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#12

CHANGES IN RESPONSE PATTERNS OF FIRE
DEPARTMENTS IN CIVIL DISTURBANCES

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This document is one of a series of publications prepared by the staff of the Disaster Research Center, The Ohio State University on sociological aspects of civil disturbances. The bulk of the Center's research deals with consensus types of community emergencies such as those generated by natural disasters. However, for purposes of analytical contrast, the Center has done research on dissensus types of community emergencies such as those generated by civil disturbances. The work reported here is part of that effort. The research for this report was done in part under Grant 5 R01 MH-15399-01 to 05 from the Center for Applied Social Problems in the National Institutes of Mental Health.
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CHAPTER I

INTRODUCTION

As Allen Barton has noted, "a collective stress occurs when many members of a social system fail to receive expected conditions of life from the system." Common examples of extreme collective stress situations are those usually associated with floods, earthquakes, bombing attacks, riots, revolutions, and mass purges. Underlying these situations and providing the parameters within which these activities occur is the community context. Work done at the Disaster Research Center (DRC) has isolated two basic community contexts: consensus and dissensus. In consensus-type extreme situations or crises, "there is general overall agreement about goals and about what should be done." Consensus crisis situations are typically exemplified in most communities during and after major disasters. Most of the research at DRC has been concerned with just such situations. However, dissensus-type extreme crises have not been neglected. These latter crises are marked by differences about goals and how these goals should be realized. Dissensus crisis situations are typically exemplified in most communities during riots or civil disorders. One major value from the DRC viewpoint in studying these latter situations is the knowledge gained in the comparison of organizational activities in the two contexts. In this report a dissensus situation, urban civil disturbance, is studied in the light of the activities and operations of one organizational component: fire departments. It is hoped that the material presented may be useful in a comparison with the activities and operations of fire departments in natural disasters.

Large fire departments are complex bureaucratic structures. There is a division of labor involving positions with clearly defined duties and responsibilities. Formal rules and regulations guide the incumbent's activities. Decisions are made on the basis of technical knowledge, not personal considerations. Permanent files are kept, with activities recorded on written documents. Relationships among position incumbents are impersonal and limited to role obligations with position incumbents being judged by proficiency standards. Positions are filled on a contractual basis using criteria of merit. The position is the incumbent's primary occupation, constitutes a career for him, and provides him with job security in the form of salaries and tenure.

The fire department as a whole has been viewed as an established crisis-relevant organization. This is an organization pre-existing before a crisis develops and empowered to carry out its regular tasks when such a situation arises. This type possesses both a community orientation or focus and emergency resources. When a crisis develops, this type of organization is notified because there is a public
expectation that the organization is both needed and relevant. Besides the fire department, the police department is also an established crisis-relevant organization. Established emergency-relevant organizations are characterized as having a pre-crisis structure and a pre-existing set of tasks.

However, some doubt may be directed to the validity of viewing the fire department as always a totally established crisis-relevant organization, especially in extreme emergencies. There are many levels and hierarchies within the typical, large, complex fire department. The response of each level or hierarchy may not be the same to a crisis situation. While some levels may indeed retain their established structure and their established tasks, other levels may be forced by the exigencies of the situation to modify their structure and/or tasks. It is the position of this report that the latter is what actually occurs in the fire department as it responds to a crisis situation. Certain levels or sections engage in new tasks; others emerge with a new structure; still others assume both a new structure and new tasks. Due to its bureaucratic form, the response of the fire department to a crisis situation is not organizationally unitary, but pluralistic. This view is elaborated in the report that follows.

The model that the report uses is a stress model. The major assumption is that an organization routinely exists with a dynamic equilibrium between two key variables: demands and capabilities. Normally, the two are relatively closely matched and there is little or no stress. In a number of situations, however, there may be a change in either the demands placed upon the organization and/or the capabilities of the organization, and/or a combination of the two. Crisis situations, both consensus and dissensus, are the key stress-producing situations for emergency-relevant organizations. This report will have as its strict focus the response of the fire department to the stress placed upon it by one particular type of crisis situation, the dissensus situation exemplified during civil disorders or civil disturbances.

The data for this report were gathered by DRC teams over a period of weeks in six cities that were struck by civil disturbances. All six are major metropolitan areas in the United States. Taped interviews were conducted with all the top echelon officers in the fire department and very extensive numbers of lower-level officers and men. The interview schedule followed a prescribed ordering but allowed room for additions in its open-ended questions. Each interview lasted approximately ninety minutes to two hours. The total number of interviews was over two hundred; in addition, much documentary data was obtained including after-action reports, departmental emergency plans, organizational logs, and similar material. All respondents were assured of complete anonymity and thus no names or distinguishing
characteristics of either individuals, departments, or cities are included in this report; where it was required, the data were masked to fit this requirement.

Chapter II presents in some detail background information concerning fire departments in general; this is to acquaint the reader with fire departments and give him a perspective on what will be discussed in the remainder of the report. Chapter III focuses upon the everyday activities of the fire department and looks at four specific fire department sections and their tasks. Chapter IV outlines two types of civil disturbance stress situations and discusses the response of the six departments to this stress in terms of the four sections noted in Chapter III. However, a synthesis of organizational responses is presented rather than six case studies as such. The last chapter, Chapter V, presents a summary and the conclusions of this report.
NOTES: CHAPTER I


5. See the discussion of the Los Angeles Fire Department in Chapter I of George Warheit and E. L. Quarantelli, An Analysis of the Los Angeles Fire Department During Watts (Columbus: The Disaster Research Center, The Ohio State University, Monograph No. 7, 1969).

6. See the stress model developed in Warheit and Quarantelli, Los Angeles Fire Department, pp. 9-11.
CHAPTER II

THE FIRE DEPARTMENT: BACKGROUND

It is the purpose of this chapter to acquaint the reader with the subject of this report: the fire department. This chapter serves as a descriptive introduction in which selected aspects of the fire department are presented. Three areas in particular are highlighted: the history of fire departments in the United States; the authority structure and the concomitant standardized roles of a fire department; and fire department equipment and apparatus. With this background information, the reader may better understand a typical metropolitan fire department. This will help to place in clearer perspective the structure and functions of the fire department during normal, everyday activities (Chapter III) and the fire department during times of civil disturbance stress (Chapter IV).

History

Fire departments in the United States have a long and very interesting history, dating back to the earliest colonial days. Fire was always a major threat to any settlement dweller in early America due to construction of buildings from combustible wood. Cooking and heating were done in open fireplaces connected to poorly constructed and frequently blocked chimneys. Also, lighting was provided by candles or oil-burning lamps that often were overturned.

The first organized effort to systematically combat the dangers of fire occurred in 1647 when Peter Stuyvestant, the governor of New Amsterdam, decreed that householders must maintain clean and unobstructed chimneys and also keep buckets and fire ladders close by. To make sure that these regulations were being observed, Stuyvestant appointed fire masters to inspect chimneys. These masters fought no fires, though; they were solely for fire prevention.

In 1653 and again in 1676 there were a number of major fires in Boston, Massachusetts. So in 1679 there was established in Boston the first paid fire department consisting of a British-made hand-operated fire engine and thirteen firemen.

The most famous of the early fire departments, and the first all-volunteer department, was the Union Fire Company, organized by Benjamin Franklin in Philadelphia in 1736. The Union Fire Company made a number of major organizational innovations that proved quite effective in fighting fires and that were copied by other fledgling
departments throughout the colonies. For example, the bucket brigade was replaced by a hierarchic company system; in addition, training became mandatory for all firemen; finally, fixed posts at fires replaced the disorganized shuffling of men that was so prevalent at previous fires.

Until 1840, hand-operated pumps supplied the water that was used to suppress the fires. Large tubs were filled by buckets from the nearest water supply and the hand-operated pump supplied the suction to produce a stream of water. The early pumps could not build up too great a volume of pressure though, and the early hoses were very rigid and easily broken. In 1840, the first steam-operated pumper was inaugurated into service in New York City. British-built, the pumper (affectionately called the "Exterminator" by the local firemen) was a great improvement over all the hand puffers. This particular engine proved too heavy to be moved quickly, however, and too cumbersome to maneuver at the scene of a fire to be of much substantive help and was discarded. In 1852, "Old Joe Ross," the first American designed steam pumper, was introduced in Cincinnati, Ohio. This model was such an unqualified success that it soon spread to the other major fire departments in the country. One change related to the introduction of the steam engines was that horses were used instead of men to pull the pump to the scene of the fire.

In 1844, Samuel Morse invented the telegraph and in 1845 the first telegraph fire alarm system was developed. A number of minor problems prevented the system from working adequately and it was not until 1852 that the first telegraph fire alarm system became operational in Boston. In 1870 the first aerial ladder was invented and immediately put into service. The great Chicago fire occurred the next year which in turn was followed by a major conflagration in Boston in 1872. A change that resulted, in addition to new fire-fighting equipment such as the aerial hose tower, was the adoption of a quasi-military organizational structure. Adopted first in Boston, the military structure soon became nationwide. A few years later, the first high pressure water system was installed in Rochester, N. Y. This system used separate mains and hydrants that were expressly constructed for the fire department. Using this system, water could be taken directly from a hydrant with great-enough pressure that a pumper was not needed. Philadelphia and New York followed with similar systems.

With the coming of the twentieth century has come the "modern" improvements that have made the fire department what it is today. The horse drawn steam pumper has been replaced by the gasoline engine; synthetic hoses have replaced their bulky and brittle forerunners; flexible and versatile nozzles have replaced the earlier immobile nozzles; and radio, telephones, and walkie-talkies have replaced long distance runners and the telegraph.
Today there are over 160,000 fully-paid professional firemen in the United States working in about 1,000 fire departments. In addition, there are over one million part-time and volunteer firemen in 15,000 other fire departments throughout the country.²

**Standard Roles**

As has been mentioned, the municipal fire department is structured along quasi-military lines. Like the military, there is a formal chain of command that is explicitly demarcated (see Figure 1). Orders flow from the top down; each subordinate takes commands from those directly above him and gives orders to those directly below him. Maximum clarity and minimum inefficiency are fostered in this way.

**Fire Chief**

The fire chief³ has charge of overall fire prevention and firefighting activities and plans. He also coordinates and directs the activities of the Fire Bureau and does other related work as required.

**Distinguishing Features of the Role**

This is administrative firemanic work involving responsibility for planning and coordinating the activities, condition, and efficiency of all firefighting units of the city. The work is performed under administrative direction in accordance with established policies and objectives permitting considerable exercise of independent judgment in directing the activities of the Fire Bureau. The work is reviewed through conferences and reports.

**Examples of Work**

Reports to and assumes command at all major fires and extraordinary emergencies; plans, coordinates, and directs the overall activities of all firefighting and fire prevention duties; supervises the investigation and determination of causes of fires; reviews reports and makes inspections to determine the condition and efficiency of all firefighting units; directs the preparation and maintenance of personnel and activities records and reports; supervises the preparation of budget estimates and the maintenance of budget control; attends meetings and conferences and addresses interested groups regarding fire prevention and firefighting activities.
The assistant fire chief has the responsibility to oversee the activities of all firefighting units within an assigned division or district and does related work as required.
Distinguishing Features of the Role

This is supervisory firemanic work involving responsibility for coordinating and directing the overall activities, condition, and efficiency of all firefighting units within an assigned division or district. The work is performed in accordance with established policies and requires the exercise of good judgment in emergencies. A high degree of responsibility for the protection of lives and property is involved.

Examples of Work

Responds to all fires within an assigned division or district and assumes command of the overall firefighting activities; investigates and, if possible, determines the causes of fires and submits detailed reports; immediately notifies the chief regarding all major fires and unusual happenings involving loss of life, injuries to persons and damage to property resulting from accidents at scenes of fires and in responding to alarms; supervises the inspection of buildings within an assigned division or district and insures compliance with fire prevention regulations; makes periodic visits and inspects company journals, records, apparatus, hose, tools, uniforms, and other equipment to insure proper conditions; assists in the overall administration of the bureau; directs the training of subordinates.

Battalion Chief

The battalion chief has charge of the activities of all firefighting companies in a fire area and does other related work as required.

Distinguishing Features of the Role

This is supervisory work overseeing the proper maintenance of fire houses and equipment of all the fire companies within the area. The battalion chief responds to all fires within his area and commands all companies until relieved by a superior officer.

Examples of Work

Responds to fire alarms within his area; relieves fire captains of command upon arrival at a fire and directs all firefighting and life saving activities until relieved by a superior officer; determines and directs the proper deployment of his companies at the scene of the fire; periodically visits each company within the area to inspect personnel, equipment, apparatus, quarters, and records; supervises the training and drilling of firefighting personnel.

Fire Captain

The fire captain is responsible for an assigned fire company under his command and does other related work as required.
Distinguishing Features of the Role

This is supervisory firemanic work involving responsibility for directing the activities of a single fire company.

Examples of Work

Supervises overall firefighting activities at scene of fire; checks to insure that men are properly assigned to lay out and connect hose lines and nozzles; direct hose streams; directs the ventilation of buildings; directs salvage operations during and immediately following a fire; inspects property at scene of fire to prevent reignition; directs custodial and maintenance activities at the station; inspects buildings for fire hazards; makes reports of personnel and activities; trains and drills subordinates.

Fire Lieutenant

The fire lieutenant supervises the activities of a small group of firemen and does other related work as required.

Distinguishing Features of the Role

This is supervisory work overseeing the activities of firemen at the scene of fires and in the station. The work is performed under the direct supervision of a superior officer. A lieutenant has complete charge of operations at the scene of a fire in the absence of or pending the arrival of a superior officer.

Examples of Work

Assigns men to lay out and connect hose lines and nozzles, turn water on and off, and raise ladders and ventilate buildings; responds to all alarms assigned to his company while on duty; inspects property at scene of fire to prevent reignition; supervises the cleaning, checking, and replacement of tools and equipment after a fire; inspects buildings and premises for fire hazards; makes reports of personnel and activities; trains and drills firemen.

Fireman

The fireman performs the basic fire prevention and firefighting duties.

Distinguishing Features of the Role

This is standardized manual work of a hazardous nature involving fighting fires and salvage work and rescue work under the immediate
supervision of superior officers. Routine maintenance and custodial work on station and equipment is performed under general supervision and inspected upon completion.

Examples of Work

Responds to fire alarms and emergency calls with the fire company; lays and connects hose lines and nozzles and turns water on and off; holds fire hose and directs stream; operates a pressure pump; climbs ladders and enters buildings when necessary; makes openings in burning buildings for ventilation and entrance; removes persons from burning buildings; performs salvage operations at scenes of fires; drives and operates motor-driven firefighting equipment; assists in giving emergency first-aid treatment to injured persons; cleans and maintains firefighting equipment.

Equipment and Apparatus

A fire department is composed of more than just firemen; it is a working combination of man and machine. In the preceding section, the standardized roles of the men were outlined; in this last section, the different types of equipment and apparatus will be discussed. No claim is made as to the exhaustiveness of this discussion. Instead, a cursory look at the equipment of fire departments will be offered so that the reader may better grasp some of the complexities of fire fighting functions.

Equipment

The standard equipment used by fire department personnel consists of ladders, hoses, snorkels, gas masks, axes, inhalators, portable lighting, life nets, smoke-ejection devices, crowbars, cutting and wrecking tools, first-aid kits, and short-wave radios. A brief description of a few of these pieces of equipment may be helpful.

Ladders come in a variety of sizes, shapes, and strengths. A small ladder is called the pompier ladder. It is usually from sixteen to eighteen feet in length and consists of a light pole with cross rungs and a hook at one end for clamping onto window sills and building cornices. Larger manual ladders may reach a length of fifty feet or more. Aerial ladders are very large, hydraulically operated, and may take a number of men to operate. These may range from smaller aerial ladders around sixty-five to eighty-five feet long to the largest, made of reinforced steel, running around one hundred and twenty-five to one hundred and forty-five feet in length.
The snorkel is a relatively new piece of equipment in fire department use, being adopted first by the Chicago Fire Department in 1958. It is an adapted industrial gooseneck crane, consisting of two hydraulic arms attached to a truck-mounted turntable and carrying a basket designed for a small number of firemen with their hoses. Its maneuverability makes it superior to a number of aerial ladder combinations.

Hoses are a major part of fire department equipment. Hoses vary according to opening diameter and nozzle types. Diameters are usually standardized and come in a limited number of sizes: three-quarter inch, one inch booster, one and one-half inch, two and one-half inch, and in larger cities, three and one-half inch opening. Nozzles until recently delivered a solid stream of water toward the fire. Lately it had been found that water cools more efficiently if it is broken up into small, tiny droplets that expose a greater water surface to the heat. For this reason, fog nozzles and water spray nozzles are coming into greater popularity.

Apparatus

There are a number of basic pieces of apparatus common to most metropolitan fire departments. These include the pumper, ladder truck, the "quad," the aerial ladder truck, the salvage truck, and the rescue truck.

The pumper or "fire engine" is the basic and indispensable piece of firefighting apparatus. The pumper is usually equipped with centrifugal-type pumps and can pump 500, 750, 1,000, 1,250, or 1,500 gallons of water per minute, depending upon size. In addition to the pump, this truck carries a water tank, called a "booster" of several hundred gallons capacity that is used to extinguish small fires. Also, the pumper carries most of the above-mentioned equipment such as at least twenty feet of hard suction hose, two hundred feet of one inch booster hose, four hundred feet of one and one-half inch hose, and twelve hundred feet of two and one-half inch hose.

The ladder truck is a service vehicle that carries an assortment of extension and straight ground ladders of varying lengths that cannot be carried on the pumper.

The "quad" or "quadruple" is a combination pumper-ladder truck. It performs the duties of both the pumper and the ladder truck and is more versatile. It is equipped with a pump, hose, ladders, and booster tank. It is used very frequently in residential neighborhoods or other small fires.
The aerial ladder truck is essential for rescue work, being used principally to save lives by taking persons out of upper windows or from roofs of burning buildings. The ladder truck is equipped with steerable rear wheels to help in negotiating turns on city streets. The fireman who steers the rear wheels is called the tillerman.

The salvage truck carries equipment such as waterproof covers, squeegees, mops, shovels, smoke ejectors, and sawdust that is used to minimize water and smoke damage and to clean up after fires.

Finally, most metropolitan fire departments have rescue trucks. The rescue squad truck carries special equipment such as gas masks and oxygen inhalators, acetelyne torches, and life nets that may be used in a wide variety of emergency situations. In addition to fire related rescue work, the squad is usually summoned to the scene of drownings and also to care for the victims of electrical shock and smoke inhalation. Also, the rescue squad truck sometimes acts as an emergency ambulance service for other injured persons.

To summarize, this chapter has been a descriptive introduction for background purposes to three aspects of the fire department: its history, role structure, and equipment and apparatus. In the next chapter the focus will be on the structure and functions of the fire department during normal, everyday activities.
1. This section is a synthesis of material found in a number of general encyclopedic works, such as *The Encyclopedia Americana*, *Collier's Encyclopedia*, and *Encyclopedia Britannica*.


3. These role descriptions are found in a mimeographed publication of the International Association of Fire Chiefs (New York, n.d.).

CHAPTER III

THE EVERYDAY ACTIVITIES OF THE FIRE DEPARTMENT

This chapter has as its focus the normal structure and operations of the fire department. The primary objective is to portray the department in its normal day-to-day activities so that a comparison may be made with its functioning during civil disturbances. The fire department that is described is based upon selected characteristics that are taken from all six departments studied. As such, no one department is an exact replica of the model presented here; all, however, bear close resemblance to it.

As was mentioned in Chapter I, the fire department is a highly complex bureaucratic organization. Figure 2 shows some of the structural complexities that may be expected in a metropolitan fire department. This report does not examine all of the intricacies and ramifications of this bureaucratic form but restricts itself to looking at the four major sections that are crucial to the functioning of the fire department. These four sections, administration, fire prevention, fire suppression, and communications, are those which we feel capture the essence of fire department operations. Other sections of the fire department are also important, but for a comparative analysis of normal and stress situations these four sections highlight the changes most clearly.

It must also be noted that it is difficult to separate these four sections so that there is no overlap between them. In nearly every fire department, some men wear two organizational "hats" and are responsible for more than one set of activities. For example, a captain may be responsible for both administrative and fire suppression activities at different times of the work day or a lieutenant for both fire suppression and fire prevention. However, these four sections of the fire department that will be discussed should be considered as analytically separate and distinct units for purposes of discussion.

Administration

The administrative section of the fire department consists of those positions that initiate and implement departmental policies throughout the organization. These positions are those that give "direction" to the fire department. For the purposes of this monograph, the administrative section will consist of the fire chief, the assistant fire chiefs, the battalion chiefs, and other supportive headquarters staff that do not work on a shift basis. Functions included are the administration of staff operations, fire suppression,
training, fire prevention, public relations, fire investigation, finance, research, personnel, communications, water bureau, and service bureaus.

One very important aspect of the administrative section is the almost total reliance upon the hierarchy structure. There are clear-cut, explicit channels through which one must go for information and the like. Closely related to this is the "move-up" policy. That is, if the chief is out of the city attending a conference, a designated assistant chief would "move up" to fill the chief's position. The assistant chief would be the acting fire chief and assume the duties of the chief. Similarly a battalion chief would move up into the assistant chief's position in an acting capacity. In this manner, there is always an individual occupying the administrative positions and carrying out the department's functions. In normal operations the authority structure is always intact.

The administrative personnel do not work on a shift basis. They put in eight hour days five days a week on an overlapping basis so that each day will be covered by at least some personnel. In the evenings and at night, also, the assistant and battalion chiefs take turns being on call for emergencies and extra-alarm fires. The chief is always on call during the evening and night hours.

Communication is very extensive, both within the administrative section and between it and other fire department sections, other emergency organizations, and supportive and secondary organizations. Within the administrative section, officials keep in close written and verbal contact in order to insure adequate diffusion of information. The process has been institutionalized in the form of weekly staff meetings in which each chief officer presents the activities of his section for discussion. There is also very extensive communication between the administrators and other fire department sections. The chiefs always carry on their person a portable buzzer system by which they may be paged when they are not near a telephone. Also, the chiefs' cars are equipped with two-way radios or telephones so that they are never out of contact when travelling within the city. This communication is quite frequent since any serious fires that develop are automatically reported to the battalion chiefs; if the fires develop further, the assistant chiefs and the fire chief are notified as a matter of routine. The administrative section communicates frequently with other emergency organizations and with secondary and supportive organizations. The administrators act as the interorganizational liaisons with the police department, the public works department, the utility companies, and the mass media organizations. The fire and police departments are in steady contact for a number of information exchange activities. Intelligence is routinely exchanged between the departments concerning situations that may be relevant to both, such that police must be notified of fire activities so that personnel may be sent to direct traffic and handle
crowd control. Public works departments are advised of serious fires that may cause drains on the water-sewage system and to take care of flooding resulting from water overflow. The electric company and the gas company are notified of fires since the electric power lines may be down and need to be turned off and gas mains shut off to guard against explosions. Finally, the administrative section is in frequent contact with numerous mass media outlets. Newspapers and radio and television stations are kept in touch about fire developments that are serious or that may become serious. This has a two-fold purpose: the public is warned of danger areas or situations so that they may be apprised of fire hazards and stay in safety; and the mass media play a vital role in fire department public relations. This last point is worth a closer look.

The administration section has as an important function the establishment and maintenance of good public relations. Each department has a captain or battalion chief whose specific job is that of public relations representative. This person issues reports to the mass media groups about fire activities, personnel awards, equipment purchases, and other matters that may be of interest to the general public. But public relations is not limited to this nominal public relations head. Each administrative officer is aware that he must "represent" the fire department in its activities with the public so he takes special care to keep informed of all occurrences that may affect it. If any firemen attract news coverage because of a fire-related or non fire-related incident, the information is quickly passed up the chain of command to the administrative section so that the officers may have the requisite knowledge with which to answer questions. Or if a fire-related development occurs in another city, such as an explosion and fire in a downtown department store, the chief officers must keep informed of this to answer questions concerning fire department procedure if that situation were to happen in their own city. Fire administrators know that their organization is highly visible to the public since it is a part of the local government and also because it is involved in dramatic attention-getting fire activities. For these reasons, the administrators are very conscious about the department's public image and try to maintain excellent relations with the mass media outlets which are the principal disseminators of information in the metropolitan area. Also, the administrators spend a great deal of time talking to clubs and other organizations about fire activities, all to maintain a good image of the fire department before the public.

It is a task of the administrative section to formulate guidelines for departmental activities during disasters and civil disturbances. These guidelines take the form of detailed written plans that outline what action each sub-unit takes when responding to these two forms of stress situations. Fire department response is limited basically to fire suppression and search-and-rescue operations.
To summarize the overall tasks of the administrative section, it may be noted that the administrators' hallmark is the hierarchical chain of command. Also relevant are the duties of establishing and maintaining good public relations and the desire to be well-informed on all matters pertaining to any facet of fire department operations.

**Fire Prevention**

Contrary to popular opinion, not fire suppression but fire prevention is the main function of the fire department. As one assistant chief remarked succinctly, "The emergency function of the department is the extinguishment of fires. The normal function of the fire department is the prevention of fire and the educating of the public along the lines of fire safety."

There are two ways in which the fire prevention section may be integrated into the fire department. Both were present in the cities studied for this report. The most common structure is for the fire prevention section to comprise a separate bureau within the department. This fire prevention bureau has its own assistant chief or fire marshall, other officers, and men whose full-time job is the inspection for and correction of fire hazards. These inspectors do not fight fires at all but become specialized solely in the fire prevention effort. They inspect all homes and buildings within the city at least once yearly, notify hazards, write out citations, and reinspect to see if the necessary corrections have been made. If not, the inspectors are empowered to label structures as fire hazards and seek their closing and/or demolition.

The second pattern is not as common as the preceding one. In this type, the fire prevention section is composed not of specialized inspectors but of the fire department as a whole. The entire fire department comprises the fire prevention bureau; every man in every company is a fire inspector. For a number of hours during the day, the men take apparatus out into the streets. When they reach the area to be inspected, the firemen spread out and inspect each dwelling. One fireman always remains at the apparatus so that the group will be in constant radio contact with headquarters at all times. During the period of block inspecting, the apparatus is categorized as "out-of-station-in-service," and the men may be subject to recall for firefighting duties at any time. When the firemen as a group do not go block inspecting, usually one or two men in every company go out and spend the entire day inspecting buildings for hazards. This job is rotated among the men so that each fireman spends some time as an inspector in addition to his duties as a firefighter.

A number of fire departments inspect buildings according to what is called the target system. During an inspection, each individual
hazard is catalogued according to the degree of the hazard and the nature of the occupancy. The hazard is then ticketed and placed in a time slot of six months, four months, two months, one month, two weeks, one week, or twice weekly. The inspector returns at the end of that time interval and checks to see if the hazard has been alleviated. If the hazard has been corrected, the building is placed in a higher time category; if the hazard has not been corrected, the building is placed in a lower category to be inspected again. For example, a clean rag shop with orderly housekeeping conditions would be in the four month category. A dirty, messy rag shop would be in the weekly or twice weekly category. If the latter were cleaned up sufficiently at the next inspection, the inspection frequency would be decreased and the shop would be placed in the four month category. If the dirty and potentially dangerous rag shop were not cleaned up, the inspectors would return more frequently for more warnings and then would begin issuance of citations.

A distinct advantage of the second type of fire prevention structure, that of the isomorphism between inspectors and firefighters, is that when a fire occurs in a building, the firemen who are battling the blaze are very familiar with the building due to their inspecting. The firemen know where the stairs are, where the stock is, the nature of the stock, where the elevators are, where the doors are, where the hazards are, and how many people are usually in the building. In other words, the firemen are familiar with the interior of the building and this is a boon to firefighting. In the short run, it helps save time in battling a blaze and in the long run it helps save both civilian and firefighter lives.

Most inspections occur on a year-round basis, interrupted only by holidays, nightfall, and particularly hazardous weather conditions. Summer and spring are the most frequent inspection periods, followed by fall and winter. Firemen go out inspecting each day of the week, except Sunday and holidays. The usual hours in which inspecting is conducted are 9:15 a.m. to 3:50 p.m. There is no model length of inspection period, varying "long enough to get the job done." The usual inspection team per standard-size dwelling consists of two men.

The types of situations inspected for hazards vary immensely. The following is a sample list of fire inspection situations: proper installation and maintenance of exits, exit doors, fire escapes, and elimination of obstructions; outdoor rubbish burners and incinerators for proper type maintenance of spark arrestors and exposure hazard; dry weeds, grass, and rubbish in vacant lots and exposed buildings; flammable liquids for proper amounts, location, and containers; proper limitations on storage of quick-burning combustibles such as lumber, boxes, paper, packing material, hay and straw; fire doors in proper repair and working order, not obstructed; chemicals identified as to hazard and observance of proper safeguards; safe installation and maintenance of small stoves, heaters, domestic
furnaces and boilers, including oil and gas-burning equipment; industrial ovens, furnaces, and heaters, located, installed, and operated properly; areas of hazardous vapors or gases, to determine the degree of hazard and extent; proper storage methods, correction of conditions where piling is too high, or where it obstructs access for firefighting, exits, operation of fire doors, sprinklers, or other fire equipment; condition of chimneys and gas venting systems; painting operations, handling of wiping rags; fire extinguishers of proper type, hand hose and other specified fire equipment in place and in good order; valves to sprinkler systems open, sealed, and unobstructed; gravity tanks, pressure tanks, hydrants, fire pumps, and other private protection; and electrical, building, health, and other hazards to be reported to the governmental agency having jurisdiction. 3

Public relations is also very important to the fire prevention section. Periodic campaigns are waged to acquaint the community in general with the required knowledge for effective fire prevention. National Fire Prevention Week, Fire Services Day, A Safe Fourth of July, and Clean-Up, Pick-Up Week are a few of the campaigns promoted by the fire department in the interest of both fire prevention and public relations. When the inspectors go into homes to look for fire hazards, they are in direct contact with the public. Most firemen go through elaborate training procedures that acquaint them with the best possible manners in which to interact with the homeowners. Firemen are usually welcomed into homes for a variety of reasons; two of the most important are that the fireman has the knowledge to help the homeowner protect his property and life from the dangers of fire and also that the fireman is a trained specialist willing to impart his knowledge freely to the homeowner for the benefit of the homeowner.

Arson comes under the jurisdiction of the fire prevention section. The deliberate setting of fires is illegal, at times widespread, and quite destructive. Arson specifically refers to the burning by one person of another person's dwelling. Incendiarism refers to the burning by one person of his own dwelling or the business property of another person. In frequent use, however, the distinction between the two terms becomes blurred and a number of fire prevention sections use the terms interchangeably.

If a fire is classed as "suspicious," i.e., if it appears to have been kindled purposively, then an arson squad investigates the fire. The squad is usually composed of at least one fire inspector and one police inspector and is sometimes augmented by a member of the city attorney's office. The squad's function is to determine the nature of the fire's starting to see if it had been set or not. Once the fire has been classified by the fire inspectors as arson, then the police inspector finds the responsible party and the city attorney brings him to trial.
Intensive record keeping is a common job of the arson squad. The arson squad keeps cross-referenced card files of each individual fire to aid them in the investigation of suspicious fires. Checklists are also filled out listing all the relevant information about the fire, the building, the time of day, witnesses, insurance, reaction of men fighting the fire, etc.

The fire prevention section as a whole also keeps very adequate and extensive records. Every inspection entails the filling out of numerous lists of hazards found in the home or building. Usually one list is given to the occupant so that he may perform the required preventive action. A second list, usually in duplicate, is kept by the inspector. One copy is sent to the administration section for filing and the other is kept in the station house for follow-up action. Other records and their keeping vary with the individual fire departments.

In summary, it can be said that fire prevention is considered the main function of the fire department. Since the causes of most fires are known, the job is to enlighten the public through campaigns and inspections about the dangers of conditions that may cause fires. Intensive inspections and elaborate records help the fire inspectors in their duty. Good public relations is considered essential if the firemen are to succeed.

Fire Suppression

The fire suppression section is what most people consider to be the fire department. It is composed of those men that live in the station houses, ride the trucks, and man the hoses. Fire suppression is the largest section within the fire department. Typically, the fire suppression section comprises approximately 90 per cent of the fire department's manpower. Budget wise, also, fire suppression receives the lion's share of the expenditures.

The men who work in fire suppression are called firefighters. Within this category there is further differentiation. Drivers are the firemen who drive the apparatus to the scene of the blaze. They must be exceptionally familiar with streets and addresses both within their district and the city in general for it is the driver's duty to safely get the apparatus to the fire in the shortest amount of time. During studies, the driver learns street approaches in his particular community, hydrant locations, the placement of alarm boxes, and the like so that he finally comes to have an almost complete picture of the city and its streets in his head. Pumper operators are another specialized duty of firefighters. The pumper operator is responsible for the mechanisms that regulate water pressure coming from hydrants through the pumper. Different types
of fires require different water pressures as means of extinguishment; it is the operator's job to supply and regulate these different pressures. The operator must learn a number of complex engineering principles and practices in addition to knowing how to properly man the pumper controls in order to insure the correct pressure. Laddermen have the task of adequately setting up the different types of ladders against the burning building for rescue and extinguishment. Occupants who may be trapped in upper stories are taken out of the building on the ladders. Also, firemen use the ladders to go to the building's roof to ventilate, a process entailing chopping a hole in the roof in a predetermined place to allow for the escape of heat and smoke so that other firemen may go into the building and fight the blaze at a closer range. Hosemen man the hoses. They unreel the fire hoses, attach the required nozzle to them, and then advance upon the seat of the fire to extinguish it. In most instances, the hosemen must go into the building itself to fight the blaze. This necessarily adds an element of danger to the work.

The fire suppression section is the most extensive and structurally complex. It very much resembles the typical bureaucratic model. The chain of command is explicit and highly formalized. Communications flow from the top downward and pass through every position. Each occupant of every position knows his duties and what is expected of him and performs those duties. Each man is very conscientious of his position. A very important result of this is that the fire suppression section is quite rigid in the performance of its duties. Each fireman has been taught that he is a member of a team and that the team depends upon everyone doing his duty correctly. Little or no variation is allowed. The firemen recognize this and accept this. Each does the required job in the prescribed manner.

There is a very extensive interpersonal structure existing among the men in the fire suppression section, however. This is due in part to the work situation and hours encountered by this section. Unlike any other community emergency organization (police, Red Cross, etc.) the fire suppression section of the fire department actually lives during working hours in the local neighborhood. The fire houses are situated in each neighborhood so that the whole metropolitan area can be quickly covered by fire apparatus. The fire station has living quarters that accommodates the shift both day and night. The men work according to varying schedules, but a very common one is 24 hours on, 48 hours off. Being together for quite long stretches of time, the men soon develop close friendships and esprit de corps. On their days off, the men go hunting or fishing or bowling together. The wives also soon come to develop friendships. Barbecues and picnics are quite a frequent occurrence among the firemen and their families. The firemen join bowling leagues, scuba clubs, and the union. During work, the shifts keep up a game of friendly rivalry as to how many fires
they have extinguished or how fast they extinguish it. Thus, the fire suppression section may be characterized by its intensive on-duty and off-duty interpersonal structure.

The typical metropolitan fire department operates its fire suppression section on a three-shift basis. Shift A will work 24 hours while Shifts B and C are off. Then Shift B will come on duty while A and C are off. Then Shift C will work while A and B are resting. Thus, during normal operations, only about one-third of the available manpower will actually be on duty, leaving the remaining two-thirds of the section as a surplus pool to be called upon as needed in extreme emergencies.

It may be helpful at this point to inject into the discussion a sample description of a typical work day of a shift in the fire suppression section. Eight a.m. is the normal reporting time, but most of the men get to the station house before this. Some check their specific equipment or apparatus. A driver will examine his pumper to see if there is water in the booster tank, if the gasoline is full, if the battery is charged, and if the tires are properly inflated. Others look after their fire clothes. A firefighter will take his fire clothes out of his locker and put them on the pumper. At eight, three bells sound and there is the transferring of the units. One shift will retire and the other will report for duty. The incoming shift will be dressed in a uniform of white shirt, tie, uniform trousers, and hat. There is a line-up, roll call, and the officers will read announcements concerning what happened during the 48 hours that the shift was off duty, list the fire hydrants out of service or buildings in the area where the sprinkler system is inoperative, and the like. The watch schedule is also posted. The watch schedule lists the firemen who must stay in what is called the joker room. The joker room is where alarms are received from the communications section. The fireman must get the box number, the address of the fire, and which group will respond. At all times there is a fireman in the joker room.

After the line-up, the shift changes from the dress uniform into working clothes of blue shirt and work trousers. Usually, then, from 8:30 until 9:30 there is a drill. A part of the fire manual may be discussed again or certain firefighting actions performed such as ladder raising. From 9:30 until early afternoon, clean-up work is done. Some men wash windows of the station house, others sweep and mop the floors, others check the apparatus and equipment, and still others clean and polish the apparatus. During this time, either one or some of the men will be out inspecting, if the department is one where fire inspectors and firefighters are the same personnel.

The men will then break for lunch. During the afternoon, there is more studying, more cleaning, and more inspecting. From the
afternoon until 8:00 the next morning, the firemen wait for an alarm. Some watch television, some play cards, and some discuss previous fires and how to better handle them the next time. Studying for examinations for promotions is very widespread, for it is only through civil service examinations that a fireman may progress through the ranks. During the night, the men sleep on beds upstairs in the fire station. At 8:00 the next morning, the shift is relieved and goes off duty.

When a fire alarm is sounded, the fire suppression section quickly swings into action. A response group is sent to combat the blaze. While the fire company is the basic organizational firefighting unit, more than one company is sent to a blaze. This multi-company group is called the response group. With this greater amount of manpower, the fire may be attacked from a number of different sides and contained more quickly. Also, it is best to have more than one pumper assigned to a fire to guard against traffic accidents and mechanical failures that may make apparatus inoperable.

There is a sort of set routine that the men follow in their fire suppression activities. First, as noted above, is to get the men, apparatus, and equipment safely to the fire. Second, is to rescue any people that may be trapped in the fire. Third is to get an adequate water supply. Fourth, getting into the building and fighting the fire. Next is covering exposures so that the fire does not travel to other close buildings. Sixth there is salvage work, trying to save as much as possible of the contents of the building. Lastly, there is overhauling. Overhauling is a very lengthy and time-consuming operation in which the firemen continue to pour water onto the embers and sift through the debris so that the fire does not rekindle itself. Every possible place that the fire may still be smouldering is checked before the firefighters finally leave the scene of the blaze and proclaim the danger over.

Public relations occupies an important place in the fire suppression section. For a number of reasons, the firefighters are aware of their public image. Living within the local neighborhood in the station house, the firefighters come in daily contact with residents of the general area. This contact is multiplied in those departments where the firefighters are also inspectors. Also, the firemen are quick to note that, unlike the policemen who are usually called when there is trouble and who can arrest people, they are called when people need their help and hence are welcomed by everyone. Whether a resident wants help in getting a cat out of a tree or his home saved from fire, the firemen are called. Hence, firemen take great pride in their image as "public protectors" and try to sustain this heroic role. In addition, the above-mentioned activities of salvage and overhauling at a fire are done to try to return the premises to their exact condition before the fire and to guard against further fire. Firemen pride themselves on how well they
can extinguish a blaze with minimal damage to the rest of the structure. Tarpaulins are spread over furniture and equipment so that a $10.00 fire in an attic does not necessitate $50.00 damage to the living room.

To summarize, fire suppression is the largest and most structurally complex of the sections within the fire department. Where fire prevention has not succeeded, fire suppression tackles the job. The firefighters form a close group of friends who view themselves as public protectors who strive to maintain a good public image.

Communications

Communications is the fourth section of the fire department to be discussed in this chapter. In this summary, attention will mainly be focused on the fire alarm headquarters, which is the center of communications where all calls by alarm systems, radio, and telephone are received and where fire run notifications are given.

The fire alarm headquarters in most metropolitan area fire departments is located in a separate building or attached to the main fire department headquarters. An assistant chief or battalion chief usually heads the communications branch. The personnel work either the standard 8 hour shifts like the administration section or the 24 hour platoon system like the fire suppression section, depending upon the specific department.

A very important responsibility of the communications section is to keep adequate and correct information concerning the whereabouts of every piece of apparatus in the fire department. The magnitude of this task becomes apparent when it is realized that the fire departments studied for this report had a minimum of 50 to 100 emergency vehicles (including one department that had over 500 vehicles). The exact location and status of each apparatus must be known. Whether a pumper is at the scene of a fire, in the station house, in the garage for repairs, or being used for inspecting, it must be kept track of. Most communications sections have large tote boards or maps that are continually up-dated as to the whereabouts and status of the apparatus.

Alarms are usually received by one of three different systems: telephone, box, or radio. The telephone is the most widely used means of reporting fires to the fire department. This is due, of course, to the universality of telephones, their location in the home or on the streetcorner, and their ease of operation. The alarm box system is very familiar to a sizeable number of residents of large cities. Most box alarms are connected to a telegraphic system that
is activated by pulling a lever or breaking a glass guard. When the lever is pulled, the box number is transmitted to the fire alarm central station. Inside the box is an apparatus similar to a clockworks. As the lever is pulled, a small wheel is turned by the clockworks. The spokes of this wheel break electrical connections in certain patterns that identify that box to the central station. After each use, the box system is rewound and reset. Only rarely are fire alarms reported by radio. In these instances, individuals who happen to have radio transmitters tuned to the fire department frequency, such as police officers or ambulance drivers, notify the communications center of fires that they may happen upon.

When an alarm is received by the fire department alarm headquarters, the dispatcher checks the running or assignment card. The running card is a printed card that lists the alarm box, the locations covered, and the apparatus to be dispatched to fight the fire. The dispatcher then notifies the local companies involved. The location is announced over radio and voice circuits to the joker rooms. The message is confirmed by the particular company involved by the relaying of a coded box location signal.

When the fire trucks are out of quarters making a run to a fire, it is the duty of communications to decide whether or not to transfer other units into the unprotected areas. Guidelines have been prepared that list in what situations which companies are to be moved where to ensure complete coverage of the area. Another duty of communications is to periodically check every fire alarm circuit to see if it is in proper working condition. Also, records must be kept of all tests and runs made. This involves listing which box was pulled, where the fire was located, which apparatus made the run, estimates of damage, etc. All records are kept in duplicate or triplicate.

In addition to keeping track of all apparatus, the communications section must keep track of all chief officers. As was noted in a previous section, for extra-alarm fires a chief officer must be notified. Thus, communications must know his whereabouts at all times. During his off-duty hours, the officer is located at home by telephone. While travelling, he is paged by a portable voice communicator or walkie-talkie.

False alarms are the perennial headache of the communications section. It has been estimated that false alarms account for 5 to 10 percent of all alarms received. False alarms create strain on the fire departments by the extra work involved in sending men and apparatus to a non-existent fire. Also, coverage for real fires is reduced by this activity. To help cut down on false alarms, the communications section engages in periodic public education programs that advise people of the dangers and illegality of reporting false alarms. School children, who are the principal persons responsible for false alarms, are given tours of the communications
section and allowed to work off their curiosity by being given the opportunity to actually operate a fire alarm box. In this manner, the firemen hope to cut down on the false reporting of fires.

Other public relations activities are important to the communications section. The dispatcher who answers the telephone in a sense represents the whole fire department. He must try to help the caller in whatever situation has arisen and at the same time put forth the best image of the department. Every man in the communications section must also be a public relations man.

To summarize, the communications section comprises the nerve center of the fire department. It receives the alarms from the public and dispatches the men and apparatus to fight the blaze. Communications keeps detailed records of fire department activities and the whereabouts of all apparatus and chief officers. It also must make decisions as to the move-up of apparatus to cover territory and is harassed at times by time-consuming and energy-consuming false alarms.

In the next chapter, discussion will center around the structure and functions of urban fire departments as they are confronted with not-so-everyday occurrences: mass civil disturbances.

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NOTES: CHAPTER III

1. This table is adapted from George Warheit and E. L. Quarantelli, *An Analysis of the Los Angeles Fire Department Operations During Watts*, Disaster Research Center Monograph Series No. 7 (Columbus: Disaster Research Center, The Ohio State University, 1969), p. 23.

2. The following data are taken from Roi B. Woolley, *Manual for Home Fire Safety* (Published under a grant from the Scott Aviation Corporation by the International Association of Fire Chiefs, 1967), p. 7.


5. For the role conceptions of firemen during emergencies, see Lewis M. Killian, "Firemen in the Kansas City Flood-Fire Disaster" (unpublished manuscript).

A civil disturbance is not an everyday activity confronting the fire department. Rather, it is an infrequent happening that, while it may partially be planned for, always consists of some unforeseen occurrences. To cope with the disturbance situation, the fire department must make changes in its operations. Some changes are planned and follow a written manual; other changes are unplanned and follow from the exigencies of the situation. This chapter will describe these changes in fire department operations while focusing upon the same four sections outlined in the previous discussion.

A civil disturbance is a stress situation for the fire department. Demands are made upon the department's capability for action. Within a range, extra demands can be adequately met. Outside this range, extra demands cannot be met and the department becomes overwhelmed. From an analysis of the data from the six cities confronting civil disturbance stress, it may be posited that there are two types of stress situations that impinge upon the departments. Figure 3 depicts the two types. Type One is called Fluctuating Stress. Three of the cities experienced this type of civil disturbance stress. Fluctuating stress involves a civil disturbance that usually begins in late afternoon or early evening and reaches peaks of activity during the night hours. With daylight, there is little or no stress. The stress then repeats itself in cyclical fashion for the next night. The average length of the total disturbance from beginning to end was three days. Type Two is called Peak Stress. The remaining three cities in the sample experienced this type. Peak stress usually consists of a civil disturbance that also starts in late afternoon or early evening and continues through the night hours but does not abate with the coming of morning. The civil disturbance continues to grow in a constant fashion until it reaches a peak of activity; it then begins to subside and disappear. Average length of the disturbance was between three and four days.

In the following pages, the four sections of the fire department that were highlighted in the previous chapter are described in terms of the two stress types. Particular attention is paid to demands arising out of the stress situation and each section's capabilities for action. Of particular importance is the fact that the four sections did not all undergo equal degrees of stress and hence their actions during and reactions to the civil disturbance were different.
Figure 3
Types of Civil Disturbance Stress

Type One: FLUCTUATING STRESS

Type Two: PEAK STRESS
Type One: Fluctuating Stress

Administration

During the day, administration had been receiving reports from the police liaison officer of abnormally large crowd activity on the east side. This activity as of yet did not involve the fire department in any fire suppressing capacity. Administrative officers routinely checked over their civil disturbance manuals for the proper tasks if and when the fire department should become involved. Historically, the fire department had been notified on a number of similar occasions in the past but no disturbances had resulted. At 5:00 p.m., the chief officers went home and took with them the civil disturbance plans and personal information sheets so as to be immediately available and close at hand. At the onset of darkness, around 9:00 p.m., isolated instances of box pulling began. Communications notified the chief officers and they began to return to duty. One assistant chief proceeded to the police department's Emergency Operations Center (EOC) as the fire department liaison. One went as an observer into the disturbance area to get first hand acquaintance with the on-going situation. The rest returned to the fire tower to be close to the communications center for immediate dispatching of orders.

As more alarms came in, and as more information from the police and the field officers were received, it became apparent that a full-fledged civil disturbance was erupting. Accordingly, the chief ordered that civil disturbance operations be put into effect. Immediately, the chief officers switched into their emergency roles. Sections like finance, research, fire prevention, and training were ignored since they had no bearing on the emergency situation. Likewise, the administration of fire suppression and communications assumed the utmost importance.

As the night wore on, fires were set in food markets, clothing stores, pawn shops, and the like. Administrative decisions were required as to the best means of extinguishing the blazes with the given number of men on duty. The task force concept was put into effect, as specified in the civil disturbance manuals. Task forces are an operation learned from the activities of the Los Angeles Fire Department during the civil disturbances in Watts. Also called the convoy system, the task force is a response group made up of a number of pieces of apparatus and men from different stations that ride to the fire together as a close knit convoy. Usually composed of two engine companies, a truck company, and presided over by a battalion chief, the task force became the major attack group of the department. It was a very important decision to go over to the task forces. Normally, if a fire occurred that evolved into a serious
situation, different apparatus would be sent from their respective stations to battle the blaze. This apparatus would usually come singly into the area from different directions depending on the station location. During the civil disturbance, this becomes unwise as it leaves the engines easy targets for missiles and firebombs. Thus, the safety-in-numbers concept was instituted. An important ramification of the use of task forces is that certain areas of the city are left with less protection than usual. The task force concept in effect abandons certain stations and doubles up on the rest. While the disturbance area becomes almost saturated with fire apparatus and men, the remaining and outlying areas become under-equipped and under-manned. So, the decision to go to task forces was a very major and crucial one.

During the rest of the night, alarms came in one on top of the other. Information was received from the police department as to various aspects of their involvement with the crowds. Firefighters and officers in the field reported on their activities. An enormous number of decisions, most expected but some unexpected, had to be made in a short time. Mostly, the civil disturbance manual was followed as to organizational decisions but some situations were so unique that no prior answer was forthcoming from the manual. As one officer commented, "We had to play it by ear." Probably the greatest change from normal operations for the administrative section was not the type of decisions but rather their number. At all times the chief officers must make emergency decisions but during the night of the civil disturbances there were an excessive number of them. The chief officers were literally bombarded with decisions relating to fire department operations that had to be made. Both in internal relations to insure proper functioning of subsections in the emergency period and in external relations with the other emergency-relevant organizations and the public, decisions had to be made. Fortunately for the departments experiencing fluctuating stress, there came a let-up in the enormous rate of decision making. With the coming of daylight, the emergency situation eased up and then ceased. The emergency reached its nadir.

The last alarm was received around 8:00 or 9:00 a.m. During the morning hours, the chiefs met in conference to discuss the previous night’s activities and to plan more adequately for the future. Each chief reported on the status of his section and commented on what could be improved or changed in the emergency plan for fire department operations. After discussion, these changes were passed down the line for implementation.

A very important problem at this time was the planning for an adequate supply of men to meet the emergency. Being unanticipated, the civil disturbance of the previous night had caught the fire department with only its normal complement of men. Two shifts were off duty, one on. The decision was made for personnel recall.

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Approximately one-half of one off-duty shift was called for immediate duty, which brought the fire department's strength up to one-half the total number of men. It was decided that instead of the usual shift tour of 24 hours on and 48 hours off, the shift tour would last 24 on and 24 off. The department, in fact, had now switched from a three platoon to a two platoon system of operations.

During the morning, as it became apparent that the disturbance had died down, the chief released the department from its emergency stance. The task force groups were disbanded and the engines and men returned to their normal station houses. The alarms that occurred and which turned out to be of a routine nature were handled by the normal response groups, not task forces. Some of the chief officers went home for a few hours sleep, some went to conferences with the mayor and police chief. The situation was discussed and better lines of communication were set up between the various community emergency organizations. Plans were devised as to how to better cope with the disturbance if it flared up again that night. More adequate preparations were made. The police were brought closer into the picture by having them ride on the apparatus as the task force went into the disturbance area. The Red Cross was contacted and asked to be on the scene with sandwiches and coffee if the need arose. The National Guard was briefed on fire department operations.

A very important decision emanating from the administration section of the fire department was the contacting of a number of outlying municipal, village, county, and city fire departments and the solidifying of mutual aid pacts. Most of the fire departments had informal agreements with outlying departments to come to each other's aid in case of extraordinary emergency, but the previous night's disturbance had seen a number of hindrances come up. Too often, the legal status of a volunteering fire department's men and apparatus was in doubt in the event of the crossing of city, county, state, and in one case, national boundaries. Also, the process of releasing the departments for action was very slow in the smaller governments. So the chief officers worked during the day to cement the agreements, iron out difficulties, and cut through red tape. The result was the better placement of firefighters in and around the emergency area since the outlying environs were to be covered by the mutual aid departments. Departmental effectiveness was thus increased.

Also during the day the administrative section was deeply involved in extensive record keeping. This was vital both for fire department need and the need of other agencies, most notably the mayor's office and insurance companies.

Toward late afternoon and early evening, reports began coming in of sporadic box pulling and arson. Police intelligence noted that crowd activity was increasing and predicted a repeat of the
previous night's outbursts. With this knowledge, the chief once again put the fire department on emergency footing. Task forces were resumed. However, there was one major difference between fire department operations the second night and those of the night before. For the second night, the fire department was prepared. During the first evening of disturbances there were numerous problems, major and minor, that resulted as a consequence of the department shifting operations from its normal procedures to its civil disturbance activities. These problems revolved basically around the unfamiliarity of the new roles and their consequences to the fire personnel. But these problems were rectified during the day when the disturbance reached a low point. The chief officers had time to make adjustments in their duties, so that the department could better cope with the disturbances. As opposed to the first night when many problems emerged due to the transition from normal operations to the civil disturbance plan, the second and succeeding nights were, as described by a number of chief officers, "purely routine." No major problems that could not be handled thereafter plagued the administrative section.

Fire Prevention

As noted in the previous chapter, fire prevention is the main function of the fire department during normal times. During civil disturbance stress, however, fire prevention activities lose their position of primacy and recede into the background. We have described the two structural forms that fire prevention may take in the department set-up: that of a separate bureau within the department and the whole department comprising the fire prevention unit. Focusing upon the first type, we may note that an enormous change was manifested when it became clear that a civil disturbance was beginning. Quite literally, the fire prevention bureau lost its operating rationale and legitimacy. It had clearly failed, in one sense, since arson reports started flooding the communications room and when it became apparent that a great number of fires had been started. Quicker than any of the other four sections that we shall discuss, the fire prevention bureau shifted from its normal operations to emergency duties. This was because its normal functions were totally untenable during a time of civil disturbance and hence caused no conflict in its change of operations. During the first night when the mass alarms reached the department's central communications office, the officers and men of the fire prevention section, having lost their primary job, became service personnel to the rest of the department. Their main activity was in keeping records and making sure the paper work did not become too backlogged. A number of personnel were in the communications room operating tape recorders of each alarm response, the time, the units dispatched, etc. Strangely enough, even though the night was a time of emergency and uncertainty, better records
were kept than during normal operating times. This resulted from the larger number of men who did the record keeping (fire prevention personnel are inspectors and not firefighters) and the knowledge that the chief officers of the department as well as other city officials would require detailed records of all fire department operations during the emergency period.

When daylight came and the disturbance subsided, fire prevention personnel did not return to their normal activities. Instead, they continued in the capacity of service personnel. Duties at headquarters that needed to be done but that had been put aside because of the disturbance were taken care of. Records and other information were collated and put in order. Fire prevention itself was forgotten for the moment. No inspections of neighborhood homes or stores were made or hazards targeted. Some chief officers, though, did go into the disturbance area and make a cursory examination of some of the gutted buildings but the arson squad was not active. Activities were not focused upon the previous night's disturbances but looked ahead to the suspected coming disturbances.

As with the administration section, the first night of the emergency was the worst yet not unmanageable time for the fire inspectors. The succeeding days and nights with their period of quiet and inactivity alternating with the hours of arson and riot, settled into a new pattern of routine. Though the time was one of emergency, it came to be handled with relative ease.

The second pattern of fire prevention is that where the total department composes the fire prevention unit. There is no separate fire bureau with inspectors who only inspect. All inspectors are also firefighters in this type. When it became apparent that an emergency was developing and the department was put on civil disturbance footing, the fire prevention activities of the firefighters ceased and the men became strictly fire suppression specialists. For this pattern also, when it was seen that fire prevention was useless, it was quickly discarded; the main function of the department then switched from fire prevention to fire suppression.

**Fire Suppression**

The brunt of fire department activity in the attempt to cope with the mass civil disturbance fell upon the fire suppression section. The greatest amount of stress was directed to this one subsection. As the large number of fires were reported during the first evening of the disturbance, the on-duty shift soon became overwhelmed. The fires were not necessarily any more serious than during normal times but the sheer number of them clogged the department's capability of extinguishing them. It was soon decided
that certain changes, some not even anticipated in the civil disturb-
ance manuals, would have to be made in the fire suppression opera-
tions. One change already mentioned was that of the task force.
Under this plan, a new response group was formed from units from dif-
ferent stations. The task group commander was usually a battalion chief.
One positive result of this was that a high ranking officer arrived
at the scene of the fire simultaneously with his men. He then
deployed his trucks and men for the best attack on the fire. Another
positive consequence of the task force concept was that decision
making at the scene of the fire became more simplified or stream-
lined. This did not mean that the chain of command was subverted or
that the line of authority was not followed. Far from it. As a
matter of fact, if anything the chain of command was followed more
closely than usual. Orders still originated with the officers and
were implemented by the firemen below. But what happened was that
orders were given directly to the men in a face-to-face context rather
than having the orders filtered through a long bureaucratic process.
In this manner, the orders were clarified at the scene and did not
gather the usual distortions that accompany any organizational direc-
tives. The orders were sharper, more specific, and more easily
understood. This greatly enhanced the fire extinguishment process.

The task force operation ran into a number of problems,
however. Since it was made up of men from different stations, not
everyone was familiar with the buildings, dwellings, or streets
in the specific area of the disturbances. One fireman related how
he and two other firefighters had become trapped in a basement of a
smoke-filled burning house and could not find the stairway. He
noted that this would not have happened if the disturbance had
occurred within his normal station’s area since he had intimate
knowledge of every building and dwelling there. In another incident,
the driver of the lead vehicle in the task force, unfamiliar with
the streets of that area, took the whole group into a narrow,
twisting dead-end alley. All the vehicles then had to back out
of the alley in disarray, regroup, and try to find the correct
address.

One major function of the task force is the protection of
firemen. With the large number of apparatus going to and from the
scene of a fire as a close-knit convoy, it was felt that the maximum
protection would be afforded the firefighters. This was not so,
however. During the first night, crowd activity, thrown rocks,
bottles, and molotov cocktails, and sniper fire harassed the firemen
as they sped to and from the disturbance area. The firemen
received little or no police protection. The major reason for this
was that the police had their hands full the first night also and
simply could not spare the men to help guard the firemen and their
equipment. Two major actions resulted from this. The first was
that in a couple of cities, the firemen themselves began carrying
weapons for defense. This is totally at variance with the past
history of the departments and only in one city did this become
official policy after the disturbances subsided. However, in no city did the fire personnel take part in crowd control. Never did the fire department turn its hoses upon the crowd. Crowd control was strictly a police problem and the fire department stayed with fire suppression. The second resulting action was that on a number of occasions the firemen were ordered to let the fire burn, i.e. not to do their job due to crowd harassment. They were ordered to let the fire burn and leave the area as their safety became threatened. Sometimes the residents of the area begged the firemen to stay and put out the blazes as the fire switched direction and threatened their homes. But the peril to the firemen was too great with no police protection the first night.

Allied with this was another change forced upon the firemen by the large number of fires. In normal times, there is a set routine and the firemen perform it in the process of extinguishing a fire (see preceding chapter). This routine changed somewhat during the civil disturbance. Getting safely to the fire -- provided by the task force -- and the protection and saving of lives remained the top priority. Having an adequate water supply and then getting into the building to extinguish the blaze followed. These remained the same as during normal times. Changes occurred in the process of extinguishing the fire. Firemen would try to drown the fire with an enormous blanket of water so as to extinguish it in the shortest amount of time. This, in a number of cases, caused more damage to the building and its contents than the fire. Exposures were not covered. No salvage work was performed. And, last and most importantly, the firefighters did not overhaul the fires. They did not sift through the debris and continue sprinkling it with water so that all signs of smouldering fire were gone. The firemen simply had no time, given the number of fires, to carry through with the overhauling operation. This change in suppression operations proved to be both a boon and a headache. On the positive side, the fire extinguishment process was considerably shortened in time and thus allowed the firemen to go to a greater number of fires. On the negative side, a number of fires rekindled themselves since they had not been totally extinguished and the firemen had to return a second and even a third time to the original fire scene to extinguish the same fire. One chief estimated that maybe one in five fires that his department responded to was a rekindle.

The fire suppression section experienced its greatest stress the first night of the civil disturbances. The overwhelming number of fires, the lack of police protection, the problems associated with changing over to task forces, the sheer fatigue of a continuous battle against fire, all contributed to straining the system to its limits. But the situation fluctuated. A period of relative calm arrived with daylight. During the day, preparations were made to alleviate the fire suppression situation. Extra personnel were recalled so that in most departments from one-half to two-thirds of
the total operating strength was on duty. Liaison meetings with
the police department and National Guard firmed up cooperation between
the organizations so that armed personnel were assigned to ride on
the task force vehicles as guards. It is noteworthy that only on a
very few occasions after this did the firemen have to abandon a
blaze due to fear for their personal safety.

The number of fires that were reported on the second and
succeeding nights of the disturbance equalled the number of the
first night, but the fire suppression section was not overwhelmed.
Both because the firefighters now knew what to expect and how to go
about in the new situation extinguishing mass fires and because of
adequate protection and increased personnel, the rest of the emergency
period became routinized. One assistant chief, in discussing how the
strain was eased after the first night, remarked a little face-
tiously yet relevantly, "The second day was routine. Our people got
themselves into a routine. . . . We could outlast the rioters,
that's what it boils down to. We work in shifts and they're
working every day."

Communications

The communications section also was subjected to heavy stress
but very quickly modified its activities to lessen its burden. No
problems that it encountered taxed it beyond its capabilities.

During the first night of disturbances, the communications
section first had to notify all the chief officers and certain
auxiliary personnel to report to duty. This was accomplished with
minimum confusion according to the pre-arranged plan in the civil
disturbance manual.

As alarms were turned in to communications central, a major
change in fire reporting was effected. Only fire reports that were
received by telephone communications were acted upon. This was
necessary for a number of reasons. First, after around five or six
pulls, the spring power in the alarm box ceases to work if it is not
rewound. Not only does this render the particular box useless
but also the rest of the boxes on the same circuit, numbering as
many as twenty, are subsequently knocked out. Alarm security is
thus jeopardized. However, during the first night of disturbances
it was impossible to rewind the boxes. The task groups did not have
the time nor would it be feasible for them to go and wind single boxes
that continually were being pulled. Nor was it safe to send a fire-
man in a single truck to rewind the boxes. Therefore, it was necessary
to discontinue to use box alarms and rely upon telephone. During
the day after the disturbance, men were sent out to insert jumpers
in most of the boxes so that no matter how many times the box was
pulled, the circuit would remain closed and no alarm recorded. Also, some boxes in the very midst of the disturbance area were taken off their pedestals and out of service completely.

Second, false alarms became a very substantial problem. One assistant chief estimated that half of all the alarms received in the first few hours of the disturbance were false alarms. A telephone alarm system was seen as a step in rectifying the problem. The dispatchers in the communications section soon became very adept at questioning a caller as to the nature of the fire, its location, seriousness, etc., so that they were able to weed out a great number of false alarm reports. The method was not foolproof, however. One fire chief related the following incident:

There was one that I remember in particular. . . . We had five calls in a period of 30 seconds to ______ Avenue and ______ Street, a fish -- supposed to be a big fish market that was burning. And all of the calls were from different voices and all of the voices were very excited and all of them said the place was burning all over, you know, two story place and it was burning all over. I was sure that this place was a fire. I was sure that it was a working fire. With five calls within 30 seconds from five different voices and all of them the same story. I figured for sure it was burning. We sent a task force over there and it was a false alarm.

What finally resulted was a multi-organizational alarm receiving and alarm check-out system. When a call was received by fire department communications on a fire in the disturbance area, the message was relayed to the police dispatcher. That dispatcher then notified police patrol cars to check out the address to see if there was a working fire. If not, the call was classified a false alarm. If the report proved to be correct, then the fire dispatcher was notified by the police department and a task force was sent to fight the blaze. This system of using police as fire verifiers was relied upon heavily during subsequent nights of the disturbance and worked quite well.

One very interesting facet of the communications was that there was less radio talk with task forces in the field and messages were clearer and more readily understood. During normal times there is quite a large amount of radio communications at a working fire between the officers in charge at the scene of the blaze and communications central. Especially at a multi-alarm fire where there are men and equipment from numerous stations, each officer would report to headquarters about the progress of his specific group. Radio chatter would hence be of a high volume. But during the disturbances the response group which was a task force was from
the very beginning in the command of a single battalion chief. Only he would communicate by radio about the movements and activities of the group. Radio messages thus were diminished by a considerable amount. A corollary of this was that the messages were more clearly received at both ends so that fewer misunderstandings resulted.

Following the first night of the disturbances, the communications section implemented a number of minor changes such as the above mentioned modification and/or removal of alarm boxes in the disturbance area, that brought the section back up to normal operating capacity. The communications section adequately handled the civil disturbance stress and was not overwhelmed. The fluctuating stress pattern gave the section a relief period in which to correct mistakes, regroup, and plan for the next night. As with administration, fire prevention, and fire suppression, the civil disturbance was soon just a "routine" for the communications section.

Type Two: Peak Stress

Administration

The stress undergone by the administrative section was the result of a cumulative, drawn-out process. Administration was under an inordinate amount of stress but its capabilities for action were not overcome. It continued to function for a couple of basic reasons. First, the chief officers delegated a number of decision making choices to other officers in the field and elsewhere who had better knowledge of the situation due to their proximity to the disturbance area. The field officers were given greater leeway in their decision making and informally the norm developed that the administration section would ratify the field officers' decisions after the fact. Thus, a major portion of decision making that ordinarily would have fallen upon the chief officers was delegated to lower level officers in fire suppression and communications. Second, the civil disturbance situation itself was of such magnitude and duration that certain routine decisions became superfluous and unneeded. For example, with a number of contiguous blocks of buildings ablaze at the same time, fire suppression personnel needed only to go from one building to the next to extinguish the fire. The fires were a direct and visible threat and fire suppression operations were quite obvious. Administrative decisions from headquarters were not needed as to the next fire to battle; the whole area was in flames.

Fire suppression in itself became the prime function of the fire department. Administration took on not its normal leadership role but one of assistance. The chief officers did what they could
to assist fire suppression activities. They contacted the police department to secure guards for the men and equipment. In the first few hours or days of the disturbance, police protection was lacking since the police were themselves operating under maximum stress due to the exigencies of the disturbance situation. Thereupon, the chiefs decided that if harassment became too severe, the firefighters should withdraw and wait for a better opportunity to extinguish the fires. This the firemen had to do on a large number of occasions. Public relations suffered a great deal because of this action. Irate storeowners would berate the fire department for abandoning their buildings to the flames. Many businessmen only latched upon the retreat of the firemen and not the danger to the firemen or the cause of their retreat in their denunciations of the fire department. Needless to say, the public image of the firemen suffered grievously among this group.

Also in their assistance of the firefighters the administration section contacted the Red Cross, Salvation Army, and other relief organizations to provide help to the firefighters. These organizations contributed coffee, sandwiches, blankets, etc. to the firemen both in the field and in the station houses. Related to this was the increased amount of contact with outside organizations that would not normally be contacted in a fire situation. Many more city, county, and state officials, including in each instance the governor of the state and his staff, had to be directly apprised of the status of the firefighting activities. Also, federal officials, from the Federal Bureau of Investigation to the Defense Department to the Attorney General, were included in the information net. The administrative section spent a great amount of time just forwarding information to these outside agencies.

The administrative section did not become overwhelmed by the situation because, in essence, its services were not crucial. Due to the magnitude of the fire danger, the course of action became quite clear and field-grade officers could give the necessary localized orders to battle each individual blaze. The general administrative order, of course, was to put out all fires. Until this was accomplished, all other major activities of the fire department were suspended.

Fire Prevention

The fire prevention section operating under the peak stress contingency reacted to the civil disturbance in the same manner as that operating under fluctuating stress. The section lost its functional legitimacy and its identity. The major duties of fire prevention (disregarding arson investigation) are performed before a fire breaks out -- inspection, testing, and education. In the
civil disturbance situation, however, the fires were a reality; prevention was unneeded. Thus, the fire prevention section lost its legitimacy and during the civil disturbance ceased to be a functioning unit.

In the form where the total department comprises the fire prevention section, little delay was lost in the switchover from fire prevention to fire suppression. Nothing interfered with the switchover; it was clear to all that the task at hand was to extinguish the fires, not prevent more. One firefighter noted that there were just too many buildings ablaze at the time for him to worry about preventing others.

In the form where a specific unit comprises the fire prevention section, there was also little delay in the switchover. However, the process took a little longer time. In the first form, the men were also firefighters, and hence that function immediately impinged upon them and they assumed that role. In this second form, however, the men are only inspectors. When they lost their operating legitimacy, they underwent a short period during which they had no duties. Very quickly, however, they assumed a "volunteer" role within the organization and were assigned to do numerous jobs that were of a helping nature, such as helping in the communications room, especially in the keeping of records.

The fire prevention section thus resembled the administrative section. It was disbanded, to be sure, but it had not been overwhelmed by the disturbance because its services had not been crucial to departmental functioning. This highlights a major change in fire department structure and values from normal times to civil disturbance times. In normal times, most resources of the department are put into the prevention of fires. When it has become apparent that this strategy has failed, as during a civil disturbance, there is little conflict and little time wasted in the shifting of the department's focus from prevention to suppression. Resources now go to suppression and prevention is relegated to a minor position.

**Fire Suppression**

Unlike the other units within the fire department operating under peak stress and unlike the fire suppression section operating under fluctuating stress, the fire suppression unit under peak stress became overwhelmed by the number of fires and lost operating efficiency. Put simply, there were just too many fires in too short a time and too few men and pieces of equipment to extinguish them. Unlike fluctuating stress where the firefighters had a breathing spell in which to size up the situation and make adjustments in their activities so that the fires soon became a routine, here there was
no breathing spell. The fires continued through the night and the following days and did not let up at daylight. The firefighters were under constant stress and at some point in the disturbances they became overwhelmed. The fire situation literally became "out of control." It was not until the law enforcement agencies, most notably the regular Army and National Guard, had entered the picture and began controlling the disturbance that the fire suppression section proceeded to gain the upper hand in extinguishing the fires.

We have noted that during normal times the firefighters have a set routine concerning any blaze and that under fluctuating stress this routine changes somewhat, especially related to overhauling. In addition to this, the firefighters now have to establish a priority listing of response. There are too many blazes for all of them to be taken care of by the task forces. Therefore, fires were categorized into discreet classes. Priorities were assigned to these classes: the high priority fires were attacked first, the low priority fires were handled as time permitted, but in most cases were simply ignored. The priority listing was as follows, from highest to lowest:

1. Dwellings or buildings involving hazard to life
2. Large valuable properties, such as warehouses, supermarkets, and furniture stores
3. Other large buildings, usually contiguous, such as a row of stores
4. Isolated buildings
5. Trash fires or automobile fires
6. Structures in areas experiencing crowd activity to the degree that there was danger to the safety of the firemen

The last two listings were considered the lowest priority. Only rarely did the firefighters ever extinguish trash fires or fires in automobiles. These were left to burn themselves out or to the make-shift fire suppression activities of area residents. We have remarked before about the situation of firemen leaving burning buildings and retreating when their safety was threatened by hostile crowds. This inevitably created friction between the fire department and the building's owners or occupants but it was felt that the safety of the firemen definitely should be supreme.

Even though the fire suppression section was being overcome by the enormity of the fires, not every available fireman was used. This, of course, created an even greater strain upon the section's capabilities. A number of on-duty firemen were kept in reserve to handle fires in other sections of the city. It should be remembered that the fires due to the civil disturbance were localized in usually one, and at most, two or three areas of the
city. The much greater remainder of the city had to be protected from everyday working fires that usually occurred. A number of firemen stated how upset they became when task forces would roll by their station house for the riot area while they had to sit and wait for fires in other sections. One group of men was quite vocal in their criticism of administrative policy when they sat for three days literally doing nothing while other firemen were working one major fire after another. Quite interestingly, no fires of any magnitude were reported from other sections of the city. Records show that the number of fires outside the disturbance area was the least of any day during the year. A chief in one city remarked, "The normal fires that occur in other portions of the city didn't seem to happen." The chief in another city also reported this: "Everything quiets down on the outskirts. It seems like maybe everybody is so overly cautious. We had no trouble there at all, no fires." It is difficult to account for this strange finding. In every city, key personnel and equipment were kept in reserve to fight the normal everyday fires in the remainder of the city, thus putting an added strain on the already overloaded firefighter working the disturbance area, but no fires erupted in the outlying areas. Fire activity there was minimal and the reserve men were in fact wasted manpower. Only one chief would dare propose an explanation. He thought that people in other parts of the city were home in greater number watching the disturbance on television and hence could themselves put out minor fires that had started or else that fires did not start due to greater watchfulness. Whatever the reason, though, there were almost no fires in the non-disturbance area and the members kept in reserve added a greater strain on the section.

Due to the continuing nature of the disturbances, the firefighters were soon tired out. Their normal working shifts were 24 hours on duty and 48 hours off. When the disturbances started, the section shifted into emergency operations and the shifts changed to 24 hours on, 24 off. Soon, however, even this became impractical. There were too many fires and these took so long to extinguish that the job became solely one of constant fire suppression. Shifts were cut down to 12 hour work periods with 12 hours off and, as the stress became greatest, they were cut to 6 hour work periods with 6 hours off. The departments found that about 6 hours of constant firefighting was all that could be expected of the firefighters during civil disturbance stress.

Related to the above is the fact that the departments did not have enough manpower, even with total recall, to adequately fight the large number of blazes over such an extended time period. For whatever reason, such as municipal cutbacks or budget shortages, all the departments were undermanned. Some chiefs believed they may have made a better showing against the fires if their departments had been up to full strength to begin with.
As an interesting sidelight, it was reported that there were very few false alarms received on a number of days during the civil disturbance. Those departments confronted with fluctuating stress met with a very large increase in false alarms and this necessitated a working liaison relationship with the police department to check the address to see if a fire were in progress or not. Confronted with peak stress, the departments encountered very few false alarms. Most of the calls received by central communications were legitimate reports of fire.

A number of chiefs reported that water pressure was low at times and interfered slightly with fire suppression activities. This was due to the constant call made upon the water system by the firefighters as they worked around the clock to combat the blazes. In no city, though, did low water pressure turn into a major problem.

As if they did not have enough headaches of their own to worry about, the fire suppression section had to assume certain duties of other sections within the fire department and of other organizations outside the department. For example, normally departmental tankers would arrive at the scene of a major blaze to bring gasoline to refuel the apparatus. These were not allowed to operate within the disturbance area due to the danger of firebombings and other thrown missiles. Consequently, the task force vehicles had to leave the disturbance area and travel to the command posts where they refueled. This extra traveling considerably lessened the time allotted for fire suppression activities. Some task forces did not follow this procedure, but instead purchased gasoline from some service stations in the disturbance area that remained open for business in violation of ordinances instructing them to close.

A very major task assumed by the firefighters concerned utilities. During the major part of the stress period, gas, electric, water, and telephone repairmen did not enter the disturbance area due to crowd and sniper activity. Thus, the firemen had to cope as best as possible with the job of turning off central electrical boxes and gas outlets. In the majority of cases, however, they worked under conditions of downed high-voltage lines and ruptured gas and water mains that remained operable. In one instance, a fireman was electrocuted when he accidentally came into contact with a high voltage line as he attempted to extinguish a blaze. In addition to this loss of life, numerous rekindles erupted as gas seepage ignited and few fires started at the same location, thus adding additional stress upon the firefighters' workload.

Finally, a major switch from normal operations of the fire department that applied to both types of stress patterns was that the men were not working under conditions of favorable public opinion and response. Rather than a consensus situation there was dissensus within the community. The firefighters now did not see
themselves as helpers of people in distress who need their assistance but as agents of the Establishment. The firemen believed that they were being identified with the police and thus were receiving anger that was directed at the police. Both chiefs and firefighters alike repeatedly remarked about the change in attitudes of the neighborhood residents. Most frequently cited was that the people were "hostile" now. The empirical indicators listed to show this attitude were the sniping, fire bombing, and rock throwing directed at firemen. One firefighter, in fact, was killed by sniper fire. Related to all this was the perceived unpredictability associated with the crowds. At one instance, a mass of people would be curiously watching fire suppression activity while at the next would be heaving large numbers of rocks at the firemen. Conversely, the same rock throwing crowd on a number of occasions went out of their way to help the firemen extinguish fires. Sometimes the firemen were cheered, sometimes jeered. But, overall, the firemen perceived the situation as hostile and one firefighter succinctly summed up the majority opinion: "It was combat."

To reiterate the fire suppression section's reaction to peak civil disturbance stress, it may be noted that it was overwhelmed by the sheer number of fires. There were too many to be extinguished by the men, part of whom were kept in reserve to extinguish fires that did not materialize in other sections of the city. One deputy chief had a fitting description of the section's activities: "We had expected a three or four or twelve hour riot and we wound up with a four day riot. There were problems . . . ."

Communications

The communications section did not become overwhelmed, as the fire suppression section did, but it too experienced problems. These were mainly in its relationship to other emergency organizations and not to subcomponents of the fire department.

The communications section responded not to box alarms after the first few hours of the disturbance but solely to telephone reports. This was necessitated by the already mentioned run-downs that occurred when there was no chance to rewind the spring mechanism controlling the telegraph alarm. The communication section's task was made a bit easier by the arrangement with the police department whereby police cruisers would check reports to see if they were false alarms or working fires, but the number of false alarms was low. Telephone call-ins were not that numerous because it probably became apparent to all that a sizeable section of the city was indeed burning and that the fire department knew about it. After a while, the communications flow pattern became reversed. Instead of communications central dispatching task forces to fires, the task forces would radio communications central that it was proceeding
so many doors up the street to fight a visible fire. In this pro-
cedure, communications ceased to be the active nerve center of the
fire department and instead became a unit only for the plotting of
the whereabouts of each task force. In most cases, this remained
the pattern for quite a while during the civil disturbances.

As has been previously mentioned, the communications section
received clerical help from a number of auxiliary personnel, most
notably those from the fire prevention section. This enabled
communications to have an adequate supply of manpower to meet the
demands placed upon it. An outcome of this was the increased compe-
tence of record keeping; very adequate records were kept regarding
almost all facets of the civil disturbance.

Within the fire department there was good communications.
The task force concept cut down on the traffic load between field
units and headquarters so that not only were there fewer messages
but they were clearer and more readily understandable. It was between
the fire department and other organizations, notably the police depart-
ment that problems developed. There was in many instances a lack
of coordination between the police and fire departments. In one
example, firemen were extinguishing a blaze in a large building at
a main intersection. The police dispatcher radioed the fire dis-
patcher to remove all firemen from the area due to heavy sniper
fire at the intersection. Upon being told this, the task force
commander in the field radioed that he was standing on the corner
of the deserted intersection and that there was no sniper fire at
all. The fire dispatcher told this to the police dispatcher. Upon
checking once again, the police dispatcher said that his men were
there and that there was heavy sniper fire and to abandon the area.
The firemen reluctantly complied and the particular building and a
number of surrounding structures burned down.

The major area of miscoordination with the police was the
protection of the firemen. It was basic to the functioning of the
task force that there be an armed guard either riding on the
vehicles or with the group in their own cars. In a great number
of cases, communications would set up a rendezvous point where
the task force would pick up its guard and in a great number of
cases the police personnel would not be there. This necessitated
either the task force going into the disturbance area unprotected
or, as we have seen, the arming of firemen themselves for a period
of time. Notwithstanding these foul-ups with the police department,
fire personnel had nothing but high praise for the police since they
realized that the police also were under an enormous amount of stress
and great demands were being placed on their capabilities. What
help the police did provide the fire department was greatly appre-
ciated. After a short while, National Guard or regular Army
troops provided protection for the task forces on a continuous
basis and so the communications section's job was taken care of.

2. For a discussion of fire department manpower, see the booklet *Count the Men* (Washington: International Association of Fire Fighters, April 1965).

This concluding chapter, drawing from the descriptions given in the previous pages, presents an overall picture of fire department response to civil disturbances. In the first section, the major organizational changes are summarized which show the necessary adaptations that the fire department made due to the stress of the disturbance situation. In the second section, the organizational response is presented in terms of the four fire department sections that were highlighted. The next few pages bring the changes and the sections together into a conclusion. And finally, this report closes with a very brief discussion of how the response of a fire department in a natural disaster situation is somewhat different from its response in a civil disturbance.

**Selected Organizational Changes**

1. The task force concept. The most far-reaching organizational change resulting from civil disturbance stress was the initiation of task forces to replace the individual company response group. The initial implementation was basically for the protection of the firemen, following the adage of safety in numbers. However, the large number of fire apparatus riding in convoy was in itself not a deterrent to hostile action from rioters. To adequately succeed, the task force needed protection provided by police or military personnel. Yet it was precisely this protection that was not forthcoming in the early stages of the disturbance. As we have seen, in two of the six cities, firemen armed themselves for protection thereby violating the traditional notion of firemen being solely public helpers. In no instance, though, did the firemen ever engage in crowd control by turning the hoses on rioters. Instead, if the firefighters were menaced by crowds, they withdrew from the area.

2. Disregarding box alarms. Due to the large number of false alarms that were received at the beginning of the disturbances, box alarms were ignored in the disturbance area. Prime reliance fell upon telephone calls from residents in the neighborhood. It was found that when fires developed, a number of residents would call within a short span of seconds of each other to report the blaze. This was a fairly adequate way of circumventing false alarms. In addition, usually the caller was asked his telephone number and he was immediately dialed back to verify the call. Or, as was more prevalent, the fire information was relayed to police patrol cars in the area to check for veracity. This last response was the most
efficient, if by efficient we mean saving unnecessary runs through hostile areas to false alarms, but it depended upon coordinated police-fire activity. In a large number of cases it was at this point of contact between the two emergency-relevant organizations that most difficulties occurred.

3. The priority of responses. In trying to decrease the demands made upon the department, fires were graded according to a priority listing. Those at the top of the list were immediately attended to by firefighting personnel while those at the bottom were attended to only as the time permitted or were ignored. This listing, with life hazards at the top and trash fires and auto fires at the bottom, helped the department cut down on the number of fire suppression demands made upon it.

4. Abbreviated fire suppression process. In conjunction with the goal of fire personnel safety, the fire suppression process itself was shortened to just the minimum time needed to extinguish a blaze and depart the area. The abbreviated process was a departure from normal fire suppression training and excluded overhauling and salvage work. The process consisted of the firefighters using very heavy streams of water to quickly smother the fire and wet the building. This "knock down and get out" routine helped the firefighters reach many more blazes than they would have been able to if they were using the standard slower process. However, with no overhauling, many rekindles occurred. Consequently, the firemen had to return a second and even a third time to the same structure to extinguish what was in essence the same fire.

5. Mutual aid pacts. Since the disturbances were limited to a relatively small and compact area, the departments could mass large amounts of men, apparatus, and equipment in the area. This, however, left outlying areas undermanned. While it was true that there was an unexplained decline in fire activity in the outlying areas, the department had to set aside part of its force to guard these areas from possible fires. This drained the fire suppression section of material in the disturbance area. To overcome this, mutual aid pacts were agreed upon between the urban fire department and nearby municipal fire departments. The latter would move into the unoccupied station houses in the outskirts of the city and provide a defense against fire in those areas. This would free more men to fight the fires in the civil disturbance area. In only one case did the outlying departments send men into the disturbance area itself. Legal questions concerning jurisdiction, finance, liability, and the like must first be answered before mutual aid agreements can be completely solidified.

6. Modification of decision making. Decision making, once the initial organizational decisions concerning the civil disturbance footing were made, was vested in the hands of field grade officers,
most notably task force commanders and not the chief officers in administration. This facilitated decision making since the commander was at the scene of the fire with a large response group and could hence make the needed judgment quickly. In essence, organizational decision making became decentralized with task forces gaining considerable autonomy. The greatest drawback to this was that overall coordination was impaired due to administration not knowing the exact whereabouts and status of each group.

7. Changed focus of the organization. This last change need only be mentioned briefly. It was a change in the major focus of the organization that overarched all the other changes mentioned. The goal of the fire department was shifted from an organization trying to prevent fires to one trying to suppress them. As we have seen, the fire prevention section was disbanded and its resources placed at the disposal of other units. The total organization changed direction and assumed the task of the suppression of the numerous fires. Only as the disturbance was subsiding did the fire prevention activities reemerge. At the end of the disturbance, fire prevention once again assumed the dominant position.

The Organizational Response

Administration

The administrative section experienced its greatest stress at the beginning of the civil disturbance period. This was quite evident in that it was the function of the chief officers to make the primary decisions as to whether the department would assume a civil disturbance posture, when this change-over in operations would occur, and how it would be accomplished. These and other related decisions had to be made in a very short amount of time if the fire department were to assume an adequate firefighting stance. Other emergency-relevant organizations, primarily the police department, had to be contacted and apprised of the department's status. More importantly, a great amount of often contradictory information had to be sifted to gain a clear understanding of the developing civil disturbance. Once the primary decisions were made, however, the administrative section ceased to play such an important role. The other sections of the fire department assumed primacy in that their tasks were more relevant to the operations of the organization. This was most clearly seen in the case of the fire suppression section. Field grade officers assumed command of the task forces and made the necessary decisions relating to fire suppression activities. These officers were afforded wide latitude in their decision making and they constituted the main operational heads of the organization during the civil disturbance period. Most of their decisions were later given official organizational sanction by the chief officers after the fact.
The functions that the administrative section undertook were primarily of a coordinating nature. These were to bring the fire department into closer working alliance with other organizations so that the duties of the fire department could be carried out more efficiently. Examples of this were the police-fire liaison where the police department would report the status of each alarm to the fire department and thus cut down on unnecessary false alarm runs; mutual aid agreements with outlying fire departments to cover certain sections of the city thereby releasing firemen to fight the disturbance blazes; and the contacting of relief organizations such as the Red Cross and Salvation Army to provide food and bedding to the firefighters who were working increased shifts.

Under both types of civil disturbance stress, fluctuating and peak, the administrative section easily handled the demands placed upon it. At no time were there more decisions to be made than chief officers to make them. And once the initial flurry of primary organizational decisions were made, the section relegated its position to the field officers who assumed operational command of the organization's chief sub-system, fire suppression. Administration then became a coordinating section trying to increase the organization's capabilities to respond to the civil disturbance.

Fire Prevention

The fire prevention section occupied a unique place in the organizational response to the civil disturbance. During normal operations, fire prevention is the main function of the fire department and a large part of the organization's resources are directed to this goal. The fire prevention section is thus the primary section of the organization during normal, everyday times. A radical shift occurred during the civil disturbance. The section lost its operating legitimacy because it clearly was not needed once it became apparent that a large number of fires were burning. Suppression rather than prevention now assumed the dominant goal of the organization. The organization's resources were hence taken from the fire prevention section and placed at the disposal of other sections. In the type where the whole fire prevention section also comprised the fire suppression section, there was a simple switching of hats and no conflict in the change-over. Fire prevention ceased to exist and all the members were firefighters working out of fire suppression. In the type where the fire prevention section comprised a separate bureau within the department, it took a little longer to make the switchover and there was more conflict. Yet relative to the other sections the change-over was very fast. The fire prevention section ceased to function as an organized unit and its members were dispersed to other sections, most notably communications, as service personnel and auxiliary workers. Hence, there was a change in both the structure and tasks of the section:
structurally, the section ceased to exist as a viable unit since it was disbanded; taskwise, the section's functions were totally abandoned for the duration of the stress period.

Fire prevention was similar to administration in that neither was overwhelmed by the amount of stress placed upon it. Yet whereas as we have seen the administrative section changed its operating procedures but continued to function as a viable section, the fire prevention section changed both its procedures and ceased to function as a viable section.

Fire Suppression

In the case of the fire suppression section, it is worthwhile to discuss separately the section's response under the fluctuating and peak types of stress. Confronted by fluctuating stress, the section experienced its greatest stress at the beginning of the civil disturbances. This stress was manifested in the organization's change in procedures from an everyday stance of fire prevention to one of fire suppression due to the large number of fires. Problems were encountered in the change-over from company response groups to task forces and in the formulation of priority listings in the extinguishment of fires that ran counter to all previous training. Allied with this was the dissensus community context and hostilities aimed at the firemen by neighborhood residents. However, after only a few hours the stress ceased as demands upon the section slackened. Operations returned to normal during the day. The section had valuable time in which to iron out the difficulties it had encountered and to adequately plan to alleviate any possible future ones. What was symptomatic of fire suppression's response to the civil disturbance was the repeated occurrence in the interviews of the word "routine." After the initial cycle of disturbances had quieted, the section knew both what to further expect in the way of fires and neighborhood hostility and how to operate efficiently to cope with the situation. Even though there may have been more fires and more hostility during the succeeding nights of disturbance, these were fully expected and easily assimilated to the new operating procedure. The further demands imposed upon the section by the civil disturbance were purely "routine."

The situation was quite different for those departments operating under conditions of peak stress. Here there was no rest or quiet periods when the fire suppression section could get its bearings and make the needed changes in its operations to cope with the civil disturbance stress. The demands placed upon the section did not fluctuate but were constant. And the data show that it was only the fire suppression section operating under peak stress conditions that could not adequately balance the demands placed.
upon its capabilities and hence was the only section that was over-
whelmed by the stress. This was very serious, however, for fire
suppression was the avowed main goal of the total organization during
emergency operations. The fire suppression section during the civil
disturbance was the key organizational sub-unit. To say that this
section was overwhelmed is to imply that the department in toto was
overwhelmed and could not adequately handle the situation. It was
only with the intervention of massive social control agencies,
especially the National Guard or Regular Army, and their initiation
of control over the disturbances, that the fire suppression section
gained an upper hand over the fires. For the fire suppression
section there was no "routine" but only "problems," as one informant
remarked.

The fire suppression section under both types of stress
responded to the civil disturbance by structural changes. Already
mentioned was the task force concept. Allied with this was the
initiation of orders by field officers riding with the task force
rather than from administration. The functions of the fire suppress-
ion section, however, remained the same. This was to extinguish
the fires with no loss of life. As we have seen, this function of the
fire suppression section became the major goal of the whole fire
department.

Communications

Under both types of stress situations, the communications
section maintained its basic structure but it greatly modified its
functions. It was not overwhelmed at any time by the demands placed
upon its capabilities.

The communications section operated at most times under the pro-
cedures outlined in the civil disturbance manuals. The process of
communications does not require many spur of the moment decisions
backed by little information. Thus, most problems were anticipated
and planned for and indeed the communications section experienced little
trouble. The structure of the communications section remained
basically the same during the disturbance as during everyday opera-
tions. It received extra capabilities due to the addition of a
number of men from the fire prevention section who acted in clerical
or supportive roles. As has been mentioned, record keeping was
above par during the disturbances due to the extra manpower. However,
the communications section modified its tasks during the civil dis-
trubance. A change-over was effected in fire reporting due to the
threat of box rundown and a telephone reporting system was initiated.
Allied to this, a liaison relationship was instigated with the police
department to help cut down the number of false alarms. This inevi-
tably drew the communications section into greater interaction with
the police department than during normal operations. What difficulties
problems that did occur centered on the police-fire juncture. The two organizations are both emergency relevant organizations and both were undergoing considerable stress. Therefore, it was quite natural that the two organizations would have difficulty in linking up. This is important to consider when it is known that, intra-organizationally, communications ran smoother than during everyday times. This was because radio traffic between the field and communications central was cut down considerably by the task force. So, while within the fire department communications became a more simplified process and free of difficulties, between the fire department and other organizations it became fraught with problems and misunderstandings. The latter constituted the major difficulty of the communications section during the civil disturbance.

The Organizational Response: Conclusion

The fire department underwent a large amount of stress due to the exigencies of the civil disturbance. The stress was either of a fluctuating or peak type. The reaction of the fire department to this stress was not sectionally equivalent. Some sections of the department experienced more stress than others and some sections had to make more changes than others. There was no unitary pan-organizational response. What happened was that throughout the organization at selected points either new structures and/or new functions emerged or there was no change at all. Within the fire department we may see four types of bureaucratic adaptation to the stress situation. These are shown in Figure 4. This typology is built around the two variables of structure and function (or tasks).

The first type of adaptation to the stress situation is where sections retain their pre-emergency structure and their pre-emergency functions. This was not the position of any of the four sections highlighted. They were too central to the organization's existence and too subject to a high degree of stress to remain in their pre-emergency footing. Within the fire department, probably, sections like budget and finance evidenced little change in either structure or function due to the stress. These were necessarily peripheral sections that were not basic to the new emergency status of the department. Those sections that were basic to the organization in its new environment all underwent major changes of some sort.

The second type of adaptation to the stress situation refers to the modification or emergence of a new structure and the continuance of the regular functions. Fire suppression ideally fits this case. The regular task of extinguishing the numerous fires continued to be the main function of the fire suppression section but its structure underwent changes. The authority structure within this section shifted from extra-local to local as orders tended to originate not
Figure 4

Patterns of Fire Department Adaptation to Civil Disturbance Stress

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<tr>
<th>STRUCUTURE</th>
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<td>Regular</td>
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<td>Type 1</td>
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<td>Regular Structure &amp; Regular Functions</td>
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<td>New</td>
<td>Type 2</td>
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<td>New Structure &amp; Regular Functions</td>
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from central administration but from the ranking field officers. Also the traditional company response group was replaced by the multi-company task force as the main firefighting unit.

The third type of adaptation involves a modification or change in the functions and the continuance of the regular structure. The communication section underwent this change. Its structure remained basically the same during the civil disturbance as it was during normal times but its tasks were modified. Communications ceased to be the initiator of fire address responses and assumed a reactor role. In addition, the section ceased to correspond only with its own organization and became the major communicator with extra-organizational agencies such as the police department.

The administration section also falls within this third type. Administration lost a number of its decision making functions to field grade task force commanders who were closer to the action. Its structure remained the same but its jobs changed from the initiation of basic organizational decisions to one of coordination of the department to assist fire suppression.

The fourth type of adaptation to the stress situation involves a modification or change in both the structure and the functions of a section. This applies generally to the fire prevention section. Undoubtedly it underwent the greatest amount of change of the four sections discussed. Structurally, it lost its form and disappeared as a distinct section. Functionally, it switched tasks from the prevention of fires to the job of either fire suppression agent or administrative clerk. During the greater part of the civil disturbance the fire prevention section ceased to exist.

These patterns show in clear relief how the fire department, a complex bureaucratic structure made up of numerous interrelated sections or components, adapted to the conditions imposed upon it by the civil disturbance. It should be remembered that stress may result either from an increase in demands upon the system, a decrease in organizational capability, or a combination of the two. In this instance of the civil disturbances, stress resulted basically from an increase in demands, these demands being the added number of fires within a hostile context. To cope with this stress some sections tried to diminish the demands and others tried to increase the organization's capabilities. For example, the administration section functioned basically to increase the organization's capabilities by recalling off-duty shifts to supply the extra manpower needed to combat the fires. The fire prevention section literally disbanded itself and placed its personnel in other sections to increase the other sections' capacity to perform their more important tasks. Similarly, the fire suppression section tried to diminish the demands upon the organization by its priority listing of fire responses and its modified extinguishment process. And,
finally, the communications section tried to diminish demands by its extra-organizational involvement with the police department in checking out false alarms. Thus, while there was a differential input of stress to each section of the organization, there was also a differential output of response by each section of the organization. In order to understand the total response of the fire department to the civil disturbance, it is therefore necessary to understand the response of each section to the disturbance.

The Fire Department and a Natural Disaster

It might be worthwhile to discuss the activities of the fire department during a natural disaster. While there are many kinds of disasters varying in magnitude and scope, it is still possible to compare them as a type to a civil disturbance. What distinguishes a natural disaster from massive civil disturbances is the community context: during disasters, there is a consensus context. During a disaster the population is likely to become unified in a collective effort to maintain community life and there is likely to be consensus among the people concerning the activities and duties that must be accomplished. An obvious task is the extinguishment of fires. Thus, the fire department is backed by a positive public opinion that supports its activities. Instead of rock throwing, sniping, and other forms of violence aimed at firemen by neighborhood groups who tend to identify the fire department with the established order during large-scale disturbances, there is help and assistance rendered to firemen by volunteers and emergent groups who identify with the community and the task of quick recovery.

It has been mentioned above that the most far-reaching organizational change resulting from civil disturbances is the implementation of task forces. This is done as a protection device to deter hostile crowd action and protect the firemen. During a natural disaster, task forces are not needed to fulfill this function; the consensus context precludes overt hostile action aimed at firemen. Thus, as a protective arrangement, task forces would not be required. However, as we have seen in this report, there are a number of important ramifications from the use of task forces during civil disturbances that are only incidentally related to crowd control activities. Communications are consistently sharpened and the volume of messages reduced by having a larger number of men under the control of a single task force commander in charge of a radio. In addition, decision making improves since the commander is usually a battalion chief; he is immediately on the fire scene with the men and equipment and can give orders directly to the fire fighters and thus bypass a number of intermediate links that may contribute to inefficiency by the loss of time and initiative. Task forces, though originating due to civil disturbance stress, thus have positive functions to perform in natural disasters also.
It is not the intent of this report to give a one-to-one comparison of the activities and operations of a fire department during civil disturbances and disasters. That awaits further work. However, this report has shown the feasibility of studying the fire department in its varied community settings. For an accurate overall picture of the fire department organization and activity, it is thus necessary to view that organization in both its normal, everyday setting and its extra-normal crisis settings, dissensus and consensus. Only then can the changes in structure and tasks that lie at the heart of the fire department be seen.

2. Brouillette and Quarantelli, p. 42.