XVII. IN-PLACE PROTECTION

In so far as the possibility of a nuclear confrontation remains, and the EMOs - save for 1.5 percent of them - do consider such a conflict within the realm of possibilities indeed, central questions are posed as to the ways in which our people could be protected. Apart from possible active defense systems, whether of the point-defense (ABM-type) variety or of the area-defense potential (embedded in the SDI research and development efforts), passive measures are an option and these, in turn, need be seen as complementary to whatever active defense systems rather than as an alternative to them and so must active defenses be seen as complementary to prudent passive defense measures.

How well (in terms of survivability) any such, active or passive, defense systems would perform is clearly open to question and to wide-ranging interpretations. But it would not seem an exaggeration of any kind to conclude that the nation would be, in the event of a conflict, better off with, than without, programs to protect the public as best may be possible within budgetary and policy constraints that exist and are likely to persist. Since any programs of blast sheltering (to attenuate even the primary weapons effects) are clearly not in the cards, were it not for fundamental policy disagreements over such issues then simply due to associated cost factors, fallout protection looms like the central option of the "in-place" class of programs.

Most of the EMOs believe that a nuclear war could well start in the way of a sudden attack and warning time in which to act would be altogether too brief, the data imply that a strategy to evacuate or relocate people from high risk areas in the midst of

a worsening international crisis is, when considered by itself alone, not quite as credible as a strategy which makes some realistic provisions to evacuate if evacuation proved feasible and to provide for such in-place fallout protection as possible should the "out-of-the-blue" attack scenario come to be realized.

It has already been shown that majorities of the respondents did not think that capabilities to cope with possible war-time radiological hazards in their jurisdictions were adequate: 71.3 percent had mentioned dearth of radiological monitors, 55.7 percent thought that operating procedures were rather inadequate, 57.9 percent said the same thing about necessary equipment and 53.5 percent reported inadequate reporting procedures that have been developed in face of possible war-like emergencies.

While the data of Table 44 show that many (65.4 percent) believed that personnel to manage health care facilities would prove adequate, and 54.5 percent stated the same about personnel to manage such lodging facilities as would be needed, only a little more than one third of the EMOs reported arrangements to provide an adequate number of personnel to manage protective facilities, that is, fallout shelters. In a surge environment, mobilization (and rapid, if minimal, training) of personnel would seem altogether feasible, at least in principle in as much as the nation would not hesitate to use whatever financial and other resources necessary under such postulated conditions of an impending threat. But in a sudden attack environment, which many EMOs views possible indeed, there would clearly have to be a great deal of improvisation but even that might prove to be of some benefit.

The domains in which majorities (Table 44) reported "adequate" provisions for personnel management (health care and lodging` of course, have also direct relevancy

to peacetime hazards so that the relative frequency of such arrangements is not surprising - rather, the fact that in some jurisdictions even these two areas of activities may be problematic is more of a surprise.

Table 44

ARRANGEMENTS FOR ADEQUATE PERSONNEL

To manage	Percent
Health care facilities	65.4
Lodging facilities	54.5
Protective (shelter) facilities	34.9

About one third of the respondents only claimed planning for war-time population protection along several axes of action. The results, in response to Question 144, are summarized in Table 45 and could be easily interpreted as suggesting rather low levels of national attack preparedness in terms of in-place protection, a level which, in turn, reflects the low level of Congressional financial support for such programs, and thus their less than enthusiastic acceptance at the local levels where such efforts have to be implemented in the first place.

It has been already noted that almost half of the respondents did not know whether their EOC or a direction and control facility provided any protection against fallout or what the protection factor might be. And, to repeat, the availability of trained radiological monitors for a war-time emergency is altogether quite limited as well.

The EMOs were asked (Question 136) whether their jurisdiction "established monitoring and reporting locations with a protection factor of PF 40 or better for use in the event of a war-related radiological emergency." Table 46 shows, of course, that no such

provisions have been made in half of the jurisdictions and only about one in ten of the respondents thought that adequate provisions to meet the need may have been made.

Table 45

WAR-RELATED POPULATION PROTECTION PLANNING

Plans for	Percent
Using expedient shelter	35.9
Using substandard shelter (PF<40)	33.8
Shelter stays up to 14 days	33.0
Using upgradeable shelters	32.7
Overloading existing shelters	23.8

Table 46

PROTECTED MONITORING AND REPORTING LOCATIONS

Locations	Percent
Adequate to meet the needs	11.5
Some established, but not enough	39.0
None	49.5

Finally, as the data in Table 47 show, almost three out of four of the respondents favor a "proposal to develop a network of fallout-protected control centers (EOCs) from which local officials would direct emergency operations and would provide survival information to be broadcast to the public." In some ways, of course, it may be even puzzling why some 2.3 percent would "strongly disapprove" and another 4.2 percent "disapprove" such a program.

Table 47

PROGRAM FOR FALLOUT-PROTECTED EOCs

	Percent
Strongly approve	39.5
Approve	34.2
Unsure	18.3
Disapprove	4.2
Strongly disapprove	2.3

The basic pattern of the data then reveals less than an adequate level of attack-related capabilities as perceived by the EMOs themselves. There is no indication that this would be a by-product of negative, if not cynical, views on the possibilities of passive defense measures; rather, it is suggestive of the more than modest priority attached to civil defense programs in their war-related modality at the national level, best and foremost reflected in reluctant and quite minimal Congressional appropriations of needed funds.

Yet, this simple summary of the findings with regard to in-place protection programs does not do justice to the issue and further analysis is obviously necessary. If reasonably adequate provisions exist predominantly in jurisdictions not likely to be targeted, it may make good sense since fallout protection programs in high (and even medium) risk areas would be of value only to a small percentage of possible survivors of an attack if people stayed in place rather than did, or had an opportunity to, evacuate to "safer" areas.

XVIII. EVACUATION

If our people, at least most of them, were in areas unlikely to be targets in the event of a nuclear war, it is not difficult to argue that their survival prospects would be better than if they were, or stayed, in high risk locations. It is, indeed, this very type of conceptualization that underlies the idea of crisis relocation or evacuation. But, of course, such a measure is feasible only if there were strategic warning and, therefore, if a nuclear conflict could be anticipated in the course of events marking sharply deteriorating international conditions. It is then this class of scenaria which suggests the advisability of evacuation planning for high risk areas of the country and many EMOs believe that a nuclear confrontation would, indeed, come about in the process of escalation of an international crisis: though they also, as has been reported, do not rule out the possibility of an "out-of-the-blue" strike for which relocation strategies do not provide a viable option.

Media reports concerning the crisis and eventually reports, not unlikely at all, that the Soviets have initiated evacuation of their high risk areas might well serve as a trigger to motivate some, and even many, people to evacuate on their own, spontaneously. Such a process would, without doubt, be further reinforced were the media also to report that the President is considering recommending evacuation in that many people would prefer to avoid the possible confusion of a directed evacuation should the President urge it and the respective Governors also act on the White House recommendation.

The EMOs in this study do not think that a spontaneous outflow of people from their areas would be of truly major proportions. Table 48 shows that almost half of the

respondents are convinced that at most 20 percent of the people in their area would tend evacuate on the basis of their own decision.

Table 48

EXPECTED SPONTANEOUS EVACUATION

Likely to evacuate	Percent
20 percent or fewer	48.8
21 to 50 percent	26.3
51 to 70 percent	6.1
More than 70 percent	2.0

In fact, 31.8 percent of the respondents thought that fewer than 10 percent would be likely to evacuate spontaneously. When actual experiences with natural disasters (hurricanes and the like) or technological hazards (such as the TMI incident) are considered along with the general public's statements and claims regarding likelihood of spontaneous evacuation under a threat of an imminent nuclear confrontation the EMOs greatly underestimate the most probable actual public response to a situation in which nuclear war represents a real threat. And many, some 16.8 percent, of the EMOs were sufficiently unsure to provide any guesstimate at all.

But these data, of course, mask the fact that there are areas of the country which one would not want to see evacuating: the jurisdictions which can be considered at low risk of being targets, the jurisdictions which could come to serve as host areas for both spontaneous evacuees as well as for those who would evacuate only following a Presidential action. Table 49 elaborates the data of Table 48 by the risk level as perceived by the EMOs.

Table 49

EXPECTED SPONTANEOUS EVACUATION BY TARGET DANGER

	Target danger			
Likely to evacuate	High	Medium	Low	None
20 percent or fewer	45.1	45.5	53.3	68.2
21 to 50 percent	28.1	30.1	24.4	10.4
51 to 70 percent	8.2	5.5	4.1	3.7
71 percent or more	2.7	2.0	0.7	3.0

Thus, logically enough, the expectations regarding spontaneous outflows of people are higher the higher the perceived target risk in the area. Even so, some evacuation is anticipated even in areas which the EMOs defined as being in "no danger" at all, jurisdictions involving 5.8 percent of the respondents.

Spontaneous evacuation, to be sure, presents some opportunities as it creates serious difficulties as well. A spontaneous outflow of people from higher risk areas would certainly help to render directed evacuation, were it to follow, somewhat easier. It would also increase the feasibility of eventually evacuating even those areas of the country, such as the New York City Metropolitan Area and the Los Angeles basin, which would be difficult, if not impossible, to evacuate even in a three day period, a time on which crisis relocation thinking has been predicated.

But it would, at the same time, negatively affect the daily rhythm of the nation's economic life and if a crisis were to subside and no directed evacuation were called for (whether because of the crisis being resolved or because the President would choose not to recommend evacuation regardless of the circumstances), the social and economic cost could be quite high. It, too, might present some problems in potential host areas since

it cannot be expected that evacuees would distribute themselves in lower risk areas somehow evenly or that their movements would be compatible with such evacuation plans as may be activated in a directed relocation process. The EMOs were asked:

> "If in the midst of an international crisis members of the public would get in touch with you, would you encourage them to evacuate on their own (that is, spontaneously), discourage spontaneous evacuation, or make it clear that it is entirely up to them ?"

The respondents were also asked whether it should be national policy to encourage or discourage spontaneous evacuation or let it evolve whichever way it might. Clearly, this is not an issue of the Federal Government telling people to evacuate or not to evacuate on their own and of their own volition but rather a policy which would make it easier for local and county emergency managers to respond to such public questions by being able to refer to a national view on the matter rather than to have to improvise on their own (and be subsequently blamed for having, possibly, made the wrong recommendation: not to evacuate if subsequently evacuation were called for, or to evacuate if no directed evacuation were to occur thereafter, or, of course, not to make a recommendation one way or another and appear indecisive or even uninformed). Table 50 provides a summary of the responses.

Table 50

DEALING WITH SPONTANEOUS EVACUATION

Spontaneous evacuation	Recommendation	National policy
Encourage	24.1	25.2
Not encourage,not discourage	38.6	29.9
Discourage	18.0	18.9
Not su	18.0	26.0

The opinions of the EMOs are thus quite divided on these issues, and many of them (26.0 percent) preferred not to commit themselves to any of the offered options, especially with regard to the need for national policy concerning spontaneous evacuation. The pluralities, in each instance, favor neither encouraging nor discouraging spontaneous evacuation while, among the remaining respondents, a few percent more favor encouraging such outflows than support the idea of discouraging them.

There are also no sharp differences as a function of the target danger perception. But a few more EMOs in the high and medium risk areas would tend to encourage more than discourage spontaneous evacuation while in the low or "no danger" jurisdictions, more of the respondents would discourage rather than encourage the process, but pluralities, regardless of perceived target danger, favor letting spontaneous evacuation take its own course without being either discouraged or encouraged by the emergency management system. Plans to facilitate directed evacuation are generally favored as is seen from the data of Table 51.

Table 51

NEED FOR EVACUATION PLANS

	Target danger				Total
Need for plans	High	Medium	Low	None	Sample
Definitely yes	26.0	23.3	29.9	28.9	26.5
Probably yes	29.5	37.7	35.1	25.2	32.8
Unsure	17.9	19.5	14.9	23.7	17.7
Probably no	19.1	14.8	12.6	12.6	15.7
Definitely no	7.0	4.4	6.3	8.1	6.5

In fact, the EMOs in high and medium risk areas tend to be somewhat less in favor of relocation planning than are respondents from lower risk jurisdictions, and those in high target danger areas (41.4 percent of all) are more often disinclined to favor such planning than are the EMOs in the other risk categories. In part, at least, this is accounted for by the fact that the EMOs in the riskiest jurisdictions are more likely to be convinced that there simply would not be enough time in which to evacuate were such an action taken.

Table 52 indicates that 43.4 percent of the respondents in the sample thought that there "probably" or "definitely" would not be enough time for directed evacuation, whereas in the high target danger areas, 53.6 percent of the respondents held this view.

Table 52

AVAILABILITY OF TIME TO EVACUATE

	Target danger				Total
Time to evacuate	High	Medium	Low	None	Sample
Definitely yes	1.5	1.1	1.9	6.7	1.8
Probably yes	21.0	24.6	29.7	33.3	25.1
Unsure	23.0	37.0	30.5	23.0	28.2
Probably no	44.3	33.2	32.9	24.4	37.1
Definitely no	9.3	3.8	3.4	9.6	6.3

The pattern of the data is further underscored by responses to the question which requested the EMOs to estimate the time it would take to evacuate. In the high target danger areas, 27.3 percent of the respondents expressed the view that a directed evacuation of their jurisdictions would take more than three days, a percentage which was but 12.6 percent in the low and perceived "no danger" areas. In the sample as a

whole, 19.1 percent fell into this category of respondents, that is those who did not believe that an evacuation could be accomplished in three days or less.

In general, as the data of Figure 8 show, the median evacuation time tends to be longer the higher the perceived target risk to the area so that the responses concerning availability of sufficient evacuation time also reflect this underlying, though not really surprising, pattern.

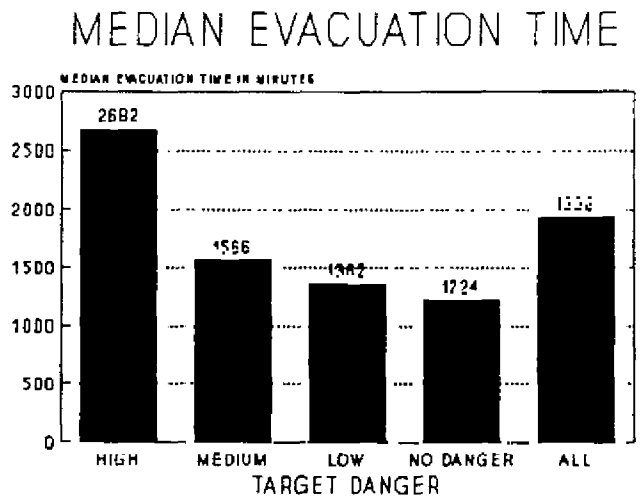

FIGURE 8

Furthermore, a majority of the EMOs, 53.2 percent of them, indicate that less than half of the people in their jurisdiction would actually evacuate or be able to evacuate, and only 13.4 percent place the percentage at 75 percent or more. And many, 10.3 percent, did not venture a guess.

Table 53

PERCENT OF PEOPLE LIKEL TO EVACUATE

Percent evacuation	Percent
Not more than 25 percent	22.0
25 to 50 percent	31.2
51 to 75 percent	23.0
More than 75 percent, not all	13.1
100 percent, all	0.3

While in the high risk areas 15.2 percent believed that 75 percent or more would, or could, evacuate (compared with the 13.1 percent of the sample as a whole), 49.6 percent (contrasted with the sample percentage of 53.2) also expressed the view that less than 50 percent of people in their jurisdictions would evacuate. But most EMOs are convinced that there could, indeed, exist some situations in which the President could, and would, urge evacuation of high areas likely to be targeted.

Table 54

POSSIBILITY OF PRESIDENTIAL RECOMMENDATION TO EVACUATE

Possible Presidential	Target danger				Total
Action	High	Medium	Low	None	Sample
Definitely yes	17.0	15.8	19.1	22.2	17.5
Probably yes	43.7	50.1	48.4	37.0	46.2
Unsure	19.7	16.8	18.2	20.0	18.4
Probably no	17.6	15.8	11.2	17.8	15.2
Definitely no	1.6	0.9	1.6	1.5	1.5

Thus 63.7 percent of the EMOs consider it possible that there might exist circumstances under which the President would urge a directed evacuation (or, of course,

in the absence of evacuation plans, such spontaneous outflows as would occur) while 16.7 percent believe this to be unlikely regardless of the situation. Along with those who perceived their area to be at no risk of being targeted, the EMOs from high risk areas were more likely than others to say that a Presidential recommendation to evacuate was unlikely under any circumstances, but the differences in terms of perceived target danger are generally quite modest.

The main views of the EMOs on evacuation as an option to in-place protection (with the understanding that, in many host locations, fallout protection would also somehow have to be provided to enhance survival chances if the crisis were to lead to an actual fighting war) may be summarized:

1. The EMOs do not expect dramatic outflows of people from their jurisdictional areas in the way of a spontaneous evacuation. But clearly, even if some 20 or so percent of people were to evacuate spontaneously, this would be a significant factor in directed evacuation planning.

2. The respondents are quite divided when it comes to raising the question as to whether they would or would not encourage spontaneous evacuation and what the national policy in this respect ought to be A modest plurality favors a neutral position - to let spontaneous evacuation take its own course and for the national Government neither to endorse nor dampen the process.

3. They favor evacuation planning but many are not convinced of the worthwhileness of the exercise. This is, it appears, mainly due to the fact that they believe that there would not be sufficient warning time to carry out a directed evacuation and, in fact, the exercise would tend to take more time the higher the target danger to the area so that it would limit its effectiveness.

4. The EMOs are also not particularly sanguine about the numbers of people in their jurisdiction who would, or could, evacuate. Relatively few, considering the magnitude of the threat, believe that more than three out of four people in their areas would actually evacuate.

5. At the same time, they tend to think it likely that, under extreme circumstances, the President would urge people to abandon high risk areas so while they implicitly question the effectiveness of the strategy,

they also do support evacuation planning despite the problems that seem to them embedded in such a strategy.

6. When all such data are coupled with the finding that a good majority of the EMOs believe that a nuclear war could come about in a sudden outburst as well as in the climax of a dynamic of an escalating international crisis, it seems rather obvious that a single, or even heavily dominant, strategy of protecting our people by planning for strategic evacuation (and the management of the evacuees thereafter) is not as credible to the EMOs as might be a mixed strategy which would provide such in-place protection as may be possible and also to plan for directed evacuation.

XIX. HELPING EVACUEES

To what extent might possible evacuees find help in the respective host communities? Three items in the questionnaire probe into the estimates of the EMOs in this regard. Question 157 asked whether host community residents would be helpful or not and it referred to the jurisdiction of the respondents should it serve as a host community if evacuation in face of an impending conflict were to take place. The second item, Question 158 solicited the view of the EMOs as to whether people in their jurisdiction would likely provide housing for evacuees, and the third item, Question 159 raised the possibility of local Government asking the residents to take in evacuees into their homes.

The data of Table 55 show that by far many of the EMOs do expect helping behavior on the part of residents of their communities. This is so with respect to general helpfulness as well as in terms of the prospects that many, if not all, evacuees could find haven in private homes of the residents.

In one sense, the findings can be interpreted as estimates of probable behavior of the residents in jurisdictions of the responding EMOs. In another sense, and perhaps even a deeper one, the results provide a kind of description of the communities as seen by the EMOs in terms of altruism of the residents. Thus they, in some measure, also may well reflect the attitudes of the EMOs to the people in their community whatever the source of such perceptions - most of which would tend to be born of actual experiences whether under emergency conditions or otherwise.

Table 55

COMMUNITY HELPFULNESS TO POSSIBLE EVACUEES

	General Helpfulness	Providing Housing
Definitely yes	19.7	5.9
Probably yes	50.7	38.6
Unsure	15.9	32.7
Probably no	10.3	19.2
Definitely no	2.3	2.2

The EMOs are thus somewhat less sanguine about the housing possibilities than they are about general patterns of helping. Almost a third of them are simply not sure whether or not community residents would be willing to take evacuees into their homes though over 44 percent of them said that they probably or definitely would do so. But, of course, the questions vary in their applicability as a function of the kind of risk to which the jurisdictions are likely to be expected.

In high risk as well as medium risk communities, it is not very probable that there would be evacuees to take care of: it is, in fact, precisely these areas that would serve as the source of evacuees rather than as hosting communities. Thus even at this level of analysis, the target danger issue cannot be totally disregarded simply because some jurisdictions cannot be realistically expected to function as host communities - they are precisely the jurisdictions likely to have to be evacuated.

In the tabulation, the response category "helpful" includes those respondents who stated that people in the community would be "definitely" or "probably" helpful. By contrast, those who thought the community would "definitely" or "probably not" be helpful were placed into the "not helpful" category, as shown in Table 56. In a similar vein, the

EMOs who "definitely" or "probably" expected that local residents would provide housing for evacuees fell into the "would provide" group, while those with the opposite views were collapsed into the "not providing housing" category.

Table 56

HELPFULNESS TO EVACUEES BY TARGET DANGER

	Target danger			
General helpfulness	High	Medium	Low	None
Helpful	65.3	73.4	75.4	75.5
Unsure	17.6	16.6	13.2	12.6
Not helpful	15.8	9.6	10.9	10.3
Providing housing				
Would provide	38.1	48.6	50.6	48.9
Unsure	34.2	33.7	29.7	31.9
Not providing housing	26.1	17.3	18.9	17.1

The lower the perceived target danger the higher the expected level of helpfulness. And in terms of the possibility of the evacuees being offered or finding private accommodations rather than having to rely on congregate care such as may be provided, only the high risk jurisdictions differ from others in a significant manner but these are, to repeat, jurisdictions that would quite certainly have to be evacuated instead of becoming potential host areas.

Almost twice as many of the EMOs, for each target danger level, are unsure about the housing prospects than they are about the community's helping behavior. Expectations that private housing would not be available are also higher, by a factor of about 1.7, than are estimates of more general helpfulness to evacuees.

Yet, even the lowest estimates of perceived willingness to accommodate evacuees in private homes would amount to a very high proportion of evacuees and any such outcome would amount to easing the pressures on congregate facilities: even under the worst conditions one might be inclined to conclude that it would prove unnecessary, in the redundancy sense, to assume the need for congregate facilities for all evacuees and this alone could make the necessary planning easier and less problematic.

In any event, three out of four respondents thought that "the local government should issue an appeal to have area residents temporarily house evacuees." One in ten of the EMOs did not think so, though only 2.6 percent expressed themselves in a definitive statement along these lines.

A mail-out survey, by its very nature, makes it impossible to determine how many, if any at all, of the EMOs may have been looking at the questionnaire as a whole first of all, or, perhaps, glancing at sequences of questions. Thus it cannot be ascertained whether the prior response (Question 158) about private housing for evacuees was not, to some degree, affected by the respondent's reaction to the follow-up item - that is, whether such helping behavior was estimated on the premise that local government might appeal to the public for evacuee housing provisions, or whether such estimates were, so to say, independent of possible government appeals and such appeals might enhance the general, already high, willingness to help the evacuees.

Table 57

LOCAL APPEAL TO HOUSE EVACUEES IN PRIVATE HOMES

Should government appeal?	Percent
Definitely yes	24.2
Probably yes	51.0
Unsure	13.2
Probably no	7.6
Definitely no	2.6

Regardless of perceived target danger, the idea of local government encouraging housing help to evacuees is heavily favored:

In high danger areas, 71.8 percent favor it;

In medium danger areas, the percentage is 75.6;

In perceived low danger areas, 78.5 percent; and

In perceived no danger areas, 78.6 percent.

Thus in the jurisdictions most likely to serve as host communities in the first place, nearly eight out of ten of the EMOs support the notion that local government should appeal to the public to provide temporary housing for such evacuees as may flow into the community. In all then:

1. The EMOs are convinced that people in their community, should it serve as an host for potential evacuees, would be helpful.

2. Fewer, but still many, believe that people in their jurisdiction would house evacuees, and quite a few are unsure but only a minority expect that such a public response should not be expected.

3. The expectations of helpfulness are greatest precisely in the kinds of jurisdictions that might serve as hosts - the jurisdictions at low risk.

4. The respondents favor the idea of a local government's appeal to residents to house evacuees and especially, once again, in the communities most likely to experience an influx of possible evacuees.

XX. SURVIVAL

As in studies of the perceptions of the general public, several questions were included in the instrument to tap the views of the EMOs on possible survivability of a nuclear assault on the United States. The "benchmark" item refers to prospects for survival if a nuclear war were to start "next week." For convenience, this "next week's war" will be referred to as NWW hereafter. The respondents were then asked to estimate survival chances if people were in blast shelters, in fallout shelters, evacuated, and protected in fallout shelters while evacuated.

A scale from 0 to 5 was used with the zero scale point defined as "no chance of survival," and the other end point as "very good chance" of survival. For the purposes of this analysis, the scale categories have been simplified into a trichotomy: responses involving scale values of 0 and 1 are labelled "poor" survival chances. Responses in the middle two categories, 2 and 3, are categorized as "medium" survival chances, while answers of the 4 and 5 variety on the scale refer to "good" survival prospects. A simple survivability index was also used. In it, the responses from 0 to 5 on the scale are assigned "survival likelihood" values of 0, .2, .4, .6, .8 and 1. Thus were all EMOs to assert that there was "no chance of survival," the index would have a value of 0 (zero) survival likelihood. And the value would be 1 (one) if all agreed that survival prospects were "very good." The higher the index value then, the higher the survivability estimate of the respondents for a given posture. Table 58 presents the basic data for the NWW ("next week's war") possibility.

If the danger of a nuclear war "next week" seemed very high in light of a deepening international crisis, many surge type activities to help protect our people at the last moment, so to say, could have some, even significant, payoff. But the wording of the question does not imply the situation of this kind. Rather, it implies, at least to most respondents, the onset of war "next week" so that the nation would essentially have to cope with it at such a level of preparedness as may exist at the time. The tabulated percentages do not add up to 100 percent since 9.6 percent of the EMOs did not venture to estimate survival chances in the event of NWW and did not answer the question.

Table 58

SURVIVABILITY OF "NEXT WEEK'S WAR"

Survivability	Percent
Poor	37.2
Medium	40.5
Good	12.7
Survivability index	.402

When the target danger variable is taken into account, the aggregate percentages of Table 58 are altered rather drastically. Table 59 shows that only 4.3 percent of the EMOs in perceived high risk areas believed that survival chances in NWW were "good" or "very good" (the "good" survival category), while 38.8 percent in the no danger jurisdictions gave the same response, a variation in the estimates by a factor of 9 (nine)

Table 59

NWW'S SURVIVAL PROSPECTS BY TARGET DANGER

	Survival prospects		
Target danger	Poor	Medium	Good
High	55.9	32.6	4.3
Medium	30.3	47.4	10.1
Low	19.7	48.2	21.8
No danger	16.4	32.1	38.8

Thus the higher the target danger perception, the lower the survivability estimate and the higher the "poor" prospects for survival as shown in Figure 9. Now if, for purposes of simplification, a national population of 240,000,000 is assumed and the distribution of

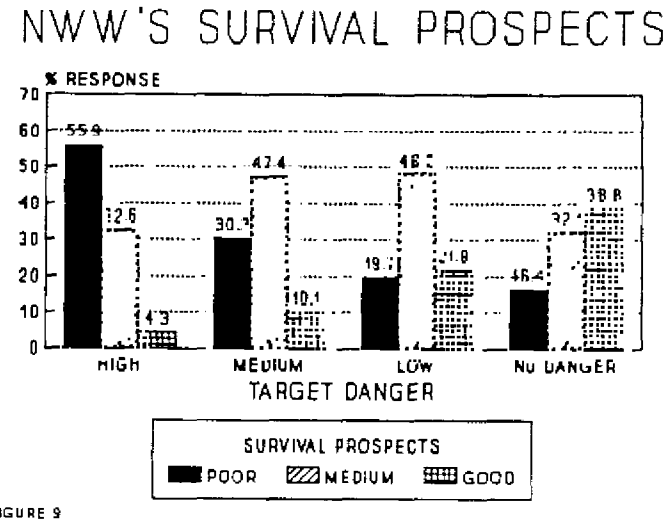

FIGURE 9

jurisdictions by target danger as seen by the EMOs is used, the Table 60 (informed by the judgements of the EMOs but, in this analysis, not by actual risk estimates as in NAPD

-92) shows the approximate numbers of people in each target area, and the estimated survival in the event of a "next week's war." This is, of course, a way of applying weights to the data of Table 59 because many more people live in high and medium risk areas than do in low or "no danger" jurisdictions - at least as seen by the responding emergency management personnel.

Table 60

POPULATION BY TARGET AREAS AND BY SURVIVAL ESTIMATES

Target danger	Population	NWW Survival
High	100,560,000	4,324,080
Medium	56,880,000	5,744,880
Low	68,640,000	16,336,320
No danger	13,920,000	5,400,960

Given the simple assumptions (of a base of population of about 240,000,000 and that the EMOs judgments reflect the approximate level of risk to their jurisdictions), the data mean, of course, that

* 1 percent enhancement of survivability in high danger areas amounts to an additional 1,005,600 people;

* in medium risk areas, such an improvement comes to 568,000 "added survivors" as contrasted with the perceived NWW situation;

* in low danger jurisdictions, it is 686,400 people;

* and in the no danger areas, 139,200.

The effects on in-place postures on survival, as estimated by the EMOs, are shown in Table 61. The data clearly indicate that fallout shelters as such have a relatively lower payoff in enhanced survivability than would blast sheltering and this is, of course, in no way a surprising result. But even the increased survivability "if people were in fallout

shelters" amounts to a significant shift upward when the data are compared with NWW results of Tables 58 and 59.

Table 61

SURVIVAL PROSPECTS UNDER IN-PLACE POSTURES

	Target danger			
Survival prospects	High	Medium	Low	None
BLAST SHELTERS				
Poor	22.8	12.2	7.7	12.2
Medium	38.4	30.0	24.8	14.5
Good	31.4	48.1	59.8	65.6
FALLOUT SHELTERS				
Poor	33.2	13.6	9.8	9.2
Medium	47.9	48.8	37.3	25.4
Good	12.8	29.7	45.7	56.2

A ratio of a given posture (blast or fallout sheltering) against the NWW data for "good" survival chances indicates the factors by which such measures for protecting the nation's population would alter the survival likelihood. Obviously, factor values in excess of 1 signify enhancement of survivability, while values below 1, if such were found, would say the opposite. An exact value of 1 would suggest no improvement in survival chances as a consequence of a given civil defense posture. For the target danger levels, the factor values are given in Table 62 and the results show that the higher the target danger the higher the enhancement of survivability.

The table then shows, for example, that in the high risk areas, 7.3 times as many people might have "good" or better prospects for survival if they were in blast shelters, while 3 times as many would have such survival chances if people were in fallout shelters

than under conditions of a "next week's war." This then can be seen as the payoff of in-place protection systems in survivability terms as seen by the EMOs.

Table 62

SURVIVABILITY ENHANCEMENT BY IN-PLACE PROTECTION

	Enhancement Factor	
Target danger	Blast shelters	Fallout shelters
High	7.3	3.0
Medium	4.8	2.9
Low	2.7	2.1
No danger	1.7	1.4

The effects, surmised by the EMOs, of evacuation of higher risk areas on survivability are displayed in Table 63. When the question refers to evacuation as well as fallout sheltering of evacuees, the posture is clearly seen as superior to a situation in which only evacuation as such is mentioned. Yet, both evacuation options produce higher survivability estimates than do in-place alternatives, and it certainly must not be forgotten that any evacuation strategy in reality would involve provisions for sheltering people against secondary effects of nuclear weapons, fallout.

Once again, the percentages estimating "good" survival under these two evacuation options (which, to repeat, in any realistic planning reduce to but one - evacuation and fallout protection wherever it would prove needed) can be contrasted with the "good" survival chances under NWW conditions.

Table 63

SURVIVAL PROSPECTS UNDER EVACUATION CONDITIONS

	Target danger			
Survival prospects	High	Medium	Low	None
EVACUATION				
Poor	13.2	8.3	8.0	12.8
Medium	40.8	38.4	32.8	19.2
Good	40.1	44.7	47.6	51.2
EVACUATION AND FALLOUT PROTECTION				
Poor	10.9	6.3	5.7	9.4
Medium	31.2	28.9	24.9	15.6
Good	51.6	56.4	59.2	57.8

The factor values of Table 64 show that the higher the perceived target danger, the greater the relative enhancement in survival likelihood. The results also show that evacuation strategies perform better in terms of survivability than do in-place protection options, especially in the high and medium risk jurisdictions (from which come responses of over 60 percent of the EMOs).

Table 64

SURVIVAL ENHANCEMENT UNDER EVACUATION OPTIONS

	Factor of enhancement	
Target danger	Evacuation	Evacuation/fallout
High	9.3	12.0
Medium	4.4	5.6
Low	2.2	2.7
No danger	1.3	1.5

Thus 12 times as many people are seen as having "good" survival chances if high risk areas were evacuated and fallout sheltering were available (if needed) for the evacuees than under the NWW circumstances. The "payoff," as is the case with all other options of civil defense protection systems (whether in-place or predicated on strategic evacuation, is the lowest, not surprisingly, in jurisdictions where the EMOs do not consider their area to be at any danger of being targeted. But only fewer than 6.0 percent of the EMOs in the study thought that their area was at "no danger" of being a target.

Yet, even under the "best" circumstances (of evacuating people from high risk areas and providing fallout protection possibilities for them should the crisis "get out of hand"), "good" survival prospects are reported only by 55.3 percent of the EMOs and it would be difficult to accept the idea that programs of this nature, at the national level, would induce some kind of a complacency, that is, make a nuclear confrontation somehow "more acceptable." At the same time, the perceived and major survivability improvements of population protection programs as contrasted to the extant posture (on which the survival estimates in a NWW are based) certainly cannot lead to a conclusion that protective measures would be, or seem, without value and thus need not be taken seriously.

Furthermore, it is difficult not to suggest that survivability estimates under evacuation with fallout sheltering would tend to be more optimistic than they (and they are clearly not very optimistic at all) if the EMOs did not think that many people would not evacuate either spontaneously or in a directed, Presidentially urged, relocation program

and if so many of them did not believe that there just would not be enough warning time in which to carry out a successful evacuation.