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SOME TRAINING IMPLICATIONS OF LARGE SHELTERS

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Prepared by:

Emil Bend

Social Systems Program
Institute for Performance Technology
AMERICAN INSTITUTES FOR RESEARCH
Pittsburgh, Pennsylvania

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ABSTRACT

Based largely upon concurrent AIR research in the area of shelter management simulation, an analysis of the impact of the large, complex shelter on shelter management training needs was conducted. The large shelter is seen as requiring the type of overall leadership that only persons with pre-existing supervisory skills can supply. Such people are, by and large, neither attracted nor helped by the standard shelter management training course. The objectives of executive shelter management training should be (1) to reveal to the student the complexity of the large shelter and the types of problems that can threaten its integrity, and (2) to identify and dramatize the differences between peacetime and emergency management. To achieve these objectives it is recommended that training for executive shelter managers incorporate (1) a planning session in which trainees participate in developing a shelter plan for a large, complex public shelter, and (2) a large shelter simulation game played during the occupancy exercise in which the students assume the roles of an executive cadre of a large shelter.

THE PROBLEM

What are the objectives of shelter management training? When given one day in the life of a volunteer during which to transmit to him the shelter management message, what should that message be?

Some civil defense educators see the objectives in terms of facts, techniques, and procedures. Their courses feature the specifics of shelter management--the way to set up the sanitation commode, the number of crackers per daily ration, the size of shelter groups and teams, and so on. Other instructors place great emphasis upon the individual and interpersonal aspects of the confinement experience, their goal being to demonstrate that survival under stress is possible. Others combine the two or underscore yet a different message.

Whatever the instructor's objectives might be it is almost inevitable, in the current program, that they are implemented in the setting of a small shelter. The information base upon which shelter management courses are built is still largely composed of data from the small, simply configured, underground shelter. The occupancy exercise that is part of the shelter management training process also tends to reinforce the image of the small fallout shelter. Preliminary tabulation of questionnaire data submitted by 24 Civil Defense University Extension Program staffs reveals an average occupancy population of 25 persons (19 students and 6 others).[1] Only 11% of the exercises had more than 40 persons, and only 2% had more than 50 persons. Therefore, not only is the shelter exercise unrepresentative of the large community shelter, it also does not accurately

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[1]Analysis of research data from training exercises is being carried on by AIR under contract OCD-OS-63-97, Research data from shelter occupancy exercises.

reflect the smallest Federally marked and stocked shelters. However, as is well known, a majority of shelter spaces are located in large, multiply-configured shelters with capacities in excess of 1,000 persons.[2] It is our contention that the standard shelter management course is insufficient preparation for the executive shelter management staff,[3] that is, those persons who will have overall leadership responsibilities in the large shelter. Executive management training ought not to be devoid of management facts, techniques, and procedures; nor do we recommend in this report that the occupancy exercise be eliminated from large shelter training. But there is nothing about the content method or student body that would exempt shelter management training from the "iron law of forgetting." The substantive content of the training course will mostly be forgotten a relatively short time after graduation. In addition, the occupancy exercise, which is likely to be retained in the memory for a longer period of time, will, at best, bear only partial resemblance to the actual occupancy environment.

In this connection, the crucial difference between the small and the large shelter is that the forgetting and the distorted recollections on the part of the manager is very likely to have significantly less effect upon the survival capacity of the occupied small shelter than of the large shelter.

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[2] Department of Defense, Office of Civil Defense. Annual statistical report. Washington: Author, June 30, 1963.

[3] Executive management is defined as the top level management cadre in a shelter of 1,000 persons or more. Applying civilian organization terminology, one can think of the executive shelter management staff as the vice-presidential level and higher. It should be remembered that a large shelter will require much more in the way of a management staff than an executive cadre alone. This report does not deal with the remainder of the management hierarchy. It is assumed that the non-executive management staff all receive standard shelter management preparation.

There is reason to suggest that a Federally stocked shelter of between 50-200 people, located in one or two rooms, can do at least a minimally adequate[4] job of managing itself without the advantage of newly trained managers. The likelihood increases even more if guidance materials are available in the shelter.

On the other hand, examination of the "average" marked and stocked large shelter strengthens the conclusion that trained executive management is an essential ingredient of the survival capability of the complex shelter.

There are essentially three responses that can be made to this statement of the problem.

The first is to do nothing, based on the assumption that the problem does not exist, or that it exists but is not important, or that it exists and is important but it admits of no practical solution. The second is to accept the importance of the problem and to solve it through attempts to simulate with fidelity the physical environment of the large shelter--to conduct executive management exercises in large shelters, populated to capacity with real shelterees. This would be a researcher's dream, but needless to say, is highly impractical as a general solution. The third reaction is to accept the problem and within the framework of the existing shelter management program, to introduce the large shelter into the training process in as pedagogically meaningful a way as possible.

This report pursues the third alternative.

To return to the question with which this report began, what should be the objectives of executive shelter management training? It has already been implied that the executive training course should not focus upon detailed facts and procedures, nor should the emphasis be on the small

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[4] "Minimally adequate" can be defined as no increase in the mortality toll attributable to the absence of a trained management staff.

group confinement experience, per se. One may add to this that the objective should not be to teach general leadership or management skills; that would be a foredoomed effort. Hopefully, the large shelter management staff will be recruited from persons with appropriate supervisory backgrounds, or at least capabilities.[5]

In our view, an executive shelter management training course is successful if it achieves the following two modest goals:

1. Reveals to the student the complexity of the large shelter system, the extent to which its parts are interrelated, and the types of problems that can threaten its integrity.

2. Identifies and dramatizes the critical differences between peacetime management desiderata and the requirements for shelter leadership and management under emergency conditions.

Awareness of these issues is a prerequisite for successful performance as a large shelter leader; such awareness is not likely to occur to the executive without prior preparation with the right type of preparation; these issues are likely to retain an impact long after specific details of the course are forgotten.

To achieve these objectives; it is recommended that the shelter management training course for large shelters incorporate the following two features:

1. A planning session, in which the students participate in developing a shelter plan for a large, complex public shelter, prior to the occupancy exercise.

2. A large shelter simulation game played during the occupancy exercise, in which the students assume the roles of an executive

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[5]Selection and recruitment recommendations appropriate for executive shelter management are presented in Smith, R.W., & Jeffreys, F.B. Selection and recruitment of shelter managers. Pittsburgh: American Institutes for Research, June 1965.

cadre of a large shelter. In addition to solving their own actual problems of shelter living, the students are also responsible for the fate of thousands of simulated shelterees.

It is the second feature that will receive greater attention in this report. For further information on shelter planning, the reader is directed to two recent AIR reports: Planning a Group Shelter, (Smith & Lasky, 1965), and An Experimental Study of "Integrated Guidance for Shelter Management." (Smith, Bend, Jeffreys, & Collins, September 1966).

THE APPROACH

This analysis of large shelter training implications was based upon two related research efforts conducted under contract OCD-PS-64-57.

The first of these was the experimental study of planning, training, and guidance materials.[6] For this study, a 6,000-person, high-rise shelter was "built." That is to say, shelter areas in a large office building were pictorially and verbally described in great detail; supply and equipment inventories were prepared. Relevant non-shelter features of the building were described (e.g., the number and types of offices and stores in the structure). Also prepared for this study was a scenario, a description of shelter events beginning with attack warning and extending to shelter exit some eight days later.

Groups of executives and students were exposed to varying combinations of shelter planning, training, and management guidance experiences and materials, and then given the task of "managing" a large shelter in a paper and pencil examination. The results of this study were evaluated for their implications for large shelter management training.

The second related research effort was the shelter management contingency game.[7] This is a large shelter simulation device, cast in game format, played by one person who acts as the manager. He makes decisions, issues orders, or asks questions of "the system." The manager responds to inputs in the form of information cards from simulated shelterees and

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[6] Smith, R.W., Bond, E., Jeffreys, F.B., & Collins, R.A. An experimental study of "Integrated guidance for shelter management." Pittsburgh: American Institutes for Research, September 1966.

[7] Hale, J.F., Meagley, D.E., Smith, R.W., & Davis, R.L. An experimental analysis of selected problems of large shelter management, environmental threat, and small shelter habitability under conditions of stress. Pittsburgh: American Institutes for Research, September 1966.

and members of the management staff. The information that the manager receives about the state of the system is contingent upon his prior decisions.

The relatedness of the contingency game to the simulation capability discussed in this report is obvious. Although the shelter contingency game is unsophisticated at present, exploratory use of it has encouraged project personnel to regard a large shelter simulation group training exercise as an attainable goal that is potentially of great value. The concept was greeted with enthusiasm by the few civil defense training specialists with whom it was informally discussed.

In addition to the evaluation of AIR research efforts, the literature on simulation of social systems was reviewed in search of concepts and techniques that would be applicable to the large shelter simulation vehicle. For example, Command Post Exercises, conducted at various organizational levels of the Strategic Air Command, especially at the wing level,[8] share interesting features with executive management simulation in the large fallout shelter.

The above mentioned efforts did not culminate in a formal, group-played, large shelter management game. The resources budgeted for this portion of the overall contract could not support application of effort across all the research tasks that are involved in the construction of a formal simulation capability. However, the materials in this report can be put to immediate use in executive management training, because they describe an initial method for introducing large shelter problems into the occupancy exercise, in a semi-formal manner.

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[8] Several years ago, the author had an opportunity to observe and evaluate a number of such exercises.

METHODS FOR INTRODUCING THE LARGE SHELTER INTO MANAGEMENT TRAINING

Shelter Planning as a Management Training Technique

Shelter planning can be viewed as a major peacetime responsibility of the shelter management staff. Even the smallest family shelter requires some form of planning. For the large, complex shelter that is the subject of this report, a carefully prepared, detailed shelter plan is an essential need for which there is no substitute.

The shelter plan identifies the problem areas that management will have to contend with during occupancy, and it specifies the supplies and equipment, personnel and procedures that have been prepared prior to occupancy to deal with each problem area.

The shelter plan provides the executive management staff with an excellent vantage point from which the complexity of and the interrelationships within the large shelter can be clearly observed. Data from the experimental study of training, planning, and guidance materials[9] support the position that shelter planning enhances the performance of the shelter manager. Students who had a shelter planning experience did significantly better on tests of management performance than students who lacked exposure to planning.

Therefore, it is recommended that executive management students be given an assignment to participate in developing a basic shelter plan for a large shelter facility prior to their shelter exercise.

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[9]Smith, R.W., Bend, E., Jeffreys, F.B., & Collins, R.A. September 1966.

Ideal circumstances would be if the students all represent the same organization which has a large Federally marked and stocked shelter, and if their employer allowed sufficient time to conduct an executive management course. Under such conditions, the actual planning effort should be preceded by a planning orientation session, using, for example, Planning a Group Shelter, (Smith & Lasky, 1965). The plan that emerges will have had benefits for executive management training, but much more than that will have been accomplished. The output of this effort will also be a valuable management resource for that shelter--an organized set of specific guidelines for achieving and maintaining a condition of readiness.

Unfortunately, shelter management training rarely operates in such ideal circumstances. Most courses are not taught for representatives of a single organization, in which case it might be reasonable to have the students develop a plan for a simulated large shelter, about which the instructional staff will have provided detailed descriptive materials. This can be a useful training technique if the students will subsequently be playing the roles of executive managers of the same shelter during their occupancy exercise.

Another deviation from the ideal is that time is almost always a factor in shelter management training. In recognition of this fact, the planning experience need not "start from scratch." A skeleton plan can be distributed to students, whose assignment would then be to complete the plan by entering their solution to each pre-determined problem area identified in the outline. Another way to overcome the handicap of time would be to assign a small portion of the plan to each student to develop, and then in a single group session put the pieces together and evaluate the resultant product.

A convenient way to incorporate the planning activity into the management course is in the form of a practical review and application of the content of previous classroom sessions and also as preparation for the occupancy exercise.

Simulating the Large Shelter in the Occupancy Exercise

The key notion in this management game[10] is to consider the students in the training exercise as the executive management cadre of a large shelter, not as the total population of a small shelter. The objective is to have the students solve the management problems created by 5,000 or so simulated shelterees, as well as taking care of their own physical and psycho-social needs during the period of occupancy.

What is being attempted here is not a replication of an idealized set of organizational and procedural arrangements for a large shelter. Some of these arrangements are as much simulated as is the size of the shelter. We are not suggesting for example, that the organization of the executive cadre, or the decision-making approach utilized in the exercise should serve as exact models for an actual large shelter plan. Deviations from standardized management guidance are necessary in order to highlight those features of the exercise that contain the basic message the executive manager must retain if the course is to be considered successful.

The following pages contain recommendations about establishing and utilizing this simulation vehicle in currently constituted training occupancy exercises.

Playing the Large Shelter Management Game

It is desirable that students be assigned to their executive management positions prior to the initiation of the exercise. A sample organization chart for a 20-person management cadre in a 6,000-person shelter is presented in Figure 1.[11]

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[10] For convenience, the term "management game" will be used as one of the synonyms for the simulation capability described in this report. It should be kept in mind that we are not attributing qualities of a formal management game to this version of the simulation vehicle.

[11] The number 20 was selected because it approximates the average number of students per occupancy exercise as indicated by data from CDUEP courses, collected under contract OCD-OS-63-97.

At the outset, the staff should be briefed on the status of the large shelter. As much descriptive material as possible covering equipment, supplies, configuration, population, etc., should be available in written form for reference use during the exercise. (See pp, 15-16). Greater familiarity with the shelter situation would result if the students were required to develop a shelter plan prior to entry. The scenario context within which this initial orientation can take place is that of the executive cadre, meeting in response to an escalating international crisis, but prior to public notification to take shelter. During this pre-public occupancy period, some problems associated with preparing the shelter for occupancy can be fed to the executive group, as, for example, filled water drums being located in non-shelter areas, or water drums regarded as filled, discovered to be empty.

During the pre-occupancy period, the students should also begin to organize to meet their own actual shelter needs. For example, the person who supervises food and water activities for the large shelter should establish food and water procedures for the 20-person executive group.[12]

With the "entry" of the shelter population, the game begins in earnest.

The game essentially is an extensive series of information exchanges, the major types of which are indicated in Table I. As such, it requires rules and procedures governing the exchange of information. The simplest arrangement is to have one or more members of the instructional staff act as the originator and recipient of all messages to and from the management cadre. A member or two of the executive cadre should be assigned to the task of monitoring all incoming communications. The

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[12]This is an illustration of a previous point that the exercise does not replicate recommended management procedures. One would not expect the Director of Operations for a 5,000-person shelter to open cereal ration tins to feed the shelter manager. However, as implied earlier, a taste of actual shelter living conditions has its value in large shelter training, as long as it does not become the primary focus of the exercise.

Link	Type	TO Executive Cadre	FROM Executive Cadre
Internal	Request	Problem that can't be handled by lower management levels	Additional data from lower levels needed to solve problem
	Response	Regular status report	Decision reached by executive group
External	Request	EOC request for shelter status information	Request by cadre of information not available in shelter
	Response	Requested data from EOC	Status information requested by EOC

TABLE I. TYPES & EXAMPLES OF INFORMATION EXCHANGE IN SHELTER SIMULATION EXERCISE

specific procedures for distributing information within the management group can be left up to the instructor or to the group itself. A "situation board" or similar display arrangement on which a record of shelter problems can be continuously maintained is recommended.

The specific manner in which problems are assigned to individuals or teams for solution can, in this version of the game, be left to the individual instructor or class to work out. Such decisions or other communications from the executive group can be transmitted to appropriate recipients in much the same manner as incoming information is handled.

The introduction of information, in the form of problems, requests, status reports, etc., is controlled by the instructional staff according to a schedule that has been worked out in advance. (See pp. 16-17).

The instructor has a great deal of flexibility in the number and types of problems that he schedules for a particular shelter exercise. One of the features that can be varied is the level of preparedness of the shelter.

The game can be played, on one hand, as if the large shelter has been completely organized according to a pre-established plan, in which case the executive cadre just waits for organizational problems to emerge that can't be dealt with at lower levels of the hierarchy. At the other extreme it can be assumed that little or no formal organization has been established, in which case it is the responsibility of the cadre to select various types and levels of leaders based on available information about likely candidates. Or to use another example, the game can be played with or without pre-established plans for use of augmented non-OCD supplies.

The problem load is also subject to flexible control on the part of the instructor. He may want to pile up problems in the early phases of the stay and reduce them as time elapses, or reverse that order. Or he may want to maintain a consistent light or heavy problem load. Or he may try to overload the system to demonstrate a teaching point. Not only the number but also the type of problem can be varied. For particular purposes,

the instructor may want to emphasize atmosphere control problems, or supply shortages, or socio-psychological situations.

Finally, time can be varied to suit instructional purposes. This goes for the actual time the exercise takes, as well as the simulated length of time covered by the scenario.

Evaluating Management Performance in the Simulated Exercise

Evaluation of student performance is an important part of any training program.

In the future management game, towards which this report is pointing, evaluation will be an essential, built-in feature of the simulation process. As the executive managers solve a particular problem, the consequences of their decision will influence the types, frequency, and intensity of subsequent problems with which they will be faced. They will receive fairly immediate feedback as to the adequacy of their solution, thereby providing a capability for on-the-spot evaluation of individual leaders, or the management group as a whole. To provide an extreme example, information about the death of a large number of shelterees, coming hard on the heels of a management decision, should convey to all the message that the solution leaves something to be desired. A valuable aspect of the "ultimate" simulation vehicle is its iterative capability. Managers will have the opportunity to try over and over again to solve persistent problems.

In the absence of this capability in the present simulation scheme, there remain several ways of evaluating management performance. The first is the post-exercise debriefing. If written records are kept of management deliberations and decisions, a detailed post-exercise evaluation can be held. Two ways of evaluating management performance during the occupancy period without interrupting the exercise suggest themselves. The first would be meetings of the entire management staff held at regular intervals, for the purpose of reviewing past events and preparing for

future problems. The second method for in-shelter evaluation involves the use of the advisory committee or council. In the standard organization of a large shelter, the establishment of a small group composed of representatives of shelterees and shelter management is recommended to act as a liaison between the manager and the shelter population, and to provide the manager with information and advice. During the simulation exercise, this group of two to three people in a 20-person student group, can continually review and evaluate management decisions from the standpoint of their impact upon the shelterees, and bring negative consequences to the attention of the executive staff. If a member of the instructional staff is to be in the shelter during the exercise, membership on the advisory group appears to be the natural assignment for him.

Although the informal evaluation procedures described above are likely to be retained because of their utility for training, the ultimate, large shelter simulation vehicle will add a powerful evaluation capability that will permit different groups of students to be compared along such quantitative dimensions as: available supplies and equipment, mortality and morbidity rates, and rates of socio-psychological disturbances, and many other indicators of shelter effectiveness.

Requirements for the Large Shelter Simulation Exercise

The simulation exercise described here levies few requirements in the way of equipment, supplies, special procedures, etc. The major requirement is sufficient time before the exercise for the instructional staff to prepare the necessary simulation materials. However, this is largely a "one shot" expenditure, unless the instructor wants to change the shelter situation or scenario of events from one exercise to another.

1. Simulation Materials

The content of the simulation exercise is derived from two sources, the shelter situation and the shelter scenario. The situation can be thought of as a static protrayal of the shelter at the time the exercise begins. It should include the following:

1. A description of the building.

2. Descriptions, and if possible, diagrams of the shelter areas.

3. Lists of shelter supplies and equipment.

4. Lists of other supply and equipment items that might be useful under emergency conditions.

5. Description of the neighborhood immediately surrounding the shelter.

6. Number and types (e.g., employees versus visitors, male versus female) of people who normally occupy the building.

A sample set of shelter situation materials is presented in the report, An Experimental Study of Integrated Guidance for Shelter Management. (Smith et al, 1966).

Shelter management trainees should be given an opportunity to familiarize themselves with the shelter situation prior to the beginning of the exercise. If the students have a large shelter plan as part of their training, the written plan can serve as the shelter situation.

The shelter scenario is the description of the dynamic features of the simulated shelter stay--events both external and internal (radiation levels, rates of supply use, rates of illness, shelter living problems, and the like). The shelter scenario is the script according to which the simulated shelter stay unfolds. It indicates to the instructor when to introduce the various types of inputs (e.g., emergency messages, requests from control center, shelter status reports, EBS broadcasts, and the like). Naturally the management students are not given copies of the scenario; the timing of the events and problems should be unknown to them until they are informed by message that a particular problem has arisen.

The scenario is different from the shelter activities schedule, which is a listing of the organized and planned activities that management

feels ought to take place. The simulation scenario is the listing of the planned and unplanned, positive and negative situations that the instructor plans to introduce into the occupancy stay.

The instructor can prepare a single scenario for use in all the exercises he conducts, or if he is adventurous, he can vary the scenario to emphasize different periods of the shelter stay, or different types of problems, or different levels of problem loading. Problems which might be included in the scenario are listed in the Appendix.

2. Equipment and Supplies

An essential ingredient is a means of communicating to and from the management area. Most training exercises utilize a telephone of one variety or another. This should satisfy the communication needs. One can be more elaborate and hook up an EBS receiver in the shelter, or even fancier devices, but these aren't requirements, at least for the type of game that is described in this report.

In addition, the shelter should contain the minimal equipment to support the simulated exercise: some chairs and tables, writing materials, a blackboard (or similar items on which to display incoming problems).

3. Personnel

In its simplest form, the simulated exercise requires only a member of the instructional staff outside the shelter to control communication into the shelter and to monitor messages from the shelter. If the shelter does not have an observation capability (capability to look and listen in from the outside without distrubing occupants) then it would be advisable to have an additional member of the instructional staff inside (on the advisory group) during the exercise.

Large Shelter Simulation in a Large Training Class

The example that has been applied throughout this discussion is that of the 20-person management training class. Modifications in the simulation exercise would be called for, if a much larger group of students, say 50, were taking part. An ideal solution would be to divide and separate the class into two management cadres in two different shelters, have both groups play against the scenario, and afterwards compare and evaluate the performance of each. It should make for quite a lively discussion period. If such an arrangement isn't possible, the alternatives are:

1. Divide group into two management shifts, with frequent changes of shift. Perhaps, have group not on duty monitor and evaluate performance of on-duty staff for post-exercise debriefing.
2. Change scenario and situation to 10,000-15,000-person shelter and increase size of management cadre accordingly. It would be quite a test of skill for the instructional staff to set up and operate such an exercise, and perhaps even more so for the shelter manager to direct an executive cadre of 50 people.

Additional Shelterees in the Occupancy Exercise

In almost half of the CDUEP occupancy exercises surveyed by AIR, under OCD contract OCD-OS-63-97, people, above and beyond the students and instructors, were brought into the occupancy exercise as additional shelterees. The use of the large shelter simulation vehicle need not restrict the practice of adding to the actual shelter population. Past experiments in the simulation of complex social systems have utilized combined human and machine inputs. One can speculate that a combination of 5,000 simulated plus 50 real shelterees (in addition to students) would enhance the impact of the exercise. It is possible, however, that the integration of the two types

of experiences would be difficult to achieve by the management cadre, resulting in an overinvolvement with one level of problems and relative neglect of the other. At least a tryout of this technique is needed before it can be further evaluated.

DISCUSSION

The training recommendations that have been presented in the previous pages are not startlingly new. It would be surprising indeed if someone in the civil defense training enterprise has not tried some or all of them out perhaps even on a regular basis. We, however, have not as yet put the group-played large shelter simulation scheme to the test. Neither has word of any such test conducted by others been brought to our attention.

That being the case, there is very little to discuss. There is at present no empirical basis for comparison between the standard management course, the semi-game simulation described in this report, and the full capability shelter management game that is on the research horizon.

If we haven't as yet evaluated the simulation vehicle, we have:

1. Studied the large shelter.
2. Trained groups of executives in shelter management.
3. Discussed large shelter training with civil defense training specialists, and anyone else interested in the problem who would listen.

These experiences have led us to contend that:

1. The large, multiple-area shelter requires the type of overall management that only a leadership cadre with pre-existing supervisory skills can supply.
2. Such people, by and large, are not attracted or helped by the standard management training course.
3. The best hope of attracting the interest of such a cadre in peacetime, and of providing the message that they need to learn and retain, is through a training experience similar to the one that has been the subject of this report.

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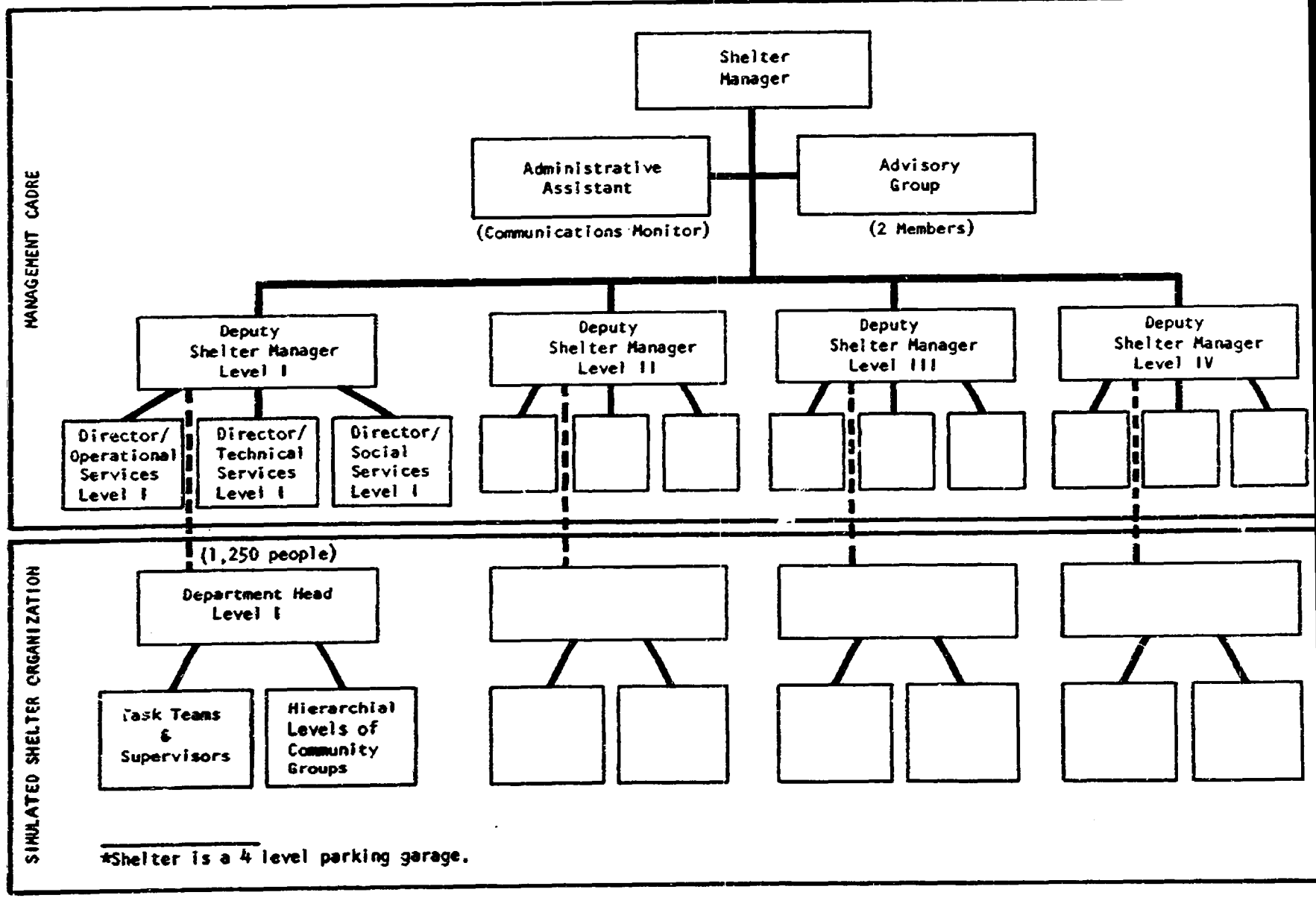
APPENDIX

Item I: Sample Organization of 20-person Executive Management Cadre for 6,000-person Shelter Simulation Exercise

Item II: Examples of Problems/Events/Requirements for use in Large Shelter Simulation Exercise

SAMPLE ORGANIZATION OF 20-PERSON EXECUTIVE MANAGEMENT CADRE FOR 6,000-PERSON SHELTER* SIMULATION EXERCISE



*Shelter is a 4 level parking garage.

EXAMPLES OF PROBLEMS/EVENTS/REQUIREMENTS FOR USE IN LARGE SHELTER SIMULATION EXERCISE

SUBJECT	PROBLEMS/EVENTS/REQUIREMENTS
ATMOSPHERE AND TEMPERATURE CONTROL	1. Air conditioning equipment failure a. one floor b. multiple floors 2. Extreme temperature rise in naturally ventilated shelter 3. Number of shelterees won't abide by "no smoking" rules that have been put into effect to combat rise in carbon dioxide levels
COMMUNICATION	1. Developing in-shelter communications capability between executive staff & each floor 2. Content of regular management briefing to shelter
FILLING THE SHELTER	1. Large groups located in non-shelter parts of building 2. Marked capacity reached & more people streaming in from the outside 3. Severe overcrowding on certain floors of shelter
FOOD AND WATER	1. Allocation of stocked food & water resources 2. Incorporation of additional resources into supply system 3. Water shortage 4. Food shortage
ILLUMINATION	1. Allocation of emergency lighting resources when public power is not available
MEDICAL AND SANITATION	1. Basis for allocating medical resources 2. Outbreak of communicable disease 3. Shortage of medical items 4. Deaths in the shelter 5. Clean up & garbage disposal problem with augmented food capability

SUBJECT	PROBLEMS/EVENTS/REQUIREMENTS
ORGANIZATION	1. Group leader in charge of one floor who is very popular with shelterees, refuses to follow instructions from higher level management 2. Shelterees "dispose" group leader, refuse to follow his orders 3. "Strike" by sanitation teams, who refuse continued "degrading" duty
PRIVATE PROPERTY	1. Owners of valuable supply items (e.g., portable radios, knives, pen-lights) refuse to make items available to supply teams
PSYCHOLOGICAL AND SOCIAL PROBLEMS	1. Drug/alcohol addiction 2. Groups wanting to leave shelter prematurely 3. Fight involving large number of shelterees 4. Theft of supplies 5. Psychologically disturbed individuals creating problems
RADIOLOGICAL PROTECTION	1. Increasing protection prior to arrival of fallout 2. Potentially dangerous radiation levels in certain shelter areas
RECORDS	1. Types of status reports required by executive management
SAFETY	1. Explosion & fire occurs in section of one shelter area 2. Development of program for disaster rehearsals
SLEEP	1. Bunks, cots, beds, available for approximately 1/3 of shelterees on each floor 2. Children & medical casualties
TRAINING	1. Development of in-shelter training program

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Institute for Performance Technology, AMERICAN INSTITUTES FOR RESEARCH, 135 N. Bellefield Avenue, Pittsburgh, Pa.

2a REPORT SECURITY CLASSIFICATION
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2b GROUP

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4 DESCRIPTIVE NOTES (Type of report and inclusive dates)
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5 AUTHOR(S) (Last name, first name, initial)
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13 ABSTRACT

Based largely upon concurrent AIR research in the area of shelter management simulation, an analysis of the impact of the large, complex shelter on shelter management training needs was conducted. The large shelter is seen as requiring the type of overall leadership that only persons with pre-existing supervisory skills can supply. Such people are, by and large, neither attracted nor helped by the standard shelter management training course. The objectives of executive shelter management training should be (1) to reveal to the student the complexity of the large shelter and the types of problems that can threaten its integrity, and (2) to identify and dramatize the differences between peacetime and emergency management. To achieve these objectives it is recommended that training for executive shelter managers incorporate (1) a planning session in which trainees participate in developing a shelter plan for a large, complex public shelter, and (2) a large shelter simulation game played during the occupancy exercise in which the students assume the roles of an executive cadre of a large shelter.

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14 KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
Executive Shelter Management						
Shelter Management Training						
Shelter Size						
Simulation						
Shelter Occupancy Exercise						

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