The foremen, however, made all the major decisions. Operational decisions were largely made by crew foremen and the general foreman. The section's link with the administration, particularly with the director of public works, was maintained by the superintendent of public works who spent most of the first hours with the director at the Public Safety Building. On Saturday he joined his crews at the shop but maintained radio contact with the director.

The general maintenance section was better prepared for the emergency in terms of radio communication facilities than were units of the engineering divisions. But radio communications were difficult during the emergency owing to the great volume of messages being passed. Nevertheless it was for several days the only reliable source of quick communication. Many of the personnel in the engineering divisions did not have access to a radio and coordination among these personnel was often very difficult to establish. On the other hand, many of the trucks employed by the general maintenance section were equipped with radio and every foreman had access to a radio, making communication and coordination in that section of public works considerably less problematic than in the engineering divisions. Under the building construction and maintenance head, the Disaster Control Office tried "everything" to improve communications during the emergency period: runners, walkie-talkies, and radio. One of the major recommendations deriving from this disaster experience, in fact, was for a general improvement in the city's communication system.[9]

But even for the general maintenance section, given its greatly increased number of personnel, radio by itself was insufficient. Thus, a system emerged which combined radio facilities with face-to-face contact. One practice, according to the foreman who dispatched for the maintenance crews on Saturday and Sunday, was to send one man who would

> contact the group of qualified people for any particular job. He would stay in constant radio contact with us until the job was completed, then he would come back.

Crew foremen, like these "contact" men, were able to transfer radio messages and information verbally to persons working in their area who were unable to use the radio themselves. Similarly, efficiency in the use of heavy equipment was increased by employing both radio and direct human communication. One maintenance man described how this permitted the sharing of emergency equipment among the several crews.

> It was agreed that one foreman would call another and tell him that a certain piece of equipment was on the way to him. The operator /of the equipment/ could do one job and then go on to another. That was the way it was going, around in circles, but everybody was doing a good job.

The equipment dispatcher described another process of locating equipment which also involved both the radio and personal, face-to-face communication.

> There are men in the engineering department that have personal contacts with all the suppliers in the area, so, when we would put out a call: "Does anyone knew where this particular piece of equipment could be located? If anyone hears this transmission, would you please reply." Then one of them would come in and say, "Yes, it's at a certain place. Do you want me to check to see if it's there and, if it is, stand by until you have the men come by and pick it up?" And we'd tell him, "Yes." So whoever located it would call back and say, "It's here. Send the men." I'd make sure that they were dispatched from here.

The process of communication during the emergency period is further discussed in the "services" section of this chapter.

Equipment Maintenance Section

One major alteration in the authority of the equipment maintenance section took place immediately following the earthquake. This change was not the result of the emergency, rather the emergency acted as a precipitating factor, demanding that the change be made then -- and not postponed any longer. As noted in chapter three (see footnote 6) the garage foreman and his superior, the superintendent of public works, did not agree on certain basic issues regarding the section. When the foreman did not report to work until his regular time, the Monday following the earthquake, the disagreements could no longer be put off, and his work for the organization terminated. His replacement -- the man who had been the day foreman -- initially held this new position on a tentative, emergency basis, final acceptance being contingent on his own decision. During the emergency period, in any case, he had assumed the authority of his absent superior, checking with him by telephone once or twice on Saturday and Sunday.

But the new foreman worked most closely with the superintendent of public works during the emergency period, who, like himself, was at the public works shop much of the time. Most of his contacts with the superintendent concerned equipment required either by his own mechanics or by maintenance crews in the field. When the foreman was not certain whether the equipment could be obtained, he would consult with the superintendent who in turn would issue a call for the equipment over the radio. Likewise, the foreman would inform his superior when fuel supplies were running low, and whenever the superintendent received requests for equipment and fuel by radio, he passed this information along to the new foreman.

As was true of the general maintenance section, much of the communication in the equipment maintenance section was face-to-face. This communication was directly with the foreman.

> There wasn't anybody in the office. /He/ was the only one available. They contacted /him/ on the phone -- when the phone did get back in operation -- or they came down to the shop here.

Mechanics in the section indicated, however, that they received information and requests themselves from persons outside the normal authority system. Thus, one "old-timer" said, "I guess I have been around here so long that they just came in and asked me to go out and do it." In addition, so much maintenance and emergency repair was done in the field rather than at the shop that it was simpler to follow leads from one job to another in the field than to return to the shop each time for instructions. The same respondents also recalled that in the absence of official information they were generally prepared to make their own decisions.

> Most of the guys took responsibility upon themselves. I know I did and it didn't make any trouble either. I just made a lot of decisions myself.
>
> I was never actually stuck on what to do. I could make my own decisions if I had to. Then, if they didn't pan out, they could chew me out about it later.
>
> If I didn't see /the foreman/ around, I would just take off and go and do what I was supposed to do and come back.
>
> If something had to be done, you didn't wait for the foreman to come along and tell you to do it -- you did it.

This independence was possible primarily because the personnel of the equipment maintenance section, like the general maintenance section, knew what needed to be done. And, even in an emergency, what needed to be done differed only quantitatively from what normally needed to be done. The priority attached to the maintenance of emergency vehicles and vehicles employed in emergency operations -- and the importance of making the most efficient use of this equipment -- was shared during Time Two by virtually all of the members of the section.

The presence of a new foreman appeared not to result in any confusion during the emergency period. The new foreman's previous position in the section had been, itself, supervisory. Little actual change occurred in his tasks -- at least during the emergency. His final decision to accept the new post officially was made in collaboration with another member of the section, one of the senior men whom the foreman persuaded to take his own vacated position. These changes, however, were made official only after the emergency. In terms of the foreman's authority and relationship with the superintendent during the emergency, he had already assumed this new position.

Treatment Plant Section

Like the equipment maintenance section, the water treatment section added no personnel during the emergency; neither were any major changes in authority made after the earthquake. With one notable exception, the earthquake rather served to intensify the section's Time One decision-making independence from "the people downtown." That exception was the direct regulation of chlorine testing by the State of Alaska Department of Health and Welfare. The danger of contamination from the disrupted sewer system was the principal consideration in this change, but the plant foreman's insufficient knowledge of events in Anchorage also contributed to this decision. Normally chlorine tests are conducted by plant personnel with only relatively indirect supervision from the health department.

Although several members of the water division administration inspected the plant shortly after the disaster and radio contact with the utility office was quickly reestablished, plant personnel -- particularly the foreman who resides at the site -- maintained their independence during Time Two. The foreman, for example, did not leave the plant for a month after the quake. Unlike other section heads who made firsthand field inspections, the plant foreman depended completely on others' reports and radio communication for earthquake information.

Emergency tasks of personnel of this section, as described in chapter four did not differ radically from their "normal emergency" responsibilities -- the procedures remained consistent from Time One to Time Two and, generally, were followed without special coordination with water maintenance personnel. What was required was the continuation of the water supply into the distributive system. This was done almost independently of repair and maintenance work on the system itself.

Plant personnel did make use of their radio link with the utility office since this was the major source of information during the period: "I was asking a lot of questions," one member of the section said, "calling them and wondering how everything was coming and naturally I would keep in contact with them." Within the section, however, less radio contact was required. With the exception of the man in charge of the maintenance of the deep-well pumps, all the personnel operated at the plant so that face-to-face communication was generally possible. The pump man was an "old-timer" and his work was done autonomously.

Completely familiar with his responsibilities, the pump maintenance man was authorized to make all necessary supply and equipment requisitions without the specific approval of the plant foreman. Most of the suppliers from whom the pump man received material knew him personally -- in any case he had city-employee identification -- so he made all the contacts himself. He even ordered supplies from Seattle without having to obtain the foreman's endorsement. The order forms, approvals, and other paper work involving requisitions were completed after the emergency period.

This pattern (usual in normal times, too) was characteristic of all sections of the public works during Time Two. Requisitioning emergency supplies without the officially-required order forms and order numbers from the city warehouse was very common. Material was, in fact, "borrowed" from private persons and organizations during the first few hours of the emergency often without the permission of its owners; messages were left for the owners informing them of what had been taken. Similarly, much informal loaning of equipment among private and public organizations and much "buying" of supplies by city employees without official permission took place. But these patterns were not strictly emergency measures; they were Time One practices which sharply increased during the emergency period. The inevitable outcome of this practice, however, was considerable bookkeeping trouble when these unofficial bills came due.

Water Maintenance Section

Compared with the general maintenance crews, personnel of the water maintenance section were both better and worse prepared for the emergency: better, in that generally men on the crews were more experienced in the work they had to perform after the earthquake; worse, in that the lack of this same experience limited the effectiveness of volunteer and hired personnel taken on to meet Time Two quantitative change in tasks. Only four new men were officially hired and these men did not actually join the crews until after the emergency period. Three experienced valve men were sent to Anchorage by the Fairbanks water department but, again, these men did not join the maintenance crews until Tuesday, four days after the earthquake. During the emergency period itself, water maintenance crews worked on their own, augmented only by a few volunteers.

As experienced men on the sewer crews had done, the experienced water maintenance men (even those who were not officially leadmen) split up so that each worked with one volunteer and could act as informal, personal leaders. "That way," one of the crewmen said, "they could spread their forces over a greater area and succeed in getting more work done." Other shifts from standard authority patterns also took place in the section as a result of variations in the experience of employees. One of the foremen, for example, was new to his position and depended on the advice and experience of a senior crew foreman. And the manager of the division, also new to the work, depended on the foremen to make operational decisions. The general foreman, who normally had authority over the three crew foremen, stepped down during the emergency and functioned essentially as another crew foreman. Of these arrangements, a division administrator said:

> The general foreman, if you go down the chain of command, he would be over the crew foremen, but as it worked out, each of the foremen more or less had a particular area of town he was working. In this manner, one foreman would be completely familiar with what was going on in one particular area of town. And we worked together that way.

The efficiency of this decentralization of authority during the emergency, according to this respondent, was closely associated with the magnitude and diffusion of the earthquake damage.

> When you have as many problems as we did, it would have been impossible for one person -- including myself -- to get the grasp of everything that's needed. I thought it worked very well. We more or less split up the town and worked at it in different areas, different responsibilities.

This arrangement was followed among the men of the crews as well. There was some exchange of personnel as the crews moved from one job to another, this exchange dependent on the individual experience of the crew members. Thus, one foreman explained how he and his fellow foremen shared their men.

> Because we had so few familiar men we had to know what the other crew was doing all the time. . . . One fellow, say, had been in an area three days before the earthquake and had been on a particular valve. Well, if he was working way over at the other end of town on another crew and I knew that, I would try and snatch him so it would be faster in finding the valve than it would have been if we had sent someone else or even myself out trying to hunt around in the snow for it. . . . So we worked pretty well together.

In addition, members of the crews, both leadmen and maintenance men, made many decisions crew foremen normally would have made: "Time and time again," one maintenance man observed, "we made decisions that should have come from a higher authority, but time wouldn't permit it." The priority on which these emergency decisions were based was a very simple one held in common by all members of the section: "What we were trying to do was to get water in the mains just as fast as we possibly could." Any man whose personal experience, relative to those around him, could contribute to satisfying this demand, made the appropriate decision.

These changes in authority were not without dysfunctional consequences. One maintenance man stated that the shifting of men from one crew to another, while it contributed to operational efficiency, also created problems. Men would find they had been given instructions by two foremen at the same time: "One foreman might have told you to go someplace and then the other would call you and tell you to meet him someplace else." Like the unofficial pattern of requisitioning supplies, this practice of shifting men from one crew to another was also characteristic of Time One. Thus, the difference between normal and emergency occurrences of this pattern was quantitative rather than qualitative. The problem was aggravated during Time Two by the attempt of one of the foremen to stay with his men all the time instead, as he later suggested, of depending more on their own judgement. This lesson he had begun to learn during normal operations but learned even more quickly during the emergency.

Communications among members of the water maintenance section were by radio and face-to-face contact. The pattern of shifting men among the various crews made communication especially vital: "Without the radio," one foreman observed, "I think we would have been dead." Indeed, his only criticism of the section's operations was of a crew foreman who used the radio too much. The radio was so busy, this informant said, that he had to "sneak" his messages in: his co-worker's monopoly of the facilities did not add to the efficiency of communications.

Water maintenance crews called upon members of the public works engineering sections for the same reasons sewer crews did. The section's utility maps and installation plans were frequently incomplete, making the location of valves difficult. To determine whether this information was available in the engineering offices, the water foremen contacted the thirty-nine engineers by radio and had them look up the necessary data. When their records were incomplete, maintenance crews relied on the memory of "old-timers" or searched for the installations. The latter process was, clearly, a major cause of delay in the restoration of services. Nonetheless, the manager of the water division and his superior, the director of public works, were much impressed with the speed of the repairs. "Give the credit to them," one administrator said of the maintenance crews, "they did a tremendous job."

Where changes in authority in maintenance sections of the public works occurred during the emergency period, they occurred in the context of Time One authority patterns. Without exception, maintenance personnel, regardless of their tasks, remained in their sections and did not, like some engineering personnel, find themselves working under completely new supervisors. Neither were there instances of the loss of authority as occurred with the building inspector and the head of the Disaster Control Office. Changes in the maintenance sections were, in fact, official emergency promotions which followed the normal links in the chain of command. The basic cause of this distinction appears to lie in the new priorities and tasks which the disaster demanded of engineering personnel as opposed to the task continuities it evoked of maintenance personnel.

In the final section of this chapter, authority patterns within the service and administrative sections of the public works are considered. The distinction between Time One and Time Two is here less clear-cut and appears to fall somewhere between those of the engineering and maintenance sections.

Service and Administration

Customer Service Section

> You just did what you saw to do. You couldn't wait for somebody to tell you and the people couldn't wait for you to say, "Well, I don't know." So you just assumed an awful lot that you weren't told to assume.

Thus a member of the customer service section of the water division summarized his Time Two authority. He went on to explain the unclear relationship of his new authority to his new tasks.

> I didn't even know I was supposed to be doing what I was doing. Just when people came in and asked me this or that, I just gave them an answer. /The manager/ was in the field, so somebody would have to answer.

He acted during Time Two essentially as an individual, rather than as a member of a section. The other members of his section, whose normal tasks were irrelevant to the emergency, had assumed or been assigned new tasks by other members of the public works. The supervisor of the section, in a literal sense, had no one left to supervise, and he operated largely as a fill-in where assistance was required. Thus, because he had had some experience with radio, he took over the City Hall radio during much of the emergency period. "The girl that was the normal switchboard operator was operating the radio," it was reported, "and she was getting completely frustrated, so /he/ took over." This was his own decision. The manager of the water division was not available for consultation and there appeared to be little in the supervisor's normal responsibilities which was relevant to the emergency, so he assumed this task as the most useful under the circumstances.

His relationship with his superiors -- and the water division's relationship in general with the administration -- was largely ex post facto. The supervisor informed the manager of decisions after the fact and the manager, in turn, passed on progress reports to the administration after the progress had been made. "We were still part of the public works," one respondent said,

> but we completely bypassed the director of public works. We acted just like he wasn't even there. The assistant director of public works, we would hand him our progress report and that would be about it. All decisions came directly from this division and were put into effect without any assistance or guidance from the city manager, director of public works, or the city council. Now normally it wouldn't be that way whatsoever. Those are the channels that we cut.

He added that it would have done the administration little good to complain since "we had already done it or it wouldn't have been written down."

Sanitation Section

Like members of the customer service section, personnel of the sanitation section were employed during the emergency period in tasks they normally would not have performed. In the course of performing these tasks, they were directed by public works supervisors outside the sanitation section.

In particular, a number of sanitation men worked with the sewer foreman of the general maintenance section. During Time Two the head of the section was also engaged in unusual tasks: he dispatched for the maintenance division during much of the emergency period, working at this task under the direction of the public works superintendent.

By Sunday -- when gravel-fill operations had opened up most heavily damaged streets -- sanitation operations began systematically. Up to that time, nothing had been done to remove the five trucks from the collapsed garage, although some preliminary efforts to obtain the heavy equipment for the project had been made. Similarly, nothing systematic had been done to provide Anchorage residents lacking sewer facilities with emergency substitutes, although, again, orders had been placed through civil defense for chemical toilets and collection barrels. On Sunday, however, the members of the sanitation section who had been engaged in other emergency tasks were called back to their own section and worked again under their own supervisor.

At this time a major shift in authority took place. The sanitation foreman was still dispatching for the maintenance division and his assistant, the sanitation officer, was serving with the National Guard. In the interim, the sanitation section had been headed by a driver -- a man who had been with the public works for eleven years. He was made temporary sanitation officer and took over the coordination of the section's personnel until the sanitation foreman was free to resume his responsibilities.[10] It was reported:

> He took it over real well. He was thoroughly familiar with the job and with the town and he took hold and did a real good job. He ran the crew for /the foreman/ while /he/ was dispatching that Sunday.

Other changes followed from this promotion, although these were changes with less impact on section authority patterns. Some additional personnel were taken on to handle the increased work load following the disaster. For drivers to work efficiently, particularly in areas drastically disrupted by the earthquake, they had to be familiar with the city. To this end, the temporary sanitation officer split up members of his old crew, made two of the men drivers, and placed them in charge of crews made up, in part, of new emergency personnel. Estimates were that five or six new men were hired after the earthquake.

Especially while the sanitation officer took his supervisor's place, decision-making power was delegated, unofficially, to sanitation personnel normally not exercising it. Drivers made decisions themselves during the emergency, particularly when persons who possessed authority were not available. They added, however, that they always informed their supervisors of the action they had taken. One supervisor declared that all levels of the organization followed this practice.

> There was never any attempt to deliberately evade the chain of command. It was just a matter of

> shortening it up. The director of public works would go directly to the head of a section to ask him what was being done there, what needed to be done, or to gather information to give to some other agency.

Of his own activities, this respondent said:

> After I had started doing it, why, /the superintendent of public works/ came on the job and told me it was all right -- to go ahead. We made our decisions on our own and made our superiors aware of them afterwards.

Communication within the sanitation section was by radio. As members of many other sections of the public works had discovered, sanitation personnel found that radio was both the most efficient and yet a most clearly limited medium. One sanitation worker suggested that any improvements made in the existing system ought to include augmenting the one available frequency with at least one more, so as to allow more immediate access to the radio during emergencies. "We would have had a lot better communications," he said, "if we had broken it up into different frequencies and had more radios on hand."[11] But without even the somewhat limited radio facilities it had, the section would have been severely hampered. The sanitation officer depended almost exclusively on radio contact with City Hall Annex to avoid gaps in the emergency sanitary system:

> /He/ was in close contact with the City Hall Annex. Anybody that needed a waste barrel would call the Annex and they in turn would just relay it to /him/.

Some difficulties developed in this communication process, particularly as it involved other organizations. Requisitions for emergency supplies were made through civil defense but, it was reported, the sanitation section was not always informed when their supplies had been received. Thus, chemical toilets remained in storage for two days simply because the sanitation personnel did not know these supplies were available. One member of the section explained how this happened.

> You can plainly see how it happened. The civil defense had all volunteer help, you know, and they weren't aware of the situation, so they set them aside. Well, here we had people screaming for these toilets all over town and we couldn't supply them because we didn't know where they were.

Some independent action was taken by the section foreman to help avoid this delay. One member of the section was stationed at the airport to set up a separate warehouse for sanitation supplies and to keep the foreman informed of shipments and available equipment. No arrangement of this kind had ever been required before.

Administration

Even during normal times, members of the administration of the public works -- the director and his assistant particularly -- tend to take a less active role in the operations of the department than in policy-making decisions. Both the director and the assistant director are engineers rather than administrators: this results in considerable autonomy among operational division heads. The emergency demanded quick action from many sections of the public works, especially from maintenance crews, sections about which the various operations foremen knew more than the engineer-administrators. As a result, the emergency increased the independence of these sections; neither the director nor his assistant became actively involved in any of the maintenance operations

The director and assistant director functioned rather as reconnaissance personnel, conducting general inspections of the damage and passing this information on to maintenance supervisors and foremen. A number of supervisors and foremen and several of the maintenance crew members themselves said that during the emergency they had received information pertinent to the damage directly from the administration. The director and assistant director were more likely to make specific operational decisions affecting the activities of engineering rather than maintenance personnel. The administration, for example, denied the Disaster Control Office the use of explosives in securing damaged buildings in Anchorage. The decision to phase out operations of the Disaster Control Office two days after the emergency period also originated in the public works administration.

But the assistant director took on some specific responsibilities during the emergency. He acted as liaison for the maintenance sections and the head of the construction section in the location and disposal of heavy equipment. In these activities he acted on behalf of any public works personnel who required additional equipment, although, on occasion, his orders came from the director.

That the assistant director assumed these responsibilities was the result of an attempt by the public works administration, mayor and city manager to organize emergency requisitioning and construct some general picture of the extent of the earthquake damage and the city's response to it. A meeting was called for 3:00 Saturday morning to which all municipal supervisors and section heads were invited. Under the leadership of the mayor, the meeting was the first systematic attempt to facilitate inter- (and intra-) organizational coordination. A public works administrator described the meeting this way.

> It was conducted by the city manager and all the department heads were there -- the municipal light and power, the telephone department, the councilmen, the mayor, the city engineer /i.e., the director of public works/, the Army and the Air Force. Doctors were there; everybody was there. There was

> standing room only -- and that was out in the hall. The place was just packed.

The major portion of the meeting was taken up with reports on damage and emergency actions from each of the city organizations. It was at this meeting, for example, that the manager of the airport announced that his facilities had sustained almost no damage and that he would not require assistance from any other public agency. In addition, other organizations, like the military, the Salvation Army, and Red Cross reported on their capabilities, requirements, and emergency operations.

One result of this meeting was the designation of the local civil defense organization as coordinating center for equipment and personnel requisitions. The assistant director of public works, then, acted as liaison between public works and civil defense, passing requisitions on to the latter organization. The results of this change were described by an administrator as generally successful.

> You could definitely see the smoothness begin to take effect. The minute it was initiated it irritated some people because they found that they couldn't go directly to the source of equipment. . . . But orders were to come by a certain method and that was it. It irritated some people that knew that they had to have something . . . but we couldn't allow them to go directly to these people. We told these agents . . . to take the information but not to act on it until it came from the proper channel, so we would know what the devil was going on.

But other members of the public works suggested these "proper channels" were not always followed during the emergency.[12] This disparity, however, may reflect the widespread procedure, even during normal times, of allowing foremen and section heads to requisition supplies and equipment to certain limits in cost without the approval of the administration and the practice of requisitioning supplies before completing order forms and warehouse authorizations. Whatever the explanation -- "there simply wasn't time" is another alternative -- the practice continued and the result was considerable confusion in the bookkeeping offices after the disaster.

With the possible exception of the ban on the use of explosives and other limiting orders, the director and assistant director were infrequently called on to make specific emergency decisions. Indeed, because the section and division heads tended to act relatively independently, the director and his assistant had few opportunities to make such decisions. As was true of the chain of command generally, the director and his assistant were more likely to be informed of public works activities after those activities had been performed. Their approval was, then, after the fact.

This pattern appeared in the decision making of the superintendent of public works and his assistant. The superintendent made more independent decisions during the emergency than he would have made during normal times. But this was true for all the men in the maintenance division. Only on major decisions affecting the operations of the entire division -- as did the change in sewer operations -- did he purposely seek out his own superiors for their approval. Similarly, another division supervisor noted that members of the maintenance division

> did not worry too much about whether /the superintendent/ said to do something or I said to do it because /everybody/ knew that "Let's get it done" was the thought in mind.

On the other hand, the administrative assistant, who is normally outside the operational chain of command, found during Time Two that his new tasks required him to make decisions affecting field crews and their tasks. Beginning on Sunday, when he returned to work, he was involved in the hiring and dispatching of emergency personnel, tasks which he coordinated with the sanitation foreman. Together they would determine the personnel needs of maintenance and repair crews, hire the men, and dispatch them. In addition, the administrative assistant also relayed damage reports and requests for repairs to crew foremen or, if they were unavailable, directly to maintenance men. The emergency placed him in a position indirectly, if not directly, associated with public works field operations, a position alien to his Time One location. The paper work he normally performed full time was altogether lacking from his Time Two responsibilities. This was itself as graphic as any indication of the difference between his normal and his disaster tasks.

Probably because the principal task of an administrator is the making of decisions -- the exercise of authority -- the difference between Time One and Time Two for public works administrators was often described in terms of the diffusion of their decision-making authority. Decisions normally deferred by crew members to foremen, or by foremen to section heads, supervisors, and administrators were made by persons who officially and normally would not have made them. But the increased numbers of activities and the priority on speed during the emergency meant that administrators themselves had more demands placed on their time and attention. Thus, they shared normal decision-making authority with those who held lower positions in the hierarchy.

Conclusions

This chapter completes the presentation of data begun in chapter three. The present chapter, however, is most clearly associated with chapter four in which a descriptive analysis of emergency tasks was presented. In this present chapter the authority structure of the public works during the emergency period has been described.

The most radical changes in authority, as in tasks, took place in the engineering sections where the earthquake may be said to have provoked a

"disaster," in the sense of a situation almost completely discontinuous with normal times. Tasks and authority relationships were altered considerably in an attempt to define the new Time Two responsibilities of engineering personnel. For operational personnel, on the other hand, the earthquake was an "emergency," of much wider scope than any previous emergency, but nonetheless, a situation which required no major changes in tasks. Nor were alterations in authority relationships demanded, other than those which occurred within the existing structure. Engineering personnel assumed certain new responsibilities, maintenance personnel were promoted to them. The distinction is an important one.

Administrative personnel shared their decision-making authority with other members of the department. Certain office personnel -- the administrative assistant, for example -- found themselves more actively involved in the operations of the public works than had been true of normal times. As a result, they also were involved in the expanded and diffused decision-making process. Finally, service personnel -- customer service representatives of the water division and sanitation employees -- whose regularly scheduled activities were temporarily irrelevant to the disaster were absorbed by other operational units. Sanitation personnel returned to their own section rather quickly owing to the essential nature of their normal services. Indeed, with the disruption of the sewer systems, they took on a greatly expanded work load. But, like Time Two maintenance tasks, these were similar to Time One sanitation activities.

In the following chapter, the major themes of this report will be brought together and their relationship to certain hypotheses in disaster research explored.

FOOTNOTES: Chapter V

1. One of the survey engineers who reported back to work Sunday afternoon said that, after the fact, he realized that he should have returned to work immediately following the earthquake.

> One of the things that I probably should have done was come down here right after the quake and take charge of the file room so that nobody would run off with anything that we have here. We missed some drawings. Somebody came running through here . . . and grabbed up a few drawings that we still haven't found or been able to replace.

2. One member of the survey section noted that there were persons outside the public works who also had this kind of information. One engineer, for example, who had designed much of the sewer system offered his services during the emergency period. Unfortunately, his offer was not accepted until several days later: "You might say they probably wasted a day that they could have utilized his services," this respondent commented.

3. "It was a pretty silly idea to start with as far as that's concerned," he added as an afterthought to this description.

4. There is some confusion relating to the decisions on the Penney demolition project. One DCO respondent admits that his supervisors did not approve of the project, but added he had also decided against it. Yet in an earlier interview with members of the Disaster Control Office, it was stated:

> It is our considered opinion that we should have gone further with this /i.e., demolitions/ than we did. We were stopped by other agencies.

This view of the events is supported by a public works administrator's description of the decision.

> /Members of DCO/ came to me on two occasions with requests to use dynamite. And, under the ordinance I do have the authority . . . to give permission to use explosives. However, that is usually in the absence of the director himself. The director was not absent, in a sense, because I could contact him by radio. But /DCO/ was rather insistent that /they/ should use dynamite, explosives, and demolition. I got hold of /the director/ and in turn we got hold of the city attorney to see what other implications could come from this and then, of course,

> we made a rapid inspection of the situation to determine whether or not it was necessary to use explosives. And, you may or may not know, there were none used.

One suspects the situation was subsequently redefined, perhaps by everyone involved.

5. This respondent went on, however, to admit that he was still (at the time of the interview three months after the disaster) "wondering what all that was about".

> It was either the building /inspection/ division or the /building construction and/ maintenance section. I've still got a few questions about that group. . . . Now just what beneficial results they had and whether they worked in conflict with the building /inspection/ division or helped them, I'm not sure.

6. He went on to describe his own confusing experiences with passes during the emergency.

> There was quite a little difficulty getting around by car. A lot of different people had a lot of different ideas of security and nobody had any official passes. A pass from one department wouldn't be recognized by another and there was a lot of interference with work because of no central pass. I could get around about as well without a pass as any other way. I carried a letter from /the head of the Disaster Control Office/, which sometimes entitled me to enter. But they wouldn't let me through in some other places. Lots of times the military wouldn't let me through at all and I had to go around some other way: call a policeman and explain to him and perhaps the military would let you through if a policeman would vouch for you.

7. If the lines of authority are followed exactly, the head of the building inspection division holds a slightly higher position than the head of the building construction and maintenance section.

8. However, he also took the view that the new organization acted inside the bounds of the public works. Despite new tasks and new authority, despite a new name, the DCO was, he suggested, still a part of the public works. In the following exchange he made his point clearly:

> Interviewer: Was /the coordinator of DCO/ operating as an authority of the public works department during the emergency?

Interviewee: Yes
Interviewer: Did he identify himself as such?
Interviewee: Oh, sure. Instead of building construction and maintenance, he became building demolition and search. But it's all part of the department, it's part of this division.

9. From the DCO's after-action report and recommendations the following indicates the importance attached to an improved communications system.

> This is the first thing that usually gets goofed up, be it war, peace or disaster. Without it we can be no more than a bunch of individuals running aimlessly around, getting very little done. With good communications, we can be an effective and efficiently operating unit. . . . KEEP IT IN MIND -- WE CAN NEVER HAVE TOO MUCH COMMUNICATION.

10. The temporary sanitation officer subsequently assumed that position permanently, a promotion which apparently took place largely as a result of the emergency.

11. This was a suggestion made by many of the public works supervisors after their experience with the earthquake.

12. Although the data are inconclusive, at least one member of the public works indicated that he channeled his requisitions through a local official who had personal ties in Seattle, thus apparently ignoring the assistant director and the civil defense altogether.