X. PERSONNEL

Full time paid personnel in the emergency management organizations of the EMOs in this study is certainly anything but abundant. Some 76.2 percent of the EMOs reported paid full time personnel levels of four or fewer and, actually, 35.8 percent stated that there was no full time personnel in their jurisdiction, the question having explicitly asked to exclude other emergency service personnel, fire and police as well as 911 or emergency dispatch personnel.

When it comes to paid part-timers, the situation is similar: indeed, 45.2 percent did not report even one part time employee in this category, and 82.8 percent referred to four or fewer members of part-time personnel. Only 16.6 percent had five or more full-time professionals, and 8.7 percent five or more part-timers. Table 23 contains the data summary.

Of course, no conclusions can be adequately drawn, or at least few interpretations are possible, unless an analysis is conducted to identify the size of the respective jurisdictions and this is not accomplished in this preliminary report. After all, the majority of the nation's jurisdictions is represented by rather small townships and boroughs where the need for emergency management personnel would be less pressing and the means for their employment less available.

And then, of course, there are volunteers. It turns out that 57.9 percent of the EMOs reported the involvement of five or more volunteers though 21.3 percent also mentioned that no volunteers were active. But volunteers obviously represent a very significant portion of the nation's emergency management community.

Table 23

EMERGENCY MANAGEMENT PERSONNEL

Personnel	Full-time	Part-time	Volunteer
None	35.8	45.3	21.2
One	17.6	22.5	3.0
Two to four	22.8	15.0	7.8
Five or more	16.7	8.8	57.9

Apart from the fact that some 11.0 percent of the responding EMOs themselves are unpaid workers, and thus volunteers (Chapter II), volunteers have been used in a variety of activities.

Table 24

MAIN USES OF VOLUNTEERS

Activity	Percent
Search and rescue	68.8
Communications	66.3
Clerical tasks	39.0
Administrative tasks	36.9
Sand-bagging	33.4
Other activities	30.5

In fact, some 59 different activities were mentioned by the respondents in the "Other activities" category, though some might be subsumed under the broader clusters of Table 24. Relatively more frequent responses include volunteer firefighting (7.3 percent), shelter operations (4.5 percent), traffic control (4.0 percent), transportation (3.4 percent), weather spotting or volunteer law enforcement (2.9 percent for each item), civil defense (2.7 percent), medical technicians (2.3 percent), laborers (2.0 percent).

Examples of other volunteer activities, mentioned by fewer than 2.0 percent of the respondents, must suffice: fundraising, equipment maintenance, legal assistance, data processing and computerization, mapping, recruiting, stress support and counseling, salvage operations.

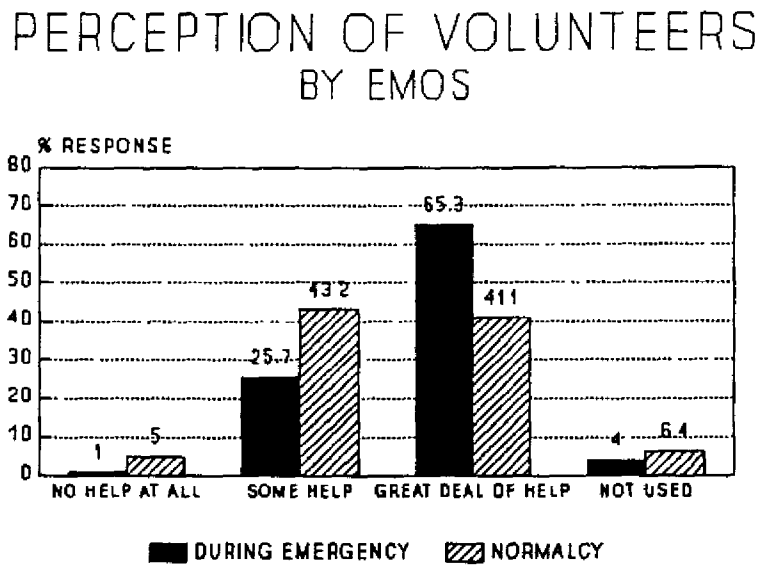

FIGURE 3

And though, as reported in Chapter III, some 25.6 percent of the respondents identified some problems with volunteers, by far most of the EMOs tend to appreciate their help. Figure 3 provides data on the extent to which volunteers do help both in an emergency situation as well as under normalcy conditions, so to say, between disasters. Clearly, volunteers are seen as being of more help during an emergency than under relative normalcy conditions, but under both circumstances, only very few of the EMOs believe that they have been of "no help at all" and small percentages report not having used volunteers, at least not thus far. It is, therefore, in no way surprising to find that the respondents do not subscribe to the idea that volunteers would cause more problems than their efforts would be worth.

Though a little more than one in ten of the EMOs are inclined to argue that volunteers are more of a problem than of help, over 76 percent of them do not agree or do not agree strongly with this proposition. (See Table 25) Many of the EMOs also disagree that only trained volunteers are an asset, but there is also a great deal of agreement with this viewpoint. Table 26 contains the basic data.

Table 25

VOLUNTEERS: PROBLEM OR PART OF A SOLUTION?

More problem than worth	Percent
Strongly agree	2.6
Agree	8.8
Unsure	11.5
Disagree	54.4
Strongly disagree	22.0

If opinions on the value of untrained volunteers are quite split, there is more of a concern over problems of liability, though almost four in ten of the respondents do not consider this to be a difficulty either. And almost two thirds of the EMOs do not agree that their jurisdiction could not afford to assign appropriate staff to supervise activities of volunteers under disaster conditions. Question 172 of the instrument probed into some of the main management practices as they apply to volunteer workers Table 27 presents the summary results.

Overall, 89.4 percent of the EMOs reported (Question 84) that their jurisdiction has developed, and maintains, call-up lists to facilitate the mobilization of available personnel resources when needed. The practice was not claimed to exist by 9.4 percent of the respondents.

Table 26

SOME PROPOSITIONS ABOUT VOLUNTEERS

	Agree	Unsure	Disagree
Trained volunteers may be useful but not untrained citizens	46.8	4.6	47.5
Liability problems using volunteers are great	46.2	12.9	38.9
The jurisdiction cannot spare staff to supervise volunteers in a disaster	23.1	9.4	65.0

Table 27

VOLUNTEER MANAGEMENT PRACTICES

	Percent
Trained volunteers used (auxiliary, cadets, SAR)	69.3
List of potential volunteers on file	57.2
Plan to have private agency, like the Red Cross, handle volunteers	55.2
Volunteer coordinator on staff	39.0
Retired personnel on call for emergencies	37.0
Individual Mobilization Augmentees	16.3

Thus:

1. In many jurisdictions, there is no paid full-time emergency manager and the tasks is being handled by someone else, the fire or police chief for the most, with a different, somewhat narrower, primary assignment, or it is being dealt with (11.0 percent) by an unpaid, and thus volunteer, professional.

2. Volunteers represent an important, even crucial, resource and are, in fact, seen as such by most of the EMOs.

3. Volunteers have been deployed in a great variety of tasks and the EMOs believe that the benefits of using volunteers outweigh whatever disadvantages.

4. Problems of liability may well serve as an important deterrent in the use of volunteers, but in light of their widespread involvement this, too, does not appear to be a major difficulty.

5. Only few jurisdictions have not used volunteers at all thus far. The reasons for this cannot be directly surmised from the data or, at least not at this simple level of analysis.

6. Most jurisdictions do use trained volunteers and maintain files of potential volunteers as well as generic files of mobilizable personnel.

7. In a majority of the jurisdictions, some plans exist to have a private agency, generally the Red Cross, help in the management of volunteers, but many EMOs (39.0 percent) also reported that a staff person in their organization was assigned responsibilities for coordinating activities of volunteers.

XI. KEY INTERFACES

Two questions (items 173 and 174) sought to probe into the relationship between the emergency management organization and other governmental agencies (Question 174) and organizations in the private sector (Question 173). The EMOs were asked to identify governmental agencies which regularly participate in exercises, critiques, or other planning activities in their jurisdiction. The results are presented in Table 28.

Table 28

INTERFACES WITH GOVERNMENTAL AGENCIES

Agency	Percent involved
Fire services	95.3
Law enforcement	92.2
Emergency medical services	87.8
Public works/streets and roads	66.9
City manager, CAO, Mayor's office	65.8
Public health	54.1
Water/sanitation authority	42.7
Finance or General Administration	34.1
Planning/Housing and Community Development	20.1
Fleet/General Services	20.0
City/County Attorney's Office	19.0

Fire and police departments along with emergency medical services thus appear to participate in the activities almost invariably and the involvement of public works officials is also quite frequent, having been reported by just about two thirds of the EMOs. The participation of General Services and of the Attorney's Office is more unusual but it still marks some 20 percent of the cases in the study.

The evidence therefore suggests considerable interactions, at least with respect to the issues the question was explicit about (planning, exercises, critiques). No data are available in this research on specific benefits which the emergency management system does derive from such patterns of participation or on problems which may be experienced in the process. What does remain clear, however, is the basic finding that the emergency management activities, under whatever organizational umbrella they may be housed, are generally not at all somehow isolated from other governmental agencies whose efforts may, too, be central in disaster prevention, management and recovery.

Quite a few organizations in the private sector are also involved. The question (item 173) asked whether specific organizations have a formally defined role in emergency management. The data of Table 29 show the crucial, even central, role of the American Red Cross, but Citizens Band Radio Amateurs as well as RACES are also involved in important ways, as is a local search and rescue associations or clubs. The patterns, then, link the public emergency management system to the community at large and in ways that cannot but be productive regardless of occasional difficulties which complexities of interfaces entail.

In the way of a belated afterthought, it would have been prudent to include, in the listing, several other organizations such as churches and synagogues, Boy and Girl Scouts, Labor Unions and the major social clubs such as the Rotary, the Shriners, the Elks, the Lions and the like. While it is possible, and perhaps even probable, that such organizations (and others) may not have any formally assigned roles in emergency management, it may have been revealing to discover the extent to which, even if rarely, they do.

Table 29

INVOLVEMENTS OF PRIVATE SECTOR ORGANIZATIONS

Organization	Percent involved
Red Cross	84.9
Citizen band radio amateurs	55.2
RACES	51.7
Local search and rescue association/club	40.0
Chamber of Commerce	23.7
Area Agency on aging or Senior Council	20.7
Local Volunteer Bureau	6.9
Traveller's Aid Chapter or Committee	2.7

In any event, the data show:

1. The emergency management system includes, at least in some of its activities, many other Departments and Agencies of the local and/ County government.

2. It also involves many community organizations in the private sector, the Red Cross above all.

3. The EMOs thus are not somehow isolated in their efforts from the organizations in their jurisdictions and through them, they are also linked to the general public in obviously important ways.

XII. TESTS AND EXERCISES

Figure 4 shows that two thirds of the responding EMOs, 66.6 percent of them, reported that "a major portion of [their] jurisdiction's Emergency Operations Plan was exercised or implemented in the course of the past year." Nuclear attack exercises in the

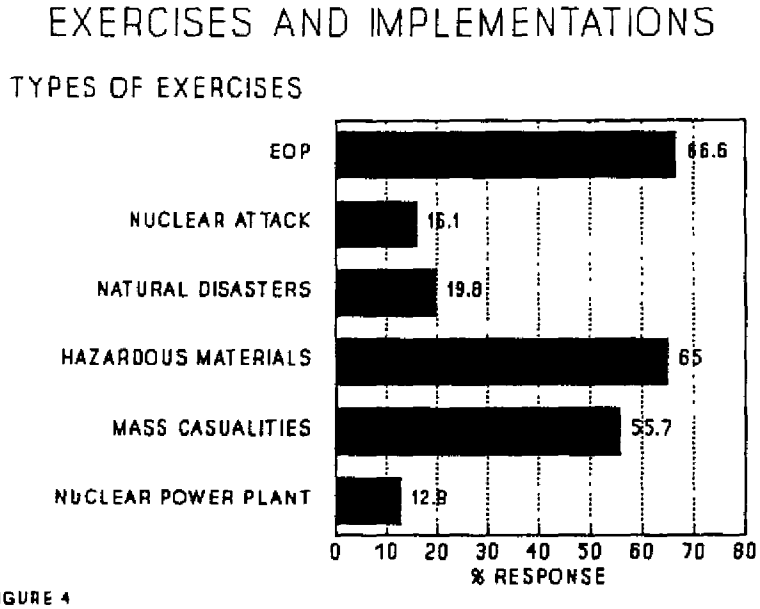

FIGURE 4

past three years were mentioned by 16.1 percent of the EMOs, while 85.2 percent stated that, again in the course of the prior three year period, an exercise was carried out against hazards other than that of nuclear war. For the most part these were exercises for possible hazardous materials incidents (65.0 percent), mass casualty accidents (plane crash, train derailment/crash and the like) which 55.7 percent reported, and nuclear power plan accidents (12.9 percent). Many respondents mentioned exercises other than those to which the question (item 141 of the questionnaire) explicitly referred: 19.8 reported exercises concerning possible natural disasters, and 14.6 percent were involved

in conducting exercises for technological hazards other than those concerning hazardous materials or nuclear power plants.

When general, or more specific, system exercises are held, they are usually (77.7 percent) evaluated so as to identify problems and generate possible suggestions for improvements. By far most jurisdictions (83.3 percent) test all their communications links regularly, and 39.1 percent claim to have a protected communications link with an Emergency Broadcast System station. Table 30 shows the frequencies with which such communications links are reported to be tested.

Table 30
FREQUENCY OF TESTING EBS COMMUNICATIONS LINKS

	Percent of those with links	Percent of sample
Daily	9.2	3.5
Weekly	22.8	8.7
Monthly	33.3	12.7
Yearly	7.6	2.9
No regular schedule	6.9	18.1
Other	8.9	3.4

Thus the communications links with an Emergency Broadcast System participating station get generally tested on a monthly, biweekly (included in the "other" category) or weekly basis, though one in ten of the EMOs reported daily tests.

Some 9.9 percent of the respondents said that there was no emergency power generator in their jurisdiction, and for 6.6 percent of the respondents the question about testing the emergency power source did not appear applicable to their work and respon-

sibilities. Among those who answered and where an emergency power generator did exist, by far most (67.1 percent) reported testing it on a weekly basis, and another 28.6 percent mentioned monthly testing. The remaining (4.3 percent) EMOs for whom the question was relevant actually said that the emergency power generator was being tested on a daily basis.

Most of those to whom the question was applicable and those who responded, 85.5 percent of the sample, stated that the alerting and warning equipment in their jurisdiction was tested at least once a month (34.2 percent), or each week (30.7). But 26.9 percent also said that there was no established procedure or that such warning system tests were quite infrequent, and 8.2 percent mentioned testing every two or three months, 72.5 percent of the EMOs were able and willing to estimate the typical pattern of warning equipment failures "based on tests over the course of a year." Table 31 provides the data.

Table 31
WARNING EQUIPMENT FAILURES

Failure rate	Percent
5 percent or less of inventory	70.6
6 to 10 percent of inventory	16.1
11 to 25 percent of inventory	6.3
25 or more percent of inventory	6.9

Clearly, warning equipment malfunctions and failures which involve more than one quarter of the jurisdiction's inventory, or even failures in excess of 10 percent, present quite special, and potentially very serious, problems.

XIII. WARNING

Two major issues form the focus of this segment of the report: one concerns the problems of alerting and warning the emergency management system itself; the second one has to do with warning the general public of an impending emergency.

In the prior section of the report, it has been already shown that some 50.2 percent of the EOCs are operated on a 24-hour basis and that 77.3 percent of the EMOs asserted that the EOC or an appropriate direction and control facility was capable of receiving alerting and warning message from State and Federal authorities every hour of every day. Furthermore, 75.1 percent of the EMOs reported that the EOC or a direction and control facility can be activated in about 15 minutes. What, in turn, is involved in the lapsed time in which the actual emergency responders can be informed and in which relevant government officials can be informed? The results presented in Figure 5 lead to a simple conclusion: in most instances, this aspect of the mobilizing process would not take more than about 30 minutes and, in fact, even less than 15 minutes. Mobilizing the emergency responders is quite obviously a priority and the data reflect the rapidity with which the EMOs are convinced this can be accomplished.

Often, the issue of the so-called "role conflict" gets raised and of its impact on emergency operations. It has to do, of course, with the possibility that some emergency responders might not show up for duty in order to take care of their family and neighbors, that others might, at least temporarily, abandon their emergency-related roles in order to ascertain the fate of their family and friends.

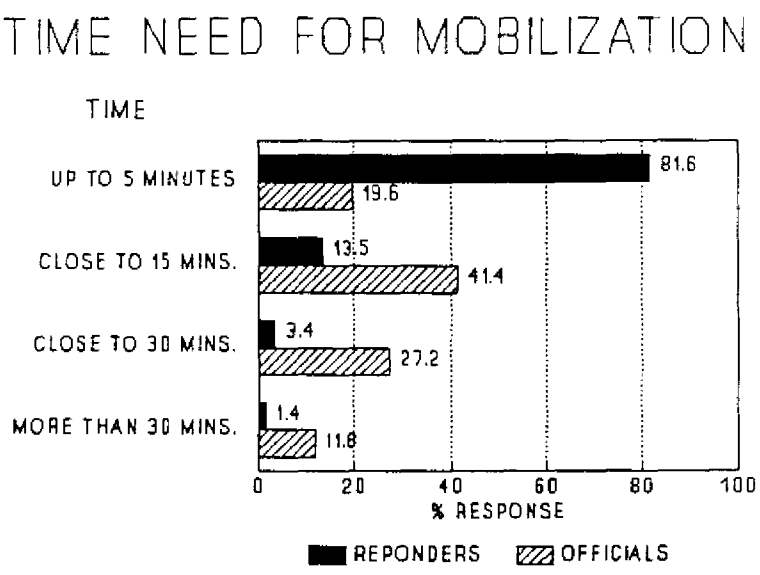

FIGURE 5

The whole "role conflict" issue, however, is more of a theoretical than a realistic one. There is very little evidence in any actual disaster that many emergency responders would either fail to show up or abandon their disaster-related tasks in order to first take care of possible family, neighborhood or friends problems.

Yet, there is no question that the responders cannot but be deeply concerned about their loved ones, especially when they cannot determine immediately and on a first hand basis whether or not they may been victimized by the disaster. Thus some methods and procedures to alleviate the stress which such concerns cannot but induce seem like a prudent approach to the potential difficulty. In fact, 40.4 percent of the EMOs said that there existed procedures in their jurisdictions "to find out rapidly the condition of the families and property of emergency response personnel."

Standard operating procedures for some of the central dimensions of emergency-related mobilization of the system are quite prevalent as the data of Table 32 clearly show.

Previously (Chapter XII), it has been shown that equipment to warn the general public (siren systems on the whole) gets typically tested at least once a month. And also, that a very significant number of the EMOs reported that at least 5 percent of the equipment, given their experiences with testing over a span of about one year, would fail - and many, indeed, reported failures in excess of 10 percent and even 25 percent.

Table 32

STANDARD OPERATING PROCEDURES

Function	Percent
Receipt of any warning issues by an authoritative source	87.2
Determination of a suitable response to an emergency situation	85.6
Notification of direction and control personnel to assemble	84.6
Damage assessment	77.5

Questions 116 and 117 sought to obtain the estimates of the percentage of the public that could be effectively alerted within some 30 minutes if "all available means of communications" were used, and thus not merely the siren systems. The first question concerns the percentage estimates of public warning dissemination during "waking hours" which were defined, for this purpose, as the hours between 6:00 AM and midnight. The second probe had to do with "non-waking hours," the hours when by far most people are asleep - between midnight and 6:00 AM.

The views of the EMOs are quite heterogeneous when it comes to public warning capabilities in their jurisdictions during daytime and evening hours. But there is much more of an agreement, on the part of 66.1 percent of the respondents, that fewer than 70 percent of the public could be alerted and warned between midnight and 6:00 AM under current warning system circumstances and even were they to use whatever available means of communication beyond the siren system (the relative failure rate of which makes it quite clearly not a method on which sole reliance could, or should, be placed if and when rapid dissemination of an alerting and/or warning message to the public is necessary.

Table 33

ESTIMATES OF PUBLIC WARNING SYSTEM EFFECTIVENESS

Percent likely to be alerted	Daytime hours	Nighttime hours
85 percent or more	33.0	14.7
70 to 84 percent	31.9	19.2
Less than 70 percent	35.1	66.1

Who, in fact, makes the decision to warn the public? The question (item 115) was asked in an open-ended manner and, indeed, numerous responses were received. But the main patterns are quite discernible and Table 34 provides a summary of the key responses.

But there are other responses as well and some may be somewhat surprising (though such answers may have been given typically by but one or two of the responding EMOs). Apparently, a county judge in one instance, and a jury president in another case decide whether the public should be warned. Some 2.1 percent mentioned that a

"dispatcher on duty" would make such a decision and various decision making groups were also mentioned here and there (city council, "local officials," "disaster team") though it is, in practice, quite difficult to see how effective, and when needed rapid, public alerting and warning could be disseminated if a group is somehow to render its judgement. Even efforts to consult relevant, say city council, members by phone or in any other way would entail some time delays which could prove altogether problematic in a rapidly evolving emergency situation.

Thus if one takes the responses of the EMOs on their face value, some obvious problems may exist in the process of arriving at a decision to alert or warn the general public.

Table 34

WHO MAKES DECISION TO WARN THE PUBLIC?

Decision maker	Percent
Emergency Management Agency staff	42.4
Chief Executive of City/Township	23.5
Police chief, Police	17.2
County official	11.3
Fire chief	10.3

XIV. EVACUATION

Asked about the frequency with which evacuation capabilities of the jurisdiction get exercised, 8.1 percent of the respondents reported that the question was inapplicable to their work, and a few others, 2.3 percent, did not answer the question so there is no way of determining whether it may have been relevant to their work but they chose not to answer. Table 35 provides data on the responses of those who did answer, 89.6 percent of the sample.

Table 35
EXERCISING EVACUATION CAPABILITIES

Frequency of exercises	Percent
Annually	17.2
Every two years	9.5
Every three years	8.0
Has not been exercised in past three years	65.3

Thus in almost two thirds of the jurisdictions, the evacuation capability was not exercised for more than three years, although almost one in five of the responding EMOs reported annual exercises. Plans to provide evacuation information to the public on a timely basis so that they can take appropriate actions were reported by 78.6 percent of EMOs (and 14.6 percent responded in the negative), and plans to provide for the security of an evacuated area were cited by 72.8 percent of the EMOs (no such plans: 18.9 percent).

Some segments of the nation's population cannot be expected to be able to evacuate on their own - such as school children, hospitalized patients, patients in nursing

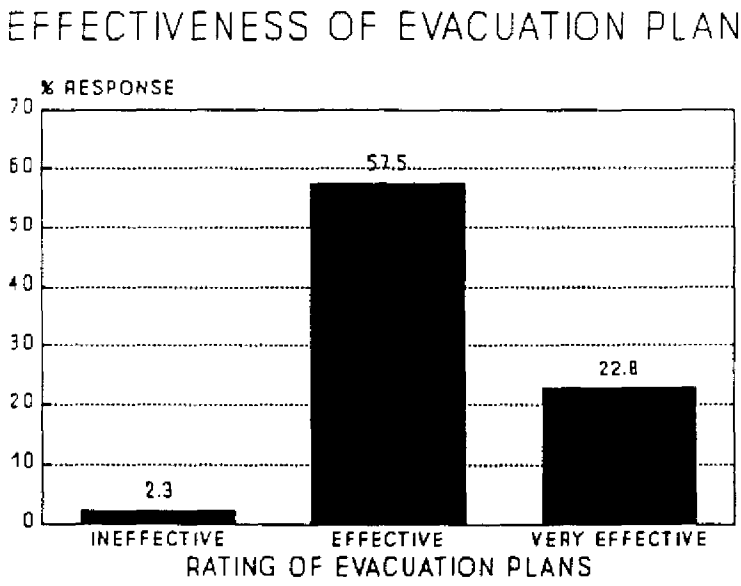

FIGURE 6

homes and, of course, prisoners. Nor can, unaided by others, many of the handicapped take full care of themselves. Special provisions in evacuation planning, and even more so in the process of an actual evacuation, are needed for such groups. It turns out that 63.6 percent of the EMOs reported that adequate plans have been developed "to insure the safety of those groups [in the jurisdiction] that are unable to evacuate on their own;" 27.7 percent reported no such plans. Provisions to identify households that "consist or, include" persons who are blind or deaf or otherwise handicapped exist in 38.3 percent of the jurisdictions, with 54.4 percent reporting no such procedure. And in 36.8 percent actual plans exist to evacuate households consisting of, or including, people with handicaps that would make evacuating on their own either impossible or extremely problematic and difficult. In 11.1 percent of the jurisdictions the plan for the evacuation of such special groups was actually put to use in the course of the past five years. Figure 6 shows that only 2.3 percent of those who did use such evacuation plans consider them to have proven ineffective or very ineffective, while 22.8 percent thought the plans worked

very well (were "very effective") and 57.5 percent claimed that the plans proved to be effective though not very effective.

In all:

1. Evacuation capabilities are generally not regularly exercised.

2. By far most jurisdiction provide for assuring security of evacuated areas, and report plans to inform the public on a timely basis to facilitate appropriate public response to an emergency in which evacuation may be necessary.

3. In many jurisdictions, there also exist plans to provide for the safety of such groups as children, hospital and nursing home patients and prisoners - groups that could not be expected to be able to evacuate on their own.

4. When it comes to persons with major handicaps, the majority of the jurisdictions has not developed procedures to identify such households or plans to help in their evacuation.

XV. HAZARDOUS MATERIALS AND RADIOLOGICAL RISKS

A number of questions in the instrument (Questions 127 through 135 most specifically) concern risks associated with hazardous materials and, in turn, possible hazards having to do with radiological peacetime incidents.

Some 58.1 percent of the EMOs reported that their emergency services personnel was adequately trained to cope with incidents involving hazardous materials; 27.5 percent stated that their personnel was not so trained and 12.1 percent answered that such personnel would be available from the State or from other public or private agencies. Table 36 shows the responses to a probe as to whether or not the response personnel, whether local, State or other, would have adequate access to information, equipment or needed protective clothing in the event of an accident involving hazardous or toxic materials.

Table 36

ACCESS TO INFORMATION, EQUIPMENT, CLOTHING

Access	Percent
Technical information about hazardous materials	85.2
Equipment	64.0
Protective clothing	60.0

While only about one half of the jurisdictions reported a capability to detect and assess the degree of exposure of individuals to hazardous or toxic materials, almost three out of four claimed such capabilities with respect to radiological incidents. And, as the

data of Table 37 show, the capabilities to provide treatment for potential victims of exposure whether to hazardous (non-radiological) materials or to radiation seem widespread.

Table 37

EXPOSURE DETECTION AND TREATMENT

Hazard	Exposure detection	Treatment
Hazardous/toxic materials	51.6	83.5
Radioactive materials	73.4	75.9

And although some one in five of the jurisdictions do not have a single trained and assigned radiological officer, more than 50 percent of them report two or more such members of the personnel and, in fact, one in four of the respondents stated that there were five of more such officers available as the summary of the data in Table 38 clearly shows.

Table 38

TRAINED AND ASSIGNED RADIOLOGICAL OFFICERS

Number of officers	Percent
None	18.1
One	19.0
Two to four	29.3
Five or more	24.1

While the reported numbers of available trained and assigned radiological officers is viewed as altogether adequate by many of the jurisdictions, 63.3 percent, for peacetime radiological hazards, only 10.7 percent considered such personnel numbers to be sufficient for war-related needs. But clearly, even when faces with peacetime dangers, the

EMOs in over 30 percent of the jurisdictions in this study do not consider the numbers of radiological officers to be sufficient to meet the potential needs.

Along these lines, the EMOs were also asked to assess the adequacy or inadequacy of some key factors bearing on radiological protection capabilities. In turn, one question (item 134) concerned peacetime hazards involving radioactive materials, and another dealt with war-related risks. Table 39 sums up the results.

With respect to peacetime events, it shows that close to 60 percent of the jurisdiction reported to have adequate Standard Operating Procedures as well as reporting procedures, while about a third of the respondents viewed these as being less than adequate. The availability of trained and assigned EOC staff to cope with radiological hazards was considered inadequate by somewhat more jurisdiction that those who viewed it adequate. In terms of hazards as they relate to war-related radioactive materials, only minorities of the respondents, in each instance, claimed adequacy of the current state of affairs while majorities saw their situation as less than a desirable one.

Finally: 81.5 percent of the EMOs stated that their jurisdiction has begun to incorporate into their Emergency Response Plans the requirements of Title III of the Superfund Amendments and Reauthorization Act (and 9.9 percent have, at the time of the study, not done so as yet).

Table 39

PROCEDURES BEARING ON RADIOLOGICAL HAZARDS

Peacetime	Adequate	Inadequate
Developed operating procedures	57.1	32.5
Reporting procedures	58.9	30.3
EOC analysis staff,trained	41.2	46.6
War-related		
Radiological equipment	29.7	57.9
Trained monitors	16.3	71.3
Operating procedures	31.3	55.7
Reporting procedures	33.1	53.5

To sum up:

1. Capabilities to deal with both non-radiological hazardous and toxic materials are widespread and there is, on the whole, trained personnel to deal with such dangers as the materials present. But this still does mean that the capabilities of a significant minority of jurisdictions are less than the EMOs would consider adequate.

2. Technical information concerning hazardous and toxic materials appears to be generally quite available, though needed equipment or protective clothing is less accessible than, once again, might be desirable.

3. On the whole, though there are again many exceptions, the personnel capable of addressing problems of radioactive materials seems fairly adequate for peacetime incidents, but woefully inadequate if the nation were to face attack-related problems of radiation.

4. This, too, holds for inadequacies in operating and reporting procedures and equipment availabilities when it comes to war-related hazards. But even in face of peacetime threats of the radiological variety, about a third of the jurisdictions do not feel that their current status of operating or reporting procedures is adequate, and more often than not they are inclined to say that there is also a dearth of EOC staff trained and assigned responsibilities for dealing with radioactive materials hazards.

XVI. THE THREAT OF NUCLEAR WAR

If the data of Table 40 on the likelihood of war estimates on the part of the EMOs are converted onto a scale from 0 (no war likelihood) to 1.00 (certainty of nuclear war), it turns out that the respondents come up with an aggregate value of .324, thus considering a nuclear confrontation much less likely than likely. The index, in turn, results by assigning (questionable but worthwhile) values to the responses which were qualitative in nature. A value of "1" was given to those who said that a nuclear war was "very likely," and values of .75, .50, .25 and 0 were given to the other responses, with the 0 likelihood value referring to those who said that such a conflict was either "very unlikely" or that it would, in fact, never happen.

But only 1.5 percent of the EMOs chose to say that nuclear war "will never happen," so that it is altogether appropriate to conclude that they consider the chances of a nuclear Soviet-American confrontation to be low but that such a conflagration does remain within the realm of realistic possibilities. Furthermore, the modal response (of 40.4 percent of the respondents) gives an estimate of nuclear war prospects as unlikely - but, indeed, not very unlikely. By contrast also, of course, only rather few of the respondents, 3.0 percent in all, believe that such a conflict is "very likely," and some 7.0 percent see it as "likely."

The remaining respondents (since the tabulated percentages do not add up to 100) were "unsure" how to answer the question, and a few, 0.8 percent, simply preferred not to answer at all.

Table 40

LIKELIHOOD OF NUCLEAR WAR

Likelihood	Percent
Very likely	3.0
Likely	7.3
About 50-50 chance	23.5
Unlikely	40.4
Very unlikely	18.1
Never will happen	1.5

As shown in Figure 7 many of the EMOs, 37.6 percent of them, think that a nuclear war, should it ever come about, would start in the process of major deteriorating international conditions, and thus after "some period of extreme tensions" (as the wording of the item stipulated). This is, of course, an "escalation theory" of the possible onset of a nuclear conflagration and it implies, if indirectly, that the nation would be, or become, increasingly aware that the international conditions are getting worse and worse and that they could, in fact, "get out of hand" and that a war could result. But 8.6 percent of the responding EMOs believe that an "attack out of the blue," a sudden, surprise attack on the United States is the most probable way in which a war, should it ever occur, would start.

Most important of all: 47.5 percent of the respondents are convinced that a nuclear conflict could start "either way" - that is, as a sudden, "out of the blue," attack or as a climax of worsening international tensions. This is, without doubt, a very significant finding because it would suggest that many, if not most, EMOs would not tend to be strong supporters of programs that put their eggs into the single proverbial basket: hence, a possible strategic evacuation program makes sense only to the extent to which there

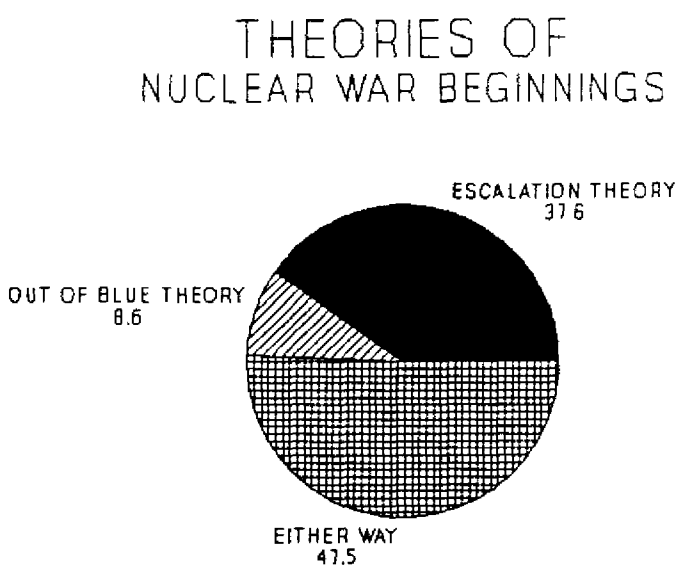

FIGURE 7

could be warning time (and a decision to act) in which evacuation is feasible - and an "out of the blue attack" perspectives does not map onto such programs very well.

The responses of the EMOs thus provide a clue to some reluctance that many may feel or have felt were the nation committed to essentially only an evacuation (of high risk areas) planning without provisions for in-place protection of some sort which would be the sole way of enhancing survival prospects under the sudden attack conditions. There is, to be sure, a call for a balanced or mixed type of effort on the attack preparedness front.

This all is underscored by the perception of the EMOs about the likely warning time that would be effectively available in an impending war environment. Table 41 sums up the responses of these emergency managers and it shows that most of them think at best in terms of hours of warning time (or, at best, of one day's warning).

Very few, indeed, subscribe to the notion that there might be more than three days of warning time (3.5 percent) so that plans which entail the possibility of strategic

evacuation over a three day period of tensions in which war seemed imminent do not appear to be altogether credible to the EMOs.

In this same context then, strategies of the surge variety also may not ring true to the EMOs who would have to explain them to their local and county officials, media representatives as well as to the general public. If, in fact, only a few hours of warning would be available - and the EMOs, 67.7 percent of them, believe that a few hours at best would be so available - there is very little in the way of last minute "surging" or mobilization that could be achieved.

Table 41

VIEWS ON WARNING TIME

Warning time	Percent
None	7.9
Minutes	39.2
Hours	20.6
About a day	3.2
Two or three days	7.2
Four days to about a week	3.5
A week or more	6.4

More than 64 percent (64.7 percent) of the EMOs say that they function in an area which is in "high" or "medium" danger of being a target. Only 5.8 percent thought that their area was "in no danger at all" (and 0.8 percent, in all, chose to skip the question). Table 42 shows the basic distribution, but it does not present data based on NAPD estimates of target areas so that it would be readily possible to determine whether some of the EMOs underestimate, or possibly overestimate, the target danger to their jurisdictional area.

Table 42

TARGET RISK PERCEPTIONS

Danger level	Percent
High danger	41.4
Medium danger	23.3
Low danger	28.5
No danger at all	5.8

The EMOs who said that their jurisdictional area was in "high" or "medium" danger of being a target in the event of a nuclear attack on the United States were also asked (Question 143) what it was about their area that made it a likely target. Eight options were provided and the respondents were asked to mark "all that apply." Overall then, 65.1 percent of all respondents answered this probe, and the data in Table 43 are based on this cohort of EMOs. The results show, of course, that the presence of military facilities would be one of the keys to the perception of enemy targeting, but also metropolitan areas and the industrial floor space are seen as important targets. The presence of military arsenals, or the fact that an area might be an important political center are considered much less crucial as likely targets.

Now, of course, the EMOs were asked to identify any and all of the suggested factors that would bear on their idea being a likely target. It turns out, that 14.9 percent of them had identified military facilities as the determining factor; 6.6 percent thought that the area's being a metropolitan one was the key to the adversary's targeting plans and 3.9 percent mentioned both military facilities and metropolitan context as relevant. Industrial floor space and metropolitan area responses characterized 3.8 percent of the EMOs, while 2.9 percent chose to say that the reason for their area being a target was

Table 43

WHAT MAKES AN AREA A TARGET ?

Factor	Percent
Military facility	55.8
Metropolitan area	52.2
Industry	45.3
Transportation center	28.4
Nuclear power plant	23.6
Electric power facility	22.7
Political center	11.4
Arsenal	10.8

that it was a metropolitan area, that there were military facilities thereabout, that it was an industrial and transportation center. Some 2.7 percent thought of the target threat in terms of the metropolitan character of the area, of the industrial might and of the transportation hub facilities of the area.

In summary terms:

1. Nuclear war remains possible though it is seen as unlikely.

2. Most of the EMOs believe that, should it ever happen, a war could come about either in a sudden attack or as a climax of the dynamic of worsening international tensions.

3. Thus, it would seem, population protection strategies which would be based on either single premise ("out of the blue attack" or "escalation theory attack") are less credible than would be strategies which do not, ex ante, lock the nation into a particular form of nuclear war onset.

4. The same concern emerges when it comes to perceptions of available warning time: by far most of the EMOs do not think that there would be more than a few hours of warning time so that population protection strategies based predominantly on the premise of a warning time of several days do not seem all too credible to the EMos.

5. Most , and rightly so, consider their jurisdictions to be likely targets in the event of a nuclear confrontation, and the key reasons, as seen by the respondents, involve military facilities in the area, the industrial floor space, transportation centralities and, of course, the fact that the area is a metropolitan one (in which, or in the vicinity of which, most of the "other" targetable facilities tend to be located anyway).