseum disaster. During the course of the year, 150 of these victims had instituted law suits amounting to claims of over $15 million.

Shortly after the disaster, on November 14, as a result of the apparent number of law suits that were going to be instituted, the State Fair Board sought "sovereign immunity" (i.e., the state legislature would have to give its consent before the Board could be sued). About the same time two leading members of the General Assembly stated that since the disaster took place in a State building, they believed it would be proper for the 1965 session to consider providing funds for the families of victims. Although the law generally holds the State immune from personal liability suits, the legislature had, on several previous occasions, appropriated funds for persons injured on State property.

The Indiana Coliseum Corporation, according to its lease, was required to assume full responsibility for the Coliseum. The general manager of the Corporation indicated that the Corporation was required to carry liability insurance, "in the amount of $100,000 per injury and $300,000 per accident."[21]

The first of the expected law suits were filed in late November and early December. It was originally anticipated that courts would be pressed for quick trials in that interpretations of existing laws indicated that damages would be awarded on a first come, first serve basis. If damage suit assets were depleted by a single or a few early court judgments, there would be nothing left to satisfy later judgments. It also appeared that the trials of civil cases might become more decentralized as attorneys sought changes of venue to adjoining counties in hopes of obtaining more liberal juries.

[21] *The Indianapolis Times*, November 2, 1963.

However, on January 9 it was announced that a test case would be heard by a panel consisting of Marion County's five Superior Court judges. This panel was to determine what firms would bear financial liability in the Coliseum explosion.[22] This case would have no effect on specific judgments in each case; there still would be separate hearings on damage claims in each one. A spokesman for the Court explained that this innovation would allow all persons who brought suits resulting from the explosion to receive equitable treatment when damages were awarded. The panel of judges was to sit as a body to hear individual cases, in lieu of jury; the panel would decide awards in each case. (The law allows judges to sit as one Superior Court, but this had never been done before in the County.)

The test case was initiated on February 3. It was one in which a woman asked for $454,000 damages for injuries suffered in the explosion. On February 9, 1964, the only public opposition to this plan was expressed by an attorney representing the State. By mid-March 108 suits had been filed totaling $8,045,460. However, hearings went very slowly, and a year later the first test case was still in process and no awards had been made.[23]

Legislative action was slow also. In March a sub-committee was investigating the constitutional questions involved in compensation of disaster victims. A year later the State General Assembly still had not made a decision.

The only financial aid any of the victims had obtained had been through the Red Cross. The local area chapter had decided, after its action had been approved by the National Red Cross, not to consider as family resources potential settlements from other sources (such as damage suits or state legislative money). Eventually the chapter distributed $78,912.13 (out of total disaster expenses of $85,052.39) to 31 families. Most of the money dispersed ($74,405.95) had been obtained through a voluntary campaign for the Red Cross conducted

[22] *The Indianapolis Times*, January 9, 1964.

[23] More than two years after the explosion, a Federal Judge did order the preparation of checks totaling $1.12 million for 379 victims of the disaster. The funds represented the full amount of insurance coverage held by the Midwest Gas Corporation. Since claims were more than $7.5 million, awards were pro-rated. See *The Columbus Dispatch*, November 2, 1965. However, this same account indicated that damage suits were still pending against one or more other defendants, and that compensation for victims was far from settled.

by *The Indianapolis Star*. Thus, a year after the disaster, few victims had obtained compensation for their losses.

ORGANIZATIONAL CHANGES

When the DRC team returned to Indianapolis one year after the disaster, effort was made to analyze the extent of organizational change. It was difficult to isolate changes which were precipitated by the disaster, as opposed to changes resulting from other factors. However, it was clear that certain relationships both between and within organizations had been changed as a direct result of what had occurred after the explosion. After discussion of inter-organizational changes, the major changes within each organization are presented.

Inter-Organizational Changes

In the course of a year, a number of changes occurred in the relationship between different emergency organizations in the Indianapolis area. For example, the position of Safety Director was created. However, only one inter-organizational change clearly seemed to be a direct consequence of the disaster. This was the development of an inter-hospital radio-telephone system. Some other changes in organizational relationships had been broached but not actually implemented.

1. *The radio-telephone system.* The lack of a communications system between the different hospitals, the explosion site, and various other emergency organizations was recognized as having created major difficulties in the community response to the disaster. In the days after the disaster, one of the first groups to initiate action was the local Red Cross chapter. On November 12, 1963, its Board of Directors authorized chapter officers to discuss with local hospitals and Civil Defense authorities the possible extension to these organizations, of the radio-telephone system already being used by the chapter. The base station at the Chapter House was being used in conjunction with 10 mobile units which were located throughout the city. A complete communications network could be constructed by simply installing fixed units at each of the other organizations.

Relatively soon after the Red Cross offer, a series of meetings held at the Civil Defense office were attended by representatives of the Greater Indianapolis District of the Indiana State Hospital Association, the Director of Communications of the city Police Department, the Indiana Bell Telephone system, and the private firm whose radio equipment is installed at the Red Cross Chapter House. After much discussion of the type of system (e.g., all radio or partial radio) that should be installed, it was decided that a partial radio and leased wire system would be recommended. Such a system would utilize existing Red Cross equipment and would have a receiving and sending unit at each of the hospital telephone switchboards.

In July, 1964, the president of the Greater Indianapolis District of the Indiana State Hospital Association informed the Red Cross that the offer was unanimously accepted by the local hospitals. Subsequently, the Red Cross submitted and obtained approval of the plan from the Federal Communications Commission. The Red Cross, Civil Defense, and the Samaritan Hospital tested the system on September 3, 1964, when "The Beatles" performed at the Coliseum. Equipment was then installed in all the other hospitals. On October 29, 1964, the system was tested with representatives present from each of the nine Indianapolis hospitals and the county Civil Defense office. A roll call test to all of the hospitals, three times a day, was initiated on November 2, 1964. The responsibility for conducting the tests was scheduled to be moved to a different hospital each week, so that all switchboard operators could become familiar with its use. After the initial testing period (scheduled to terminate January 3, 1965), the daily tests would be conducted by Samaritan Hospital.

A series of procedures for use of the equipment had been written. Samaritan Hospital is the only hospital in Indianapolis with a 24-hour emergency service. It was therefore selected to be the initial emergency control point. City Police and fire units usually contact this hospital in the event they need immediate ambulance service. In the event of disaster, the first ambulance on the scene could radio back details to Samaritan. Such details could be immediately aired to all other hospitals. Control for the system would remain at Sa-

maritan Hospital until such time as the Red Cross-Civil Defense coordinator or his delegated representative might desire to change the control to another place, e.g., the Red Cross Chapter House, another hospital, or to a mobile unit at the scene. Efforts were also initiated to extend the system to hospitals in near-by counties. Hence, it was felt that this communications network would link all of the hospitals, Red Cross and Civil Defense headquarters, with officials at the scene of any future disaster.

There was some disagreement on the eventual decision to recommend the radio-telephone system over a "pure radio" system which would not utilize telephone lines, and which could be constructed so as to allow independent simultaneous communications between different organizations. Certain officials saw the existing system as adequate for current needs. Others felt that while not entirely adequate, it was a step in the right direction. Still other organizational officials took the position that the installation of the "unacceptable" Red Cross system would but delay the development of the only acceptable system—a pure radio system.

Three specific points seemed to be involved in the differences of opinion. First, a pure radio system would permit radio contact between any of the units independent of the others; thus, if any one unit were rendered inoperable, this would in no way affect the others. Under the present system, destruction of the base station at the Red Cross Chapter House would incapacitate the entire system.[24] Since telephone lines are used, disruption of these lines could also create difficulties. Furthermore, independent simultaneous communication between organizations is not possible, i.e., when one group is communicating with any other, no communication between the others is possible at the same time.

Second, the difference in cost between the two systems is great. Estimated cost of the pure radio system was $20,000 plus a maintenance cost of $143.00 per month. The cost of the radio-telephone system which was installed was only $2,160 plus a charge of $80.25 per month for the leased wire service, all of which was paid by the Indianapolis area chapter of the Red Cross. Officials of the Red Cross

[24] However, in part to cover this possibility, a back-up system had been developed by the Amateur Radio Club.

indicated that they had wanted to offer the kind of system which seemed to meet the need of the hospitals, and had been advised by communications experts that the radio-telephone and leased wire system should be installed. However, some other organizational officials saw the issue as only a question of money. They felt that since the radio-telephone system was cheaper, this was what was purchased.

Third, during the hours from 9:00 a.m. to 12:00 noon on Saturdays, normal control of the system is at the Red Cross Chapter House. The Red Cross uses the system for its own work during this time and all such radio traffic is broadcast at each of the fixed units, i.e., nine hospitals and the Civil Defense office. To cope with this "noise," the switchboard operators at certain hospitals turn down the volume so as not to be distracted. The night of the initial test, for example, the representative from Samaritan Hospital attempted to call the Hospital from the Red Cross Chapter House where the meeting to demonstrate the equipment was being held. Upon getting no reply, he had to telephone the Hospital and request the operator to turn up the volume so that she might hear his call! Some organizational officials felt that without effective monitoring the efficiency of the system would be greatly reduced.

2. *Suggested but non-implemented changes.* Soon after the disaster, organizational officials broached many ideas they had for a possible community disaster plan. Nevertheless, a year later, there had been no implementation of details for such a plan. As the DRC discovered, even at the later time, nearly every official contacted indicated specific ideas about what inter-organizational plans could be developed. Generally, such ideas had not been communicated between the organizations to any great degree. However, some had.

The following are two examples of the kinds of inter-organizational changes that had been discussed but not implemented. Some persons suggested that if a common disaster tag were utilized by all hospitals in the event of disaster, confusion in shifting patients from one hospital to another would be minimized. All of the necessary information would have been collected and records of treatment given would be clear to personnel at each institution. At the

time of the explosion, Indianapolis hospitals used different schemes for classifying the medical status of patients which would have complicated any movement from one institution to another.

Other persons suggested that in focalized disaster such as the Coliseum explosion, the major medical response needed at the scene was a triage and the directioning of ambulances to avoid overloading the hospitals. While it was doubtful that anything could be done to prevent victims from leaving the scene and going directly to a hospital, usually the closest one, police could direct ambulances to avoid already overcrowded hospitals. This would require knowledge of current status of hospital capacity. Mechanically this could be handled through the use of the police radio system and the radio in the first ambulance to arrive at the disaster scene. However, what really would be required would be a prior understanding of the procedures to be followed. For instance, there would have to be a prior agreement among organizational officials involved that a few medical triage personnel could determine the priority of the victims to be dispatched, sending casualties with particular kinds of injuries to the hospital best equipped to handle them, and seeing to it that a concentration of any one type of injury (e.g., serious burn cases) did not occur at any one hospital.

A few officials had made personal efforts to bring about such changes in inter-organizational procedures. For example, the chairman of the Marion County Medical Society CD Committee reported to the 15th annual National Conference on Disaster Medical Care of the American Medical Association, that two-way radios should be installed in all hospitals. As might be expected, this report created some concern among local Red Cross and CD officials who were instrumental in establishing the radio-telephone network.

The County Coroner was even more specific in at least two papers which he prepared for coroners through the state and nation. For example, he stated that a "pure-radio" communications network between the hospitals and police was essential. He also felt that such a system ought to be completely separated from any connection with either the Red Cross or Civil Defense; his position being that these organizations should become involved in disasters only at the

discretion and request of the various police departments. The Coroner stated that the distribution of patients from the disaster scene was the responsibility of the police since he thought that in emergencies they were trained, available, and given deference by virture of their uniform.

The existence of such differences of opinion among officials regarding inter-organizational relationships had clearly been stimulated by the disaster. The discussions and debates of such issues undoubtedly had potential for considerable future change in the nature of the cooperation and coordination between community organizations. However, most matters had not gone beyond a talking stage; actual structural changes had been few — in fact, confined to the aforementioned establishment of the radio-telephone system.

Intra-Organizational Changes

During the course of a year, changes had occurred in those organizations that the DRC studied soon after the explosion. As might be suspected, even organizational personnel found it difficult to isolate those changes which they thought were a direct consequence of the disaster. However, some shifts in structure and functions clearly appeared to be more directly related to the Coliseum explosions than any other possible factors. In a few cases, it appeared that there were no changes in procedures or operations, that the disaster had not acted as a stimulant for new organizational behavior.

1. *Indianapolis Police Department.* Several changes were made to facilitate police communications in future disaster. Additional telephone units were installed in the communications room at headquarters. Officials felt that these additional units, which could be manned in the event of a disaster, would allow for a more effective response to requests by the public for information. Steps were also taken to ensure the instant availability of the police command radio. This radio, on the night of the explosion, had been eventually found hidden under a pile of empty boxes and was delayed in being taken to the Coliseum. To prevent "losing" this radio and other emergency radios in the future, each was specially tagged and placed in a defi-

nite area of the property room. All communications personnel were specifically informed of their new location.

As was indicated in previous chapters, key police personnel were not immediatedly notified of the explosion by communications personnel. The emergency "call list" had been removed for revision purposes shortly before the disaster and so no list was available the night of the explosion. A new "call list" was immediately compiled and its use explained to all personnel involved in communications procedures.

After the disaster the police disaster plan was scrutinized. It was found to be outdated, listing in some instances names of persons no longer living, incorrect telephone numbers, and even names of firms that were no longer in business. This plan was in the process of being totally revised when the DRC team returned to Indianapolis in 1964. A complete analysis of emergency equipment had been made with a procedure instituted so that memorandums would be mailed every six months to all cooperating organizations. In this way, the police would know any changes among the personnel who were to serve as emergency contacts as well as changes in telephone numbers, and so forth. The equipment inventory was divided into four sections, corresponding to the four areas of the city. It was felt that this would allow a quicker locating of the equipment nearest to the sites of future disasters.

While much effort had been directed to revising and updating the equipment part of the disaster plan, police officials reported that they had instituted or expected little change in the specific disaster procedures of the organization. The experience of the Coliseum explosion was thought of as a lesson that would permit police officers to perform more effectively in any future disaster. Officials particularly felt that problems of security and traffic control would be handled more effectively, and a police command post would be established more quickly in any subsequent large-scale catastrophe.

2. *Indianapolis Fire Department.* Officials indicated that since "standard operating procedures" were followed at the Coliseum explosion, if the same event were to occur again the Fire Department would probably react in exactly the same way. No changes in dis-

aster procedures had been made. As was the case with most of the organizations contacted, additional personnel, equipment, buildings, etc. had been acquired since the explosion; however, these changes were not directly attributable to the disaster.

On October 31, 1964, a brief memorial service in memory of the victims of the Coliseum explosion was held in Indianapolis. Preceding the ceremony, a private insurance company presented an emergency mobile communications and first aid trailer to the Fire Department. This contribution was initially conceived of and backed by the Indianapolis Fire Buff's Organization, and seemed only partly a consequence of the Coliseum explosion. The new $3,000 piece of equipment will provide medical supplies and radio communications in future large fires or other disasters where the Department will have a "long stand." Since fires are more frequent in the winter, the trailer will also provide a place for firemen to get warm. Any injured persons could also be housed until ambulances arrived.

3. *Marion County Civil Defense.* Among the more important changes in the local CD office directly attributable to the Coliseum explosion were those in the communications area. Drill sessions with "ham" radio operators were routinized; emphasis being placed on rapid mobilization. Also, plans had been made to move a communications trailer quickly to disaster scenes. Arrangements were clarified with the telephone company regarding the setting up of conference lines between the headquarters of emergency organizations. This procedure had been technically possible at the time of the Coliseum explosion, but apparently was unknown to officials of emergency organizations.

The elaborate equipment inventory compiled by CD had been revised. While this inventory was updated each year, the inventory was expanded following the explosion. Two new sections, on medical equipment and supplies, and medical manpower, were added.

CD supplies had been stored at various points around the city with selected personnel informed of their location. Arrangements were made which provided for 11 trucking companies to furnish

immediate transportation for such supplies. Also, arrangements with 11 alternative companies ensured that transportation would be available when needed.

At the time of the last DRC visit, the CD plan for the entire county was in the process of being revised. Revisions were being made so as to emphasize natural disasters somewhat more; prior planning had focused on recovery from nuclear attack. It was indicated by CD officials that they felt they needed to broaden their approach, so as to be prepared for disasters of any type, man-made or natural in origin.

CD officials reported that their first application for federal funds would also be made soon. This change was due in part to increased public interest in CD after the Coliseum explosion and also to the fact that a new Mayor had been elected five days after the explosion. The new Mayor, it was believed, would look upon federal money with more favor than had the previous encumbent.

4. *Indianapolis Area Chapter of the American Red Cross.* As indicated earlier in this chapter, local Red Cross officials were very active in promoting the extension of their radio-telephone system to Indianapolis hospitals. Staff time spent on this high priority matter resulted in some delays in other chapter projects of lower priority which would have been completed had the disaster not occurred. For example, managers for about 300 Red Cross-Civil Defense shelters were being selected at the time of the disaster. While selection of the managers had since been completed, their training had not yet begun. A manual to be used for this purpose was in draft form when the DRC team returned to Indianapolis in 1964. Red Cross officials indicated that it would soon be ready for distribution. These officials felt that this entire program would have been completed if it had not been for the extensive Red Cross involvement in the disaster. Also, source lists of material resources, e.g., clothing, food, cots, blankets, had not been revised. This also would probably have been completed if the organization had not devoted its time to explosion-related matters.

Minor changes in Red Cross disaster procedures were expected to be made soon, including some involved in the extension of the

radio-telephone system. For example, Samaritan Hospital, using the new communications system would now probably be the first group to notifiy Red Cross of a disaster. Officials thought this would lead to quicker notification since both police and fire departments had several other activities of higher priority to attend to before telephoning the Red Cross. Since standard operating procedures were judged to have proved effective in the Coliseum explosion, it was thought that no other organizational changes in procedure were needed.

Two additional changes in the communications area had occurred. First, an Indianapolis Red Cross Radio Club with 48 active members had been organized. Among the new equipment utilized by the club members was a "teletypewriter." This unit could be sent to the scene of future disasters to type out casualty information to be transmitted electronically to a receiving unit at the Chapter House. Officials believed that this procedure would reduce errors in spelling of names and, in general, increase the effectiveness of Red Cross efforts to collect and disseminate casualty information.

Second, Red Cross mobile communication units had been spatially reassigned so that one unit is now located in each section of the county during evening hours. It was reasoned that such a dispersion of units would decrease the amount of time required to establish a radio network between the scene of any future disaster and the Red Cross Chapter House, Civil Defense Headquarters, and the nine hospitals currently linked to the radio-telephone system.

There also had been some quantitative change in certain Red Cross activities. Officials reported that the Coliseum explosion had stimulated much public interest, especially in the area of first aid training. Furthermore, greater attention to mass emergency care by local nurses marked the Red Cross nursing committee. Neighboring counties also expressed increased interest in the Civil Defense-Red Cross 200-bed mobile hospital.

5. *Indiana State Police.* Officials from the Indiana State Police reported no changes of any major consequence had occurred as

a result of the Coliseum explosion. The feeling was that their procedures had evolved over a number of years, and a single event such as the Coliseum explosion would not result in change.

However, it was indicated that slight changes would be made in missing persons report forms used by the State Police. The specific changes and reasons for such were unspecified and had not been implemented at the time of the last DRC visit. Officials also disclosed that in future disasters they would attempt to compile their own casualty lists. Prevention of dissemination of incorrect information was given as the reason for this, although the point was not emphasized.

6. *Marion County Coroner's Office.* It was unclear to the DRC team in its last visit to Indianapolis if there had been any specific changes implemented in the Coroner's office as a result of the Coliseum explosion. However, the Coroner had engaged in activities which he felt would better prepare coroners elsewhere as well as other communities for disasters.

He had written two reports for circulation among other coroners, in which he outlined a series of disaster procedures for officials in such positions. The reports discussed a number of points, two of the most interesting being: 1) that coroners should beforehand ascertain what legal responsibilities they have in a major disaster in their communities; and 2) that valuables should not be removed from bodies unless necessary; they should remain on the bodies for identification purposes. Personal valuables had been removed from victims while they were still at the Coliseum; the feeling now was that these kinds of items would have materially assisted in the identification process.

7. *The Salvation Army.* Organizational officials reported that no changes had occurred as a consequence of the Coliseum explosion. The same standard operating procedures would be followed in future disasters.

8. *Presbyterian Hospital.* Following the Coliseum explosion, the disaster plan for Presbyterian Hospital was completely and thoroughly revised. First copies of the revision were available in May, 1964. This plan was again soon revised, although the revision

primarily had to do with stylistic and editorial rather than substantive changes. This last version had been completed only a few days before the DRC team returned to Indianapolis in November. It was being distributed throughout the hospital while the team was there.

The new plan differed from the old in several important respects. For one, all medical personnel were now assigned to different specific areas according to their organizational positions. The new plan emphasized that residents and interns were *not* to converge at the emergency unit, but were to go to designated treatment areas. Those not assigned were to meet in the doctors' lounge adjacent to the main lobby. From that point they would be allocated as needed.

Second, the disaster tag to be used for initial admitting was revised. It was increased in size (to 9½ x 5½ inches) to provide more room for recording information. A stiff backing material allows use of the tag without a clipboard or other such device, and use of special paper makes three duplicate copies without the use of carbon paper. The decision was also made that the "MIDE" system[25] would be used to categorize patients in the triage area.

Third, according to the new plan, student nurses will be assigned to each patient admitted as a result of a disaster. The girls are supposed to stay with their respective charges until termination of the emergency period. It was felt that this would prevent numerous problems, such as how medical personnel were to be made immediately aware of any sudden changes in a patient's condition.

A detailed comparison of the 1963 and 1964 (November) plans shows that, in general, the latter plan specifies emergency procedures in much greater detail. For example, the 1963 plan instructed all members of the medical staff to report to the telephone office where they would be informed of the location of the medical officer who would make assignments. This was the extent of the detail included. The 1964 plan, in contrast, contains

[25] The letters have reference to categories for medical care: Minimal, Immediate, Delayed, and Expectant.

one and a half pages devoted to a listing of the emergency organization and activities of the medical staff.

The detailed nature of the new procedures is also illustrated by the statement in the plan that the second responsibility of the housekeeping unit is to send elevator #2 to the fifth floor to await and transport the central service disaster supply cart to the outpatient department on One South. Correspondingly, the central service unit is instructed to send the disaster supply cart immediately to the outpatient department via elevator #2.

Many new features were also added to the plan. For example, the plan is to be activated by the hospital telephone service office making the following announcement, "Plan 99. All residents and interns report to your treatment area." The 1963 plan had specified that the telephone office page in this fashion, "All interns and residents report to the emergency room." Furthermore, the 1964 plan calls for the availability of red signs reading "Emergency use only. Disaster Plan in Effect." Housekeeping personnel are responsible for seeing that these signs are immediately placed on all elevators at all floors. Previously a "No Call" sign had been used. Also, the 1964 plan describes the inter-organizational radio-telephone communication system.

An attempt to use non-medical personnel more effectively was clearly reflected in the 1964 plan. For example, personnel from the controller's office, in addition to previous assignments, are now to secure a victim's valuables in the pre-registered valuable safe-keeping envelope. They are then to give envelope stubs to patients or secure them to their disaster tags. Similarly, in addition to previous assignments, admitting personnel are now to ascertain the number, type, and location of beds immediately available and notify the administrative officer-in-charge.

Many details, unmentioned in 1963, were assigned in the 1964 plan to particular units. For example, the maintenance and construction units are to see to it that keys to all storage areas are readily available. Personnel responsible for security are instructed by the 1964 plan that helicopter landing space, if necessary, can be made available in parking lot Number 4. Also, specific ambulance depar-

ture routes are designated. The 1964 plan also includes a section entitled "decontamination" which outlines general guidelines for handling such emergencies.

While many details which were changed in the 1963 plan are not specified here, the types of changes provided by the new plan should be clear from the above illustrations. However, it should be observed that specifications in the plan do not necessarily mean the change was implemented. Furthermore, in a number of instances, whether or not a change had actually occurred would be very difficult to ascertain in the absence of the hospital's involvement in another major disaster. Nevertheless, on paper at least, there were substantial changes in the disaster stance of Presbyterian Hospital.

9. *St. Luke's Hospital.* Hospital personnel at St. Luke's indicated that the disaster plan had not been revised. In fact, the general feeling was that the old plan had worked well at the time of the Coliseum explosion. Thus, no major change was seen as needed.

The only types of change reportedly made in hospital procedures or the disaster plan were relatively minor. First, the newly installed radio-telephone system was made part of the plan. Second, disaster victims were to be encouraged to come directly to the emergency area rather than entering through the laboratory area as the plan had previously specified.

10. *Samaritan Hospital.* Hospital officials stated that the disaster plan for Samaritan Hospital had generally been "revised in the minds of the administration," but these revisions had not yet been put into written form. One of the few important changes which had actually occurred was the key role which Samaritan Hospital assumed in the new inter-hospital communication system. As was previously indicated in this chapter, Samaritan operators will act as emergency control for the system until relieved by CD or Red Cross officials. Also, some changes in the quantity and types of medical supplies stocked at the hospitals were made, but these were not detailed for the DRC team.

Among the more important changes being considered in the hospital disaster plan were the following. A change in the emergency lines of authority was contemplated. The old plan specified

that the chief-of-staff would be directly under the Superintendent and thus over the senior full-time house staff. It was felt that this authority relationship should be reversed. Since the house staff was more familiar with all aspects of the hospital than the chief-of-staff, who was a physician in private practice, the house staff was in a better position to assume authority than the chief-of-staff during an emergency period.

The old plan had specified that emergency headquarters should be established in the administrative offices. This is a great distance from where emergency treatment was to be undertaken. Consequently, it was thought that it would be more effective for personnel in command positions to be closer to the emergency area. In the new plan, therefore, space nearer the emergency area may be specified for the superintendent, chief-of-staff, and others in command positions.

More extensive use of runners to facilitate communication is likely to be encouraged. Telephones too often require personnel to leave their posts momentarily. Also, the new plan will probably include a way of immediately notifying off-duty telephone operators.

The old plan had specified that two triage teams should be established. Consideration would be given in the new plan to the possibility of establishing only one triage team. The number of staff (doctors, nurses, etc.) assigned to each treatment area was also going to be re-evaluated and some changes in this were anticipated. It was especially thought that more guards were needed to ensure security.

New arrangements to insure that adequate supplies of morphine would immediately reach the scene of any future disaster were also to be made. Investigation had begun into the purchase of a large refrigeration unit, which could be used to cool a large area such as the ambulance garage. If needed, this area could also serve as a temporary morgue.

Since the DRC team did not return to Indianapolis after its last visit a year after the explosion, it is unknown if any or all of the discussed changes were ever implemented. Certainly the disaster had made hospital personnel think about different problems. But change in this hospital, as is generally true of organizational restructuring anyway, was clearly not a quick aftermath of the disaster.

11. *St. Anthony Hospital.* Two substantial changes were made in the disaster plan of this hospital. First, the emergency location assigned to the administrator of the hospital was changed. Previously the plan had specified that she should remain in her own office. This proved ineffective the night of the Coliseum explosion. The new plan designates that the administrator will utilize the personnel office, which, being adjacent to the emergency room, will place her closer to incoming patients. She will thus more easily be able to appraise the emergency response of the hospital and direct activity.

Second, in future disasters, public relations personnel will immediately establish an information center. All incoming calls requesting casualty information will be directed to them. The night of the explosion, some such calls got to the emergency room and somewhat hindered work of personnel there.

At least on paper these were two changes that occurred in this hospital. However, as in some previous cases mentioned, only an actual disaster could reveal the presence or absence of actual change.

12. *Indianapolis Hospital.* Personnel at Indianapolis Hospital indicated that the hospital disaster plan was still in the process of being revised when the DRC team returned to Indianapolis in 1964. A large new addition to the hospital was just being completed at that time. Therefore, many changes were scheduled to be made in the disaster plan which would reflect only changes necessarily resulting from the new construction. Solely those changes which hospital officials indicated would probably be made as a result of the Coliseum explosion are discussed here.

Officials at Indianapolis Hospital felt that a new disaster plan must clearly designate a disaster medical director. He would direct all medical aspects of the emergency response and his authority to do so would be clearly understood before the advent of future disaster. Also, one doctor may be assigned the responsibility to dismiss patients if extra beds are needed. Such dismissals would be based on his appraisal of their current medical status, and it would be unnecessary for him to obtain the permission of the personal physician of each patient.

A disaster kit to be housed in the emergency area will be constructed. Among the many items in this kit will be arm bands and "stick-on" tags for hospital personnel. Use of these devices will permit immediate identification of the technical status of all personnel which is sometimes confused because staff members and workers may rush from home to the hospital "dressed as they are." Such means of identification would also allow maximum utilization of personnel from other hospitals. Marking devices which can be used over blood, perspiration, etc. will also be included in the disaster kit. Status and treatment could be written directly on the patient thus preventing more than one immediate examination. Furthermore, since paper forms and clip boards proved to be ineffective the night of the disaster, disaster tags to be used for admitting purposes will be designed and stored. These tags will be constructed so they may be tied directly to patients.

A variety of procedural changes were also being considered. One possible set of actions was thought of as follows: An immediate decision of the type of treatment necessary will be made. Patients will then be dispersed to different areas of the hospital for treatment. Registration will take place in the treatment areas and would not be attempted initially, as was done on the night of the Coliseum explosion. Second, to avoid elevator congestion only ambulatory patients will be moved from one floor to another. Third, the emergency "call list" will be expanded so as to include "untrained personnel." These persons could be used as litter bearers, elevator operators, and so forth. The old "call list" largely included only medically trained personnel. Fourth, a current victim census will be maintained by assigning one physician to circulate among patients: he will send current casualty information to the public relations office by runners so as not to tie up telephones.

Many changes in the areas assigned to specific types of treatment will be made; these are largely due to the new hospital addition. However, in light of the Coliseum response, assignments will be made with more care. For example, the old disaster plan specified that the doctors' lounge was to be used as "holding area." It was originally selected principally because it could be cleared fast and

had a great deal of space. However, there are no outlets for special equipment, oxygen, etc. in that room; thus, this space will probably not be so assigned in the future. Also the "staging area" most likely will be moved from the main lobby to the emergency area, since this is where most of the patients went or were taken the night of the explosion.

These then are some of the important consequences of the disaster for the key organizations that became involved. Undoubtedly there have been and will still be other changes not discussed that in some way might be traced back to that fateful evening.[26] Nevertheless, what we have described probably represents the major effects of the Coliseum explosion on the major emergency organizations in Indianapolis.

[26] For listing of some changes in the medical area see, "The Indianapolis Coliseum Disaster," *The Indiana State Board of Health Bulletin*, 67 (November, 1965), p. 14.

V

OBSERVATIONS AND GENERAL CONCLUSIONS

The previous chapters in this report have been primarily descriptive. In this chapter we attempt to be more analytical. In one sense, up to this point we have presented a social history of the organizational response to the Coliseum explosion; now we will try using that incident as the specific example to generalize to a sociology of organizational functioning in disaster.

Behavior in disaster must be viewed within its larger social context. Societies are composed of individuals interacting in accordance with an immense multitude of norms, i.e., ideas about how individuals *ought* to behave.[1] These norms vary in their level of specificity, in that some apply only to single social situations while others are applicable to many situations.[2] Normally, societal members interact with one another in relatively well-defined patterns. In general, each member holds certain expectations for others and complies with expectations he perceives are held for him. Similarly, organizational activities, both inter and intra, assume somewhat definite patterns.

Is behavior in disasters different? Certainly the image of disaster behavior as "mass hysteria" and general chaos remains popular even though social scientists who have analyzed such stress situations have clearly disputed this view.[3] Our position is that activities of individuals and collective units such as groups and organizations are guided by a normative structure in disaster just as in any other situation. This is not to say that behavior is identical in both situations, but only that post-disaster activity is neither random nor purposeless. In

[1] This normative interpretation of social behavior is basic to much sociological theory. See for example, Robin Williams, *American Society* (New York: Alfred A. Knopf, 1960), pp. 19-38.

[2] For additional characteristics of norms, *Ibid.* See also Jack P. Gibbs, "Norms: The Problem of Definition and Classification," *American Journal of Sociology*, 70 (March, 1965), pp. 586-594.

[3] For a much more comprehensive analysis of disaster myths see E.L. Quarantelli, "Images of Withdrawal Behavior in Disasters: Some Basic Misconceptions," *Social Problems*, 8 (Summer, 1960), pp. 68-79; and Charles E. Fritz, "Disaster," in *Contemporary Social Problems*, Robert K. Merton and Robert A. Nisbet (eds.), (New York: Harcourt, Brace and World, Inc., 1961), pp. 651-694.

disasters, the actions of individuals and groups are largely guided by emergent rather than established norms, but norms nevertheless.

There are certain sets of norms which remain operative in both disaster and non-disaster situations. For example, in American society, series of norms exist which clearly specify that individuals are to aid others who have been injured, as well as relatives or neighbors in need of assistance. Similarly, for example, there are sets of norms oriented around the point that hospitals are the primary organizations for treating medical emergencies and the seriously ill, and that police departments are the major groups responsible for traffic control. Clusters of norms of this kind are general and apply almost without exception to all situations.

While such sets of norms lack specificity as to the social situation for which they are appropriate, they also tend to lack task specificity. That is, other than positing a general end, many of the means of obtaining that end remain vague.[4] It is the resulting highly purposive "coping behavior" which is addressed toward the establishment of new relationships that is often labeled "mass hysteria" or personal disorganization. Individual behavior remains guided by existing norms which clearly designate ends to be obtained but which usually lack sufficient specificity to guide behavior most effectively in disaster situations. Of course, somewhat specific "disaster roles" are available for a few societal members by virtue of their affiliation with emergency organizations, e.g., police and fire personnel. However, these organizations often lack normative systems sufficiently specific enough to disasters to guide the emergency period behavior of their members. Thus, even for these organizations, initial responses to community emergencies often involve large amounts of coping behavior, i.e., efforts to modify and adopt intra- and inter-organizational relationships to meet disaster conditions more effectively.

In a community struck by disaster what we find is a rather clear image of a general end and an effort by the community to accom-

[4] A somewhat similar idea is suggested in the literature. See Allen H. Barton, *Social Organization Under Stress: A Sociological Review of Disaster Studies* (Washington, D. C.: National Academy of Sciences—National Research Council, 1963), pp. 20-22; William H. Form and Sigmund Nosow, *Community in Disaster* (New York: Harper and Brothers, 1958), pp. 14-28.

plish that end. Previous sets of relationships, applicable to non-disaster conditions, must be modified to fit the changed conditions created by the disaster, and new relationships often emerge. Thus, after the explosion occurred in Indianapolis, the community began what Barton has labeled a "mass assault," the efforts of individuals, small groups and complex organizations to cope with the disaster.[5] In this report we have primarily described only one facet of the mass assault—the organizational response. However, in many disasters the bulk of the mass assault typically is conducted by community emergency organizations though non-organizational volunteers may greatly assist. Certainly this was the situation at Indianapolis. Furthermore, the disaster was focalized as to time and place which allowed all of the organized emergency groups in the community to concentrate on conditions created by the explosion.

Viewed from this perspective, what we see is the emergence of an emergency social system which is a set of new relationships that more effectively fit the changed conditions produced by the disaster. Thus, individual and organizational behavior in disaster is not purposeless or random, but rather represents efforts to construct new relationships that meet new conditions—to impose structure where the previous one has failed, is inadequate, or simply inappropriate for the changed circumstances.

We have made an effort to extract from descriptive data presented throughout the present report, a series of general observations related to organizational functioning precipitated by the community emergency. The observations are discussed within the context of the following series of variables: organizational environment, mobilization, communication, coordination, control, and pre-planning.

ORGANIZATIONAL ENVIRONMENT

Organizations exist in an environment which contains both physical and social constraints as well as assets. Some understanding of such factors is necessary since they define the conditions within which emergency organizations function.

[5] Allen H. Barton, "The Emergency Social System," *Man and Society in Disaster*, George W. Baker and Dwight W. Chapman (eds.), (New York: Basic Books, Inc., 1962), pp. 226-228.

As a part of the mass assault, individual response is of extreme importance to formal groups since this response may in some cases create as many organizational problems as the actual disaster. On the other hand, special resources not possessed by any complex emergency group may be required to cope with the disaster. These resources may be available elsewhere in the community, which is one aspect of the organizational environment. Physical characteristics of the disaster agent, as well as the geographical setting of the impact area, may present unique handicaps or assets to organizational response.

The following observations specify the more significant elements of the environment within which the Indianapolis emergency organizations functioned.

1. There was little evidence of extreme personal disorganization.

Popular conceptions have it that disasters evoke a great deal of personal, as well as social, disorganization. Personal disorder is thought to manifest itself in extreme form through such behavior as panic flight and hysterical breakdown. Clearly, if such phenomena occurred on a large scale, they would seriously interfere with the operations of emergency organizations.

However, at the disaster in Indianapolis there was neither panic flight at the scene nor hysterical breakdown there or elsewhere in any degree. The absence of these kinds of behavior support the conclusion of Quarantelli and others that such response to emergency circumstances are quite rare and occur only under very specific and limited conditions.[6] Some researchers have argued that it is a myth that disasters typically evoke extreme personal disorganization on a large scale. The evidence from the Coliseum explosion supports this view.

Given the circumstances, spectators were well-behaved in going to the exits. At no time was there any stampede to leave the build-

[6] Quarantelli suggests that panic flight occurs only when two conditions are present: (1) persons feel a sense of possible entrapment, i.e., that they may not be able to escape from an impending threat; (2) persons feel a great helplessness, i.e., they feel both powerless and alone. See E. L. Quarantelli, "The Nature and Conditions of Panic," *The American Journal of Sociology*, 60 (November, 1954), pp. 267-275; E. L. Quarantelli, "Images of Withdrawal Behavior in Disasters: Some Basic Misconceptions," *op. cit.* See also Duane P. Schultz, *Panic Behavior: Discussion and Readings* (New York: Random House, 1964).

ing. In fact, it took a less severe explosion, minutes after the first, to encourage lingering on-lookers to move out of the building. Thus, the popular image of mass panic once again showed itself false.

In general, persons who experienced this disaster also did not exhibit the hysterical behaviors portrayed by popular stereotypes. For example, the Administrator of St. Luke's Hospital stated that she was surprised at the calm behavior of relatives on the night of the explosion. Friends and relatives waiting for information, or to see patients, were unusually cooperative. When instructed to sit down and wait, they did just that. They did not roam around constantly asking questions and interfering with hospital activity, a common pattern under normal circumstances (and also very noticeable when relatives of traffic accident victims come to the hospital). Affected persons were aware of the conditions around them and modified their behavior accordingly.

Further evidence to dispute the hysteria stereotype was obtained through an analysis of the Indianapolis Police tapes. Many outside callers expressed great concern about the fate of their relatives and friends. However, even these persons who were probably the most distraught did not converse in a manner that would fit the popular stereotype of disorganization. While greatly concerned, all were quite coherent and in general asked meaningful questions and sought relevant information.

This facet of the organizational environment is crucial to organizational functioning because decision makers must evaluate public response correctly. Evidence indicates that some organizational officials have an incorrect conception of disaster behavior and allow it to guide organizational actions. For example, Williams and Rayner report failure and delay by public officials in issuing hurricane warnings for fear of public panic.[7] The nature of the Coliseum disaster precluded many organizational responses on the basis of gross misconceptions of public reaction. Nevertheless, this study reinforces the notion that extreme personal disorganization is not a typical dis-

[7] Harry B. Williams, "Human Factors in Warning-and-Response Systems," in *The Threat of Impending Disaster*, George H. Grosser, Henry Wechsler, and Milton Greenblatt (eds.), (Cambridge, Massachusetts: M. I. T. Press, 1964), pp. 87-89; Jeannette F. Rayner, "Hurricane Barbara: A Study of the Evacuation of Ocean City, Maryland, August, 1953," (Washington, D.C.: National Academy of Sciences—National Research Council, 1953), (unpublished report), p. 16; and Charles E. Fritz, "Disaster," *op. cit.*

aster response and, therefore, not likely to interfere with organizational operations.

2. Individuals did not wait for directions from authorities to act, but instead acted in accordance with the realities of the situation as they defined them.

Another popular misconception is that victims of disasters become passive and dependent on others for almost all help. Some researchers have characterized this as the "big brother myth."[8] Certainly the problems for organizations are substantially increased if persons involved in disasters are not going to do anything for themselves.

In contrast to the "big brother myth," however, explosion victims did not exhibit docile, impotent, or apathetic behavior. They were not "waiting childlike for someone to take care of them."[9] Persons near the explosion area immediately began to assist the injured. Many victims were immediately taken to hospitals by friends or relatives in attendance at the ice show. These actions were taken without advice or direction from authorities.

Available evidence on the Coliseum explosion supports the conclusion of Quarantelli that "disaster victims react in an active manner, not passively as implied in the dependency image. They do not just wait around for offers of aid by organizations. They act on their own. . . ."[10]

This kind of response created some problems for emergency organizations, especially the hospitals. For example, the uneven patient distribution at the local medical centers was partially a result of this factor. Also, "walk-in" patients at hospitals nearest the Coliseum, who were unfamiliar with emergency entrances and procedures, complicated activities. Patients entering through several entrances placed additional strain on the already overloaded admitting and dispersal processes.

Organizational decision makers must be aware of this probable post-disaster response and prepare for it. While the effectiveness of

[8] E. L. Quarantelli, "Images of Withdrawal Behavior in Disasters: Some Basic Misconceptions," *op. cit.*

[9] *Ibid.*, p. 72.

[10] *Ibid.*, p. 73.

the emergency social system might be increased if removal of victims is delayed until a triage area and an orderly system of patient dispersal are established, it is doubtful that such a passive response on the part of victims will ever occur unless several societal norms are radically altered. Parallel problems for other organizations besides hospitals are obvious. Therefore, plans of such groups should assume a certain amount of personal initiative on the part of victims as "normal" in major emergencies.

3. Much of the public response was characterized by convergence behavior that compounded organizational problems.

If the evidence from the responses to the explosion negates the popularly held "panic-hysteria" and "big brother" image of disaster behavior, what kind of behavioral response was generated by the disaster? Much of the response by individuals and organizations was what Fritz has categorized as convergence.[11] There was material, personal, and informational convergence of substantial degree—a phenomenon which has been observed in almost all disasters.

Apparently motivated largely by a desire to help, numerous persons went directly to the Coliseum. Even those who first telephoned police or fire department headquarters were encouraged to go directly to the explosion site. Many brought equipment, e.g., house jacks, wreckers, acetylene torches, etc. which were supposedly in demand. Others arrived in station wagons, trucks, and, in a few instances, buses, since additional transportation facilities for the injured were also reported to be needed. This massive convergence was unfiltered as it moved toward the disaster site, and, as discussed earlier, the resulting traffic congestion created a serious problem for emergency organizations around the Fairgrounds.

Even away from the Coliseum there were some convergence problems. This was especially true at the hospitals. Thus, the broadcast appeal for blood donors led dozens of persons to go to those locations.

[11] For a detailed treatment of convergence behavior see Charles E. Fritz and J. H. Mathewson, *Convergence Behavior in Disasters* (Washington, D.C.: National Academy of Sciences—National Research Council, 1957).

Relatives and friends in search of victims also added to the convergence response, both at the hospitals and the Coliseum itself. This part of the convergence was motivated largely by a desire to obtain information. In fact, the hospital which reported the most difficulty with "outsiders," who even hampered activity in the emergency room, was one that was remiss in establishing an information center. This inaccurate assessment of public response created additional problems for the organization.

In addition to the physical convergence of men and equipment, an informational convergence also occurred. Communication facilities of all emergency organizations were overloaded. Of course, much of the overload was precipitated by an increase in internal communication, but all organizations reported that their telephone systems were extensively used by non-organizational callers. In fact, due to inadequate telephone facilities at the explosion site, interested persons telephoned headquarters of emergency organizations thereby also creating an informational convergence at places other than the disaster scene.

Mass convergence not only occurred at Indianapolis, but was also a problem. The work of emergency organizations was clearly made more difficult by the phenomena. Recognition of this as a typical post-disaster response and preparation to cope with the problem would greatly increase the output of the emergency social system.

4. Various ecological (spatial and temporal) factors tended to minimize organizational problems.

There were at least two types of ecological factors which greatly affected organizational responses. An understanding of these conditions, spatial and temporal in nature, is crucial in assessing organizational behavior since they facilitated the response in Indianapolis. In another disaster, of course, other ecological elements could hamper organizational effectiveness.

First, unique spatial factors were effectively used by emergency organization officials. For example, the presence of the enclosure around the Fairgrounds with a limited number of gates made security in the area of the Coliseum infinitely less difficult than

otherwise would have been the case. Relatively few police at the various gates were able to secure the entire area.[12] This was of obvious value in eventually reducing the number of convergers. The presence of the ice rink made the Coliseum an ideal place for a temporary morgue. Local hospitals would have been much harder pressed if the Coroner had not utilized this asset. Also, large entrance structures made it possible to move a large crane inside the Coliseum. Had this rather uncommon structural feature not been present, removal of the large slabs of concrete from atop victims would have been greatly complicated. Organizations involved in rescue efforts might not have been able to extricate all victims as quickly as they actually did.

Second, the timing of the event proved to be an important organizational asset. The explosion occurred on Halloween night which meant that there were many additional police officers on duty to prevent vandalism. Police, both official and volunteer, were thus more readily available. Also, the blast occurred shortly after 11:00 p.m. Many organizations, e.g., hospitals and police, momentarily were at "double strength" since shift changes occur at this time. Upon learning of the explosion, many persons who were about to go off duty stayed, thus immediately providing these organizations with nearly a double work force.

These types of circumstances greatly affected organizational responses. The importance of such factors is obvious when the research focus is on organizational functioning in disaster. However, while less apparent and perhaps different in degree and type, such ecological factors are equally crucial in understanding organizational behavior in non-disaster settings.[13]

MOBILIZATION

Immediately after the explosion, the mass assault by the Indianapolis community began. However, the initial step in organizational mobilization is notification. It was here that the

[12] See Diagram 2 for a spatial layout of the area.

[13] See Wilbert E. Moore, *Man, Time, and Society* (New York: John Wiley and Sons, Inc., 1963) for a discussion of the importance of analyzing time as a factor in social behavior.

Indianapolis community system experienced some difficulty. After news of the explosion spread, emergency organizations throughout the entire metropolitan area mobilized with little difficulty.

Major observations related to organizational mobilization are as follows:

5. Not all organizations received immediate notification of the event which thereby complicated their mobilization efforts.

Three of the five hospitals studied reported that they did not receive official notification that the explosion had occurred. For example, St. Luke's Hospital, closest to the Coliseum, was informed of the explosion by victims seeking treatment. Mobilization of hospital staff was somewhat complicated since it had to be completed as additional victims arrived.

Indianapolis Fire and Police Departments, the Sheriff's Office, as well as the Indiana State Police, were immediately notified by persons at the Coliseum. In contrast to the hospitals, other emergency organizations also quickly learned of the disaster. This was a partial result of overheard transmissions on the police and fire radio communication nets which the hospitals do not monitor. For example, both Civil Defense and Red Cross organizations received initial notifications through organizational incumbents who were monitoring police radios.

Hospital notification was initiated by a Fire Department dispatcher who alerted Samaritan Hospital. However, the information was not passed on to other hospitals in the city. Unless a specific set of procedures is clearly understood before a disaster, such alerting activities may easily be overlooked. Presumably, extension of the Red Cross radio-telephone communication network to local hospitals and Civil Defense will provide both the equipment and procedures necessary to prevent a recurrence of the difficulty.

It is important to note that organizational response in community disaster must be viewed in a larger context, the community emergency social system. Community disasters, by their very scope, usually require the resources, not of any single organization, but

of the various emergency organizations throughout the area. Notification of each unit, i.e., each single organization, within the community emergency social system is thus an important system requirement. Effective completion of this requirement will increase the output of the emergency social system.

6. Once notified of the event, major community emergency organizations experienced little difficulty in intra-organizational mobilization efforts.

Firsthand data clearly indicate that representatives of emergency organizations reached the disaster scene quickly. Fire equipment, housed near the main entrance to the Fairgrounds, arrived at the Coliseum within minutes after the explosion. The District Chief quickly assessed the scope of the disaster and reported back to fire headquarters within four minutes after the initial blast. Similarly, representatives from the Indianapolis Police Department, Civil Defense, State Police, Samaritan Hospital, The Salvation Army, Red Cross, and numerous other agencies such as the Sheriff's Office and volunteer fire departments, quickly converged at the Coliseum.

Organizational officials did report instances where upper echelon personnel were not immediately notified of the explosion. In some cases this was not viewed as dysfunctional, e.g., at certain of the hospitals. However, there was delay in notification of the Indianapolis Police hierarchy and certain technical specialists, e.g., the communication captain, who were off-duty. This was attributed to the absence of a "call list" in the radio room. In the first few days following the explosion, a new "call list" was constructed and all police communication personnel were briefed on its function, which will presumably remedy this problem.

Organizational mobilization was thus accomplished with a minimum of difficulty or delay. Reflecting functional divisions in organizational structures, rapid mobilization can be attained without the necessary presence of top echelon personnel. This, of course, is by design. However, priorities for mobilization of organizational personnel following extensive community disaster may not be the same as for situations of a more localized scope. Thus, what hap-

pened at Indianapolis is no argument for failing to notify top echelon officials at times of emergencies.

7. The greater the proportion of paid personnel (as contrasted to volunteers) in an organization, the greater the speed in mobilization of the oganization.

Most of the emergency organizations utilized volunteer help in a variety of ways. However, it is important to note the distinction between volunteer help used for specific short-term tasks and volunteer *position incumbents*. The contrast is most easily seen between the Red Cross and The Salvation Army. While the Salvation Army officials may use volunteer help for specific short-term tasks, all Army officers are regular staff members, this being their primary occupation. Aside from a small administrative component, positions within local Red Cross organizations, however, are enacted by volunteers who have other occupational responsibilities.

The Salvation Army officers were on the scene, with their canteen, serving coffee about an hour after the explosion. Red Cross motor service equipment was first used to transport first aid supplies and their feeding operations were somewhat delayed. Also, Red Cross nurses, after assembling at the Chapter House, went to the Coliseum and several local hospitals. However, by the time they arrived at the Fairgrounds, most victims had been removed and many hospitals were well organized after having implemented their disaster plans. Similarly, certain first aid supplies and blankets which Red Cross workers took to the Coliseum remained unused because of the lateness of their arrival.

It must be emphasized that the above statements are not intended to detract from the efficiency of the local Red Cross Chapter, which performed several very important functions; rather these observations reflect a basic organizational limitation since mobilization of volunteers requires a certain amount of time. Just as both police and fire departments sometimes effectively use volunteers who require time to be mobilized, so also did the local Red Cross Chapter contribute greatly to the community emergency social system. However, the major contribution of the Red Cross was not in treatment or removal of injured, but rather in compilation of

a casualty list, handling welfare inquiries, and providing longer-term economic assistance. Thus, while Red Cross nurses provided only limited assistance in victim treatment, they performed an invaluable service in compiling a comprehensive casualty list and assisting officials at the Coliseum in victim identification.

Knowledge of variation in organizational structures can thus provide invaluable insights into post-disaster mobilization behavior. After a study of responses of complex groups following a tornado that struck Flint and Beecher in Michigan, Form and Nosow made a similar observation based on the differential responses of Red Cross, The Salvation Army, and State Police organizations.[14] They further suggested that organizational behavior in disaster can be most meaningfully understood by using a typology of organizations based on analytically different structures.[15] Membership characteristics, degree of formalization within the organization, size, etc. are all structural characteristics which provide insight into post-disaster organizational response.

Organizational mobilization is thus a complex process which must be further researched. It is clear that the process is greatly affected by the structural characteristics of organizations. Also, it is crucial to note that following community disaster, a basic requirement of the community emergency system is notification of all units within the system. While of minimal priority for each respective organization, this requirement is of highest priority for the larger community system.

COMMUNICATION

Inadequate communication was the major organizational difficulty in the disaster response. While equipment deficiencies contributed to this problem, inability to implement effective emergency procedures quickly was the major factor. In this area, like most others in the organizational response, the problems were

[14] William H. Form and Sigmund Nosow, *Community in Disaster* (New York: Harper and Brothers, 1958), pp. 136-216.

[15] *Ibid.*, pp. 130-133. Similarly Haas and his associates have emphasized the utility of an organizational typology which would allow for hypothesis testing within different classification types. See J. Eugene Haas, Richard H. Hall, and Norman J. Johnson, "Towards an Empirically Derived Taxonomy of Organizations," in *Studies on Behavior in Organizations*, Raymond V. Bowers (ed.), (Athens, Ga.: University of Georgia Press, 1966).

sociological not technological in nature, i.e., technology capability was present, but used ineffectively. No other factor so severely impaired the output of the emergency social system as did the communication problems.

8. No central communications center through which all participating organizations could communicate was ever established, and only limited inter-organizational communication developed.

Initial organizational responses followed a somewhat similar pattern. After being alerted, organizational representatives arrived at the scene and quickly began to request additional manpower, supplies, and equipment from their headquarters. Little attention was paid to the activities of other groups until the injured had been removed, about an hour after the explosion. In a sense, the priority given to attending victims appeared to obscure a perception of parallel activities by other emergency organizations.

This in turn also prevented personnel at the various organizational headquarters from knowing what actions were being taken by other organizations. Yet aside from the efforts of a Civil Defense communication officer, at the scene in his sound truck, few attempts were made to establish inter-organizational communication. No central communications center was ever established at the disaster site or elsewhere which allowed all or even most of the participating organizations to communicate with one another. As a result, great amounts of unneeded equipment and supplies were sent to the Coliseum since emergency groups were unaware of each other's efforts.

In addition to the absence of an inter-organizational communications center, internal communications systems were often not used most effectively. For example, much of the public convergence initially remained unfiltered because personnel at police and the fire department headquarters lacked current information as to conditions at the explosion scene. On-site personnel tended only to request additional items and seldom gave information about what was transpiring. Requests were often simultaneously duplicated at several of the organizational headquarters.

To the extent that inter-organizational communication developed, it was a consequence of a secondary problem. Both at the Coliseum and at local hospitals, there were difficulties in locating and identifying victims. This problem led to more inter-group contacts although it was later observed that ". . . by the time the communications were effective at the Coliseum, all patients were either en route to or admitted to the various hospitals."[16]

Inadequate equipment at some organizational headquarters was a contributing factor, e.g., inter-organizational communication from all local hospitals was possible only through telephones which were quickly overloaded. However, Civil Defense plans specified that police cruisers were to be sent to all hospitals to establish a communications system. While units were sent to some hospitals later in the night, this action was delayed too long to be of benefit except in victim identification. Thus, a plan and the technology for its implementation existed but were not utilized.

Extension of the Red Cross radio-telephone system to local hospitals may be of help in future disasters. However, this system is limited to the hospitals, Red Cross, and Civil Defense. The Indianapolis Police and Fire Departments, the State Police, the Marion County Sheriff's Office, and other such emergency agencies have not been linked to the Red Cross system. The example of the Coliseum explosion would seem to suggest the advisability of tying together into a communications network *all* of the major emergency organizations in a community.[17]

Barton, after reviewing numerous disaster studies, has suggested that the output of the emergency social system can be greatly increased through the establishment and utilization of a central communications center.[18] Except for efforts to collate casualty informa-

[16] Remarks of Dr. Carl D. Martz (Chairman of the Indiana and Indianapolis Committees on Trauma of the American College of Surgeons), as reported in "What Is the Job of the Individual in a Mass Medical Emergency," *The Ohio State Medical Journal*, 61 (January-February, 1965), pp. 1-7.

[17] In March, 1966, DRC learned that an emergency operations center to coordinate disaster services for all county and city agencies was planned for the new chapter house to be built for the Indianapolis Red Cross. The building, scheduled to be commenced in the summer, is to include a communications room where all organizations will have representatives at times of emergencies. These men will thus be in a position to communicate readily with one another as well as their own organizational headquarters.

[18] Allen H. Barton, *Social Organization Under Stress: A Sociological Review of Disaster Studies, op. cit.*, p. 119.

tion, such a center was not established following the Indianapolis explosion. Had an inter-organizational communications center been established as part of the immediate disaster response, much of the convergence in the form of unneeded manpower, equipment and supplies could have been minimized.

9. Lack of communication from and to local hospitals contributed to their intra- and inter-organizational problems and difficulties.

Whether at the disaster scene or at other organizational headquarters, few persons knew what was occurring at local hospitals. Rescue workers at the Coliseum, unable to communicate easily with the hospitals, had little knowledge of where victims ought to be sent. Aside from a major announcement that one hospital was filled, little information was available.

Of course, such information, if it had been available, might have remained unused. However, in this instance it simply was not obtained. Ignorance of hospital conditions was also reflected by the actions of personnel at Police Headquarters who informed some callers that most of the victims had been taken to Samaritan Hospital. In actuality, Samaritan treated only 27 victims whereas Presbyterian treated 120, St. Luke's 87, and Indianapolis 70. Unawareness of hospital conditions by officials at the Coliseum was likewise evidenced by the fact that nurses and doctors were dispatched to hospitals where they were not needed.

In part, uneven patient distribution, circulation of misinformation on hospital activities to relatives of victims, and waste of time and effort of medical personnel can all be linked to the absence of adequate communications from the hospitals. Such organizations may and perhaps should not have the responsibility for informing the outside world of their activities and status. However, to the extent that there is inadequate information about hospital conditions, the difficulties indicated above are likely to develop in a community disaster.

While the above situations somewhat reduced the effectiveness of the Indianapolis emergency social system, communication inadequacies even more severely handicapped the response of local hospitals.

After initial notifications, which in some instances were made by actual victims, hospital officials received little information about conditions at the Coliseum. They did not know whether to launch a full-scale disaster effort involving the recalling of staff and personnel. They could not find out how many additional victims might be anticipated, thus posing questions about adequacy of bed facilities and supplies. When information was received, it was nearly impossible to confirm. For example, both Presbyterian and Samaritan reported that they received word that the Coroner planned to use their facilities for morgues. It was nearly 4:00 a.m., however, before the two hospitals learned instead that the ice rink would serve as the sole temporary morgue. Similarly, blood donor volunteers were asked to wait at several hospitals because no one knew how much blood might be needed since the number of injured was unknown.

Decision making and organizational responses are severely impaired when communication failures of this kind occur. Even the best of plans would be difficult to implement. Organizations need information input and a flow of communication from outside their own boundaries in order to function effectively in large-scale emergencies.

10. Lack of a communications system between local hospitals contributed to an overload of their communication facilities.

As word of the disaster spread, the relatives of possible victims began to search for them. As has been documented for other large-scale disasters,[19] much of the personal and especially informational convergence focused on hospitals. However, no one knew to which hospitals particular victims had been transported. Since no hospital was informed about who was treated at other hospitals, a single searcher might call half a dozen hospitals in Indianapolis before locating the victim. The consequence was a massive traffic of telephone calls which soon overloaded the existing outside communication facilities of the institutions. (Later, extra telephone lines were placed into different hospitals.)

[19] Harry B. Williams and Jeannette F. Rayner, "Emergency Medical Services in Disaster," Medical Annals District of Columbia, 2 (December, 1956), pp. 655-662. See also Charles E. Fritz, "Disaster," *op. cit.*, p. 678.

An inter-hospital communications system could have permitted the exchange of casualty lists. This action might have greatly reduced the number of calls since relatives would have probably been informed of locations of victims with the initial call to any one of the hospitals. Questions could have been immediately checked with other medical institutions when necessary.

Extension of the Red Cross radio-telephone system to local hospitals provides the necessary equipment for such a system. However, without agreed upon procedures known to all personnel prior to disaster, implementation of the possibility remains in doubt. Technological capability is useless without a corresponding social organization. This is a simple point, but one astoundingly ignored in much organizational disaster planning.

11. Informational convergence on telephones seriously interfered with inter-organizational communication.

Normal telephone lines into most emergency organizations were overloaded with calls by non-organizational persons. Often such persons stated that they desired to help in any way possible. This kind of response is typical and has been documented in other disaster studies.[20] The point here, however, is not that of public informational convergence as a result of desire to offer aid, but rather the implication for organizational functioning.

The only means of communication between Indianapolis hospitals was by way of telephone. Communication between other emergency organizations also depended heavily on telephones; in fact, in many instances it was the only mode of contact. Officials at all organizations noted a telephone overload and reported some difficulty in reaching other organizational headquarters by telephone.

The situation that developed at Indianapolis was not atypical. If not rendered inoperable by the disaster agent, usual telephone lines become sufficiently saturated through public responses so as to make them relatively useless for inter-organizational purposes. Telephone communication cannot be relied on during emergency periods unless special arrangements have been made, e.g., private or direct

[20] See Harry B. Williams, "Human Factors in Warning-and-Response Systems," *op.cit.*, pp. 79-104; Charles E. Fritz, "Disaster," *op. cit.*; and Charles P. Loomis, *Social Systems* (New York: Van Nostrand, 1960), pp. 158-159.

lines restricted to inter-organizational use. Alternative means of communication using different modes are probably even more useful. Here again, however, for actual effectiveness in disaster situations, there must be knowledge of, as well as organized, social arrangements, to utilize such possible alternate means for inter-organizational communication.

12. The disaster precipitated the utilization of new communication techniques and the later establishment of a new communications system.

A new telephone technique assisted the local Red Cross Chapter in coping with post-disaster welfare inquiries. When the chapter's switchboard became overloaded the morning after, a telep[illegible]ne company representative suggested using a new device which would directly transfer all "excessive" calls to the telephone company where additional operators could handle them. While technical difficulties prevented full usage of the automatic transferring device until 11:00 a.m., its use on this occasion was thought to be a "first" in the history of Indiana.

Numerous other emergency organizations reported a variety of communication innovations, e.g., establishment of runner systems. All of these efforts were evidences of the changes in the requirements of the emergency social system during the post-disaster period. The innovations reflected changes in organizational relationships especially in the quantity of information that had to be exchanged and coordinated between different groups.

Shortly after the disaster, Indianapolis and Marion County Red Cross officials began efforts to construct an inter-hospital communications system. Development of this system was explained in detail in Chapter IV. Establishment of this system was clearly generated by the situation following the explosion and may be a valuable asset to the emergency social system in future crisis situations. It is not often that such a clear-cut organizational consequence of a disaster has been documented in the past.[21]

[21] For another example, see F. L. Bates, *et al.*, *The Social Psychological Consequences of a Natural Disaster: A Longitudinal Study of Hurricane Audrey* (Washington, D.C.: National Academy of Sciences—National Research Council, 1963), p. 134.

COORDINATION

Under normal conditions emergency agencies within a community form a social system which tends to be characterized by very "loose" organization. A division of labor permits the groups to operate somewhat autonomously—each in its own functional area. Inter-organizational interaction may be relatively infrequent and largely routine. While such interaction tends to be more frequent at higher levels, it is often of a more social than technical or professional nature. As a result, organizational officials often lack knowledge about the capability, structure, and general procedures of other groups.

When confronted with a community disaster, emergency organizations must function in a unitary fashion. Effectiveness can no longer be viewed solely within the confines of a single organization; rather the response of a larger unit, the emergency social system, becomes crucial. Organizational actions must be appraised within the context of the larger system of which they are a part.

Basic incongruencies between organizational priorities and system requirements may easily exist. The latter often require precedent if the community is to respond effectively. Thus, some actions which may be of highest priority to a single organization must at times be delayed, so that other activities, of less importance to the single organization but crucial to the larger system, may be completed. It is in this more complicated sense of system requirements that we speak of organizational coordination.

13. In general, all emergency organizations cooperated with one another in the disaster response.

A few instances of an initial unwillingness to cooperate were reported, e.g., one hospital initially refused to provide the Red Cross with a casualty list. These were rare exceptions, however. Nearly every official interviewed commented on the cooperation which other organizations extended. Several officials emphasized the fact of cooperation several times throughout their interviews. There is no question that this factor served to increase the output of the emergency social system.

Many researchers have documented the increased organizational cooperation which often occurs following disasters.[22] However, it is important to note that cooperation does not automatically result in coordination. Organizations may be willing to cooperate with each other, but still duplicate many activities as well as neglect activities important to the larger community system. Coordination implies that sub-units within a larger system are allocated specific responsibilities crucial to the larger system. Cooperation between the sub-units, i.e., emergency organizations, is necessary, but much more is required if coordination at the community system level is to be obtained.

14. Victim dispersal from the disaster site remained largely uncoordinated by emergency organizations.

Traffic in and around the Coliseum quickly became very congested after the explosion. The sole effort to establish an ambulance route was initiated by the CD communication officer. Even though he was able to obtain only very limited information about hospital conditions, he attempted to direct ambulances to institutions other than those closest to the Coliseum. Personnel from other emergency organizations made no major efforts to equalize or control the distribution of disaster victims to different hospitals.

This example clearly illustrates the concept of system requirements in disaster response. Hospital personnel are physically unable to handle the problem of victim dispersal from a disaster site. They must depend on other organizations within the system to meet this requirement. If left unmet, as was largely the case in Indianapolis, the functioning of the medical component of the emergency social system is impaired. However well prepared any hospital is, it cannot overcome the necessity for inter-organizational coordination.

15. Inadequate inter-organizational coordination resulted in duplication of some activities and negect of others during the immediate disaster response.

Efforts to locate heavy rescue equipment, transportation facilities, and first aid supplies were duplicated by fire and police

[22] See F. L. Bates *et al.*, *ibid.*

departments, Civil Defense, Red Cross, and other organizations. Many unnecessary items were sent to the explosion site. Different organizations concurrently attempted to compile a list of casualties.

On the other hand, some actions crucial to the larger community system were largely delayed or ignored. Most local hospitals were not officially notified of the disaster. Once victims were removed from the disaster site, limited attention was given to their dispersal. Hospitals remained uninformed as to conditions at the Fairgrounds, obtaining little information on how many victims they might anticipate. A central communications center, whereby efforts of all participating organizations might have been coordinated, was not established.

A certain amount of duplication in post-disaster activities is probably not only inevitable, but may not be completely dysfunctional. Neglect of certain problems, however, is more serious. Thus, the issue is not the elimination of all duplication, but rather that organizations should respond in such ways as to assure coverage of all critical problems in the disaster situation. In some respects, inter-organizational coordination is possibly more important in bringing about attention to all key problems than it is in eliminating duplication of effort.

16. During the initial disaster response, organizational representatives tended to rely on the capabilities of their respective groups rather than seeking assistance from other organizations.

Police and fire dispatchers seldom requested specific items of assistance from other organizations except when the material was first volunteered by these groups. For example, rather than relying on the Red Cross or Civil Defense to supply blankets at the scene, the fire dispatcher requested men on two trucks to "strip their beds" before leaving the station house. A major exception to this pattern of response was the search for a mobile crane which was quickly obtained when CD personnel became aware it was needed. However, even in this instance, police and fire communication personnel, plagued by inadequate equipment lists, spent some time attempting on their own to find this kind of a crane.

The capabilities of the emergency social system are not limited to any single organization. The output of the system is greatly increased when organizational incumbents do not permit their perspectives to be limited by organizational boundaries. Plans help in this respect. However, the point of significance here is not that of pre-planning; rather it is that effective response to community disaster requires the interrelated actions of separate emergency organizations. Effective utilization of community capability requires a perspective not limited by organizational boundaries or day-to-day organizational problems.

17. Much greater coordination between emergency organizations developed after the high priority task of helping the injured had been met.

Seminal efforts at inter-organizational coordination began to be evidenced about an hour after the explosion. By two hours later, after the injured had been removed, emergency organizations *at the scene* were much better coordinated. A central command post had been set up in the Administration Building across the street from the Coliseum. Representatives from several agencies worked under the direction of the Coroner and had organized a temporary morgue. Police had established security around the Fairgrounds, as well as around and within the Coliseum. Red Cross staff members were compiling a master casualty list. Salvation Army officers were providing hot food. Representatives from several other agencies were assisting in the numerous activities.

The pressure for coordinating the activities of different groups seems to increase after the injured have been found and removed from a disaster site. The value placed on directly saving lives seems to preclude immediate organizational concern with many other tasks. However, once that problem is solved and a sharper division of labor emerges, the necessity for greater coordination among emergency organizations becomes more manifest. Thus, it is only in the later stages of the immediate post-disaster period that one generally finds the development of inter-organizational coordination unless planned for in advance.

CONTROL

A variety of factors proved to be of importance in the organizational response from the standpoint of control. Inter-organizational relationships did not specify a system-wide authority structure. Existing specifications were vague and overlapping. As a result, system control was absent during much of the initial response.

18. There was no overall authority at the immediate disaster scene whereby the emergency response of the numerous individuals, groups, and organizations could be controlled.

Indianapolis CD plans specified that the County CD Director would assume command of all emergency organizations in the event of a major disaster. The Coliseum explosion was not judged a major disaster by the CD Director or even the Mayor, who was in attendance at the ice show. As a result, no one assumed control of the overall response until the Indianapolis Chief of Police attempted to do so when he arrived.[23] By then, about an hour after the explosion, much congestion had already resulted. Emergency organizations undertaking duplicative functions somewhat complicated his efforts to control the situation. However, the Police Chief established a central command post and with control localized, procedures were set up for victim identification, press releases, and so forth.

Most local officials interviewed, perceived their organizational efforts as fairly well coordinated. Some felt no overall authority was necessary or desirable. However, had such control existed, the output of the emergency social system would have been greatly increased. Much duplication of effort, traffic congestion, delay in victim identification, and general confusion could have been minimized.

It should be recognized that control at the community system level acts as a constraint upon the separate emergency organizations. Such control necessarily somewhat restricts organizational

[23] This phenomenon has been previously reported by others, e.g., see Irving L. Rosow, *Authority in Natural Disaster* (Columbus, Ohio: The Ohio State University College of Administrative Science, forthcoming).

autonomy. This is viewed by some officials as undesirable. While this problem is not peculiar to disaster situations, the issue becomes more salient under emergency conditions. The matter is not one affording simple solutions since it involves basic value positions about organizational responsibilities and rights.

19. Although no control problems resulted, laws specifying authority relationships and organizational responsibilities were somewhat inconsistent, ambiguous, and overlapping.

Fire Department officials legally are in command in the event of a fire in the Indianapolis community. The Coliseum disaster, however, occured on State property and, therefore, the Indiana State Police were theoretically in charge. Local law, on the other hand, specifies that the County Coroner is the absolute authority in a disaster where there is a death. Thus, there were three different legal definitions about which organization had control of the disaster. Fortunately, the inconsistencies were informally handled by organizational officials and did not create any major problems.

As also prescribed by Indiana law, Civil Defense responsibility included both man-made and natural disasters, but CD activities greatly overlapped with those of the Red Cross. While the directors of both organizations attempted to minimize problems, prior informal and vague agreements created some difficulties. At the time of the disaster, the County CD Director decided that all welfare inquiries would be handled at the command post in the Administration Building. He encountered a problem when he telephoned the Executive Director of the Red Cross and requested that its casualty lists be sent to the command post. The Red Cross Director had already decided that his organization would handle all welfare inquiries at the Chapter House. This issue was settled quickly, but, due to the lack of specificity in the official relationships between the organizations, could have led to serious complications if different individuals had occupied these positions. Other organizations, particularly the Coroner's Office, also had unclear legal responsibilities.

While emergency organizations were able to function satisfactorily under normal conditions with existing relationships, the disaster created a new set of circumstances for which new relationships

had to be innovated. Such a change in authority relationship is often a difficult task under non-disaster conditions and is greatly aggravated when there is a sense of urgency attached to the change. Indianapolis officials did an excellent job resolving ambiguities, legal or otherwise, and quickly established new patterns fitting the disaster situation.

As the example above shows, maintenance of control over a disaster does not require that all legal norms be clear-cut or that all official responsibilities be evident. Nevertheless, informal understandings and agreements between organizational officials cannot always be depended upon to nullify inconsistencies or clarify ambiguities. Certainly effective control is facilitated when laws governing organizations are clear and responsibilities specific. If the opposite exists, the potential for trouble in inter-organizational coordination, as well as general control, is considerable.

20. Uniforms served as signs of authority.

Fire, police, and Salvation Army personnel indicated that their uniforms were of value in the disaster situation. The readily identifiable clothing served to legitimize the presence and behavior of organizational officials on the scene. Also, various agencies reported that lack of noticeable identification for the County Coroner and his deputies was somewhat of a problem. For example, when police security was established within the Coliseum, officers were not sure who was to be allowed to remain without specifically questioning each person not in uniform.

Lack of uniform or visual identification also had certain latent effects. For instance, the CD communications officer, who was very active at the Coliseum, was not perceived as being associated with his organization by officials from the Red Cross or the Indianapolis Fire Department. When specifically questioned about this individual, the consistent answer received was that he was an individual who attended nearly all local disasters (e.g., small fires) as a hobby! Furthermore, he was personally highly regarded by many individuals in other emergency organizations. However, all of these officials were insistent that he was not affiliated with any emergency organizations. Thus, the local CD unit did not receive credit from

other organizations for the activities of this individual despite the fact he had been associated with the group for at least 12 years.

The importance of uniforms as indicators of legitimate authority has been noted in many disasters.[24] Organizational control is certainly facilitated by such clothing. In fact, if not originally present, there is a tendency for such signs of authority to emerge by way of temporary insignia or makeshift armbands.

Organizational control is an important factor in understanding post-disaster behavior. As is apparent from the above discussion, the process has many aspects and much more detailed analysis is required, especially of the informal mechanisms, before it will be understood. If the Indianapolis example is at all typical, it is clear that informal structures play a crucial part in post-disaster response. However, efforts to formalize agreements and make organizational assignments more explicit may result in the development of mechanisms which could increase the output of the emergency social system. Development of such social structures is presumably the objective of disaster planning. This topic merits more detailed discussion.

PRE-PLANNING

We have continually emphasized in this report the theme that post-disaster behavior is not random or purposeless; that it is a product of a complex normative structure which emerges, although perhaps in an "under developed" fashion, for disaster situations. Norms specifying disaster roles for individuals frequently are limited to specification of a general end. Similarly, organizational responsibilities and inter-organizational relationships for disaster situations often tend to be only vaguely specified. Establishment of a more complete organizational normative system to guide behavior in disaster has been repeatedly emphasized as an effective means to increase the output of the emergency social system.[25] Incomplete normative systems necessarily result in coping behavior, as individuals and organizations seek to identify expectations held for them. New relation-

[24] Eli S. Marks, Charles E. Fritz *et al.*, "Human Reactions in Disaster Situations," (Chicago: National Opinion Research Center, 1954), (typewritten).

[25] See for example, Form and Nosow, *op. cit.*, pp. 235-238. Another discussion is in James D. Thompson and Robert W. Hawkes, "Disaster, Community Organization, and Administrative Process," pp. 268-304 in *Man and Society in Disaster, op. cit.*

ships, both intra- and inter-organizational in scope, must be constructed. These actions, while necessary, reduce the output of the emergency social system. To the extent that prior planning provides a normative system applicable to the conditions created by the disaster, it reduces coping behavior and thereby increases the output of the emergency social system. Time and resources are not expended in structuring activity but are directed at the immediate tasks.

Indianapolis officials obviously had an image of the end they were seeking. They wanted to repair as quickly as possible the damage done to the community and to restore the system to a "normal" state. However, few normative prescriptions existed to obtain that end other than the general notion that organizational officials were to cooperate with one another.

21. There is a marked difference in organization planning for day-to-day emergencies and planning for post-disaster community responses.

Many Indianapolis officials expressed the opinion that emergency organizations were confronted daily with "miniature disasters"; therefore, separate procedures for community disaster situations were unnecessary. While popular, this viewpoint is extremely narrow and fails to recognize certain qualitative differences between the two situations. Certain similarities do exist between an automobile accident or an apartment house fire in which half a dozen persons may be killed, and a large-scale community disaster. However, such similarities are extremely limited in number and kind. Response to community disaster is necessarily at the community level. A larger system comes into play than when only a small group or unit is involved. Thus, emergency organizations must work closely together to meet the requirements of the larger community system, which may be in addition to, or at times even at variance with normal organizational responsibilities for small-scale events.

Unless explicitly planned for, vital requirements of the system may be neglected at the expense of high priority organizational needs. Thus, Indianapolis fire and police officers elected to focus

heavily on intra-organizational mobilization while generally ignoring inter-organizational mobilization. Inter-organizational communication, especially with local hospitals, was delayed. An inter-organizational command post, the first step in system coordination, was not even initiated until nearly an hour after the explosion.

Illustrations need not remain so abstract, however. Some victims were reported to have been angered when they were told by the District Fire Chief that they or their relatives would have to remain under a large slab of concrete until a mobile crane or high-speed cutting torches arrived. The general reaction was, "Why didn't you bring it with you?" Rescue efforts undoubtedly would have been much more effective if a crane had been taken directly to the scene. However, it would be nonsense to suggest that a crane should be taken on every fire run! What is needed is a set of procedures whereby this or that piece of seldom-used equipment can be quickly obtained, i.e., a special set of procedures to guide behavior in uncommon situations. In essence, community disasters, which require resources from throughout the community, necessitate planning different from that required for small, highly localized emergencies.

22. Inter-organizational disaster plans were incomplete, unclear, and not widely known or rehearsed.

Rather vague plans, dealing with a very large disaster such as a nuclear attack, had been formulated by the County Civil Defense Director. Plans of this nature could have been modified to fit a smaller scale disaster. In fact, taking into account the legal responsibilities of the Indiana CD (e.g., responsibility for both man-made and natural disasters), this kind of preparation would have been more logically anticipated here than in other states where CD does not have so broad a legal responsibility. This was not the case; plans for peacetime disasters had not been fully formulated.

There appeared to be little knowledge of the resources potentially available from other organizations. Fire and police departments had attempted to compile lists of emergency equipment; it was obvious, however, that key organizational personnel on the night

of the disaster were unclear where they could find certain items and material. CD did have an extensive inventory of equipment, but neither fire nor police dispatchers appeared to be aware of this resource. Except in one case police or fire personnel did not refer requests for special heavy equipment to CD although officials of the organization had telephoned both Fire and Police Headquarters to announce that the CD office was open.

Aspects of plans relating various organizations to one another were apparently not known to lower level personnel such as dispatchers. However, inter-organizational activity in disaster is not limited to the upper levels of the organizational hierarchy. The CD Director indicated, for example, that his organization's plan called for police cars to be sent to all hospitals. The police dispatcher and intermediate command officers were apparently unaware of this plan for creating a radio communication network between different organizations.

At one time, Indianapolis hospitals had planned a joint rehearsal of their disaster plan in conjunction with CD. An explosion at a local school was going to be simulated with the children acting as victims being transported to hospitals. The school board raised the question of liability for the students while they were in transit. Neither the school board, the hospitals, nor Civil Defense would assume such liability. Consequently, the joint rehearsal was not held; no exercises of this kind have since been attempted.

To prevent recurrence of several of the difficulties experienced in the community response, the CD Director indicated that he planned to initiate a series of "disaster classes" for personnel in local emergency organizations. He intended to clarify the specific roles of each organization in a disaster and to emphasize the potential usefulness of each organization for the others, e.g., the availability of the CD equipment inventory to any group. He also planned to stress the importance of such procedures as the setting up of a central command post, communications with hospitals, establishment of an ambulance route, sorting of victims, prevention of traffic "bottlenecks," etc.

The intention expressed above is not atypical in a post-disaster period. However, even if the "classes" were conducted, their use-

fulness would be somewhat limited. It is clear that "paper plans" unrehearsed by organizational personnel are of little value in guiding post-disaster behavior. While inter-organizational plans should be complete, clear, and widely known, they lack the most crucial ingredient if they are not actually exercised.

23. Hospital administrators and related medical personnel expressed a need for medical planning sessions for large-scale disasters.

One of the aftermaths of the Coliseum explosion was the stimulation of interest among hospital personnel for disaster planning. Many felt the need for an exchange of information. Numerous questions were generated for which administrators as well as physicians sought guidelines.

Determination of treatment priority is a good example. When faced with many critically injured patients, which ones should be treated first? Should one doctor restrict himself to a single patient when others, not quite as seriously injured, are waiting? Similarly, there are many questions with respect to the use of drugs. When there is the possibility of a drug shortage, should any be used on victims whose chances for survival are low? Although these are difficult dilemmas, they could easily arise in an extensive disaster.

Another very important concern expressed by hospital personnel was the question as to where treatment should occur. Upon hearing of the disaster, many doctors and nurses went directly to the Coliseum. Some were specifically directed to go there by Red Cross personnel, police officials, and other organizational personnel. One hospital administrator later expressed concern about such behavior. He felt that it was usually better to treat victims at hospitals rather than at any disaster scene. This administrator stated that if a patient was so badly injured that he was going to die within a few minutes anyway, the presence of a doctor was unnecessary. Similarly, the Coroner also indicated that the place for medication is at the hospital, and not at the disaster site. He felt doctors trying to give first aid at the scene would unnecessarily delay the entire rescue operation. Many felt that the major medical

function to be performed at the scene was that of triage and establishing departure priorities, rather than immediate treatment.

At Indianapolis, as also has been documented in other post-disaster situations,[26] there was a feeling among hospital personnel that planning was needed to evolve a clearer set of norms to specify more adequately the emergency functioning of the medical community. It was thought that this could partly be brought about by planning sessions. While such meetings undoubtedly would have some value, as indicated earlier, however, paper plans alone are of limited usefulness.

24. Long-standing personal relationships became highly significant in the absence of specific plans which designated authority relationships and organizational responsibilities.

Personal relationships which frequently exist between members of emergency organizations must be recognized as a major variable in understanding the response of a community social system to disaster. Such relationships often stem from lengthy membership in certain groups. For example, the Executive Director of the local Red Cross Chapter had been Director for 35 years, the CD Director had been in his position for 12 years, and the Fire Chief had been Chief for 9 years but had been with the city Fire Department for a total of 35 years. Such longevity of service in the organization was also a characteristic of upper echelon officials within the Indianapolis Police Department. A consequence of this was that such officials were likely to have developed personal relationships with one another, which would have some effect on how they performed their organizational roles.

Among the many examples that might be cited, the following illustrates the point. The Executive Director of the local Red Cross Chapter had a friend in an executive position at the telephone company whom he called when additional telephones were needed; he also telephoned a friend at Fort Thompson when "lower echelon" hospital officials refused to give Red Cross nurses a casualty

[26] See Harry B. Williams and Jeannette F. Rayner, "Emergency Medical Services in Disaster," *op. cit.*; and Harry E. Moore, *And the Winds Blew* (Austin: University of Texas, 1964), pp. 117-142.

list. Thus, personal friendships were often used as a means to cut through bureaucratic "red tape."

It should be noted, however, that while of great value in an emergency situation, first-name relationships of this kind may serve to impede disaster planning. The need for formal emergency plans linking organizational personnel interacting on a first-name basis is often not apparent until after a disaster has been experienced, if even then. As said earlier, cooperation does not necessarily result in coordination. To the degree that friendships inhibit the development of more specific inter-organizational disaster plans, such relations tend to be dysfunctional for the emergency social system.

25. Changes in intra-organizational disaster planning were precipitated by the explosion.

Organizations changed in different ways as a result of the disaster. A number of these changes were discussed earlier. For example, attention was called to the fact that the equipment inventory of the police was completely revised and procedure was instituted whereby it would be updated every six months.

Several local hospitals had either revised their disaster plans or had definite commitments to do so. These changes were discussed in detail in Chapter IV of this report. The revised plans aimed at more effective communication and clearer authority relationships within the hospital framework.

In some instances, probable changes would not manifest themselves unless another major disaster occurred. The Coroner, for example, implied that there would be several specific changes in the procedures his office would follow in the event of a future emergency involving a large number of casualties.[27] He observed that: 1) a single medical team rather than several should inspect bodies; 2) only a few individuals ought to be allowed to identify a given body; 3) identification tags should be wired directly to bodies rather than tied to clothing with strings; and 4) all per-

[27] In addition to interview data, these recommendations have appeared with several others in reports and speeches at a professional meeting prepared by the Marion County Coroner, e.g., at the Fifteenth National Conference on Disaster Medical Care in Chicago, Illinois, November 7-8, 1964.

sonal possessions of victims should be left at the scene of the temporary morgue in order to facilitate identification of bodies.

Of course several changes in the emergency plans of the Red Cross, hospitals, and CD were precipitated by the extension of the radio-telephone system. However, DRC found in its initial trip to Indianapolis that, while most local officials felt an excellent job had been done in the disaster response, many believed that much more planning was required. This point requires further elaboration.

26. While most organizational officials expressed an interest in the development of a comprehensive disaster plan when initially interviewed after the explosion, one year later no such plan had materialized.

For a few brief hours in 1963, the various organizations involved endeavored to work together to meet a common emergency. However, the DRC team was most impressed with the degree of concern for organizational autonomy which existed one year after the explosion. Let us not be misunderstood. In only the very rarest of instances did we find even a hint of reluctance to cooperate at the time of disaster. However, just as good will does not of necessity bring about coordination, neither does undergoing a disaster necessarily prepare an organization for a future, large-scale emergency. Personal experiences, unless incorporated in codified plans and procedures, tend to decrease in value as the time of their occurrances become more distant.

Reluctance to relinquish organizational autonomy in the response to a massive disaster was manifested in many ways. For example, the Indianapolis Police, Red Cross, CD, and other agencies all felt it necessary to compile their own lists of emergency equipment. Absence of a comprehensive community disaster plan which would unify the efforts of police and fire units, CD, Red Cross, hospitals, public works, electric, gas, and telephone companies, etc. is another example.[28]

However, as said earlier, inter-organizational planning requires a certain amount of relinquishment of organizational autonomy. At

[28] As indicated in footnote 17, more than two years after the disaster some steps were being taken towards unification of city and county organizational response to large-scale emergencies. However, emphasis still appeared to be placed on equipment and physical arrangements rather than social organization.

least it does if it is to be a potentially effective plan. Such a plan must go beyond existing only on paper in the office files of a few organizational officials. Such a plan has to specify the functions to be performed by each organization, and, in turn, personnel in each organization must be informed of the part they are to play. Even before the disaster, structural mechanisms must exist to provide inter-organizational communication between all emergency organizations, so that shifts in planning can be rapidly communicated and so that decisions can be quickly implemented. That is, a community-wide emergency organizational structure must be specified, and the necessary social mechanisms be created, so that such a structure can be quickly implemented. In this way a more explicit normative system for disaster conditions can be brought into existence. Coping behavior, as an initial response, can thereby be minimized and the output of the emergency social system therefore increased.

There are many reasons why a comprehensive community disaster plan did not materialize following the Coliseum explosion. Many public officials, and apparently much of the general public a year later did not perceive the need for a plan. Also important are the attitudes of some officials who in interviews expressed a lack of confidence in the ability of other organizational officials. In a few cases these attitudes were directed not only at the representatives of certain organizations, but at entire organizations which were viewed as being as much of a problem in disaster preparation as a help. To the extent such attitudes exist, it is predictable that little progress will be made toward construction of a comprehensive disaster plan in which all local emergency organizations participate.

Contributing also to the failure of the development of a disaster plan was the marked absence of inter-organizational channels of communication. Officials in many organizations were frequently unfamiliar with the requirements, structure, and resources of other community groups. Often quite similar ideas for disaster preparation were verbalized by local officials to DRC interviewers, but organizational officials apparently did not discuss these ideas with personnel in other agencies. Financing the development and maintenance

of inter-organizational structures also posed a problem. For example, where would money for an inter-hospital radio network have originated, had the Red Cross not made its contribution?

Perhaps there is another reason for the lack of a comprehensive community disaster plan more significant than all those yet suggested. Does sufficient knowledge exist at the present time to design an actual plan? Obviously, we do have much knowledge about how community disaster plans should be organized; certainly a great deal more is known than what is currently being implemented. However, much remains to be learned. It is clear that complex organizations are, and will continue to be, the instruments through which most community functions in modern mass societies in both disaster and non-disaster situations will be fulfilled. Hence, research, basic in nature, on the behavior of simple and complex organizations in a variety of disaster settings is necessary to produce systematic knowledge about the nature and patterns of those fundamental processes which will provide a scientific basis for future disaster preparation. It is toward this end that the present study is directed. It will only be through future basic research that this end can be realized.

APPENDIX A

SOURCES OF DATA

The 12 emergency organizations which appeared to be the most involved in the disaster response were selected for study. Data on these organizations were obtained from a variety of sources. Efforts were made to contact the official head of each organization, and, depending upon the degree of cooperation expressed by these individuals, interviews were conducted with them and other high-echelon personnel. Also, many special reports completed by the various organizations were made available to the research team, such as notes on a critique meeting by key personnel at Samaritan Hospital. Much additional information was obtained from taped police and fire department logs, newspapers, radio and television reports, organizational disaster plans, public relations brochures, and annual reports. The following lists interviewees and special reports used in the present study.

INTERVIEWS

The interviews were relatively unstructured except for predefined general areas of inquiry which the DRC team felt were essential to cover. Interviews ranged in length from 30 minutes to nearly three hours, but most averaged about one hour. Interviews were conducted with the following individuals representing their respective organization.

Interviewees — 1963

1. Fire Chief ..... Indianapolis Fire Department
2. Assistant Fire Chief ..... Indianapolis Fire Department
3. District Fire Chief ..... Indianapolis Fire Department
4. Deputy Chief of Police ..... Indianapolis Police Department
5. County Civil Defense Director ..... Indianapolis and Marion County Civil Defense
6. Captain (identification expert) ..... Indiana State Police
7. Lieutenant ..... Indiana State Police

8. Executive Director ..... Indianapolis Area Chapter of the American Red Cross
9. Director of Disaster Services ..... Indianapolis Area Chapter of the American Red Cross
10. Eastern Area Field Representative for Central Indiana ..... Indianapolis Area Chapter of the American Red Cross
11. Director of Home Services ..... Indianapolis Area Chapter of the American Red Cross
12. Major (second in command of State unit) ..... The Salvation Army
13. Brigadier ..... The Salvation Army
14. Captain ..... The Salvation Army
15. County Coroner ..... Marion County Coroner's Office
16. Night and Week-end Director ..... WLW-I TV
17. Executive Director ..... Presbyterian Hospital
18. Administrator ..... Samaritan Hospital
19. Director of Medical Education ..... Samaritan Hospital
20. Nursing Supervisor (3-11 shift) ..... Samaritan Hospital
21. Resident Administrator ..... Indianapolis Hospital
22. Coordinator of Disaster Plan ..... St. Anthony Hospital
23. Administrator ..... St. Luke's Hospital
24. Administrative Assistant ..... St. Luke's Hospital
25. Executive Secretary ..... Indiana State Medical Association

Interviewees — 1964

1. Fire Chief ..... Indianapolis Fire Department
2. Dispatcher ..... Indianapolis Fire Department
3. Chief of Police ..... Indianapolis Police Department
4. Communications Captain ..... Indianapolis Police Department
5. Planning Officer ..... Indianapolis Police Department
6. County Civil Defense Director ..... Indianapolis and Marion County Civil Defense
7. Superintendent ..... Indiana State Police
8. Captain (identification expert) ..... Indiana State Police
9. Executive Director ..... Indiana Area Chapter of the American Red Cross
10. Brigadier ..... The Salvation Army
11. County Coroner ..... Marion County Coroner's Office
12. Director of Medical Education* ..... Samaritan Hospital
13. Executive Director ..... Presbyterian Hospital
14. Director of Development and Public Information* ..... Presbyterian Hospital

15. Personnel Director* ..... Indianapolis Hospital
16. Administrative Assistant ..... St. Luke's Hospital
17. Physical Therapist* ..... St. Anthony Hospital

* Were either charged with disaster plan or had worked on it.

SPECIAL REPORTS

The following documents and articles directly pertaining to the disaster and listed according to apparent date of issuance were also used in writing the present monograph:

1. "Summary of Suggestions Arising from the Evaluation Session on November 4, 1963, of the October 31, 1963 Disaster," Minutes of Critique Meeting, Presbyterian Hospital.
2. "Insurance Loss at Indianapolis Waits Liability Decision," *The National Underwriter,* (November 8, 1963), pp. 1, 18.
3. "How Indianapolis Hospitals Met Blast Emergency," *Hospitals,* 37 (November 16, 1963), pp. 17-20B.
4. Draft of article appearing in *Presbyterian Hospital Beacon,* 10 (November, 1963).
5. CD Communications Staff Officer's Report, personal letter to County CD Director describing in detail the activities of the Communications Officer in response to the disaster, (1963).
6. "The Indiana State Fairgrounds Coliseum Disaster," paper prepared by Indianapolis and Marion County Civil Defense, (1963).
7. "Indiana Coliseum Disaster," report prepared by the Indianapolis Area Chapter of the American Red Cross, (1963).
8. Wilbur L. Walls, "Indianapolis Coliseum Explosion," *Quarterly of the National Fire Protection Association,* 57 (April, 1964), pp. 392-398.
9. "The Ice Capades Disaster at Indianapolis Coliseum," *The Ohio State Medical Journal,* January-February, 1965, pp. 4-6.
10. "What Happened at Indianapolis," *Summary Proceedings Fifteenth National Conference on Disaster Medical Care,* Chicago, Illinois, November 7-18, 1964, pp. 48-54.
11. "The Indianapolis Coliseum Disaster," *The Indiana State Board of Health Bulletin,* 67 (November, 1965), pp. 10-14.

APPENDIX B

DETERMINATION OF THE PHYSICAL CAUSE OF THE EXPLOSION

Investigations into the physical cause of the blast began as soon as the injured were removed from the Coliseum. The gas tanks found at the scene were immediately taken to Indianapolis Fire Department Headquarters. Within a day investigations were begun by eight different State, City, and County agencies: the Indianapolis Fire and Police Departments, the Sheriff's Office, the State Administrative Building Council, State Police, the Fire Marshal, the Coroner, and the company insuring the State Fair Board and the Indiana Coliseum Corporation. Several LP gas experts arrived in Indianapolis to assist in the investigation.

In the late afternoon of Saturday, November 2, the Chief Investigator for the Fire Marshal's Office stated that the disturbance of "important evidence" at the scene of the explosion might prevent investigators from learning the exact cause of the blast; the evidence included a shut-off valve, rubber and copper tubing, and other parts and fragments of parts which were taken from the blast crater by men who said they represented an Indianapolis law firm. These men, after spending nearly an hour going through debris, were ejected from the Coliseum by State Police who then tightened security. Although the articles (apparently connected with the propane gas tanks causing the explosion) were not removed from the Coliseum, the Fire Marshal's investigator felt that nothing should be moved except by "competent, official investigators." The Fire Marshal then ordered that all "private interests" be refused admittance.

The question was then raised whether the liquid petroleum gas industry should be allowed to have its own experts involved in the disaster inquiry. The Fire Marshal permitted two representatives of the National Liquid Petroleum Gas Association and an employee of the local LP firm which supplied the tanks found in the rubble

to join the team of experts assisting him in the study of LP gas as a factor in the explosion.

The Fire Marshal decided that the tanks should be analyzed by experts at Purdue University. The tanks were delivered by State Police to the University, Wednesday, November 6, 1963, where they were stored in a rocket fuel bunker. (An official of the Indianapolis Fire Department had, without consulting any of the officially responsible investigators, emptied one gas tank which reportedly began leaking before sending the tanks to Purdue.) The President of Purdue designated the Associate Dean of Engineering to direct the examination. However, since no instructions had accompanied the tanks, the investigation was delayed for a week until a letter was received from the Fire Marshal, who requested that the University supply information on exact weight and content of the tanks, note any leaks or defects found, and calculate the pressure necessary to release the safety valves.

Insurance attorneys representing the State Fair Board and the Indiana Coliseum Corporation requested that the examination of gas tanks be postponed until their own experts could join Purdue officials in conducting the test. They claimed that the tests, unless properly conducted, could change physical properties of the evidence, and, therefore an expert of their choosing should be allowed to participate in the examination. However, the Chief Investigator of the Fire Marshal's Office declared that there would be no delay for *any* private interest.

On November 18, it was announced that a report by a member of the National Fire Prevention Association received by the Fire Marshal and the Indianapolis Fire Prevention Chief placed the blame on LP bottle gas. However, no attempt was made to identify the specific source of ignition which touched off the explosive mixture. The report stated that through "a process of elimination, and supported by the physical evidence and the observation of witnesses, it is concluded that the explosion was caused by the ignition of a propane-air mixture resulting from the release of propane from one of five cylinders in the area." (*The Indianapolis Times,* November 18, 1963).

However, the following day the National Liquid Petroleum Gas Association took the position that there was "no direct evidence" which proved that bottled gas caused the explosion. The Gas Association, in a technical report distributed to members of the bottle gas industry made four points: (1) although there is no direct evidence that LP gas was the cause, the absence of other fuels which could have produced such an explosion indicates that the probable cause was LP gas; (2) the fog reportedly sighted by witnesses could have been produced by a broken steam line or leaking liquid carbon dioxide rather than LP gas; (3) examination by authorities showed that all five containers were odorized; (4) a relatively small amount of LP gas was consumed in the fire as shown by the weights of the tanks after the fire. (*The Indianapolis Times,* November 19, 1963).

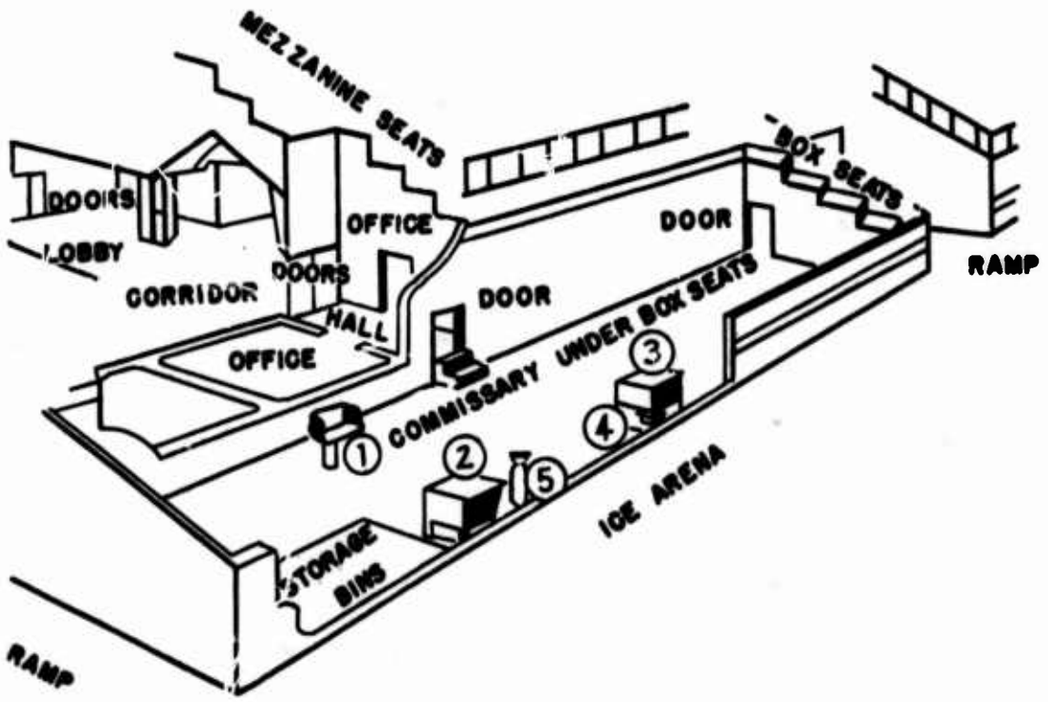
On December 4, 1963, Purdue University released their report. It supported the theory of state investigators that a propane gas tank safety valve allowed the explosive gas into the Coliseum commissary. The following reconstruction of the mechanics of the explosion was suggested: ". . . heat radiation in the tightly enclosed area where the tanks were stored swelled the liquid gas until one of the tanks was completely and dangerously full. A further rise in temperature caused the safety valve on the tank to open and discharge liquid gas into the commissary. The fatal reaction was completed when the horizontal jet of liquid gas from the safety valve upset the tank, which then spewed more gas along the floor. The liquid gas vaporized quickly and diffused until it made an explosive mixture with the air in the room. When the explosive mixture reached something hot enough for ignition (such as a cigarette butt or electric heater), the explosion occurred." (*The Indianapolis Times,* December 4, 1963). See Diagram 10 for a visual representation of the materials in the commissary just prior to the blast.

The report suggested that all five gas tanks were free of leaks (although the valve on the tank emptied at Fire Headquarters had a slight leak) and that gas in all tanks contained odorizing agents required by law to permit the presence of even small quantities to

be detected by smell. It was assumed that the events leading up to the explosion happened so quickly that no one had time to detect the odor of the gas. According to chemical analysis, the gas in the tanks was almost pure propane.

On December 7, the Fire Marshal's Office, acting on the recommendation by the Purdue officials who had tested the tanks, ordered Midwest Gas Corporation, which had delivered the gas to the Coliseum, to stop its deliveries to customers until its methods of filling tanks could be fully investigated. The Purdue report had pointed out that overfilling of the tanks could have been a

DIAGRAM 10—Coliseum Blast Site



This is an artist's conception of the approximate disposition of materials in the concession commissary at the Coliseum. According to an eyewitness, a radiant heat device (1), fired by propane gas, was used to heat prepopped popcorn in a storage bin (2). A nearby tank of propane (5) apparently became overheated and a safety valve was popped, causing the gas to flow from the valve and the tank to fall over. Another popcorn storage bin (3) was being warmed by an electric cone-type heating element (4). When the seeping gas reached the electric heater, the explosion resulted. (Tom Johnson, *Indianapolis News*, November 12, 1963).

contributing factor in the disaster and suggested that methods of filling the tanks be checked. Before the order was issued an inspection of the Midwest Gas filling plant found security and safety measures inadequate; the scales used in filling tanks were inadequate (in one case condemned) and some of the tanks unmarked, thus making it impossible to be sure of the exact weight of liquid gas put into them.

The Marion County Grand Jury released the report of its investigation on December 9, 1963. This report supported the belief of other investigators that an LP tank safety valve released gas into the commissary when its contents were swelled by the heat in the closed, unventilated area. This conclusion was also supported by an article appearing in the April, 1964, issue of the *Quarterly of the National Fire Protection Association,* in which the technical cause of the explosion was discussed. It was concluded that LP gas was the cause of the fire; however, the exact way in which the gas was released remained in doubt, as it probably would forever. Thus, it appears that LP gas was the physical cause of the explosion.

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13. ABSTRACT

This is a study of 12 community organizations heavily involved in the emergency response to the Indianapolis Coliseum explosion on October 31, 1963 when 81 persons were killed and nearly 400 injured.

A description and analysis of the structure, disaster activity, and operational problems of each of the following organizations is presented: Indianapolis Police Department, Indianapolis Fire Department, Indianapolis and Marion County Civil Defense, Indianapolis Area Chapter of the American Red Cross, Indiana State Police, Marion County Coroner's Office, Indiana Salvation Army, and five Indianapolis hospitals.

Major inter- and intra-organizational changes occurring in the year after the disaster are also discussed.

The report concludes with a more general discussion about organizational environment, mobilization, communication, coordination, control, and pre-planning as they pertain to disaster responses.

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Organizational communication						
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