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RESEARCH DATA FROM SHELTER OCCUPANCY EXERCISES

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**Institute for Performance Technology
AMERICAN INSTITUTES FOR RESEARCH
Pittsburgh, Pennsylvania**

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Summary of Final Report

RESEARCH DATA FROM SHELTER OCCUPANCY EXERCISES*

Prepared for:

OFFICE OF CIVIL DEFENSE
DEPARTMENT OF THE ARMY
OFFICE OF THE SECRETARY OF THE ARMY
Under
CONTRACT NO. OCD-OS-63-97
OCD WORK UNIT 1517A

Prepared by:

Robert A. Collins
Emil Bend

December 1966

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

*This contract was originally entitled "The Use of OCD School Occupancy Exercises as Sources of Shelter Habitation Research Data." Because of the changing nature of the study, it has been changed to the above.

Summary

This project grew out of recommendations of an earlier project that an Occupancy Exercise Research Program be established to collect, analyze, and report habitability data. This implied the development of a formal, centralized information system using automatic data processing. Initially, it was felt that the prime source of data would be the occupancy exercises conducted by the Civil Defense University Extension Program (CDUEP) schools, but it was deemed desirable to also consider the possibility of including the findings of experimental shelter research, non-OCD habitability studies, and disaster research into the occupancy data system at a later time.

Two data collection forms were developed to tap the information areas of interest; one for the student to fill out, the other for the instructor, supplementing and elaborating upon data provided by students. These forms were subjected to both in-house and outside evaluation and tryout.

Coincidental with question development, a method of coding responses was developed, as well as punching, tape storage, and retrieval methodology.

This report includes data returns for slightly more than half the CDUEP facilities throughout the Country. All eight civil defense regions are represented.

Student Questionnaire

The content of the student questionnaire is subdivided into four areas of interest: (1) background information, (2) civil defense information, (3) shelter habitability, and (4) shelter management. A summary of the findings for the student questionnaire data is as follows:

Student Responses

Background Characteristics

The average student is a male, of middle age, married, with two children, who has had some college education (though not completed), and presently holds a job assignable to the category of "lesser professional." This category includes such jobs as: accountant, military commissioned officer, nurse, and pharmacist. The majority of male students have had some armed forces experience, mainly with the Army and have attained the rank of non-commissioned officer.

Student Civil Defense History

Two out of three students in the courses (mostly SM and SMI) had no prior CD courses. This fact was explained on the basis that these courses were relatively early in the CD course sequence. Following a similar pattern, only 20% said that they presently held CD positions, most of which were part-time, unpaid positions. Of those students involved in some CD occupational category, the most frequently mentioned positions were officers in charge of operational functions such as RADEF, communications, etc., followed by city, county, or state directors. Twenty-four per cent of the students were or would be assigned to positions of shelter management.

Student Response to the Occupancy Exercise

Opportunity was given for the students to rate a number of habitability factors in terms of whether or not these were satisfactory, or whether they created problems during the shelter stay. Most of the factors didn't create much of a problem--the problems mentioned most often were personal cleanliness, temperature and humidity, and sleep.

In an attempt to determine whether or not the complaints were attributable to most people checking one or two items, or a small number checking a great many; frequency distributions of individual habitability factor ratings were obtained. There were very few people who checked more than a few of the habitability factors as problem areas. In like manner, individual students were asked to check a list of physical symptoms to indicate the extent to which they were noticed during the shelter stay. The most frequently checked symptom was headache and loss of energy. As was done with the habitability factors, an analysis was performed to determine the frequency distribution of individual's physical symptom responses. Here, as with the habitability factors, there were only a few individuals who checked all or most of the symptoms.

Shelter Management in the Occupancy Exercises

Most of the occupancy exercises had one shelter manager. Ratings of these managers in terms of their technical and "human relations" proficiency indicated that most shelterees considered their exercise manager(s) excellent or good, with very few lower ratings. Unplanned events of the technical and human relations variety arose in 40 per cent of the exercises. Most of these were power failure and shelteree conduct problems. It was pointed out that there may have been quite a bit of misinterpretation on the part of the students of the word "unplanned."

Students were asked to list important characteristics of shelter managers. The ability to be a leader, (authority figure) and the ability to deal with others were mentioned by at least 40 per cent of the respondents.

Students were also asked for their suggestions for exercise modifications; the most frequent change suggested was an increase in the organization and planning before the exercise.

Instructor Responses

Exercise Description

The composite exercise had an average length of 15 hours. Slightly less than half of the exercises were conducted in single area shelters intended for training use only. The size of the average class was 17. In addition to this number of students, one observer or instructor was present in approximately half of the exercises.

OCD Supplies and Equipment

There were no significant occurrences of problems in the use of OCD supplies and equipment. Of those mentioned, the preparation or setting up of water drums and their contents was the most frequently mentioned.

Non-OCD Equipment and Supply Problems

A substantial proportion of exercises had non-OCD equipment and supplies present, especially communications and ventilation equipment, sleeping facilities, and atmosphere and temperature measuring devices. Generally speaking, the number of problems associated with the use of these non-OCD supplies and equipment items was quite low.

Shelter Organization

The majority of exercises included those management positions and task teams that are generally agreed upon as being important. Eighty-seven per cent of the exercises developed and utilized a formal schedule of shelter activities. Most of the exercises utilized shelter records such as a general shelter log, communications log, and registration forms.

Exercise Scenario

Some 88 per cent of the instructors mentioned the inclusion of simulated emergencies; illness or injury, power failure and entrance of contaminated person(s) seemed to predominate. The most frequently mentioned reason given for an emergency's effectiveness was that it demonstrated a training point.

Almost all of the exercises had messages introduced into the shelter. More than half of the responses indicated the origin of the message, not the content; information on radiation level was the most frequently mentioned content where given.

Eighty-four per cent of all exercises were on scenario (simulated) time. The average time simulated was slightly over nine days.

Shelter Management

In over half of the reports, one shelter manager managed for the duration of the stay. Most of the managers were students--the greater proportion selected by the instructional staff. Styles of management expressed by these students were primarily democratic (as opposed to authoritarian and laissez faire). Ratings received by the student managers in both human relations and technical areas were split fairly evenly between "excellent" and "good." In approximately one quarter of the exercises, unplanned technical and human relations events took place.

Forty per cent of the exercises reported that their students had special background characteristics (were all of the same sex, were all nursing students, etc.).

Training

Over 90 per cent of the exercises reported the inclusion of training sessions within the shelter exercise. Over 60 per cent of the exercises had training ranging from one to three hours. Eight hundred shelter managers, 358 shelter manager instructors, 73 radiological monitors or radiological monitor instructors were certified in the courses reported.

Cross Tabulations

Cross tabulations were performed on several items of interest. QCD equipment and supply problems were broken down in terms of civil defense regions. Generally, it was found that such problems occurred in roughly equivalent proportion to the number of exercises in that region.

The presence of non-OCD supplies in training shelters as opposed to operational shelters was determined. There was no clear cut advantage for either shelter type insofar as stocking of more non-OCD items was concerned. Generally, a greater percentage of the items that were stocked in operational shelters were normally stocked there and not just brought in for the exercise.

"Large" (26-51 students) versus "small" (4-14 students) exercises (in terms of student numbers) were examined to determine if the size of the exercise had any bearing on: (a) habitability factor ratings, (b) frequency of physical symptoms, and (c) shelter manager ratings in the human relations and technical areas. Most of the habitability factors were rated less satisfactory in the large exercises and two of the physical symptoms (headache and dizziness) were more frequently mentioned in the large exercises. The large exercise managers received more favorable ratings in both the technical and human relations areas.

Occupational level was examined to determine if it effected response to the question asking for suggested course changes. Generally, those higher in the occupational hierarchy suggested changes more frequently. There were some differences in what was suggested in the way of changes by various occupational levels. For those in the highest level (higher executive, major professional) the most frequently suggested change was the establishment of realism--this finding was not in evidence in the other occupational levels.

Initiator scale scores were analyzed to determine if the level of scores was related to responses of a certain nature on other questions. Students were assigned to low, medium, and high categories of initiator scale scores and their responses to questions relating to civil defense activity, rating of shelter managers, and suggested changes for the exercise were determined. Generally, those high on the initiator scale were more active in civil defense (had taken more prior civil defense courses, held civil defense positions, and held positions of greater authority). Ratings in both the human relations and technical areas were roughly the same for high, medium, and low initiators. More high initiators than low (31 per cent versus 23 per cent) had suggested changes in the exercise.

The background characteristics and reactions to the shelter environment of female course participants were determined. Five hundred sixty six or 30% of all students were females. By and large, the female course participants were younger. Almost half of the women students fell into the "housewife, student, or retired" category, another sizable proportion fell into the "business manager" category. Approximately half of the female participants are married, and half are single. Ten per cent of the female course participants hold civil defense positions as opposed to 38% of the male students.

Females show a greater percentage of rating habitability factors a problem, similar findings are noted for the rating of physical symptoms.

Twenty-four to twenty-seven per cent of students from all civil defense regions report that they are already or will be assigned to shelters after course completion. Exceptions to this are regions 3, 7, and 8 with lower percentages.

Another analysis that was thought to be of interest was the determination of responses for course volunteers versus course assignees to items such as civil defense activity and habitability factor ratings. Over twice as many volunteers as assignees have taken prior civil defense courses. Roughly the same ratio is applicable to civil defense positions held. Volunteers gave consistently more "satisfactory" ratings to habitability factors than did assignees although only a few percentage points separated the two in most cases.

Further analyses were performed to determine if shelter manager ratings related to other ratings such as habitability factors or frequency of physical symptoms. Generally speaking, the ratings received by shelter managers in the technical area were not good predictors of how well their students would rate habitability factors or physical symptoms. Human relations ratings were more effective predictors. In all but seven of the factors, there was at least a 10% difference in "satisfactory" ratings for students rating shelter managers excellent and students rating shelter managers fair. The seven factors not showing a difference were water (taste & amount), odors, religious activities, crowding, OGD toilet facilities, temperature and humidity. There was no similar difference in frequency of physical symptoms between the students rating shelter managers fair and excellent.

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ABSTRACT

The purpose of this project was to collect and analyze habitability data from Civil Defense University Extension Program (CDUEP) school exercises. As initially defined, the data were to include: (1) information related to experimental manipulations, where introduced into the exercises, (2) background information on participating students, and (3) other data related to the occupancy exercises (supplies and equipment, general feelings about the experience, and management data).

Two data collection instruments were developed, both self-administering; one for the students and one for the instructor of the course.

Procedures were developed for coding this data and entering codes onto punched IBM cards for later transference to magnetic tape for purposes of ultimate storage and analysis. Marginal distributions for student and instructor questionnaire data are exhibited in table form and discussed. Selected cross tabulations are exhibited and discussed. Suggested ideas for future research are listed.

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INTRODUCTION

The Background of the OCD-US-63-97 Contract Series

The initial work on the contract series (1963-1964) dealt with an investigation into the amount and type of research data that could be obtained from occupancy exercises for shelter manager training without interfering with the training goals of the exercise. A secondary goal was to assess the role of the occupancy exercise in shelter manager training.

The first phase of this study was that of familiarization and coordination, to gain information about occupancy exercises and to coordinate project efforts in the field.

The second phase consisted of development and implementation of experimental manipulations in the Eastern Training Center and the Staff College. In these studies, the goal of data gathering was secondary to that of demonstrating the feasibility of conducting "quasi-experimental" studies within the constraints imposed by training requirements.

The third analytic phase was a survey of occupancy exercises presently being conducted in the United States. A mail questionnaire was developed by the project staff and approved by OCD and Bureau of Budget. The questionnaire was sent to the universities under contract to OCD for shelter management training and to other organizations and communities that were known to have conducted occupancy exercises.

Discussions were then held with members of the instructional staffs of eight universities performing civil defense training. Also, several occupancy exercises conducted by university instructors were observed by members of the project staff, with the goal of assessing the research capability of the Civil Defense University Extension Program (CBUEP).

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On the basis of information derived from the above mentioned project activities, a final report¹ and an accompanying document entitled Occupancy Exercise Research Guide² was produced. The purpose of the latter document was to assist school staffs and other interested persons in utilizing occupancy exercises for research purposes.

The major finding was that a program of occupancy exercise research was both feasible and practical. It was found that experimental manipulations could be introduced into occupancy exercises without appreciably affecting the primary training goals of the exercise.

The major recommendations arising from this initial study was that an occupancy exercise research program should be established to collect, analyze, and report habitability data. This implied the development of a formal, centralized information system using automatic data processing. Initially, it was felt that the prime source of data would be the occupancy exercises conducted by the 50 CDUEP schools, but it was deemed desirable to also consider the possibility of including the findings of experimental shelter research, non-OCD habitability studies, and disaster research into the occupancy data system at a later date.

Accordingly, the American Institutes for Research was funded for the initial development of an occupancy exercise research program, the major portion of which was to be devoted to a data storage and retrieval capability.

¹Dend, E., & Griffard, C. D. Research data from shelter occupancy exercises for training. Pittsburgh: American Institutes for Research, October 1964. (Contract No. OCD-OS-63-97, Subtask 1517A).

²American Institutes for Research. Occupancy exercise research guide: An introduction to the research use of the shelter exercise for training. Pittsburgh: Author, October 1964. (Contract No. OCD-OS-63-97), Subtask 1517A).

Chronology of System Development

On the basis of returns from CDUEP schools (the third phase of the original study) and the newly assigned opportunity to train shelter managers, the 50 CDUEP schools were given primary consideration for data collection.

As stated in the report, the project was envisioned as being concerned with experimental manipulation performed while in shelter, as well as standard questions regarding the physical environment of the shelter, the background of student participants (personal and civil-defense related), and management-related items. It was realized also, that for purposes of comprehensiveness, both student and instructor data sources should be utilized. Accordingly, work was begun on the design of two data-collection instruments to satisfy project requirements. The finished products, the Student Questionnaire, and Instructor's Data Form, are included in the Appendix of this report which starts on page A-1.

The Student Questionnaire

The voluntary nature of data collection within the CDUEP system dictated certain requirements related to the process of questionnaire content and administration.

In order to add as little as possible to the administrative responsibilities of the school staffs, it was decided to design a questionnaire that could be self-administering. The time for completion also warranted considerable attention. It was determined that 15 minutes was approximately the maximum allowable time for form completion. This required that the population of questions of initial interest would have to be reduced somewhat.

The content of the form was subdivided into four areas of interest: (1) background information, (2) civil defense information, (3) shelter habitability, and (4) shelter management.

Background Information. The background information section contained many of the standard demographic items found in most individual surveys. Such items as age, education, occupation, hobbies and interests, make up this section. The utility of this section lies in the use of the data to develop a profile of personal characteristics of the composite occupancy exercise participant, allowing re-analysis and appropriate modification of the level of instruction, prediction of an individual's place in the community structure, etc. The comparison of the resulting profile with other individual survey data is also a possibility that is explorable.

Civil Defense Information. The civil defense information section was included in data collection forms to ascertain individual background with regard to history of courses taken, reason for taking present course, present and probable future civil defense assignment, and status of the students shelter assignment (if known). Knowledge in this area will be applicable to problems of shelter manager recruiting, development of course material (based on responses to prior civil defense courses taken), and possible need for more active work in graduate placement at the community individual shelter level.

Shelter Habitability. The shelter habitability section deals specifically with the environmental aspects of the shelter experience. Included in this section is a list of specific possible areas of concern as regards supplies, physical design of the shelter, and atmospheric conditions. Also included is a checklist of physical symptoms providing the student with opportunity to indicate the extent to which these gave him trouble and a section to gauge the extent to which the student's preconceptions of the shelter stay were borne out by his experience.

The checklist of supply conditions and physical aspects of the shelter provide a nationwide quality check on civil defense supplies and equipment, with the resultant possibility of spot-checking the quality tolerances actually being followed in production. This list also indicates where the

intrinsic nature of a design or composition of supplies or equipment is in need of re-design, not merely adherence to a more stringent standard of production tolerances.

It may be feasible to extrapolate from the findings of short-term occupancy to a situation of shelter operation during a real emergency; i.e., to assume that some complaints about listed aspects of supplies and shelter environment would assume even greater status as discomfort factors in an extended period of occupancy. At the same time it is realized that many reported problems might not assume major importance under these conditions. Consequently, it would appear feasible to utilize the findings of this section in selective fashion for the modification of existing capability.

Shelter Management. The shelter management section, in contrast to the shelter habitability section, deals with the "people" aspect of the occupancy exercise specific to shelter management. This section includes items concerned with evaluation of the shelter manager's performance in the solution of various problem types, a listing of what the student considers the necessary characteristics of the shelter manager to be, and suggested changes in the occupancy exercise specific to its role as a teaching technique.

The last page of the questionnaire for the student consists of space for his additional comments and notes.

The Instructor's Data Form

Generally speaking, the Instructor's Data Form provides data in addition to, and more specific than that provided by the Student Form. The subdivision of this form and brief comments about the items within are as follows:

1. Exercise Description. The number of class hours, occupancy hours, and placement of the occupancy within the course.

2. Description of Shelter. The physical description of the shelter and its primary function (i.e., for training use or actual shelter intended for use).
3. Shelter Occupants. Summary data on the shelter population; breakdown by age, sex, and roles within the shelter.
4. Condition and Use of OCD Supplies. Specific statements of problem types and descriptions related to stocked OCD supplies and equipment.
5. Non-OCD Supplies and Equipment. Identification of non-OCD supplies and equipment that were available at the time of the occupancy exercise along with problems associated with these, if any.
6. Multi-Purpose Use of Supplies. Instances of use of OCD supplies for purposes other than those for which they were intended.
7. Shelter Organization. Provision for drawing a shelter organization chart relevant to that exercise, including management, task teams, and community grouping where pertinent; schedule of activities and record keeping.
8. Exercise Scenario. Description of programmed "emergencies" and messages sent from outside.
9. Shelter Management. Description of the processes of selection of the shelter manager(s) and evaluations of performance of these managers in various areas. Special characteristics of the shelter population.
10. Training. Description of any formal training conducted during the occupancy exercises; certification of students at course completion.

Space for additional notes and comments was provided for on the last page of the Instructor's Data Form.

Refinement of the Data Forms

After the areas of interest for both forms (described above) were determined and suitable items incorporated within each area, extensive evaluation and refinement of the forms took place. These evaluations were initiated at the in-house level and proceeded with assistance from academic and civil defense training personnel.

In-House Evaluation. Extensive inter-staff discussions were held regarding the format, content, and scope of the two forms. In addition, a check was made on the time involved in filling out the forms by administering both forms to staff personnel at various levels in order to obtain as accurate an estimate of the time involved in filling these out as possible. Individuals chosen were of various degrees of naiveté concerning civil defense information.

Other Evaluation. Modifications resulting from the in-house review were incorporated in the forms which were in turn submitted to individuals in the Department of Sociology and Sociology Research Office at the University of Pittsburgh. In addition, the forms were given to individuals in the training cadre of various CDUEP schools on the East coast for further comment and criticism.

Comments and criticism from the above three sources were evaluated and incorporated into the data forms where possible.

Data Collection

Initial contact with all CDUEP schools was made through a letter in September, 1965 (Appendix, page A-21). Enclosed with the letter explaining the project and requesting cooperation was an initial supply of both the Student and Instructor Forms. Provision was made for re-ordering of forms

by CDUEP schools on a need basis. Additional exposure was given to the project through the insertion of a description of the project goals in the June 1965 issue of the University Extension Civil Defense Program Newsletter. The first return of completed data forms was in 1965. As the pattern of data returns became established, it became apparent that some follow-up would be necessary to the original letter contact. The prime need was to determine plans for cooperation for those schools from whom no data had been obtained, also to determine, if they did not intend on cooperating, why this was the case. Accordingly, a letter and questionnaire (Appendix page A-22) was sent on 30 December 1965. Analysis of the questionnaire responses will appear in a later section of this report.

Data Processing

Prior to and coincidental with the first data returns, work began on a system of data reduction. The first consideration was the development of a coding scheme to categorize responses to the various items within the questionnaires. In some cases, coding had already been established by the forced-choice format of certain questions. Others, however, were of an "open-end" variety, theoretically allowing an infinity of responses. Initial work began on the coding of these items before returns were available. This was through a process of consideration of the probable categories into which responses to a particular item were likely to fall. The determination of the validity of these "pre-codes" was established through examination of initial returns. Such examination made it possible to determine whether or not the responses given fit into the codes initially established. Modifications in the original coding scheme were accordingly made.

A full-time coder was assigned the task of coding incoming forms, along with two part-time people to help with the verification and checking of early forms. Weekly meetings were held with the coders and other project staff to resolve coding problems and other administrative details that would occasionally appear.

Responses for each student and instructor return were punched on IBM cards, in accordance with the data placement scheme developed synonymously with the coding design. A card-to-tape program was utilized to transfer the punched data on to tape storage and translate the punches into machine language. Marginal distributions and cross tabulations were then obtained from this tape by a program used in conjunction with an IBM 7090 computer at the University of Pittsburgh Computation and Data Processing Center.

Description of Data Source

Analysis of data for this interim report includes the following:

1. Separate training sessions: 107

2. Student forms: 1872

3. <u>OCD Region</u>	<u>Number of Students</u>	<u>Number of Sessions</u>
1	617	30
2	356	26
3	35	2
4	92	8
5	457	23
6	70	5
7	222	12
8	23	1

MARGINAL DISTRIBUTION OF STUDENT RESPONSES

BACKGROUND INFORMATION

Age and Occupation

Examination of background information reveals the average student is a male of middle age (in terms of the age continuum utilized). The distribution of student age is approximately normal, (i.e., the greatest number of students are in the middle categories, 31-40 and 51-60 years respectively). Category entries on either side of the mid-range drop off in roughly equivalent fashion.

Table I

Student Age (Question 1)

	<u>N</u>	<u>%</u>
Under 21	162	8.7
21 - 30	355	19.0
31 - 40	451	24.1
41 - 50	513	27.4
51 - 60	300	16.0
Over 60	67	3.6

Table II

Student Sex (Question 2)

	<u>N</u>	<u>%</u>
Male	1301	69.7
Female	566	30.3

The breakdown of student occupations shows the most frequently mentioned occupation to be "Lesser Professional." Approximately 25 per cent of the respondents fall into this category. Under this category are such

occupations as accountant, military commissioned officer, nurse, pharmacist, social worker, and teacher. The second most frequently mentioned categories are "Skilled Manual Employee" and "Student", each with 11.3 per cent of the total. "Machine Operator and Semi-skilled Employee" is the next biggest category with 10.1 per cent of all responses. It was thought of interest to determine the percentage of students in occupations that probably involve some management of personnel. Accordingly, "Proprietors of Large Concerns", "Business Managers", "Proprietors of Medium Businesses", and "Administrative Personnel" were selected as categories, and their separate percentages added. These categories together account for 16.4 per cent of all students who are taking courses intending to lead to management function in time of emergency. For a complete list of the occupations that fall under each occupational category listed in the table, see Appendix page A-23. Results of student occupation question responses are found in Table III.

Table III

Occupation

	<u>N</u>	<u>%</u>
Higher executives	12	.7
Proprietors of large concerns	1	.1
Major professionals	99	5.4
Business managers	162	8.9
Proprietors of medium businesses	10	.6
Lesser professionals	445	24.6
Administrative personnel	110	6.1
Small independent businesses	13	.8
Minor professionals	25	1.4
Clerical and sales workers	117	6.4
Technicians	93	5.1
Owners of little businesses	1	.1
Farm owners	3	.2
Skilled manual employees	205	11.3
Small farmers	2	.1
Machine operators & semi-skilled employees	183	10.1
Unskilled employees	42	2.4
Relief, unemployed, sharecroppers	3	.2
Housewives	66	3.6
Students	205	11.3
Retired	82	.8

Education and Family Status

The greatest number of students (27 per cent) have had some college experience but have not received a degree. The next greatest number (22 per cent) completed high school, but had no further education. Fourteen per cent have graduated from college and 10 per cent have received a professional degree of some sort.

Answers to questions related to students' family status reveal a substantial majority of them are married (73 per cent). The greatest number of the married students (23 per cent) have two children, 16 per cent have three children, and 13 per cent have one child.

Table IV

Highest Level of School Completed by Student (Question 5)

	<u>N</u>	<u>%</u>
Professional Degree	188	10.2
Some Graduate School (no degree)	160	8.7
College Graduate	250	13.6
Minor Professional Degree	0	0.0
Some College (not completed)	494	26.8
Completed Business or Trade School	128	6.9
Completed High School	403	21.9
Some High School (not completed)	163	8.8
8 Years or Less of School	56	3.0

Table V

Student's Marital Status (Question 8)

	<u>N</u>	<u>%</u>
Married	1348	72.9
Single	413	22.3
Widowed	39	2.1
Divorced	50	2.7

Table VI
Number of Children (Question 9)

	<u>N</u>	<u>%</u>
None (not married)	413	21.3
None (married)	188	10.2
One	242	13.2
Two	420	22.9
Three	283	15.7
Four	155	8.4
Five	73	4.0
Six	35	1.9
Seven	10	.5
Eight or more	9	.5

Military Background

Military background questions reveal that 51 per cent of the students have had active military service of one kind or another, 47 per cent of these served in the Army, followed in order of decreasing proportions by the Air Force and the Navy. The highest rank attained by the majority (61 per cent) with service was non-commissioned officer (i.e., sergeant, petty officer, corporal, etc.). Ninety-two per cent of those responding were not presently affiliated with reserve units of any kind.

Table VII
Military Experience of Male Students (Question 10)

	<u>N</u>	<u>%</u>
Yes	945	71.7
No	373	28.3

Table VIII

Branch of Service for Those Students With
Military Experience (Question 10b)

	<u>N</u>	<u>%</u>
Army	445	47.2
Air Force	213	22.6
Navy	203	21.5
Marines	25	2.7
Other	25	2.7
Branch Unspecified	20	2.1
Coast Guard	11	1.2

Table IX

Highest Rank Attained for Those Students With
Military Experience (Question 10c)

	<u>N</u>	<u>%</u>
NCO: Sergeant, Petty Officer, Corporal	576	61.2
Private, Seaman, Recruit	150	16.0
Captain (Army), Lieutenant, Ensign	108	11.5
Colonel, Major, Captain (Navy)	68	7.2
Rank Unspecified	21	2.2
Warrant Officer	14	1.5
General, Admiral	4	.4

Table X

Student's Current Reserve Membership (Question 11)

	<u>N</u>	<u>%</u>
Yes	153	8.5
No	1115	91.5

The Initiator Scale

Included in the questionnaire were three items concerned with the student's free-time pursuits, including leisure time activity, conversational topics, and organizational affiliation. Together, these items

determine an individual's position on a scale intended to measure his degree of influence over those with whom he comes in contact. The scale is called the initiator scale and has been used frequently in market research and other broadly defined consumer research applications to pinpoint those individuals who would be most influential in affecting the thoughts of others about some "product" of interest. In the tables that follow, those items under each of the three categories that are given credit for the scale are marked by an asterisk.

As can be seen by Table XIV, the population is approximately normally distributed with respect to scores on the initiator scale, (i.e., the great majority of individuals, 38 per cent, cluster about the mid-range and then the number drops off in roughly equivalent fashion on either side of the middle of the scale. This would seem to illustrate the fact that the population of individuals taking the course is quite similar to the average population.

In a later section of this report, we utilize this scale in fuller fashion. By identifying those who score high on the initiator scale and comparing these responses to (a) average scorers, and (b) low scorers.

Table XI
Student's Leisure Activities (Question 12)
(Initiator Scale Item)

	<u>N</u>	<u>%</u>
Read Newspapers**	1412	76.0
Watch Television	1287	69.3
Listen to Music	1001	53.9
Read Books*	994	53.5
Read <u>Life</u> , <u>Post</u> , etc.*	941	50.6
Listen to Radio	923	49.7
Work in Garden	906	48.8
Visit, Entertain	874	47.0
Watch Sports	863	46.4
Travel*	749	40.0
Read Business or Professional Journals**	685	36.8

Table XI (Continued)

	<u>N</u>	<u>%</u>
Read News Magazines**	666	35.8
Hobbies	606	32.6
Participate in Sports	596	32.1
Go to Movies	367	19.8
Others	325	17.5
Attend Plays, Opera or Ballet*	273	14.7

* = 1 point given on initiator scale

** = 2 points given on initiator scale

Table XII

Student's Conversational Topics (Question 13)
(Initiator Scale Item)

	<u>N</u>	<u>%</u>
Your Work	1371	73.8
World Affairs*	1159	62.4
National Problems*	1086	58.5
Sports	984	53.7
Community Problems*	955	51.4
Your Family	997	45.3
Government Policies*	684	36.8
Religion	659	35.5
Civil Defense	581	31.3
Business Conditions*	572	30.8
Music, Art, etc.	543	29.2
Labor Union Matters*	235	12.7
Others	110	5.9

* = 1 point given on initiator scale

Table XIII

Student's Organizational Affiliations (Question 14)
(Initiator Scale Item)

	<u>N</u>	<u>%</u>
Church, Religious Group, or Clubs*	858	47.0
Professional Association*	552	30.3
Fraternal, or Veteran's Organization, such as Elks, Legion, etc.*	439	24.1
Civil or Local Association such as School Board, Community Association, etc.*	338	18.5
None of These	335	18.4
Sports Clubs such as a Country Club, Golf Club, Swimming Club, etc.	291	16.0
Service Clubs such as Rotary, Lions, Junior League*	205	11.2
Others	175	9.6
Business Associations*	144	7.9
Political Organizations*	126	6.9
Labor Union or Organizations*	95	5.2
Drama, Arts, Cultural Group, etc.	92	5.0

* = 1 point given on initiator scale

Table XIV

Initiator Scale Scores for All Students
(Derived from Questions 12, 13, & 14)

<u>Score</u>	<u>Number of Students</u>	<u>%</u>	
1	50	2.7	Lowest - 119 Students
2	69	3.7	
3	84	4.5	Low - 466 Students
4	100	5.4	
5	135	7.3	
6	147	7.9	
7	163	8.8	Middle - 712 Students
8	151	8.1	
9	133	7.1	
10	144	7.7	
11	121	6.5	

Table XIV (Continued)

<u>Score</u>	<u>Number of Students</u>	<u>%</u>	
12	126	6.8	
13	102	5.5	
14	77	4.1	High - 432 Students
15	77	4.1	
16	50	2.7	
17	43	2.3	
18	29	1.6	
19	16	.9	
20	17	.9	
21	9	.5	Highest - 114 Students

CIVIL DEFENSE INFORMATION

The civil defense information section includes questions dealing with present and past course participation, circumstances surrounding present course participation, and present civil defense capacity, where appropriate.

By far the major number of courses offered in conjunction with the occupancy exercise were "end-product training", i.e., courses in shelter management. Almost 1,400 students, or 74 per cent of the total student population surveyed fell into this course category. The other 26 per cent fell into the Shelter Management Instructor category.

Table XV

Title of Course Taken in Conjunction With
Occupancy Exercise (Question 15)

	<u>N</u>	<u>%</u>
Shelter Management Instructor	472	25.2
Shelter Manager	1385	74.0

Of the students surveyed, slightly more than 53 per cent volunteered to participate in the course and 47 per cent were assigned or asked.

Of those volunteering for the course, the two most frequently mentioned reasons were: (1) personal interest, information, experience, and (2) preparation for the future if necessary.

Of those students assigned or asked to participate, the most popular reason was that the training was essential to their occupation. The second most frequently noted reasons, that they were sent to represent their place of employment.

Table XVI

Student's Reason for Enrolling in Class (Question 17)

<u>Volunteered</u> (N=964, %=53.4)	<u>N</u>	<u>%</u>
Personal interest, information, experience	428	23.7
Preparation for future	291	16.1
Active in CD work--additional training	103	5.7
Instruction of others	44	2.4
Other than above	38	2.1
Reason not stated	60	3.3
 <u>Assigned or Asked</u> (N=842, %=46.6)	 <u>N</u>	 <u>%</u>
Training essential to occupation	291	16.1
Sent to represent place of employment	138	7.7
Training essential to future assignment	82	4.5
Active in CD work--additional training	51	2.8
Other than above	55	3.1
Reason not stated	142	7.9

The majority of students responding (70 per cent) had no prior civil defense course experience. This is not surprising in light of the fact that Shelter Management, listed as the course being taken in the majority of cases, is a relatively "early" course in the characteristic sequence of civil defense courses. Of those taking prior course, 17 per cent had only one previous course, and 7 per cent had two prior courses. The remaining proportion of students had three to seven courses in decreasing frequency respectively.

Table XVII

Prior CD Courses Taken by Students (Question 18)

	<u>N</u>	<u>%</u>
Yes	555	30.5
No	1276	69.7

Table XVIII

Number of Prior Courses Taken by Students (Question 18a)*

	<u>N</u>	<u>%</u>
One	310	17.2
Two	125	6.9
Three	40	2.2
Four	20	1.1
Five	10	.6
Six	4	.2
Seven or more	10	.6

As befits the limited civil defense course background and current Shelter Management course experience, over three-fourths of the respondents hold no current civil defense position. Of those holding present positions, slightly more than one quarter are CD officers in charge of some specific operational function, such as RADEF or communications. The next most frequently mentioned position (22 per cent) is that of Director (city, county, or state). Sixty-eight per cent of those holding civil defense positions are on a part-time basis. Seventy-five per cent of those holding civil defense positions are volunteers, the remainder are paid.

Table XIX

Students Presently Holding CD Positions (Question 19)

	<u>N</u>	<u>%</u>
Yes	368	21.0
No	1381	79.0

*Two per cent of those who had taken prior CD courses did not indicate the number.

Table XX

Titles of CD Positions Currently Held by Students (Question 19a)

	<u>N</u>	<u>%</u>
Director (City, County, State	75	22.3
Assistant (Deputy, Sector)	40	11.9
Shelter Manager	44	13.1
Auxiliary Police, Fire, Rescue	44	13.1
Officer in Charge of Specific Operational Facilities (RADEF, Communications, Liaison, Special Services, Warden)	90	26.7
Instructor	23	6.8
Office Staff	12	3.6

Table XXI

Time Devoted to CD Positions Currently
Held by Students (Question 19b)

	<u>N</u>	<u>%</u>
Full Time	87	31.0
Part Time	193	68.9

Table XXII

Reimbursement of CD Positions Currently
Held by Students (Question 19c)

	<u>N</u>	<u>%</u>
Voluntary	234	75.7
Paid	75	24.3

For those who have had, or are presently enrolled in the Shelter Management course, almost half had no idea whether or not they would be assigned a shelter on course completion, 24 per cent knew that they would be assigned, and 30 per cent knew that they wouldn't be assigned. Of those who knew they would be assigned, over half would take the position of shelter manager, an additional 13 per cent would take deputy shelter manager responsibilities.

Table XXIII

Known Present or Future Assignment of Student
to Shelter Management Position (Question 20)

	<u>N</u>	<u>%</u>
Yes	392	24.2
No	485	29.9
Don't Know	745	45.9

Table XXIV

Title of Management Position for
Those Students Assigned (Question 20a)

	<u>N</u>	<u>%</u>
Shelter Manager	179	58.9
Deputy Shelter Manager	39	12.8
Deputy - Technical Services	30	9.9
Deputy - Operational Services	17	5.6
Deputy - Special Services	14	4.6
Other	13	4.3
Task Team Head	12	3.9

To determine the management readiness of shelters to which these course graduates would be assigned, a question was inserted in the questionnaire asking for the number of others on the management staff of the shelter who had received training. Almost half of the assigned students reported that no one else had received training, slightly more than one-fifth reported that one other had received training. When it is realized that only one-fourth of those being graduated from a particular Shelter Management course are sure of assignment, and further that in half of these shelters, the respondent is the only trained person on the management cadre, the need for increased emphasis on selection, training, and assignment seems fairly evident.

Table XXV

Number of Other Trained Management Personnel
in Assigned Shelter (Question 20b)

	<u>N</u>	<u>%</u>
None	96	41.0
One	56	23.9
Two	20	8.5
Three	10	4.3
Four	7	3.0
Five	7	3.0
Six	2	.9
Seven or more	36	15.4

Those shelters that have been assigned shelter managers are, for the most part, all Federally marked and stocked (approximately 80 per cent).

Table XXVI

Status of Assigned Shelter (Question 20 c,d,e)

	<u>N</u>	<u>%</u>
Shelter Federally Marked	279	79.3
Shelter Federally Licensed	263	79.0
Shelter Federally Stocked	279	80.4

SHELTER HABITABILITY INFORMATION

The information gleaned from this section of the student questionnaire is of considerable importance in that it highlights the effect of even a short period of occupancy in a shelter-like environment on the participant. Aspects of shelter living are evaluated, physical symptoms produced during the stay are listed, and variations of the real experience from what was expected are delineated. The results of this section, concerned with only a brief period of occupancy, have relevancy for the prediction of problems within a "real" shelter stay in a period of National emergency. The

similarities between a general situation in which occupants are forced to live in rather primitive conditions, restricted in their movements, and crowded, is, in general, similar to what would be found in a "real" in-shelter situation.

Table XXVII on the following page provides a list of aspects of shelter living, which the students grade according to the problems these aspects produced during the stay. Three levels of evaluation were provided: "satisfactory," "slight problem," and "significant problem."

A "slight problem" is defined as a situation that caused some discomfort but would not affect the students ability to endure a 14-day shelter stay. A "significant problem" is defined as a situation that might affect the physical survival or mental well-being of the subject or others in an extended shelter stay. In both cases, an estimation of the long range effects of a problem is, of course, an interpretation of the individual student, and would not necessarily be a "real" problem in a long stay.

Number values were assigned to student ratings of separate habitability factors: (1) satisfactory, (2) slight problem, and (3) significant problem. These numerical ratings for all factors were averaged for all students. These average figures constitute a "problem rating" for the listed factors; higher average figures reflect a greater frequency of problem ratings for that factor. In Table XXVII, the factors are listed in order of increasing problem rating.

As can be seen in Table XXVII, the five factors with the highest rating are lack of privacy, lack of physical exercise, personal cleanliness, temperature-humidity, and sleep, in order of increasing problem rating.

Civil defense supplies and equipment included in the list for evaluation were found in the lowest two-thirds of the problem ratings. Water (taste) had the lowest problem rating of any of the 22 factors, followed by medical supplies. It must be pointed out, however, that a fair evaluation of the capabilities of the supplies within the medical kit may not have been possible during a short period of shelter occupancy. The amount of water was number seven on the list, and other OCD factors (food-amount and taste; and toilet facilities) were clustered about positions eleven through fourteen.

Data gleaned from the Instructor's Data Form will make it possible to determine more specifically what problems were encountered in the use of OCD and non-OCD supplies.

Table XXVII

Problem Ratings of Habitability Factors in
Occupancy Exercise Shelters

<u>Habitability Factor</u>	<u>Problem Rating</u>
Water-taste	1.08
Medical supplies	1.12
Behavior-others	1.15
Religious activities	1.17
Shelter organization	1.18
Other aspects	1.18
Water-amount	1.19
Odors	1.20
Recreation	1.20
Shelter cleanliness	1.22
OCD food-amount	1.22
OCD toilet facilities	1.27
Smoking	1.28
OCD food-taste	1.29
Noise	1.31
Crowding	1.36
Seating	1.38
Lack of privacy	1.41
Lack of physical exercise	1.42
Personal cleanliness	1.45
Temperature, humidity	1.47
Sleep	1.49

Table XXVIII on the following page lists physical symptoms that the student may have experienced during the stay. The symptom that seemed to be most common was headache, mentioned as a mild, moderate, or severe symptom by 34 per cent of the respondents.

The second most frequently mentioned symptom was loss of energy, mentioned as a symptom by 13 per cent of the respondents.

Considering the mention of lack of sleep, lack of physical exercise, temperature and humidity, and smoking as complaints in the habitability factors checklist, the occurrence of these symptoms seems fairly reasonable. Also, it would appear reasonable to assume that the occurrence and severity of these symptoms would increase with a longer shelter stay.

Table XXVIII

Physical Symptoms Reported by Students

<u>Physical Symptoms</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
	<u>No Symptoms</u>		<u>Mild to Severe Symptoms</u>	
Diarrhea	1698	99.8	3	.2
Rash	1691	99.4	10	.6
Dizziness	1618	94.9	87	5.1
Sore Throat	1595	92.7	125	7.3
Upset Stomach	1590	92.6	127	7.4
Loss of Energy	1444	84.4	217	13.1
Headache	1176	66.4	596	33.63

Table XXIX gives an indication as to how well the actual shelter experience coincided with student expectations. Fewer than half stated that the experience was as expected with only slight differences. One-fourth said that the experience was as they had anticipated it, and one-fourth had no expectations to compare the experience with. Only 6 per cent stated that there were major differences between reality and expectation. Again, to a certain extent, the mental preparedness of the students could be termed quite high.

Table XXIX

Similarity of Shelter Stay to
Student's Expectations (Question 24)

	<u>N</u>	<u>%</u>
No Expectations	408	23.2
Just as Expected	464	26.4
As Expected with Some Difference	747	42.6
Many Things Were Different	107	6.1
Not At All As Expected	29	1.7

Further Analysis of Habitability Factor and Physical Symptom Responses

Upon examination of the frequency of complaints, both for habitability factors (question 21, Student Questionnaire) and physical symptoms (question 23, Student Questionnaire) it became of interest to determine the response patterns of the individual students. In an attempt to determine whether or not the complaints were attributable to most students checking one or two items, or a small number checking a great many; frequency distribution of individual factor ratings and physical symptom ratings were obtained.

Table XXIXa

Student Distribution of Habitability Factor & Physical Symptom Scores

DISTRIBUTION OF PHYSICAL SYMPTOMS 8 Symptoms Listed			DISTRIBUTION OF HABITABILITY FACTORS 21 Factors Listed		
Possible Response Combinations	Score	Frequency	Possible Response Combinations	Score	Frequency
No symptom mentioned-----	1.00	1016	No problem	1.1	531
1 Mild symptom-----	1.12	324	1 slight problem	1.2	316
1 Moderate Symptom---	1.25	170	5 slight or 3 significant prob.	1.3	280
2 Mild symptoms or 1 severe-----	1.37	70		1.4	186
	1.50	54		1.5	147
	1.62	30	10 slight or 5 significant prob.	1.6	92
	1.75	13		1.7	70
6 Mild symptoms-----	1.87	8	15 slight or 8 significant prob.	1.8	71
4 Moderate symptoms				1.9	15
3 Severe symptoms				2.0	11
	2.00	4		2.1	7
	2.13	2		2.2	8
	2.25	1		2.3	2
	2.50	1	21 slight problems	2.4	3
Not Scored		180		2.5	1
			Not Scored		133

As can be seen by the above table, there were very few people who checked more than a few of the habitability factors as problem areas. The same findings were attained for the rating of physical symptoms; very few individuals checked more than two or three symptoms.

Of those mentioning differences, 39 per cent expected better conditions, 16 per cent expected worse conditions and 15 per cent expected better organization.

Table XXX

Specific Differences between Student Expectations
and Actual Shelter Experience (Question 24)

	<u>N</u>	<u>%</u>
Expected Better Conditions	43	39.4
Expected Worse Conditions	18	16.5
Expected Better Organization	16	14.7
Other	13	11.9
Expected More Realism	9	8.3
Expected More Interesting	6	5.5
Expected Boredom	2	1.8
Expected More Training Sessions	2	1.8

SHELTER MANAGEMENT

This section of the student questionnaire relates to the management and conduct of the occupancy exercise, suggested changes in the exercise to enhance its function as an integral part of the training program, and some desirable characteristics of shelter managers as seen by the students.

Table XXXI reveals that the great majority of occupancy exercises had either one or two managers (the great majority of whom were students) during the course of the exercise. These managers may have served either simultaneously or separately. Because of the small number of the average occupancy exercise class, it is assumed that they served separately, although later modification of the questionnaire can provide this information. A place on the questionnaire was provided for the students to rate the manager(s) in terms of performance in technical operations and human relations. Ratings for each

area were: "excellent", "good", "fair", and "poor", with space provided for rating of up to three managers. Almost uniformly, for all managers and both areas, the ratings were approximately 60 per cent "excellent", 35 per cent "good", and the rest "fair" or "poor" in decreasing proportion.

Table XXXI

Number of People Taking the Role of Shelter Manager
During Occupancy Exercise (Question 25)

	<u>N</u>	<u>%</u>
One	1141	62.6
Two	568	40.1
Three	103	10.3
Four	0	0.0
Five	11	.6
Six	0	0.0
Seven	0	0.0
Eight or more	0	0.0

Table XXXII

Ratings of Technical and Human Relations Performances of Shelter Managers
(Question 26, 27)

<u>Technical Operations</u>								
	<u>Excellent</u>		<u>Good</u>		<u>Fair</u>		<u>Poor</u>	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
First Shelter Manager	1086	62.7	584	33.7	54	3.1	8	.5
Second Shelter Manager	305	58.7	188	36.2	23	4.4	4	.8
Third Shelter Manager	86	68.3	34	27.0	3	2.4	3	2.4
<u>Human Relations</u>								
	<u>Excellent</u>		<u>Good</u>		<u>Fair</u>		<u>Poor</u>	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
First Shelter Manager	1044	60.5	610	35.4	64	3.7	6	.3
Second Shelter Manager	295	58.2	181	35.7	28	5.5	3	.6
Third Shelter Manager	78	65.5	38	31.9	2	1.7	1	.8

It was thought to be of interest to determine the number and kind of unplanned events taking place during the occupancy period. Accordingly, the students were asked to describe events taking place in two areas: (1) technical areas, and (2) human relations areas. It must be pointed out that these questions were answered on the basis of the students' perception of the events as unplanned. It appears that a disproportionate number of these events; particularly power failure and attitude and conduct of shelterees were mentioned as unplanned events. Checking of the Instructor's Form answers indicated that these occurrences, in most instances, were part of a pre-planned scenario. It remains to be seen whether the student actually perceived these events as unplanned or whether the question was misinterpreted. Clarification of the statement of these questions is indicated. The sole occurrence of unplanned technical events was mentioned by 19 per cent of all students. Eight per cent of the students mentioned the sole occurrence of unplanned events in the human relations area. Twelve per cent of the students mentioned the occurrence of both unplanned technical and unplanned human relations events. The three most frequently occurring events (both technical and human relations) were power failure followed by attitude and conduct of shelterees and physical illness in descending frequency respectively (see Table XXXIII).

Table XXXIII

Unplanned Events Occurring During
Occupancy Exercise According to Students (Question 28, 29)

	<u>Number of Students Reporting</u>	<u>Per Cent of Students Reporting</u>
No unplanned events	1088	60.8
Technical events only	339	18.9
Human relations events only	149	8.3
Both technical & human relations events	214	12.0

Table XXXIV

Description of Events (Question 28,29)

	<u>Number of Students Reporting</u>	<u>Per Cent of Students Reporting</u>
Power failure	261	14.6
Attitude and conduct of shelterees	126	7.0
Physical illness	119	6.6
Mental illness	118	6.6
Uncontrolled entrance or exit	60	3.4
Other	57	3.2
Overcrowded condition	53	3.0
Mechanical malfunction of equipment	49	2.7
Food and/or water rations	33	1.8
Fire	33	1.8
Absence of necessary tools and equipment	31	1.7
Radioactive contamination	28	1.6
Authority of shelter manager	25	1.4
Damage to shelter	15	.8
Children	15	.8
Smoking	13	.7
Thievery	10	.6
Lack of medical supplies	9	.5
Waste Disposal	3	.2

Since one of the features (or hoped for features) of an occupancy exercise is familiarization with the requirements of successful shelter management, it was thought that a survey of what the students considered to be desirable characteristics of an ideal shelter manager would be informative.

Accordingly, an appropriate question was included in the questionnaire. The most frequently mentioned qualities (see Table XXXV) in order of decreasing frequency are: ability to serve as a leadership and authority figure, ability to deal with others, and ability to provide a behavior example. It is interesting to note that the technical skills such as former training and some previous related experience might have imparted are in the middle of the list. The most frequently mentioned attributes or traits are personality oriented.

Table XXXV

Student's List of Essential
Shelter Manager Qualities (Question 30)

	<u>N</u>	<u>%</u>
Leader, Authority Figure	978	52.2
Ability to Deal With Others	837	44.7
Provide Behavior Example	708	37.8
Management, Organization Ability	450	24.0
Adequate Training	421	22.5
Delegate Authority to Others	352	18.8
Ability to Anticipate Changing Conditions	160	8.5
Previous Related Experience	76	4.1
Maintain Morale	53	2.8
Other	53	2.8
Sound Physical Appearance	42	2.2

The last question in this area dealt with student suggestions for changes in the occupancy exercise. Of those students responding to this question, 27 per cent felt that changes were in order. Highest in suggested changes for these people was increased organization and planning before the exercise, followed by length of occupancy and inclusion of problem-solving situations.

Table XXXVI

Student's Suggesting Change in Course (Question 31)

	<u>N</u>	<u>%</u>
Yes	461	26.7
No	1266	73.3

Table XXXVII

Student's Suggested Course Changes (Question 31)

	<u>N</u>	<u>%</u>
Increased Organization and Planning before exercise	116	25.7
Length of Occupancy (longer or shorter)*	104	23.1
Inclusion of Problem-solving situations	73	16.2
More Classroom Instruction prior to exercise	65	14.4
Establishment of Realism	62	13.7
Changes in Stocked Items	31	6.9
Experience in All Duties	20	4.4
Changes Unique to Local Needs	16	3.5
Eliminate In-shelter Exercise	5	1.1

*Any mention of change of length (longer or shorter)
is assigned this code.

MARGINAL DISTRIBUTION OF INSTRUCTOR RESPONSES

EXERCISE DESCRIPTION

The occupancy exercises reported had a range of from 4 to 25 hours with a mean of 14.9 hours. An examination of the entries showed that clustering of the greatest frequency occurred around the 8-, 12-, 18-, and 24-hour points. None of the occupancy exercises were divided. Table XXXVIII illustrates the number of hours devoted to the occupancy exercise by the courses.

Table XXXVIII

Length of Shelter Exercise (Question 3)

<u>Hours of Shelter Stay</u>	<u>Number of Classes</u>	<u>Per Cent of Classes</u>
Less than 8	9	8.4
8 - 11	32	29.9
12 - 17	18	16.8
18 - 23	25	23.4
24 - 29	23	21.5
30 or over	0	0.0

DESCRIPTION OF SHELTERS USED IN EXERCISES

Of the shelters used as sites for the occupancy exercises, 46, or 44 per cent of the total were intended for training use only, whereas 58, or 56 per cent of the total, were actual marked or stocked shelters. The fact that the great proportion of shelters used for the exercises were those which would actually be utilized in event of a nuclear emergency, gives increased weight to the projection of student comments concerning the occupancy exercises.

As concerns the configuration of the shelters used, 72 per cent were held in a single area, the remaining 28 per cent were in multiple-area configurations extending from two areas to five areas. The size of the average class (17) would make extended use of multi-space exercise shelters seem needless, yet a substantial percentage of the Nationally marked and stocked shelter spaces that those students will manage are in multi-space, often multi-story structures. It must be noted that no determination is possible as to whether more than one area was actually used. Modification of future questionnaires will be able to resolve this point.

Table XXXIX illustrates the number of areas in those shelters with more than one area.

Table XXXIX

Number of Shelter Areas Reported (Question 7)

<u>Number of Areas</u>	<u>Number of Exercises</u>	<u>Per Cent of Exercises</u>
2	13	12.3
3	12	11.3
4	4	3.8
5	1	.9

To determine the number of people of various types in the shelter during the exercise, a question was included asking for number of students, instructor/observers, and "others" in the shelter at various times during the exercise. Generally speaking, there was no great shift of personnel in and out of the shelter during the course of the exercise. Table XL illustrates the numbers of these three types of personnel in the shelter at the beginning of the exercise. "Others" refer to additional persons introduced for the exercise, such as family, friends, and members of the local community.

Table XL

Number of Students, Instructor/Observers, and (Others)
in the Shelter at Start of Exercise (Question 9)

Students*			Instructor/Observers					Others		
Number of Students	Number of Exercise	Per Cent Exercises	Number of Instructor/Observers	Number of Exercises	Per Cent Exercises	Number of Others	Number of Exercises	Per Cent Exercises		
Less than 6	4	8.7	0	14	13.1	0	57	53.2		
6 - 10	19	17.8	1	50	46.7	1 - 5	23	21.5		
11 - 15	27	25.2	2	30	28.0	6 - 10	15	14.0		
16 - 20	18	16.8	3	6	5.6	11 - 15	2	1.9		
21 - 25	17	15.9	4	4	3.7	16 - 20	1	.9		
26 - 30	8	7.5	5	0	0.0	21 - 25	2	1.9		
Over 30	14	13.1	6	0	0.0	26 & Over	5	4.7		
			7	0	0.0					
			8	0	0.0					
			9	1	.1					

*Average number of students per exercise = 17.4

As is illustrated, the largest number of exercises had from 10-15 students, 1 observer or instructor, and 0 others in the shelter at the beginning of the exercise.

Thirty-eight of the 107 exercises had people leave for reasons other than part of the exercise plan. Table XLI illustrates the breakdown of reasons for leaving, Table XLII shows the number of exercises having certain number leaving.

Table XLI

Reasons for Leaving Shelter (Question 12)

	<u>N</u>	<u>%</u>
Report for work	12	11.2
Sickness	11	10.3
Called for from outside	5	4.7
Other type of appointment	5	4.7
Attend school	2	1.9
Other	5	4.7

Table XLII

Number of People Leaving Exercise (Question 12)

Number of People Leaving	Number of Exercises
0	66
1	19
2	8
3	1
4	2
5	2

OCD SUPPLIES AND EQUIPMENT

The Instructors Data Form provides for specification of problems encountered in the use of OCD supplies. Statements about the suitability

of OCD supplies and equipment have already been mentioned in general fashion in the description of student questionnaire returns. Speaking broadly, there were no significant occurrences of problems in the use of OCD supplies and equipment. The following table summarizes the results of this section.

Table XLIII

Condition and Use of Civil Defense Supplies and Equipment
(Questions 14-19)

OCD SUPPLY	# EXERCISES USING	PROBLEMS MENTIONED & FREQUENCY
Bulgar Wafer	5	1-Shelteree acceptance
Wheat Biscuit	58	1-Missing Items 1-Poorly or Incorrectly Packaged Items 1-Preparation/Setting-up Problems 1-Other
Wheat-Corn Cracker	12	1-Missing Items 1-Rationing/Appportionment 1-Distribution Problems
Carbohydrate Supplement		6-Missing Items 1-Rationing/Appportionment 1-Distribution Problems 1-Shelteree Acceptance
Water Drum & Contents		7-Preparation/Setting-up Problems 6-Distribution Problems 3-Poor Quality Items 2-Damaged Containers 1-Storage/Disposal Problems 1-Rationing/Appportionment 1-Other
Sanitation Kits		3-Shelteree Acceptance Problems 2-Missing Items 2-Damaged or Inoperative Items 1-Poor Quality Items 1-Damaged Containers 1-Storage/Disposal Problems 1-Other

Table XLIII (Continued)

OCD SUPPLY	# EXERCISES USING	PROBLEMS MENTIONED & FREQUENCY
Medical Kits		5-Missing Items 2-Damaged or Inoperative Items 1-Shelteree Acceptance 1-Other
Radiological Kits		6-Damaged or Inoperative Items 4-Missing Items 1-Poor Quality Items 1-Shelteree Acceptance 1-Other

As illustrated by Table XLIV, water drums and contents are the most frequently mentioned of problems, specifically, preparation/setting-up problems and distribution problems are most frequent. The next most problem-prone equipment item is the RADEF kit, with 12 problems mentioned; six involving damaged or inoperative items, and four involving missing items. Eleven problems are mentioned for the use of sanitation kits; three are in the shelteree acceptance area. At present, there is no method utilizing the current coding scheme to determine how these problems are distributed in individual exercises. The "N" in the "Number of Problems" mentioned column is the total number of problems in the particular item area, both within and among all exercises.

NON-OCD EQUIPMENT AND SUPPLY PROBLEMS

Included in the Instructor Data Form is a section requesting a list of non-OCD equipment and supplies used and any problems that were encountered in their usage.

The following table summarizes the results of this section.

Table XLV

Non-OCD Equipment and Supplies (Questions 20-31)

Equipment Supply Type	Most Frequently Mentioned Items	No. of Exercises Utilizing	Problems Encountered
Communication	Telephone (also)	64	8-Mechanical Malfunction
	Field Phone		
	Portable Radio	32	5-Insufficient Equipment
	Intercom	33	
	PA System used as radio	38	
Ventilation Equipment	Air Conditioner	6	2-Misuse of Equipment
	Fans	23	1-Mechanical Malfunction
	Forced Air	9	
	Controlled Temperature System	1	
Atmosphere Temperature Measuring Devices	Dry Bulb Thermometer	13	
	Hygrometer	42	1-Misuse of Equipment
	Oxygen Meter	2	4-Mechanical Malfunction
	Carbon Dioxide Meter	2	
Lighting Equipment	Regular Overhead Light	13	
	Flashlight	9	
	Portable Light	6	1-Mechanical Malfunction
	Lanterns	3	
	Candles	1	
Auxiliary Power	Generator	9	1-Mechanical Malfunction
Non-OCD Food and Water	Extra Canned or Baked Goods	2	
	Warm Foods	1	None
	Non-OCD Water	4	
	Coffee or Other Beverage	10	

Table XLV (Continued)

Equipment Supply Type	Most Frequently Mentioned Items	No. of Exercises Utilizing	Problems Encountered
Non-OCD Medical Supplies	Mercurochrome Band Aids Aspirins Other Supplies	2 4 2 1	None
Non-OCD Sanitary Facilities	Flush Toilet	28	1-Storage or Distribution Problem
Sleeping Facilities	Bunk or Cots Blankets Mattresses Sleeping Bags	52 53 19 12	3-Insufficient Equipment 1-Misuse of Equipment
In-Shelter Training Materials	Tape Recorder Black Boards or Other Writing Materials Vis-aids Projector, Allied Equipment Medical Demonstration Materials Books & Pamphlets	9 28 3 37 27 17	1-Mechanical Malfunction
Recreation & Religious Materials	Books or Other Reading Materials Games Bibles Radios Toys Musical Instruments	29 45 34 3 4 3	2-Insufficient Equipment

Generally speaking, the number of problems associated with the use of non-OCD supplies and equipment is quite low. Use of this equipment, especially communications gear, sleeping facilities, in-shelter training materials, and religious and recreation materials is quite prevalent.

MULTI-PURPOSE USE OF SUPPLIES

Improvisation would appear to be a chief virtue in any emergency situation. The peace-time context of the occupancy exercise, the adequacy of supplies, and the short-term nature of the experience would reduce the need for improvisation to occur on a large scale. Yet, it was thought to be of interest to determine to what extent this took place. Accordingly, a question was inserted in the Instructor's Data Form asking for instances of multi-purpose use of OCD supplies (i.e., use for purposes other than the intended one).

In only five per cent of the occupancy exercises did multi-purpose use of supplies occur. Supplies involved were food containers and sanitation kits. Utilization of these articles was for purposes of sanitation facilities, and light receptacles.

SHELTER ORGANIZATION

A section was included in the Instructor's Data Form enabling the instructor to sketch a chart of the exercise shelter organization, including management positions, functional groups (task teams) and population groups. Table XLVI illustrates the number of exercises where each of the organizational positions or groups were present.

Table XLVI

Presence of Organizational Groups or
Positions Within Exercise Population (Question 33)

Group or Position	N of Exercises Reporting	% of Exercises Reporting
Shelter Manager	89	100
Deputy Shelter Manager	11	14
Advisory Committee	58	76
Deputy Information & Training	61	81

Table XLVI (Continued)

Group or Position	N of Exercises Reporting	% of Exercises Reporting
Deputy Operations	64	85
Deputy Supply & Maintenance	60	80
Food & Water Team	90	100
RADEF Team	84	93
Communications Team	81	92
Health-Sanitation Team	76	93
Security Team	73	87
Recreation Team	62	76
Supply Team	61	75
Bunking Team	60	73
Training Team	58	70
Maintenance Team	56	69
Religious Team	55	68
Living Units	29	59

Approximately 87 per cent of the exercises developed and utilized a formal schedule of shelter activities. A series of questions were inserted into the Instructor's Data Form to determine the extent to which record keeping of various types were a part of the exercise. Questions were asked concerning use (not demonstration) of such shelter records as shelter log, communications log, etc. Table XLVII demonstrates the findings of this question.

Table XLVII

Use of Shelter Records in Exercise (Question 35)

	<u>N of Exercises Using</u>	<u>% of Exercises Using</u>
Shelter Log	101	95
Communications Log	101	95
Registration Form	103	97
Medical Log	38	36
Shelteree Diary	7	7
Radiation Log	93	88

As can be noted, a shelter log, communications log, registration form, and radiation logs were used by the great majority of the exercises. Medical logs, probably because of the lack of need, and shelteree diaries were kept in considerably fewer exercises (36 per cent and 7 per cent respectively). Shelter diaries have the potential of constituting a valuable data source. Impressions that might be written in response to occurrences in-shelter are often times later lost to memory.

EXERCISE SCENARIO

As part of the exercise, 88 per cent of the instructors mentioned the inclusion of simulated emergencies in the exercises. The type of emergency and the frequency with which they were utilized in the exercises is illustrated in the following table.

Table XLVIII

Usage of Simulated Emergencies (Question 35)

	<u>N of Emergencies</u>	<u>% of All Exercises</u>
Illness or Injury	21	22
Power Failure or equipment damage	19	20.6
Entrance of contaminated persons	13	14.1
Threatened damage to shelter	10	10.8
Psychologically disturbed persons	5	5.4
Manager incapacitated	3	3.3
People wishing or needing to leave shelter	3	3.2

As is illustrated by the above table, the most frequently utilized "emergency" was illness and injury, followed by power failure or equipment damage.

Space was also provided for instructors to state reasons for the emergencies' effectiveness. Table XLIX illustrates their responses.

Table XLIX

Reasons Given for Emergencies' Effectiveness (Question 36)

	<u>N of Emergencies</u>	<u>% of Effectiveness</u>
Demonstrated a training point	24	39.3
Created excitement, activity, added to realism	21	34.4
Demonstrated first aid technique	8	13.1
Determined managers control	5	8.1
Showed ability of another (beside manager) to take over	3	4.9

As is illustrated by the above table, the most popular reason for the effectiveness of the emergencies was that it demonstrated a training point, or that it created excitement, activity, or otherwise added to the realism of the exercise.

Almost 100 per cent of the exercises have messages introduced into the shelter. Table L illustrates the type of messages and the frequency with which they were used.

Table L

Types and Frequency of Messages Introduced
Into Exercise Shelter (Question 37)

	<u>N of Messages</u>	<u>% of Messages</u>
Origin given, not content	31	53.4
Information on radiation level	13	22.4
Messages asking to take more people	6	10.3
Messages on general outside conditions	4	6.9
Personal messages	3	5.1
Warning of approaching looters	1	1.7

As is seen by the above table, more than half of the messages described give the origin of the message only, and not the content. Of those where content was described, information on radiation level was the most frequently mentioned message.

As in simulated emergencies, the instructors were asked to list reasons why this particular message was effective. Table LI gives the results of that question.

Table LI
Reasons for Effectiveness of Messages
(Question 37)

	<u>N of Reasons</u>	<u>% of Reasons</u>
Elicited a desired response (problem solving, attention, etc.)	22	64.7
Added to realism	8	23.5
Informed shelterees	3	8.8
Simulated discussion	1	2.9

As can be seen, the most popular reason for a message's effectiveness was that it elicited a desired reaction on the part of the shelterees, either leading to problem-solving behavior of some kind of attention directed toward the message.

A question was inserted to determine the source of the simulated emergencies and messages. Nineteen per cent were obtained from an OCD training center, 40 per cent from a CDUEP staff member, and 92 per cent from the OCD Instructor's Guide (IG#1).

Of all the exercises, 84 per cent were on scenario time and 13 per cent were on clock time. Three per cent used a combination of scenario and clock time. The average time simulated by means of a scenario was a little over nine days.

SHELTER MANAGEMENT

Included in the Instructor's Data Form was a section containing items pertinent to the conduct of shelter management during the exercise. Typical of the areas included are the type and number of managers, reason for and process of selection, and description of management performance.

In over half of the cases (65%), one shelter manager managed for the duration of the stay. The remainder had two or three managers for the period (in descending percentage order). Forty-six per cent of all managers were students selected by the instructor staff; 35 per cent were students selected by other students. Basis for selection was, overwhelmingly, knowledge, experience, or skills. In a majority of cases, the manager was selected shortly prior to the start of the exercise.

Tables LII through LV illustrate these findings.

Table LII

Number of Individuals Taking the Role of Manager
(Question 40)

<u>Number of Managers</u>	<u>Number of Exercises</u>	<u>Per Cent of Exercises</u>
0	1	.9
1	70	65.4
2	26	24.3
3	8	7.5
4	0	0.0
5	1	.9
6	0	0.0
7	0	0.0
8	0	0.0

It is interesting to note, that the predominant percentage of second and third shelter managers are students, but selected by other students rather than by the staff. This finding is explained to a certain extent by looking at Table LIII which delineates the time of selection of

first through third shelter managers. Although first shelter managers are selected before the exercise (and by the instructional staff), the second shelter managers are chosen after the exercise begins (by other students). The same finding is not true of third shelter managers who return to the pattern of the first as to time of selection, but the number of cases in the third category is so small as to cast doubts on the ability to generalize from these findings.

Table LIII

Description of Shelter Managers (Question 41)

	1st SM		2nd SM		3rd SM		All SM's	
Members of Instructional Staff	9	8.5	1	2.7	0	0	10	6.8
Student, Selected by Instructional Staff	56	53.3	10	27.7	2	25	68	45.9
Student, Selected by Other Students	32	30.4	17	47.2	4	50	52	35.1
A Student Volunteered	7	6.6	3	8.3	2	25	12	8.1
Other	1	.9	5	13.8	0	0	6	4.0

Table LIV

Description of Selection Process (Question 42)

	1st SM		2nd SM		3rd SM		All SM's	
Experience & Skills	78	75.0	23	63.8	6	75	107	72.3
Random Selection	14	13.4	6	16.6	1	12.5	21	14.2
Selected to make a special teaching job	3	2.8	3	8.3	1	12.5	7	4.7
Other	9	8.6	4	11.1	0	--	13	8.8

Table LV

When Selected (Question 43)

	1st SM		2nd SM		3rd SM		All SM's	
Before Course	16	15.2	3	8.5	1	12.5	20	13.5
After Course, Before Exercise	83	79.6	12	34.2	4	50.0	99	66.9
After Exercise	6	5.7	20	57.1	3	37.5	29	19.6

Also included in this section was an assessment of the various student manager's style of management. Without directly being labeled as such, three paragraphs descriptive of authoritarian, democratic, and laissez faire styles of leadership were given, and the instructor asked to check the one description best typifying the manner in which each student shelter manager performed.

The substantial majority of student ratings were in the democratic area, followed by authoritarian and laissez faire attitudes in order of decreasing frequency. Table LVI illustrates these facts, both for individual first, second, and third shelter managers and for overall ratings of all shelter managers.

Table LVI

Leadership Style of Student Shelter Managers (Question 44)

	1st N %	2nd N %	3rd N %	Overall N %
Authoritarian	25 28.0	7 20.0	1 12.5	33 25.0
Democratic	59 66.2	24 68.5	5 62.5	88 66.6
Laissez faire	5 5.6	4 11.4	2 25.0	11 8.3

The extent to which the "style" findings can be extrapolated to a real operational situation is lessened by the fact that the exercises, for all attempts at realism, still do not contain the stress and turmoil of a real nuclear emergency. It is expected that an authoritarian type of leadership would be more suitable for the first few hours of occupancy until organization and orientation of the population has taken place.

A number of questions in the Instructor's Data Form pertained to ratings of student managers in human relations and technical operations skills. Technical operations were defined as referring to shelter activities such as feeding, medical care, sanitation, etc. Human relations refers to maintaining motivation and morale, seeing to it that social standards were upheld, etc. Definitions of these two areas were provided in the questionnaire. Tables LVII and LVIII illustrate findings for these two questions. Note that separate ratings are given for first, second, and third shelter managers, as well as an "overall" rating for all student shelter managers.

Table LVII

Technical Operations Ratings of Student Shelter Managers
(Question 45)

	1st		2nd		3rd		Overall	
	N	%	N	%	N	%	N	%
Excellent	47	47.4	19	51.3	3	33.3	69	47.5
Good	48	48.4	13	35.1	4	44.4	65	44.8
Fair	2	2.0	4	10.8	2	22.2	8	5.5
Poor	2	2.0	1	2.7	0	0.0	3	2.0
Very Poor	0	0.0	0	----	0	0.0	0	0.0

Table LVIII

Human Relations Ratings of Student Shelter Managers
(Question 47)

	1st		2nd		3rd		Overall	
	N	%	N	%	N	%	N	%
Excellent	56	52.1	22	59.4	4	44.4	92	59.8
Good	38	38.7	13	35.1	5	55.5	56	36.3
Fair	4	4.0	1	2.7	0	----	5	3.2
Poor	0	----	1	2.7	0	----	1	.6
Very Poor	0	----	0	----	0	----	0	----

Ratings received by student managers for technical operations proficiency are split fairly evenly between excellent and good, both for separate managers and the overall manager rating. In the human relations area, excellent ratings out weighted "good" ratings to a considerable extent. In both cases, fair, poor, or very poor ratings did not occur frequently.

Two questions were inserted asking if any instances of unplanned events within the technical or human relations area occurred during the exercise. The results of these two questions are given in Tables LVIX and LX on the following page.

Unplanned Technical Events

Of all exercises, 29 or 28 per cent had unplanned events occurring that fell into the technical area. Of these occurring, the largest identifiable category was an occurrence of power failure, followed by mechanical malfunctioning of equipment and lack of necessary equipment and supplies in decreasing order. Seven of the events fit into no existing code category and were placed in the "other" section.

Unplanned Human Reations Events

Of 107 exercises, 22 or 22 per cent had occurrences of unplanned events in the human relations area. The most frequent category mentioned was physical illness, followed by attitude and conduct of shelterees and mental illness in that order. It must be noted that some of the responses to this question would appear to be suited more to the technical events section, especially shortage of medical supplies and personnel, the choice of assignment, however was left to the individual instructor. The extent to which mental illness was mentioned leads to the belief that this may have been a simulated emergency rather than an unplanned event. Future re-defining of this question may prevent any misunderstanding of this point.

Table LIX
Occurrence of Unplanned Technical Events
(Question 46)

	<u>N</u>	<u>%</u>
Yes	29	28.4
No	73	71.6

Table LX

Description of Unplanned Technical Events
(Question 46)

	<u>N of Exercises</u>	<u>% of Exercises</u>
Power Failure	17	15.8
Mechanical Malfunction of Equipment	4	3.7
Lack of Necessary Equipment & Supplies	2	1.9
Fire	1	.9
Damage to Shelter	1	.9
Air Pollution	1	.9
Overcrowded Conditions	0	0.0
Other	7	6.5

Table LXI

Unplanned Human Relations Events (Question 48)

	<u>N</u>	<u>%</u>
Yes	22	21.6
No	80	78.4

Table LXII

Description of Unplanned Human Relations Events (Question 48)

	<u>N of Exercises</u>	<u>% of Exercises</u>
Physical Illness and Death	11	10.8
Mental Illness	4	3.9
Overcrowded Conditions	1	1.0
Smoking	0	0.0
Children	0	0.0
Thievery	0	0.0
Attitude and Conduct of Shelterees	7	6.9
Lack of Medical Supplies or Personnel	1	1.0
Food and Water	0	0.0
Authority of Shelter Manager	0	0.0
Other	5	4.9

Special Background Characteristics of Student Population

Frequently the student population of a given exercise will be predominately made up of a specific type of individual, such as nursing graduates, mental hospital staff, etc. This fact leads to a unique flavoring of the exercise and related course that is valuable to have some record of. A large proportion of such instances may dictate future specialization of course material to fit the needs of a particular group. Table LXIII gives the results of this section.

Table LXIII

Special Background Characteristics of Student Population (Question 49)

	<u>N</u>	<u>%</u>
Yes	44	41.9
No	61	58.1

Table LXIV

Description of Characteristics of Students (Question 49)

	<u>N of Exercise</u>	<u>% of Exercise</u>
All Male	3	2.9
All Female	5	4.8
Predominantly Children	2	1.9
Outstanding Common Feature (Prisoner, Patient, etc.)	28	26.7
Research Staff	0	0.0
Other	8	7.6

As is seen by the table, 44 of the exercises, or some 42 per cent were characterized by the presence of student populations with special characteristics. The most frequent category was that of "outstanding common feature"--further investigation into this category reveals that a

large number of exercises were attended by nursing students and related health profession personnel. Five of the exercises were all female, and three were all male. Two exercises were made up of children.

TRAINING

The last section of the Instructor's questionnaire was concerned with the extent to which exercise time was used for formal training sessions. Also of interest was an estimation of the number of certificates awarded in the various CD course categories.

Tables LX through LXVII illustrate the findings in this area.

Table LXV

Frequency of Training Sessions within Shelter Exercise
(Question 50)

	<u>N</u>	<u>%</u>
Yes	96	91.4
No	9	8.6

Table LXVI

Hours of In-Shelter Training (Question 50)

<u>Hours</u>	<u>N of Exercises</u>	<u>% of Exercises</u>
1	33	31.4
2	16	15.2
3	18	17.1
4	9	8.6
5	7	6.7
6	6	5.7
7	1	1.0
8	5	4.8

Table LXVII

Number of Certified (Total for all courses)
(Question 51)

<u>Course</u>	<u>N Certified</u>
SMI	358
SM	800
RMI	30
RM	43

As is illustrated, 96 or 91 per cent of the exercises included some formal in-shelter training. Of those conducting training, the greatest number had sessions of one hour, followed by three, two, and four hours in decreasing frequency.

Certificates were awarded to 800 shelter management students, 358 shelter manager instructors and a lesser number of radiological monitor and radiological monitor instructors.

CROSS TABULATIONS

CROSS TABULATIONS

The preceding material describing student and instructor data returns has consisted of marginal distributions of data, i.e., the frequency of various responses to all questions in the two instruments. Frequently new insight can be gained into the data if a response of one particular question is held constant, and marginal distributions on all, or selected other questions are obtained. As an instance, it might be of interest to hold constant the response of Female to the question on student sex, and run all marginals, then run all marginals for Male response. In like manner CD regions, educational, or vocational level and other response categories can be held constant, and comparisons made between response types of each level and selected questions of interest.

The following material consists of selected cross tabulations of the type described above. The following comparisons will include:

1. OCD supply and equipment item problems by OCD regions.
2. Distribution of non-OCD equipment and supply items by shelter status (real vs. practice shelter).
3. Placement of course graduates by OCD regions.
4. Shelter readiness of assigned shelters by OCD regions.
5. A description of desirable SM qualities by professional-educational level of students.
6. Suggested changes in exercise by different professional-educational levels.
7. High, medium, and low initiator scale scores by:
 - a. Number of previous CD courses taken.
 - b. CD position (where applicable).
 - c. Rating of SM performance in exercise.
 - d. Suggested changes in exercises.

8. Course volunteers vs. course assignees by:
 - a. CD course and position information
 - b. Expectations of shelter stay.
 - c. Evaluation of habitability factors.
9. Exercises where SM's received fair vs. poor ratings and habitability factor evaluation.
10. Number of students in exercise:
 - a. Habitability factor ratings.
 - b. Physical symptom frequency.
 - c. Manager ratings.

One of the first thoughts about the usefulness of such a data bank was that it could serve as a quality control measure of OCD stocks and equipment by OCD region, state, or some other meaningful geographic location. The analysis in terms of marginal distributions did not pinpoint the source of the problems encountered in the use of OCD supplies and equipment. These could have been spread out evenly across the country, or they could be occurring in one state or OCD region, implying checking of the plant or distribution process applicable to the state or region. Accordingly, an analysis of responses to this question (No. 14-19 IDF) by OCD region was made. Table LXVIII illustrates the results of this analysis. The number of exercises reported by the various regions is entered in under the number of that particular region. It must be noted that there was quite a spread of exercises reported by region--as an example, region one had 30 exercises reported whereas region eight had but one reported. The analysis of the preceding table must take this into account. By and large, the number of problems encountered with the use of OCD supplies and equipment, is not assignable to one or two regions, but is fairly proportioned out over all eight, in rough proportion to the number of exercises reported by each region.

Table LXVIII

OCD Supply and Equipment Problems Listed by OCD Region

OCD Region

Supply-Equip- ment item	1		2		3		4		5		6		7		8	
	30	1	26	2	2	8	23	5	5	12	1	1	12	1	1	1
	PROB.	FREQ.	PROB.	FREQ.	PROB.	FREQ.	PROB.	FREQ.	PROB.	FREQ.	PROB.	FREQ.	PROB.	FREQ.	PROB.	FREQ.
Bulgar Wafer	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem
Wheat Biscuit	1 11 13	1 1 1	3	1	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem
Wheat Corn Cracker	1	1	No Problem	No Problem	No Problem	No Problem	10	1	9	1	No Problem	No Problem	No Problem	No Problem	No Problem	No Problem
Carbohydrate Supplement	1	2	No Problem	No Problem	No Problem	No Problem	10	1	9	1	1	3	1	1	No Problem	No Problem
Water Drum & Content	6 8 10	1 3 2	6 10	1 2	No Problem	No Problem	7 9	1 1	2 8 11 12	2 4 1 1	2 1		10	2	No Problem	No Problem
Sanitation Kit	2 6 11	1 1 1	5	1	No Problem	No Problem	11	1	5 11	1 1	12	1	1	2	No Problem	No Problem
Medical Kit	1 13	2 1	No Problem	No Problem	No Problem	No Problem	1	1	1 11	2 1	5	2	No Problem	No Problem	No Problem	No Problem
Radiation Kit	5 13	1 1	No Problem	No Problem	1	1	4	1	2 5 11	1 1 1	5	2	5	1	No Problem	No Problem

PROBLEM CODE

Condition Problems

- 1- Missing items
- 2- Poor quality items
- 3- Poorly or incorrectly packaged items
- 4- Wrong item supplied
- 5- Damaged or inoperative items
- 6- Damaged containers
- 7- Other condition problem

Use Problems

- 8- Preparation/setting-up problems
- 9- Rationing/apportionment
- 10- Distribution problems
- 11- Shelteree acceptance problems
- 12- Storage/disposal problems
- 13- Other use problems

Stocking of Non-OCD Equipment by Shelter Type

As is seen by examination of the preceding section, a fair number of shelters stocked supplies and equipment that were not within the OCD-supplied area. It was thought of interest to determine in just what type of shelters this equipment was found. One of two possibilities existed: (1) the equipment was found in shelters that were actual marked and stocked fallout shelters, or (2) equipment was found in shelters adapted for exercise use only, and not really set up as operational fallout shelters. Question 5 on the Instructor's Data Form obtains this information. Table LXVIX illustrates the findings of this analysis.

Table LXVIX

Distribution of Non-OCD Supplies by Shelter Status

Equipment	Shelter Type			
	For Training Use Only		Operational Shelters	
	% of Exercises having 1 or more items	% of Items Normally Stocked	% of Exercises having 1 or more items	% of items Normally Stocked
Communications Equipment (radios, telephones, intercom systems, P.A. systems, etc.)	97.7	2.5	100.0	13.6
Ventilation Equipment (air conditioning, power ventilation, controlled temperature system, fans.)	45.9	23.5	55.3	88.8
Atmospheric Temperature Measuring Device (wet/dry/ bulb thermometers, oxygen, carbon dioxide meters, hygrometer)	76.3	11.1	56.0	26.9
Lighting Equipment (regular lighting system, portable lantern, flashlights, candles)	89.5	98.8	70.2	59.5
Auxiliary Power battery powered, generators	0.0	0.0	19.1	100.0

Table LXVIX (Continued)

Non-OCD Food and Water (canned goods, fresh fruit or vegetables, warm food, non-OCD water, coffee)	15.0	0.0	26.5	25.0
Non-OCD Medical Supplies (band aids, aspirin, mercurichrome, additional supplies same as OCD medical kit)	50.0	0.0	10.0	33.3
Non-OCD Sanitation Equipment (refuse containers, flush toilets, supplies, soap and towels, mops and brooms)	17.9	85.7	40.8	80.9
Sleep Facilities (floor mats, bunks, sleeping bags, blankets, pillows, mattresses)	82.5	8.5	72.0	28.5
Training Materials (books or pamphlets, writing materials, projectors and relevant equipment, visual aids, demonstration materials)	84.6	6.6	54.2	22.7
Recreation/Religious Materials (Bibles, books, games-cards, toys)	84.6	12.0	50.0	21.4

Atmosphere and temperature measuring devices were present in 76 per cent of the training shelters as opposed to 56 per cent of the actual (operational) shelters. However, in counterbalancing this difference, 26 per cent of the items mentioned in the operational shelters were actually part of the normal stocks, whereas only 11 per cent of the items mentioned in the training shelters were stocked normally, the others being brought in especially for the exercise.

Non-OCD sanitation equipment was available in 40 per cent of the shelters in the operational category; of these, over 80 per cent of these items were part of the normal stocks. Seventy-two per cent of the operational shelters had sleeping items, but only 28 per cent of the items were normally stocked. Only 19 per cent of the operational shelters had any source of auxiliary power.

Size of Shelter Exercise vs. Evaluation of Exercise Factors by Students

It was thought of interest to determine the effect of size of exercise as it related to student evaluation of various exercise factors. It was hypothesized that larger exercises would place more strain on the existing management system, and accordingly would result in less satisfactory habitability factor ratings, physical symptom ratings, and management ratings. Accordingly, this hypothesis was tested by categorizing exercises into small (4-14 students), medium (15-24 students) and large (26-51 students) and noting responses for questions dealing with habitability factor ratings (question 21), physical symptoms (question 23) and evaluation of technical and human relations performance of shelter management (questions 26 and 27).

The first table below illustrates response to habitability factor evaluation for small vs. large shelter exercises. The entries are in terms of percentages of small and percentages of large exercise students giving each factor a "satisfactory" rating.

Table LXX

Size of Exercise (Number of Students) As It Relates
to Satisfactory Habitability Factor Rating

<u>Habitability Factors</u>	Small (4-14)		Large (26-51)	
	<u>N</u>	<u>% Sat.</u>	<u>N</u>	<u>% Sat.</u>
Water--taste	883	91.9	129	85.4
Water--amount	795	83.3	116	78.4
Odors	772	81.3	123	82.6
Personal Cleanliness	589	62.3	81	54.4
Lack of Physical Exercise	582	61.4	83	56.1
Lack of Privacy	600	63.6	90	61.2
Recreation/Free time	769	81.6	113	77.9
Religious Activities	788	85.7	113	79.6
Seating	655	69.1	79	54.1
Shelter Cleanliness	778	81.6	101	68.2
Shelter Organization	793	83.3	121	84.0

Table LXX (Continued)

Sleep	545	58.2	80	56.7
Crowding	663	70.9	107	71.8
OCD Toilet Facilities	713	76.3	109	73.6
Smoking	699	75.6	104	71.7
OCD Food Rations--taste	705	74.0	100	67.6
OCD Food Reations--amount	757	80.1	103	71.0
Behavior of Other Shelterees	810	85.4	124	82.7
Noise	670	70.8	113	76.4
Temperature & Humidity	566	59.5	82	55.4
Medical Supplies & Care	831	88.2	136	90.7

It is interesting to note that for almost all factors, there is a lower "satisfactory" rating the large exercise students as opposed to the small exercise students.

In similar fashion, responses of students for the three sizes of exercise were obtained to the question asking if physical symptoms such as headache, sore throat or dizziness were present. The table below illustrates findings of this analysis. Of interest is the finding that only two of the symptoms (headache and dizziness) had appreciably more frequent mention for the large as opposed to small exercises. The ratings are in terms of percentages of students having "no symptoms". The other ratings are comparable, the two symptoms mentioned are the only ones that differ five or more percentage points between size categories.

Table LXXI

Size of Shelter Group as it Relates to
Reporting of Physical Symptoms

	Small (4-14)		Large (26-51)	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Headache	631	66.8	85	56.3
Upset Stomache	850	93.4	132	91.7
Constipation	857	93.9	133	93.7
Diarrhea	903	99.8	140	99.3
Rash	901	99.4	138	98.6
Sore Throat	846	92.3	121	85.2
Dizziness	860	94.7	130	91.5
Loss of Energy	763	84.0	116	80.6

The last of the student evaluations that were compared with exercise size was student ratings of SM's in the technical and human relations area. Again, it was hypothesized that increased demands placed on the shoulders of the shelter managers of the large exercises would result in a relatively poorer showing in these two rating areas than for small exercises. Tables LXXII and LXXIII illustrate the findings in this area.

Table LXXII

Technical Operations Ratings for SM's
as They are Affected by Exercise Size

	<u>Excellent</u>	<u>Good</u>	<u>Fair</u>
Small	61.6	34.8	3.1
Medium	59.5	35.5	4.4
Large	70.3	24.8	4.1

Table LXXIII

Human Relations Ratings for SM's
as They are Affected by Exercise Size

	<u>Excellent</u>	<u>Good</u>	<u>Fair</u>
Small	59.5	36.0	3.9
Medium	58.4	36.1	5.4
Large	63.7	33.1	2.8

Just the reverse happened--for both areas (technical and human relations proficiency) the ratings were in favor of large exercise managers, although it is difficult to determine whether or not these differences are of statistical significance. Perhaps the students took the increased responsibilities of these managers into consideration when determining their ratings.

Occupational Level and Responses to Shelter Management Questions

It was generally realized that people of different occupational levels would react differently to questions concerning desirable shelter manager qualities and changes in the course exercise; items found in the Shelter Management section of the Student Questionnaire.

It was especially important to determine the pattern of responses for those in the executive/managerial categories of occupation, as these individuals would more than likely constitute a large pool of desirable CD management personnel in time of need.

Accordingly, an analysis was performed to determine differential responses to the question, (#30, Student Questionnaire) as to what students thought were most desirable shelter manager qualities. Largely the results did not demonstrate any perceptible difference in what one occupational level considered to be important qualities as opposed to other levels. The most frequently mentioned quality for all occupational levels is an ability to present a figure of authority, followed by the ability to deal with others and the ability to furnish a good behavioral example.

An analysis was also performed to determine the extent to which various levels of occupation suggested changes for the exercise. The results of this analysis are presented in the following tables.

Table LXXIV

Frequency of Suggested Changes in Exercise by Occupational Category

	<u>N</u>	<u>%</u>
Higher Executive, Major Professional	36	34
Business Manager, Lesser Professional	199	35
Administrative Personnel, Minor Professional	39	29
Clerical & Sales, Technical	47	24
Skilled Manual Employed, Small Farmer	29	15
Machine Operator, Semi-skilled Employees	25	15
Unskilled	3	8
Housewife, student, retired	75	28

Table LXXV

Suggested Changes (% of each occupational category)

	Organization, Planning Before Exercise	Classroom Instruction	Length of Occupancy	Problem-Solving Situation	Establishment of Realism	Changes in Stocked Items	Experience in All Duties	Changes Unique to Local Needs	Elimination of Shelter Exercise	Other
Higher Executive, Major Professional	7.1	2.7	6.3	6.3	8.9	2.7	.9	.9	.9	1.8
Business Manager, Lesser Professional	8.0	4.7	6.4	6.6	3.7	3.1	1.0	1.3	.5	4.2
Administrative Personnel, Minor Professional	11.5	3.4	6.1	2.0	3.4	6.1	2.7	.7	.7	2.7
Clerical & Sales, Technical	4.2	1.9	5.1	5.1	1.9	1.9	1.9	0.0	0.0	3.8
Skilled Manual Employed, Small Farmer	2.4	4.3	2.4	1.9	1.9	1.0	0.0	.5	0.0	.9
Machine Operator, Semi-Skilled Employees	3.3	1.6	1.1	2.7	1.6	0.0	.5	0.0	0.0	2.2
Unskilled	0.0	0.0	0.0	2.2	2.2	0.0	0.0	0.0	0.0	4.4
Housewife, Student, Retired	5.6	3.9	8.4	3.9	4.2	1.1	.7	1.4	0.0	3.3

Interesting to note (Table LXIV) is that those higher in the occupational hierarchy had considerably greater frequency of suggested changes (34% for higher executives and major professionals) than did those lower on the scale (8% for the unskilled). For those in the higher category, the most frequently mentioned change was that of the establishment of realism, checked by approximately 9 per cent of all in this category, the next highest was more organization and planning before the exercise (7%), followed by increased length of occupancy and the inclusion of problem-solving situations in the exercise. Interesting to note is the fact that the higher category (higher executives and major professionals) was the only occupational group indicating that more realism should be established as the most frequently mentioned change in the exercise.

Characteristics of Low, Medium, and High "Initiators"

Included among the questions in the Student Form was a set of three items involving leisure time activities, conversational topics, and organizational affiliations that together define a score for each respondent on the Initiator Scale. This scale has been used, and validated for many consumer research applications, to isolate, those who are the activists (in the trend setting, initiating sense) in their groups. Theoretically the scale is free from socio-economic determinants, i.e., there are just as many high initiators in the lower socio-economic groups as in the higher--also the same is true for educational level.

It was hypothesized that those higher on the initiator scale would be more active in CD work, i.e., would have had more prior courses and would be more active, and higher, on the position hierarchy than would those lower on the scale. Accordingly, the students were divided into high, medium, and low initiator scores and their answers to three CD activity questions determined. Tables LXXVI through LXXIX illustrate the findings in this area.

Table LXXVI

Have Prior CD Courses

	<u>N</u>	<u>%</u>
Low Initiator	159	27
Medium Initiator	206	29
High Initiator	190	35

Table LXXVII

Number of Prior Courses Taken

	0 Course		1 Course		2 or More	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Low Initiator	427	74.7	96	17.8	49	8.6
Medium Initiator	495	71.7	114	16.5	81	11.7
High Initiator	350	66.2	100	18.9	79	15.0

Table LXXVIII

Have Held CD Positions

	<u>N</u>	<u>%</u>
Low Initiator	102	18.4
Medium Initiator	136	20.3
High Initiator	130	25.0

Table LXXVIX

CD Title

	Director or Assistant Director		SM	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Low Initiator	21	24.1	12	13.8
Medium Initiator	39	31.4	14	11.3
High Initiator	55	43.7	18	14.3

As can be seen, 36 per cent of the high initiators have had previous CD courses, whereas only 27 per cent of the low initiators had prior courses. Percentage wise, twice as many high initiators as low initiators have had two or more courses.

As concerns CD positions held, 25 per cent of the high initiators have CD positions of one sort or another, whereas 18 per cent of the low initiators have CD positions. The level of these positions, however, discriminates more heavily between low and high initiators. Forty-four per cent of those holding director or assistant director positions are high initiators, whereas only 24 per cent of those holding these positions are low initiators. In conclusion, the initiator score seems to constitute a fairly good indicator of CD activity, both course related, and position related.

Another series of items thought to relate to initiator scores were student ratings of shelter managers technical and human relations performance. Since high initiators are theoretically the "activists", a reasonable hypothesis would appear to be that an individual so described would tend to be more critical of shelter management performance than would someone lower on the initiator scale, i.e., he would experience frustration that he was not performing the job himself--leading to lower ratings of those who were doing the job. As can be seen by tables LXXX and LXXXI no such trend is in evidence. Excellent ratings in both areas are given by roughly the same percentage of low, medium, and high initiators.

Table LXXX

Rating By Student's of SM's Technical Operation Performance

	Excellent		Good		Fair		Poor		Very Poor	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Low Initiator	493	63.4	257	33.4	26	3.3	1	.1	0	0.0
Medium Initiator	528	60.0	313	35.6	33	3.8	6	.7	0	0.0
High Initiator	449	63.1	233	32.7	21	2.9	8	1.1	1	.1

Table LXXXI

Ratings by Students of SM's Human Relations Performance

	Excellent		Good		Fair		Poor		Very Poor	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Low Initiator	465	60.4	276	35.8	24	3.1	2	.3	1	.1
Medium Initiator	513	58.2	324	36.8	37	4.2	7	.8	0	0.0
High Initiator	435	62.8	223	32.2	33	4.7	2	.3	0	0.0

Another item thought to be related to initiator score was the question asking for suggested exercise changes. As is illustrated by Tables LXXXII and LXXXIII, 31 per cent of the high Initiators had changes to suggest in exercise, whereas only 23 per cent of the low initiators had suggestions. Of the specific suggestions, increased prior organization was the most frequently mentioned for the "high" group, followed by length of occupancy.

Table LXXXII

Had Suggested Changes in Exercises

	<u>N</u>	<u>%</u>
Low Initiator	127	23.3
Medium Initiator	171	25.9
High Initiator	162	31.8

Table LXXXIII

Suggested Changes in Exercises

	% of All Low Initiators		% of All Medium Initiators		% of All High Initiators	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Increased Organization	34	6.2	38	5.8	43	8.4
Class or Instructions in-shelter	19	3.5	21	3.2	25	4.9
Length of Occupancy	24	4.4	49	7.4	31	6.1
Problem-Solving Situation	23	4.2	24	3.6	26	5.1
Estimate of Realism	23	4.2	20	3.0	20	3.9
Changes in Stocked Items	6	1.1	13	2.0	13	2.6
Experience in All Duties	4	.7	7	1.1	9	1.8
Changes Unique to Local Needs	2	.4	7	1.1	7	1.4
Estimate Shelter Exercise	2	.4	3	.5	0	0.0
Other	11	2.0	22	3.3	26	5.1

The Characteristics of Female Course Participants

A potential source of civil defense workers, that in many cases has not been tapped is the vast number of capable, potentially qualified women. Not only is this segment of the population a potential source of students, but in time of emergency, the women of this country would probably find themselves (officially placed or not) in positions of responsibility. Teachers, nurses, and even housewives, (insofar as the family is concerned) would probably find themselves burdened with positions of major responsibility for the safety and well-being of their charges.

If the above statement is accepted, it would appear important to examine the characteristics of the female course participants to determine among other things, background information, civil defense course and position information, and adaptability to the shelter environment, insofar as we are able to determine from the brief exercise. Tables LXXXIV through LXXXVIII illustrates some of the findings in this area comparing the female with the male exercise population.

Table LXXXIV

Student Age, Student Occupation, Student Marital Status

	Male		Female	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Under 21	29	3.0	122	22.3
21-30	234	18.0	121	22.2
31-40	370	28.5	80	14.7
41-50	390	30.0	122	22.3
51-60	210	16.2	89	16.3
Over 60	55	4.2	12	2.2
Higher Executive, Professional	103	8.2	9	1.6
Business Manager	433	34.4	188	33.8
Administrative Personnel	129	10.3	18	3.2
Clerical and Sales	132	10.5	82	14.7
Skilled Tradesmen	204	16.2	3	.5
Machine Operators	169	13.4	14	2.5
Unskilled Workers	38	3.0	7	1.3
Housewives & Students, Retired	49	3.9	235	42.3

Table LXXXIV (Continued)

Single	141	11.0	272	48.4
Widowed	5	.4	34	6.0
Married	1112	86.6	233	41.5
Divorced	26	2.0	23	4.1

Table LXXXV

How Students Enrolled in Course

	Male		Female	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Volunteered	686	54.5	276	51.0
Were Requested	572	45.5	265	49.0

Table LXXXVI

Students Holding CD Position

	Male		Female	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Held Position	313	25.5	54	10.5
Director or Assistant				
Director	110	38.1	5	10.5
Shelter Manager	42	14.6	2	4.2
Did Not Hold Position	915	74.5	459	89.5

Table LXXXVII

Students Mentioning Slight or Significant Problems
To The Habitability Factors

	Male %	Female %
Water--taste	5.9	15.3
Water--amount	14.0	19.4
Odors	18.2	20.2
Personal cleanliness	34.0	51.3
Lack of physical exercise	34.5	44.0
Lack of privacy	31.8	47.3
Recreation/free time	16.3	21.7
Religious activities	13.5	19.4
Seating	30.5	35.6
Shelter cleanliness	14.9	29.5
Shelter organization	14.0	20.9
Sleep	36.2	52.4
Smoking	22.8	25.7
Crowding	28.7	32.0
OCD toilet facilities	21.7	27.7
OCD food rations--taste	22.7	31.4
OCD food rations--amount	18.2	21.3
Behavior of other shelterees	12.5	17.5
Noise	25.1	35.4
Temperature and humidity	36.0	51.9
Medical supplies and care	8.1	17.2

Table LXXXVIII

Physical Symptoms Mentioned by Students
Mild, Moderate, Severe

	Male %	Female %
Headache	28.2	46.7
Upset stomach	4.9	14.5
Constipation	5.7	5.7
Diarrhea	.1	.4
Rash	.3	1.4
Sore throat	5.7	11.3
Dizziness	2.9	10.6
Loss of Energy	10.6	27.8

An examination of the above tables reveals the female course participant to be roughly five years younger, on the average than her male counterpart. This is due, to a large extent to the large number of females in the "under 21" category, most of whom are nursing students.

The two greatest proportions of females are in the housewife or student category and the business manager category respectively. About half of the female course participants are married, approximately the same percentage are single.

About half of the women volunteered for the course and half were assigned. Reasons given for course participation were similar for both men and women. For those who volunteered, the greatest percentage of both men and women said they did so for reasons of personal interest, information, or experience. Of the assignees of both sexes--training essential for occupation was the most popular response.

Ten per cent of the women course participants held CD positions, whereas 25 per cent of the men held such positions. Approximately 10 per cent of the women were director or assistant directors, whereas 38 per cent of the male students held this position.

Response to The Exercise Shelter Environment

It was thought of interest to determine the extent to which the shelter environment created problems for female as opposed to male students. The tables below break down habitability factor ratings and indices of physical symptoms for the sexes. It is interesting to note that in all instances of habitability factor ratings, the females show a greater percentage of rating the factor a slight or significant problem. In three of the instances, the problem ratings for the women is at least twice that for the men (water--taste, shelter cleanliness, and medical supplies and care). The extent

to which these findings indicate a potentially greater problem of adjustment and functioning for women in a fallout shelter situation is not known. It may well be that the women notice these problems to a greater extent, but that this would not impair their functioning.

Similar findings are noted for the rating of physical symptoms. For almost all symptoms, the percentage of women who rated them mild, moderate, or severe is twice that of the men. Again, no direct implications for their functioning or ultimate adjustment to a shelter situation can necessarily be drawn.

Management Position Assignment and Shelter Readiness of Civil Defense Regions

One of the items that seemed appropriate to analyze was the extent to which students had or would be assigned to management positions within the various OCD regions. Another related analysis that was thought of interest was whether or not the shelters to which these students would be assigned were licensed, marked or stocked.

The tables below give the results of this analysis. As is noted in the case of region three and region eight, very low numbers of students made up the response population--it is therefore questionable that the results for these two regions can be interpreted as a picture of the entire region, with any confidence.

Table LXXXIX

Student Assignment to Shelters by OCD Region

Region	# of Courses	Yes	No	Don't Know
1	30	24%	29%	47%
2	26	27%	27%	45%
3	2	12%	39%	49%
4	8	26%	18%	57%
5	23	27%	27%	45%
6	5	26%	33%	41%
7	12	14%	45%	41%
8	1	16%	21%	63%

Table XC

Status of Assigned Shelters by Region

Region	# of Courses	Marked	Licensed	Stocked
1	30	58%	58%	62%
2	26	87%	80%	78%
3	2	75%	67%	75%
4	8	87%	92%	80%
5	23	87%	79%	82%
6	5	81%	69%	56%
7	12	46%	46%	85%
8	1	67%	67%	67%

As can be seen by the above tables, most of the regions report approximately 24-27 per cent of their students as assignees or intended assignees to positions of shelter management responsibility. Regions 3, 7, and 8 deviate from this pattern with considerably lower percentages. Note has already been made of the low numbers reporting from regions 3 and 8 however.

Students who are or will be assigned positions of management responsibility report fairly consistent percentages for marked, stocked, and licensed status for their assigned shelters. Region 7, however, reports roughly twice as many shelters in the stocked category as in the marked or licensed categories. Percentages of students within separated regions who report shelter readiness range from 46 per cent from region seven to 87 per cent from region 2.

Responses to the Shelter Exercises by Those Who Volunteered for the Course as Opposed to Those Who Were Assigned.

Although there may have been some semantic confusion attached to students explaining the process of their course enrollment in terms of voluntary vs. assigned, it was thought of interest to determine if responses to items such as CD activity, and evaluation of habitability factors would differ for those two groups. Accordingly an analysis was performed on responses of these two groups to questions related to (1) CD course history, (2) CD positions held, and (3) habitability factor rating. The tables below give the results of these analyses.

Table XCI

CD Course and Position Characteristics of Volunteers and Assignees

	Volunteers	Assignees
Have taken prior CD course	40.3	19.1
Hold CD position	24.3	11.5

Table XCII

Satisfactory Ratings Given to Habitability Factors
by Volunteers and Assignees

	Volunteers		Assignees	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Water--taste	831	90.0	760	92.3
Water--amount	776	85.0	679	83.4
Odors	745	82.3	649	80.1
Personal cleanliness	573	63.1	464	57.2
Lack of physical exercise	563	62.5	484	59.5
Lack of privacy	576	63.6	511	63.6
Recreation/free time	747	83.2	648	80.7
Religious activities	742	84.4	668	85.0
Seating	630	69.4	533	65.8
Shelter cleanliness	739	81.1	649	79.8
Shelter organization	778	85.2	665	83.0
Sleep	542	60.8	449	56.3
Smoking	699	78.5	578	73.6
Crowding	653	71.9	547	68.6
OCD toilet facilities	697	77.3	599	74.9
OCD food rations--taste	709	77.5	581	71.3
OCD food rations--amount	757	83.6	625	77.7
Behavior of other shelterees	786	86.2	693	85.7
Noise	634	69.6	595	74.0
Temperature and humidity	552	60.4	471	57.9
Medical supplies and care	821	91.1	699	86.9

As can be seen, over twice as many volunteers as assignees had taken prior CD courses. The same ratio applied to questions concerning the present holding of CD position.

The per cent of volunteers giving "satisfactory" ratings to the habitability factors was consistently greater than the per cent of assignees giving the same rating--but the difference was usually restricted to three or four percentage points.

Ratings Received by Exercise Shelter Managers as They Relate to Habitability Factor Ratings and Frequency of Physical Symptoms

The student questionnaire provides for a rating of the exercise shelter manager(s) in the technical and human relations areas. It was thought of interest to isolate these students rating their shelter managers fair from those rating their shelter managers excellent in the two areas and determine the differences, if any, in their responses to theoretically related items such as habitability factor ratings and physical symptom frequency. It was hypothesized that students rating their shelter managers fair would assign less satisfactory ratings to habitability factors, and would be characterized by a greater frequency of physical symptoms than those rating their shelter managers excellent.

The following tables present the results of this analysis.

Table XCIII
Student Technical Ratings of Shelter Manager(s) and
Satisfactory Habitability Factor Ratings

	SM's Received Excellent Technical Ratings		SM's Received Fair Technical Ratings	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Water--taste	898	91.2	51	94.4
Water--amount	816	85.0	45	86.5
Odors	790	81.8	46	86.8
Personal cleanliness	636	65.6	34	64.2
Lack of physical exercise	635	65.9	26	49.1
Lack of privacy	631	65.7	27	52.9
Recreation/free time	796	83.4	44	83.0
Religious activities	806	86.8	43	81.1
Seating	672	70.0	35	66.0
Shelter cleanliness	811	83.7	47	88.7
Shelter organization	897	92.6	19	37.3

Table XCIII (Continued)

Sleep	584	61.3	30	56.6
Smoking	746	79.0	40	78.4
Crowding	697	73.6	32	59.3
OCD toilet facilities	762	79.2	40	76.9
OCD food rations--taste	755	77.6	39	73.6
OCD food rations--amount	794	82.4	42	79.2
Behavior of other shelterees	870	89.9	45	84.9
Noise	726	75.3	38	71.7
Temperature and humidity	581	60.0	30	56.6
Medical supplies and care	874	90.9	47	88.7

Table XCIV

Technical Ratings of Shelter Manager(s) and Percent
of No Symptoms reported by Students

	SM's Received Excellent Technical Ratings		SM's Received Fair Technical Ratings	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Headache	645	66.9	32	61.5
Upset stomach	874	92.8	43	86.0
Constipation	894	95.7	47	92.2
Diarrhea	929	99.7	50	100.0
Rash	929	99.5	51	100.0
Sore throat	879	93.3	45	86.5
Dizziness	878	94.3	47	92.2
Loss of energy	792	84.5	45	88.2

Table XCV

Student Human Relation Ratings of Shelter Manager(s) and
Satisfactory Habitability Factor Ratings

	SM's Received Excellent Human Relations		SM's Received Fair Human Relations	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Water--taste	974	91.6	51	94.4
Water--amount	822	87.2	43	82.7
Odors	774	82.9	46	86.8
Personal cleanliness	622	66.4	23	44.2

Table XCV (Continued)

Lack of physical exercise	614	65.8	29	54.7
Lack of privacy	620	66.6	22	42.3
Recreation/free time	771	83.8	33	62.3
Religious activities	776	86.4	45	86.5
Seating	675	70.5	31	58.5
Shelter cleanliness	791	84.4	37	69.8
Shelter organization	868	92.4	23	43.4
Sleep	563	61.1	23	42.6
Smoking	730	80.3	33	63.5
Crowding	666	72.6	41	75.9
OCD toilet facilities	725	78.5	36	69.2
OCD food rations--taste	740	78.5	36	67.9
OCD food rations--amount	781	80.9	39	73.6
Behavior of other shelterees	857	91.3	33	62.3
Noise	721	77.1	30	57.7
Temperature and humidity	567	60.4	30	56.6
Medical supplies and care	838	90.5	39	76.5

Table XCVI

Human Relation Ratings of Shelter Manager(s) and Percent
of No Symptoms Reported by Students

	SM's Received Excellent Human Relations Rating		SM's Received Fair Human Relations Rating	
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>
Headache	628	67.5	35	66.0
Upset stomach	847	93.8	44	84.6
Constipation	851	95.4	50	94.3
Diarrhea	893	99.8	52	100.0
Rash	890	99.3	53	100.0
Sore throat	843	93.3	46	86.8
Dizziness	843	94.5	51	96.2
Loss of energy	762	84.8	48	90.6

The technical ratings received by the exercise shelter managers do not appear to relate greatly to habitability factor ratings. In only four cases (shelter organization, crowding, lack of physical exercise, and lack of privacy) do satisfactory ratings differ more than 10% between excellent shelter managers and fair shelter managers in the technical area. It must also be pointed out that these items do not relate to the criteria for technical ratings as given in the Student Questionnaire. Tasks such as feeding, medical care, and sanitation are given as examples of tasks to evaluate for this rating.

For all practical purposes, there is no difference in frequency of physical symptoms between students rating shelter managers fair and students rating shelter managers excellent in the technical area.

The human relations ratings seem to be better predictors of habitability factor ratings. In all but seven of the factors, there was at least a ten percent difference in satisfactory factor ratings for students rating shelter managers excellent and students rating shelter managers fair in the human relations area. The seven factors were water (taste and amount), odors, religious activity, crowding, OOD toilet facilities, and temperature and humidity. Five factors had over 20 per cent differential in satisfactory ratings for students rating shelter managers excellent and students rating shelter managers fair in the human relations area. These factors are: personal cleanliness, lack of privacy, recreation--free time, shelter organization, and behavior of other shelterees. These factors appear to be those that would be influenced by management most readily. By and large, there was no difference in frequency of physical symptoms between the students rating shelter managers fair and excellent.

SUMMARY OF FINDINGS

Student Responses

Background Characteristics

The average student is a male, of middle age, married, with two children, who has had some college education (though not completed), and presently holds a job assignable to the category of "lesser professional." This category includes such jobs as: accountant, military commissioned officer, nurse, and pharmacist. The majority of male students have had some armed forces experience, mainly with the Army and have attained the rank of non-commissioned officer.

Student Civil Defense History

Two out of three students in the courses (mostly SM and SMI) had no prior CD courses. This fact was explained on the basis that these courses were relatively early in the CD course sequence. Following a similar pattern, only 20% said that they presently held CD positions, most of which were part-time, unpaid positions. Of those students involved in some CD occupational category, the most frequently mentioned positions were officers in charge of operational functions such as RADEF, communications, etc., followed by city, county, or state directors. Twenty-four per cent of the students were or would be assigned to positions of shelter management.

Student Response to the Occupancy Exercise

Opportunity was given for the students to rate a number of habitability factors in terms of whether or not these were satisfactory, or whether they created problems during the shelter stay. Most of the factors didn't create much of a problem--the problems mentioned most often were personal cleanliness, temperature and humidity, and sleep.

In an attempt to determine whether or not the complaints were attributable to most people checking one or two items, or a small number checking a great many; frequency distributions of individual habitability factor ratings were obtained. There were very few people who checked more than a few of the habitability factors as problem areas. In like manner, individual students were asked to check a list of physical symptoms to indicate the extent to which they were noticed during the shelter stay. The most frequently checked symptom was headache and loss of energy. As was done with the habitability factors, an analysis was performed to determine the frequency distribution of individual's physical symptom responses. Here, as with the habitability factors, there were only a few individuals who checked all or most of the symptoms.

Shelter Management in the Occupancy Exercises

Most of the occupancy exercises had one shelter manager. Ratings of these managers in terms of their technical and "human relations" proficiency indicated that most shelterees considered their exercise manager(s) excellent or good, with very few lower ratings. Unplanned events of the technical and human relations variety arose in 40 per cent of the exercises. Most of these were power failure and shelteree conduct problems. It was pointed out that there may have been quite a bit of misinterpretation on the part of the students of the word "unplanned."

Students were asked to list important characteristics of shelter managers. The ability to be a leader, (authority figure) and the ability to deal with others were mentioned by at least 40 per cent of the respondents.

Students were also asked for their suggestions for exercise modifications; the most frequent change suggested was an increase in the organization and planning before the exercise.

Instructor Responses

Exercise Description

The composite exercise had an average length of 15 hours. Slightly less than half of the exercises were conducted in single area shelters intended for training use only. The size of the average class was 17. In addition to this number of students, one observer or instructor was present in approximately half of the exercises.

OCD Supplies and Equipment

There were no significant occurrences of problems in the use of OCD supplies and equipment. Of those mentioned, the preparation or setting up of water drums and their contents was the most frequently mentioned.

Non-OCD Equipment and Supply Problems

A substantial proportion of exercises had non-OCD equipment and supplies present, especially communications and ventilation equipment, sleeping facilities, and atmosphere and temperature measuring devices. Generally speaking, the number of problems associated with the use of these non-OCD supplies and equipment items was quite low.

Shelter Organization

The majority of exercises included those management positions and task teams that are generally agreed upon as being important. Eighty-seven per cent of the exercises developed and utilized a formal schedule of shelter activities. Most of the exercises utilized shelter records such as a general shelter log, communications log, and registration forms.

Exercise Scenario

Some 88 per cent of the instructors mentioned the inclusion of simulated emergencies; illness or injury, power failure and entrance of contaminated person(s) seemed to predominate. The most frequently mentioned reason given for an emergency's effectiveness was that it demonstrated a training point.

Almost all of the exercises had messages introduced into the shelter. More than half of the responses indicated the origin of the message, not the content; information on radiation level was the most frequently mentioned content where given.

Eighty-four per cent of all exercises were on scenario (simulated) time. The average time simulated was slightly over nine days.

Shelter Management

In over half of the reports, one shelter manager managed for the duration of the stay. Most of the managers were students--the greater proportion selected by the instructional staff. Styles of management expressed by these students were primarily democratic (as opposed to authoritarian and laissez faire). Ratings received by the student managers in both human relations and technical areas were split fairly evenly between "excellent" and "good." In approximately one quarter of the exercises, unplanned technical and human relations events took place.

Forty per cent of the exercises reported that their students had special background characteristics (were all of the same sex, were all nursing students, etc.).

Training

Over 90 per cent of the exercises reported the inclusion of training sessions within the shelter exercise. Over 60 per cent of the exercises had training ranging from one to three hours. Eight hundred shelter managers, 358 shelter manager instructors, 73 radiological monitors or radiological monitor instructors were certified in the courses reported.

Cross Tabulations

Cross tabulations were performed on several items of interest. OCD equipment and supply problems were broken down in terms of civil defense regions. Generally, it was found that such problems occurred in roughly equivalent proportion to the number of exercises in that region.

The presence of non-OCD supplies in training shelters as opposed to operational shelters was determined. There was no clear cut advantage for either shelter type insofar as stocking of more non-OCD items was concerned. Generally, a greater percentage of the items that were stocked in operational shelters were normally stocked there and not just brought in for the exercise.

"Large" (26-51 students) versus "small" (4-14 students) exercises (in terms of student numbers) were examined to determine if the size of the exercise had any bearing on: (a) habitability factor ratings, (b) frequency of physical symptoms, and (c) shelter manager ratings in the human relations and technical areas. Most of the habitability factors were rated less satisfactory in the large exercises and two of the physical symptoms (headache and dizziness) were more frequently mentioned in the large exercises. The large exercise managers received more favorable ratings in both the technical and human relations areas.

Occupational level was examined to determine if it effected response to the question asking for suggested course changes. Generally, those higher in the occupational hierarchy suggested changes more frequently. There were some differences in what was suggested in the way of changes by various occupational levels. For those in the highest level (higher executive, major professional) the most frequently suggested change was the establishment of realism--this finding was not in evidence in the other occupational levels.

Initiator scale scores were analyzed to determine if the level of scores was related to responses of a certain nature on other questions. Students were assigned to low, medium, and high categories of initiator scale scores and their responses to questions relating to civil defense activity, rating of shelter managers, and suggested changes for the exercise were determined. Generally, those high on the initiator scale were more active in civil defense (had taken more prior civil defense courses, held civil defense positions, and held positions of greater authority). Ratings in both the human relations and technical areas were roughly the same for high, medium, and low initiators. More high initiators than low (31 per cent versus 23 per cent) had suggested changes in the exercise.

The background characteristics and reactions to the shelter environment of female course participants were determined. Five hundred sixty six or 30% of all students were females. By and large, the female course participants were younger. Almost half of the women students fell into the "housewife, student, or retired" category, another sizable proportion fell into the "business manager" category. Approximately half of the female participants are married, and half are single. Ten per cent of the female course participants hold civil defense positions as opposed to 38% of the male students.

Females show a greater percentage of rating habitability factors a problem, similar findings are noted for the rating of physical symptoms.

Twenty-four to twenty-seven per cent of students from all civil defense regions report that they are already or will be assigned to shelters after course completion. Exceptions to this are regions 3, 7, and 8 with lower percentages.

Another analysis that was thought to be of interest was the determination of responses for course volunteers versus course assignees to items such as civil defense activity and habitability factor ratings. Over twice as many volunteers as assignees have taken prior civil defense courses. Roughly the same ratio is applicable to civil defense positions held. Volunteers gave consistently more "satisfactory" ratings to habitability factors than did assignees although only a few percentage points separated the two in most cases.

Further analyses were performed to determine if shelter manager ratings related to other ratings such as habitability factors or frequency of physical symptoms. Generally speaking, the ratings received by shelter managers in the technical area were not good predictors of how well their students would rate habitability factors or physical symptoms. Human relations ratings were more effective predictors. In all but seven of the factors, there was at least a 10% difference in "satisfactory" ratings for students rating shelter managers excellent and students rating shelter managers fair. The seven factors not showing a difference were water (taste & amount), odors, religious activities, crowding, OCD toilet facilities, temperature and humidity. There was no similar difference in frequency of physical symptoms between the students rating shelter managers fair and excellent.

SUGGESTED FUTURE RESEARCH

SUGGESTED FUTURE RESEARCH

The following points are suggested as profitable lines of research extension.

1. Modification of Content and Format of Questionnaire.

a. Content

It would appear profitable to modify the content of the questionnaire in light of our experience with its usage and results of the analyses included in this report; i.e., to eliminate those items that do not provide useful information, to reword those items whose interpretations have appeared indefinite, and to add new items of interest. It is expected that the best approach to these modifications would include CDUEP sources of information.

b. Format

It is thought that a pre-coded format based on the response spectrum of current questionnaires could be developed. This would allow more efficient handling of data that is currently possible with written responses.

2. The Introduction of Small-scale Experiments into Selected CDUEP Occupancy Exercises.

An earlier report in this contract series (Wend & Griffard, 1964) proved the feasibility of introducing small-scale experiments into occupancy exercises without interfering with the primary goal of training. It would appear valuable to develop and introduce experiments of this nature into selected occupancy exercises. Specific areas of investigation might be (a) the impact of diet change upon the exercise population and (b) the impact of leisure time activity upon adaptability to the shelter environment. Special data forms would be

developed to collect information from these studies and results would be stored in the data bank. Conclusions as to the outcomes of similar research would be available from the bank on demand, via statistical manipulation of data after selective retrieval.

3. The Development of Short-form Questionnaires to Investigate Specific Occupancy Exercise Information in Depth.

Often a specific area of information surrounding occupancy exercise experience is more complex than has been reflected in questions tapping this area within the two existing data collection forms. The question may even not be included because of space and time limitations observed as a result of the voluntary nature of CDUEP data provision. Such areas as problems with OCD supplies, impact on students of the occupancy experience, and the extent to which other (than OCD) supplies and equipment are deemed advantageous in the reduction of undesirable aspects of shelter living could be covered in depth with these questionnaires.

4. The Expansion of Occupancy Exercise Data Sources.

In the current report, 54% of CDUEP schools cooperated in data collection. It is of importance to expand this source of data. Two approaches might be taken: (a) the expansion of CDUEP returns by making the questionnaires easier to fill out, or by providing answers to questions of interest to CDUEP personnel on demand. (b) A search for other than CDUEP sources for data collection. The follow-up of SMI graduates in an attempt to get them to submit data from their course occupancy exercises is one such idea.

5. The Inclusion of Other Occupancy Exercises and Habitability Studies in the Data Bank.

The source of this data would largely be secondary from the experimental literature available to us. Although data of

this sort would not be summarizable because of its uniqueness,
it would be readily available should information about a particular type of study or experiment be required.

APPENDIX

Student Questionnaire

Instructor's Data Form

Letter To CDUEP Staffs Requesting Their Participation

Follow-up Letter

Occupational Categories

STUDENT QUESTIONNAIRE

You have been asked to complete the following questionnaire concerning your impressions of the shelter exercise you have just completed. Your answers, when combined with the answers supplied by other students across the country, will provide the Office of Civil Defense with useful information about many aspects of shelter management.

The answers will be treated in strict confidence, and will not be identified with the individual student or the organization that he or she represents.

Please answer the questions as accurately and thoroughly as possible.

Thank you for your cooperation.

BACKGROUND INFORMATION

1. Age: _____
2. Sex: 1() Male 2() Female
3. Occupation: _____
4. Which of the following categories comes closest to describing your job (check one)?

1() Professional or technical worker	5() Sales worker
2() Farmer or farm manager	6() Craftsman
3() Manager, official, business owner	7() Service worker or operator
4() Clerical worker	8() Laborer
	9() Other (explain): _____
5. What is the highest level of schooling you have completed (check one)?

1() Some grammar school (not completed)	6() Some college (not completed)
2() Completed grammar school	7() College graduate
3() Some high school (not completed)	8() Some graduate school (no graduate degree)
4() Completed high school	9() Masters' degree
5() Completed business or technical school	X() Doctors or professional degree
6. In what community do you live? _____
(City or Town/State) (Zip Code)
7. In what community do you work? _____
(City or Town/State) (Zip Code)

8. Marital status: 1() Single 3() Married
 2() Widowed 4() Divorced
9. Number of children: _____
10. Have you had any military experience? 1() Yes 2() No
If Yes: a. Dates of service (do not include reserve time) _____
b. Branch of Service: _____ c. Highest rank: _____
11. Are you currently in the military reserves? 1() Yes 2() No
12. Please CIRCLE the number of each of the following that you do quite a bit of in your free time. Circle as many as apply.
- | | |
|---|--|
| 1 Travel | 1 Listen to the radio |
| 2 Visit or entertain friends or relatives | 2 Read business or professional journals |
| 3 Read daily newspapers | 3 Watch television |
| 4 Participate in sports | 4 Work in the yard or garden |
| 5 Watch sports events | 5 Go to the movies |
| 6 Read weekly new magazines | 6 Listen to music |
| 7 Read magazines like LIFE, LOOK, POST, etc. | 7 Attend plays, opera, or ballet |
| 8 Hobbies like woodworking, photography, etc. | 8 Read books |
| | 9 Others: _____
(explain) |
13. Please CIRCLE the number of each of the following things you are likely to talk about when you get together with other people. Circle as many as apply.
- | | |
|-----------------------|------------------------------|
| 1 Your work | 1 National problems |
| 2 Religion | 2 Sports |
| 3 Political affairs | 3 Music, art, etc. |
| 4 World affairs | 4 Community problems |
| 5 Your family | 5 Government policies |
| 6 Business conditions | 6 Labor union matters |
| 7 Civil defense | 7 Others: _____
(explain) |
14. Please CIRCLE the number of all those types of organizations below in which you are very active.
- | | |
|---|--|
| 1 Professional association | 7 Fraternal or veteran's organization such as Elks, Legion, etc. |
| 2 Church or religious group or club | 8 Civil or local association such as school board, community association, etc. |
| 3 Political organization | 9 Drama, arts, cultural group, etc. |
| 4 Service club such as Rotary, Lions, Junior League | X Business association |
| 5 Sports club like a country club, golf club, swimming club, etc. | Y Others: _____
(explain) |
| 6 Labor union or organization | 0 None of these |

CIVIL DEFENSE INFORMATION

15. Title of CD course you are now taking: _____

16. Date of the shelter exercise: _____

17. Why did you enroll in this CD course?

1() I volunteered.

2() I was requested or assigned.

↓
a. For what reason?

↓
b. For what reason?

18. Have you taken any CD courses prior to this one? 1() Yes 2() No

a. If Yes, how many previous courses have you taken? _____ courses

19. Do you currently hold a CD position? 1() Yes 2() No

a. If Yes, what is your title? _____

b. Is the position: 1() Full time 2() Part time

c. Is the position: 1() Paid 2() Voluntary

Answer question 20 only if you are now taking or have taken a shelter management course. If not, skip to question 21.

20. Upon completion of shelter management training, will you be (or have you been) assigned to a position on the management staff of a shelter?

1() Yes

2() No

3() Don't know

a. If Yes, what will your management position be? _____

b. How many others on the management staff of the shelter have received shelter management training? _____

c. Has your shelter been Federally marked? 1() Yes 2() No

d. Has your shelter been Federally licensed? 1() Yes 2() No

e. Has your shelter been Federally stocked? 1() Yes 2() No

SHELTER HABITABILITY

21. Consider the following aspects of shelter living and indicate whether they were satisfactory or whether they presented a problem to you during the exercise. Place a checkmark in the appropriate column for each aspect. A "slight problem" is a situation that caused you some discomfort or concern, but would not affect your ability to endure a 14-day shelter stay. A "significant problem," on the other hand, is a situation that might affect the physical survival or mental well-being of yourself or other shelterees in an extended shelter stay.

<u>Aspects of Shelter Living</u>	<u>Satisfactory (No Problem)</u>	<u>Slight Problem</u>	<u>Significant Problem</u>
a. Water--taste	_____	_____	_____
b. Water--amount	_____	_____	_____
c. Odors	_____	_____	_____
d. Personal cleanliness	_____	_____	_____
e. Lack of physical exercise	_____	_____	_____
f. Lack of privacy	_____	_____	_____
g. Recreation/free time	_____	_____	_____
h. Religious activities	_____	_____	_____
i. Seating	_____	_____	_____
j. Shelter cleanliness	_____	_____	_____
k. Shelter organization	_____	_____	_____
l. Sleep	_____	_____	_____
m. Smoking	_____	_____	_____
n. Crowding	_____	_____	_____
o. OCD toilet facilities	_____	_____	_____
p. OCD food rations--taste	_____	_____	_____
q. OCD food rations--amount	_____	_____	_____
r. Behavior of other shelterees	_____	_____	_____
s. Noise	_____	_____	_____
t. Temperature and humidity	_____	_____	_____
u. Medical supplies and care	_____	_____	_____
v. Other aspects: _____	_____	_____	_____
_____	_____	_____	_____

22. If you reported that any aspect of shelter living presented a "significant problem," briefly describe the nature of the problem on page 8, under ADDITIONAL NOTES AND COMMENTS. If you have any suggestions for overcoming the problem, briefly mention these also.

23. Did you experience any of the following physical symptoms during the shelter exercise?

	<u>No Symptoms</u>	<u>Mild Symptoms</u>	<u>Moderate Symptoms</u>	<u>Severe Symptoms</u>
a. Headache	_____	_____	_____	_____
b. Upset stomach	_____	_____	_____	_____
c. Constipation	_____	_____	_____	_____
d. Diarrhea	_____	_____	_____	_____
e. Rash	_____	_____	_____	_____
f. Sore throat	_____	_____	_____	_____
g. Dizziness	_____	_____	_____	_____
h. Loss of energy	_____	_____	_____	_____
i. Others (list): _____	_____	_____	_____	_____
_____	_____	_____	_____	_____

24. In general, how did the actual shelter stay compare to what you had expected before you entered the shelter (check one)?

- 1() I didn't have any expectations about the shelter stay before it began.
 - 2() The shelter stay was just as I had expected.
 - 3() Much was as I had expected, but there were some things that were quite different.
 - 4() Many things, but not all, were different than I had expected.
 - 5() It was not at all what I had expected.
- a. If you checked answers 4 or 5, how would you describe the major difference between what you had expected and what you actually experienced?

SHELTER MANAGEMENT

25. How many persons took the role of shelter manager during the exercise?
(Do not include assistants who only relieved the manager for short periods
of time.)

1() One 2() Two 3() Three 4() More than three → How many? _____

26. How would you rate the performance of the shelter manager insofar as the technical operations of the shelter are concerned? (Technical operations refers to shelter activities such as feeding, medical care, sanitation, and the like.) Place a checkmark alongside the answer that best describes the technical performance of each manager. NOTE: If there was only one manager during the exercise, place your checkmark in the column titled "First Shelter Manager."

	<u>First Shelter Manager</u>	<u>Second Shelter Manager</u>	<u>Third Shelter Manager</u>
a. The manager did an excellent job.	_____	_____	_____
b. The manager did a good job.	_____	_____	_____
c. The manager did a fair (barely adequate) job	_____	_____	_____
d. The manager did a poor job.	_____	_____	_____
e. The manager did a very poor job.	_____	_____	_____

27. How would you rate the performance of the shelter manager in regard to human relations in the shelter? (Human relations refers to maintaining motivation and morale, seeing to it that social standards are upheld, etc.) Place a checkmark alongside the answer that best describes the human relation performance of each manager. NOTE: If there was only one manager in the shelter, place your checkmark in the column titled "First Shelter Manager."

	<u>First Shelter Manager</u>	<u>Second Shelter Manager</u>	<u>Third Shelter Manager</u>
a. The manager did an excellent job.	_____	_____	_____
b. The manager did a good job.	_____	_____	_____
c. The manager did a fair (barely adequate) job.	_____	_____	_____
d. The manager did a poor job.	_____	_____	_____
e. The manager did a very poor job.	_____	_____	_____

28. During the exercise, did any unplanned events, situations, or incidents pertaining to technical operations arise that would have created management problems under conditions of actual shelter occupancy?

1() Yes

2() No

a. If Yes, describe:

29. During the exercise, did any unplanned events, situations, or incidents pertaining to human relations in the shelter arise that would have created management problems under conditions of actual shelter occupancy?

1() Yes

2() No

a. If Yes, describe:

30. In your opinion, what are the essential qualities, characteristics, or skills that a person must have in order to be an effective shelter manager? (List only those factors that you consider absolutely essential.)

31. If you were teaching a course of the type you are now taking, would you make any changes in the shelter exercise associated with that course?

1() Yes

2() No

a. If Yes, describe the changes:

ADDITIONAL NOTES AND COMMENTS

Course Title: _____

Date(s): _____

Where Taught: _____
(City or Town) (State)

Taught by: _____
(Organization and/or School)

(Organization and/or School)

INSTRUCTOR'S DATA FORM

EXERCISE DESCRIPTION

1. How many class hours (excluding the shelter exercise) did the course consist of? _____ hours.

2. How many class hours were held prior to the exercise? _____ hours.

3. How many hours did the shelter stay actually last? _____ hours.

4. When did the exercise begin and end?

(a) Began: _____ (date/time) (b) Ended: _____ (date/time)

(c) NOTE: If the shelter stay was divided into two or more separate time periods, check here _____. On page 12, ADDITIONAL NOTES AND COMMENTS, describe how the exercise was divided.

DESCRIPTION OF SHELTER USED IN EXERCISE

5. What is the status of the exercise shelter?

1() For training use only 2() Actual marked or stocked shelter

6. Where was the exercise shelter located?

1() Above ground 2() Below ground 3() Ground level

7. Did the exercise shelter consist of a single area or multiple areas (e.g., separate rooms, floors, or areas separated by barriers)?

1() Single area 2() Multiple areas

a() If multiple areas, how many? _____ areas.

8. On page 12, ADDITIONAL NOTES AND COMMENTS, draw a rough sketch of the exercise shelter, indicating the dimensions (length, width, height) of the area(s) used for the exercise.

SHELTER OCCUPANTS

- | | <u>Students</u> | <u>Instructors/
Observers</u> | <u>Others (see
footnote)</u> |
|---|-----------------|-----------------------------------|----------------------------------|
| 9. How many people were in the shelter when the exercise began? | _____ | _____ | _____ |
| 10. What was the maximum shelter population during the exercise? | _____ | _____ | _____ |
| 11. How many people were in the shelter when the exercise ended? | _____ | _____ | _____ |
| 12. Did anyone leave the shelter before the exercise was completed for any reason that was not part of the exercise plan? 1() Yes 2() No | | | |
| a. If Yes, describe who left, and the reason(s) for leaving. _____ | | | |
| _____ | | | |
| _____ | | | |
| 13. How many males and females in each age category were in the shelter at the time of maximum population? | | | |

	12 yrs. of age & under	13-20	21-59	60 & over	Total
Male					
Female					

Footnote: "Others" refers to additional persons introduced for the exercise, such as family, friends, members of the local community.

CONDITION AND USE OF OCD SUPPLIES

If there was a problem with the condition or use of any OCD supply item, write the appropriate letter(s) from the legend below in the column titled "Problem Type." Briefly describe the problem in the "Problem Description" column. If there were no problems with a particular OCD supply item, place a checkmark in the "Problem Type" column.

LEGEND OF PROBLEM TYPES

Condition Problems

- a. Missing items
- b. Poor quality items
- c. Poorly or incorrectly packaged items
- d. Wrong items supplied
- e. Damaged or inoperable items
- f. Damaged containers
- g. Other (describe)

Use Problems

- h. Preparation/setting up problems
- i. Rationing/apportionment problems
- j. Distribution problems
- k. Shelteree acceptance problems
- l. Storage/disposal problems
- m. Other (describe)

Supply Item	Problem Type (indicate by letter)	Problem Description
14. Cereal ration--check which was used: 1() Bulgur wafer 2() Wheat biscuit 3() Wheat-corn cracker		
15. Carbohydrate supplement		
16. Water drums and contents		
17. Sanitation kits		
18. Medical kits		
19. Radiological kits		

NON-OCD EQUIPMENT AND SUPPLIES (NOT FEDERALLY PROVIDED)

Identify the non-OCD items that were inside the shelter or in its immediate vicinity, **AND** that were available for use during the exercise. For the "Item Source" column, check the "N" column if the item is part of the normal supplies of the building or shelter. Check the "E" column if the item was introduced for exercise purposes only. If any of the items created a problem during the exercise, briefly describe the problem in the last column.

Equipment/ Supply Type	Items Available for Exercise Use	Item Source		Description of Equipment or Supply Problem
		N	E	
20. Communication Equipment				
21. Ventilation Equipment				
22. Atmosphere/ Temperature Measuring Devices				
23. Lighting Equipment				
24. Auxiliary Power Equipment				

NON-OCD EQUIPMENT AND SUPPLIES (continued)

Equipment/ Supply Type	Items Available for Exercise Use	Item Source		Description of Equipment or Supply Problem
		N	E	
25. Non-OCD Food and Water Supplies				
26. Non-OCD Medical Supplies				
27. Non-OCD Sanitation Facilities				
28. Sleeping Facilities				
29. In-Shelter Training Materials				
30. Recreation & Religious Materials				
31. Other: _____ _____ _____				

MULTI-PURPOSE USE OF SUPPLIES

32. Were there any instances during the exercise where OCD supplies were effectively used for purposes other than those for which they were intended?

1() Yes

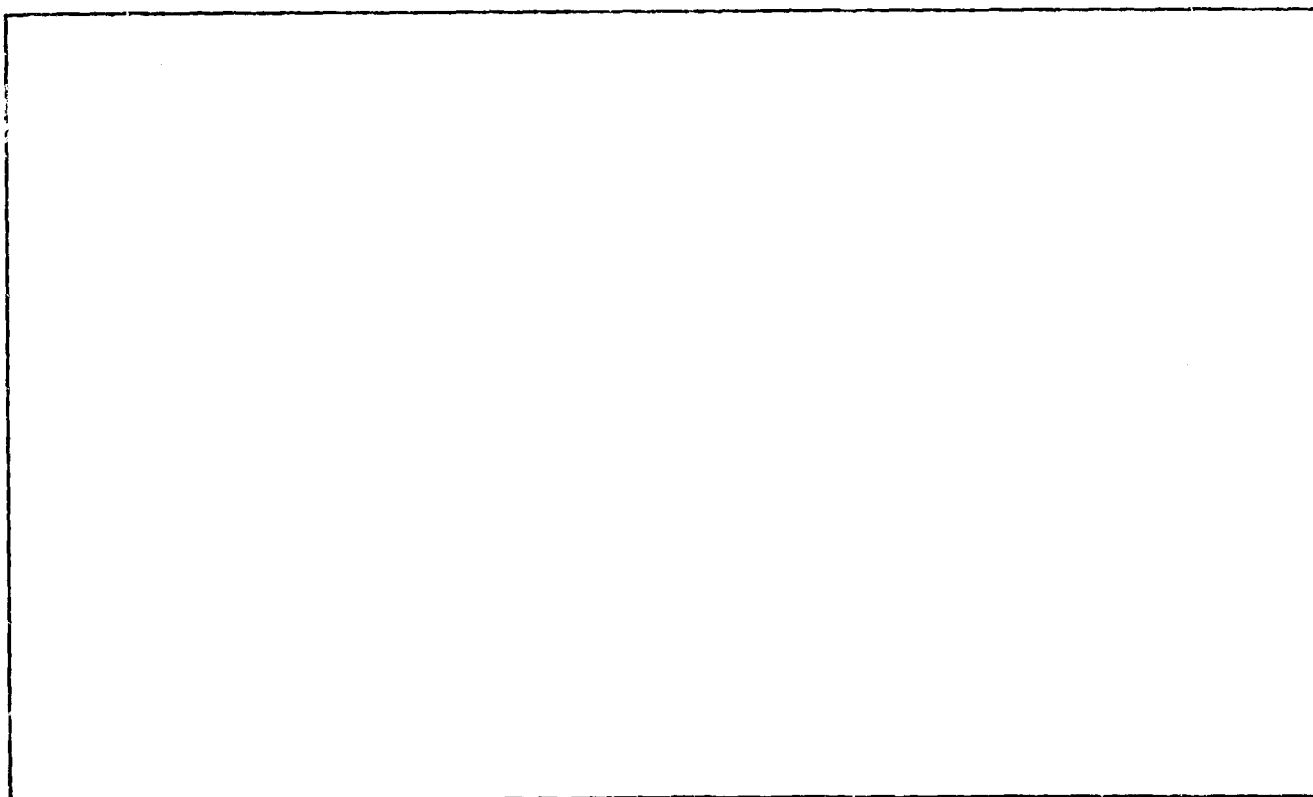
2() No

a. If yes, describe:

Supply Item	Improvised Use

SHELTER ORGANIZATION

33. Sketch a chart of the shelter organization, indicating: (a) management positions, (b) population groups (e.g., units, sections), (c) functional groups (e.g., RADEF team, food and water team). Also, write in the number of people in each group on the chart.



34. Was a formal schedule of shelter activities developed and used?

1() Yes

2() No

a. If Yes, please attach a copy of the schedule, if available.

35. Which of the following records were actually used (not just demonstrated) during the shelter exercise?

1() Shelter log

5() Shelteree diaries

2() Communications (message) log

6() Radiation log

3() Registration forms

7() None

4() Medical log

8() Other (describe): _____

EXERCISE SCENARIO

36. Were simulated shelter "emergencies" introduced into the exercise?

1() Yes

2() No

a. If Yes, describe below any simulated "emergencies" that were outstandingly effective or particularly ineffective in terms of the objectives of the exercise. If there were no such cases, write "none" below.

Effective or Ineffective Emergencies	Reasons for Effectiveness or Ineffectiveness

37. Were "messages from the outside" (e.g., from control centers, seats of government) introduced into the shelter? 1() Yes 2() No

a. If Yes, describe below any messages that were outstandingly effective or particularly ineffective in terms of the objectives of the exercise. If there were no such messages, write "none" below.

Effective or Ineffective Messages	Reasons for Effectiveness or Ineffectiveness

38. What was the source of the materials for the "emergencies" and "outside messages" used in the scenario?

1() OCD Instructor Guide IG.1.

2() OCD Training Center → Which one? _____

3() CDUEP staff member.

4() Other (explain): _____

NOTE: If copies of scenario items (messages, radiation levels, etc.) are available and have not been previously submitted, please include them with the completed data form.

39. Was the exercise run on normal clock time or on simulated scenario time?

1() Clock

2() Scenario time

a. If on scenario time, what was the total duration of time simulated in the occupancy exercise? _____

SHELTER MANAGEMENT

40. How many persons took the role of shelter manager? (Do not include assistants who only relieved the shelter manager for short periods of time.)

1() One 2() Two 3() Three 4() More than three → How many? _____

If there was only one manager, place your answers to questions 41-43 under the column "First Manager."

	<u>First Manager</u>	<u>Second Manager</u>	<u>Third Manager</u>
41. Who was selected as manager?			
1. A member of the instructional staff	_____	_____	_____
2. A student, selected by the instructional staff	_____	_____	_____
3. A student, selected by other students	_____	_____	_____
4. A student volunteer	_____	_____	_____
5. Other (explain): _____	_____	_____	_____

	<u>First Manager</u>	<u>Second Manager</u>	<u>Third Manager</u>
42. What was the basis for selection of this person?			
1. Experience and skills	_____	_____	_____
2. Random selection	_____	_____	_____
3. Selected so that a special teaching or research point might be made (explain): _____	_____	_____	_____
4. Other (explain): _____	_____	_____	_____

	<u>First Manager</u>	<u>Second Manager</u>	<u>Third Manager</u>
43. When was this person selected?			
1. Before the course began	_____	_____	_____
2. After the course began, but before the exercise	_____	_____	_____
3. After the exercise began	_____	_____	_____

Answer questions 44-48 only if one or more of the shelter managers was a student. If no student was a shelter manager, skip to question 49.

44. Check the one description that most closely fits the manner in which each student shelter manager performed.

	<u>First Student Manager</u>	<u>Second Student Manager</u>	<u>Third Student Manager</u>
1. He was involved in all major decisions, and often personally implemented them; he often bypassed the chain of command to get right at the issues. He was always in the middle of things, demonstrating procedures, and generally serving as a model for shelteree behavior.	_____	_____	_____
2. He allowed the shelterees to arrive at a consensus, insofar as feasible, and then utilized his authority to implement the will of the shelterees. He may have been as "strong" a leader as the authoritative one, but he limited his role and allowed the group to reach its own decisions.	_____	_____	_____
3. He allowed the processes of "shelter government" to operate without his direct intervention, unless called for in an emergency. He may have been a "behind-the-scenes" type administrator who doesn't relish the limelight, or a person who wasn't too keen about the job.	_____	_____	_____
4. Other (describe): _____			

45. How would you rate the performance of the student manager insofar as the technical operations of the shelter are concerned? (Technical operations refers to shelter activities such as feeding, medical care, sanitation, and the like.) Place a checkmark alongside the answer that best describes the technical performance of each student manager.

	First Student Manager	Second Student Manager	Third Student Manager
1. The manager did an excellent job.	_____	_____	_____
2. The manager did a good job.	_____	_____	_____
3. The manager did a fair (barely adequate) job.	_____	_____	_____
4. The manager did a poor job.	_____	_____	_____
5. The manager did a very poor job.	_____	_____	_____

46. During the exercise, did any unplanned events, situations, or incidents pertaining to technical operations arise that would have created management problems under conditions of actual shelter occupancy?

1 () Yes

2 () No

- a. If Yes, describe:

47. How would you rate the performance of the student manager in regard to human relations in the shelter? (Human relations refers to maintaining motivation and morale, seeing to it that social standards are upheld, etc.) Place a checkmark alongside the answer that best describes the human relation performance of each manager.

	First Student Manager	Second Student Manager	Third Student Manager
1. The manager did an excellent job.	_____	_____	_____
2. The manager did a good job.	_____	_____	_____
3. The manager did a fair (barely adequate) job.	_____	_____	_____
4. The manager did a poor job.	_____	_____	_____
5. The manager did a very poor job.	_____	_____	_____

48. During the exercise, did any unplanned events, situations, or incidents pertaining to human relations in the shelter arise that would have created management problems under conditions of actual shelter occupancy?

1() Yes

2() No

a. If Yes, describe:

49. Were there any special background characteristics of the shelter population (i.e., any factors that would lead one to consider this group different from a "normal" shelter group) that were relevant to shelter management? An example of relevant characteristics might include hospital patients as shelterees, large numbers of children, aged, etc.

1() Yes

2() No

a. If Yes, describe:

TRAINING

50. Were training sessions (either formal classroom sessions or in-shelter training and orientation) conducted during the occupancy exercise?

1() Yes

2()

a. If Yes, how many hours? _____ hours.

51. How many students attending the course associated with this exercise were certified in the following subjects?

SMI _____ SM _____ RMI _____ RM _____

Other (identify): _____

ADDITIONAL NOTES AND COMMENTS

INSTITUTE FOR PERFORMANCE TECHNOLOGY
AMERICAN INSTITUTES FOR RESEARCH

[PT]

Date

Dear _____:

The American Institutes for Research (AIR), under contract to the Office of Civil Defense, is conducting a project to collect, analyze, and evaluate data from occupancy training exercises, with special emphasis on exercises conducted under the Civil Defense University Extension Program.

A previous study by AIR investigated the research potential of the occupancy training exercise. A large majority of universities doing civil defense training filled out prototype data forms as part of that study. Both the Instructor's Data Form and Student Questionnaires are intended to be filled out after a training occupancy exercise. Each form takes an average of 20 minutes to complete.

This project creates the opportunity to collect valuable data on a wide variety of shelter-related subjects from all sections of the country. Its success is heavily dependent upon the cooperation of the universities. We ask you, therefore, to fill out the Instructor's Data Form after each occupancy exercise, and see to it that the students fill out their questionnaires after or towards the end of the exercise, but prior to any debriefing session. The completed forms should be returned to AIR in the envelopes provided for that purpose.

Our data collection and analysis plans have been discussed with Dr. James I. Ridgeway, Director of Training and Education, Office of Civil Defense, who has approved our request for your cooperation.

Sincerely yours,

James W. Altman
Director

JWA:cm

Enclosures

INSTITUTE FOR PERFORMANCE TECHNOLOGY
AMERICAN INSTITUTES FOR RESEARCH

IPC

Date

Gentlemen:

On September 27, the American Institutes for Research sent a package of questionnaires and supporting information to all institutions of higher learning offering CDUEP courses. This was done as part of an OCD sponsored research study dealing with the collection, storage and retrieval of habitability data derived from shelter exercises. As stated in our earlier letter, the project in its first stages will depend largely upon CDUEP data.

Since the original mailing, a substantial number of CDUEP staffs have indicated their interest in the project, and have submitted completed data forms. However, replies have not been received from all universities. In addition to reminding you of our dependence upon data from CDUEP, we would like to discover, if possible, the reasons why some universities have not as yet responded. For those who have submitted forms, we would like to hear any comments or questions you might have.

Please take note of our new address, as indicated on the enclosed card. If you happen to be in the Pittsburgh area, we'd like to show you our new building, and discuss civil defense training issues with you.

Sincerely,

Emil Bend
Associate Program Director
Social Systems Program

EB:cm

Enclosure

OCCUPATIONAL CODES LIST

Higher Executives, Proprietors of Large Concerns, and Major Professionals

Higher Executives:

- 101 Bank Presidents; Vice-Presidents
- 102 Judges (Superior Courts)
- 103 Large Businesses, e.g., Directors
Presidents, Vice-Presidents,
Executive Secretary, Treasurer,
Assistant Vice-Presidents
- 104 Military, Comm. Officers, Major and Above
- 105 Officials of the Executive Branch of Government,
Federal, State, Local, e.g., Mayor, City Manager,
City Planning Director, Internal Revenue Directors.
- 106 Research Directors, Large Firms

Proprietors of Large Concerns:

- 111 Brokers
- 112 Contractors
- 113 Dairy Owners
- 114 Lumber Dealers

Major Professionals:

- | | |
|--|---|
| 120 Accountants (C.P.A.) | 132 Economists |
| 121 Actuaries, Registrars | 133 Engineers (College Graduate) |
| 122 Agronomists | 134 Foresters |
| 123 Architects | 135 Geologists |
| 124 Artists, Portrait | 136 Lawyers |
| 125 Astronomers | 137 Metallurgists |
| 126 Auditors | 138 Physicians |
| 127 Bacteriologists | 139 Physicists, Research |
| 128 Chemical Engineers | 140 Psychologists, Practicing |
| 129 Chemists | 141 Symphony Conductor |
| 130 Clergymen (professionally trained) | 142 Teachers, University, College |
| 131 Dentists | 143 Veterinarians (Veterinary Surgeons) |

Business Managers, Proprietors of Medium Sized Businesses, Lesser Professionals

Business Managers:

- | | |
|---|--------------------------------------|
| 201 Advertising Directors | 209 Office Managers |
| 202 Branch Managers | 210 Personnel Managers |
| 203 Brokerage Salesmen | 211 Police Chief; Sheriff |
| 204 District Managers | 212 Postmaster |
| 205 Executive Assistants | 213 Production Managers |
| 206 Export Managers, Int. Concern | 214 Sales Engineers |
| 207 Government Officials, minor, e.g.,
Internal Revenue Agents | 215 Sales Managers, National Concern |
| 208 Farm Managers | 216 Store Managers |

Proprietors of Medium Sized Businesses:

221	Advertising Owners	229	Manufacturer's Representatives
222	Clothing Store Owners	230	Poultry Business
223	Contractors	231	Purchasing Managers
224	Express Company Owners	232	Real Estate Brokers
225	Fruits, Wholesale	233	Rug Business
226	Furniture Business	234	Store Owners
227	Jewelers	235	Theater Owners
228	Labor Relations Consultants		

Lesser Professionals:

240	Accountants (Not C.P.A.)	249	Military, Comm. Officers, Lts, Capt.
241	Chiropodists	250	Musicians (Symphony Orchestra)
242	Chiropractors	251	Nurses
243	Correction Officers	252	Opticians
244	Director of Community House	253	Pharmacists
245	Engineers (Not college grads.)	254	Public Health Officers (M.P.H.)
246	Finance Writers	255	Research Assistants, University
247	Health Educators	256	Social Workers
248	Librarians	257	Teachers, Elementary and High School

Administrative Personnel, Small Independent Businesses, Minor Professionals

Administrative Personnel:

301	Advertising Agents	309	Sales Representatives
302	Chief Clerks	310	Section Heads; Federal, State, Local Government
303	Credit Managers	311	Section Heads; Large Business, Indus.
304	Insurance Agents	312	Service Managers
305	Managers, Department Stores	313	Shop Managers
306	Passenger Agents -- R.R.	314	Store Managers (Chain)
307	Private Secretaries	315	Traffic Managers
308	Purchasing Agents		

Small Independent Businesses:

320	Art Gallery	339	Jewelry
321	Auto Accessories, Garage	340	Machinery Brokers
322	Awnings	341	Manufacturing
323	Bakery	342	Monuments
324	Beauty Shop	343	Package Store (Liquor)
325	Boatyard	344	Clothing, Dry Goods
326	Brokerage, Insurance	345	Coal Business
327	Car Dealers	346	Contracting Business
328	Cigarette Machines	347	Concocting Homes
329	5¢ and 10¢	348	Decorating
330	Florist	349	Dog Supplies
331	Food Equipment, Products	350	Engraving Business
332	Foundry	351	Finance Company, Local
333	Furniture	352	Fire Extinguishers
334	Gas Station	353	Painting, Contracting
335	Glassware	354	Plumbing
336	Grocery - General	355	Poultry Producers
337	Hotel Proprietors	356	Publicity and Public Relations
338	Instructors of Music	357	Real Estate

Small Independent Businesses (contd):

358	Records and Radios	364	Tire Shop
359	Restaurant, Tavern	365	Trucking
360	Roofing Contractor	366	Trucks and Tractors
361	Shoe	367	Upholstery
362	Signs	368	Wholesale Outlets
363	Taxi Company	369	Window Shades

Minor Professionals:

370	Actors and Showmen	383	Oral Hygienists
371	Army, M/Sgt.: Navy, C.P.O.	384	Photographers
372	Artists, Commercial	385	Physio-therapists
373	Appraisers (Estimators)	386	Piano Teachers
374	Clergymen (Not professionally trained)	387	Radio, T.V. Announcers
375	Concern Managers	388	Reporters, Court
376	Deputy Sheriffs	389	Reporters, Newspaper
377	Dispatchers, R.R. Train	390	Surveyors
378	Interior Decorators	391	Title Searchers
379	Interpreters, Court	392	Tool Designers
380	Laboratory Assistants	393	Travel Agents
381	Landscape Planners	394	Yard Masters, R.R.
382	Morticians		

Clerical and Sales Workers, Technicians, Owners of Little Businesses

Clerical and Sales Workers:

400	Bank Clerks and Tellers	409	Factory Supervisor
401	Bill Collectors	410	Post Office Clerks
402	Bookkeepers	411	Route Managers
403	Business Machine Operators, Offices	412	Sales Clerks
404	Claims Examiners	413	Shipping Clerks
405	Clerical or Stenographic	414	Supervisors, Utilities, Factories
406	Conductors, R.R.	415	Toll Station Supervisors
407	Employment Interviewers	416	Warehouse Clerks

Technicians:

420	Dental Technicians	430	Operators, P.B.X.
421	Draftsment	431	Proofreaders
422	Driving Teachers	432	Safety Supervisors
423	Expeditor, Factory	433	Supervisors of Maintenance
424	Experimental Tester	434	Technical Assistants
425	Instructors, Telephone Co., Factory	435	Telephone Company Supervisors
426	Inspectors, Weights, Sanitary	436	Timekeepers
	Inspectors, R.R.; Factory	437	Tower Operators, R.R.
427	Investigators	438	Truck Dispatchers
428	Laboratory Technicians	439	Window Trimmers (Store)
429	Locomotive Engineers		

Owners of Little Businesses:

440	Flower Shop
441	Newsstand
442	Tailorshop
450	Farm Owners

Skilled Manual Employees

500	Auto Body Repairers	540	Electricians
501	Bakers	541	Electrotypists
502	Barbers	542	Engravers
503	Blacksmiths	543	Exterminators
504	Bookbinders	544	Fitters, Gas, Steam
505	Boilermakers	545	Firemen, City
506	Brakeman, R.R.	546	Firemen, R.R.
507	Brewers	547	Foremen, Construction, Dairy
508	Bulldozer Operators	548	Gardeners, Landscape (Trained)
509	Butchers	549	Glassblowers
510	Cabinet Makers	550	Glaziers
511	Cable Splicers	551	Gunsmiths
512	Carpenters	552	Gauge Makers
513	Casters (Founders)	553	Hair Stylists
514	Cement Finishers	554	Heat Treaters
515	Cheese Makers	555	Horticulturists
516	Chefs	556	Lineman, Utility
517	Compositors	557	Linoleum Layers (Trained)
518	Diemakers	558	Linotype Operators
519	Diesel Engine Repair, Maintenance (trd)	559	Lithographers
520	Diesel Shovel Operators	560	Locksmiths
521	Machinists (Trained)	561	Loom Fixers
522	Maintenance Forement	562	Repairmen, Home Appliances
523	Installers, Electrical Appliances	563	Rope Splicers
524	Masons	564	Sheetmetal Workers (Trained)
525	Masseurs	565	Shipsmiths
526	Mechanics (Trained)	566	Shoe Repairmen (Trained)
527	Millwrights	567	Stationary Engineers (Licensed)
528	Moulders (Trained)	568	Stewards, Club
529	Painters	569	Switchmen, R.R.
530	Paperhangers	570	Tailors (Trained)
531	Patrolmen, R.R.	571	Teletype Operators
532	Pattern and Model Makers	572	Toolmakers
533	Piano Builders	573	Track Supervisors, R.R.
534	Piano Tuners	574	Tractor-Trailor Trans.
535	Plumbers	575	Typographers
536	Policemen, City	576	Upholsters (Trained)
537	Postmen	577	Watchmakers
538	Printers	578	Weavers
539	Radio, T.V. Maintenance	579	Welders
		580	Yard Supervisors, R.R.

Small Farmers:

590	Owners (Under \$10,000)
591	Tenants who own farm equipment

Machine Operators and Semi-Skilled Employees

600	Aides, Hospital	620	Hairdressers
601	Apprentices, Electricians, Printers	621	Housekeepers
	Steamfitters, Toolmakers	622	Meat Cutters and Packers
602	Assembly Line Workers	623	Meter Readers
603	Bartenders	624	Operators, Factory Machines
604	Bingo Tenders	625	Oilers, R.R.
605	Bridge Tenders	626	Practical Nurses
606	Building Superintendents, Custodians	627	Pressers, Clothing
607	Bus Drivers	628	Pump Operators
608	Checkers	629	Receivers and Checkers
609	Coin Machine Fillers	630	Roofers
610	Cooks, Short Order	631	Set-up Men, Factory
611	Delivery Men	632	Shippers
612	Dressmakers, Machine	633	Signalmen, R.R.
613	Elevator Operators	634	Solderers, Factory
614	Enlisted Men, Military Service	635	Sprayers, Paint
615	Filers, Benders, Buffers	636	Steelworkers (Not Skilled)
616	Foundry Workers	637	Stranders, Wire Machines
617	Garage and Gas Station Assistants	638	Strippers, Rubber Factory
618	Greenhouse Workers	639	Taxi Drivers
619	Guards, Doorkeepers, Watchmen	640	Testers
641	Timers	647	Welders, Spot
642	Tire Moulders	648	Winders, Machine
643	Trainmen, R.R.	649	Wiredrawers, Machine
644	Truck Drivers, General	650	Wine Bottlers
645	Waiters - Waitresses	651	Wood Workers, Machine
646	Weighers	652	Wrappers, Stores and Factory
660	Smaller Tenant Farmers who own little equipment		

Unskilled Employees

- | | |
|--|-------------------------------|
| 700 Amusement Park Workers (Bowling
Alleys, Pool Rooms) | 721 Laborers, Construction |
| 701 Ash Removers | 722 Laborers, Unspecified |
| 702 Attendants, Parking Lots | 723 Laundry Workers |
| 703 Cafeteria Workers | 724 Messengers |
| 704 Car Cleaners, R.R. | 725 Miner, General |
| 705 Car Helpers, R.R. | 726 Platform Men, R.R. |
| 706 Carriers, Coal | 727 Peddlers |
| 707 Counter men | 728 Porters |
| 708 Dairy Workers | 729 Roofer's Helpers |
| 709 Deck Hands | 730 Shirt Folders |
| 710 Domestics | 731 Shoe Shiners |
| 711 Farm Helpers | 732 Sorters, Rag and Salvage |
| 712 Fishermen (Clam Diggers) | 733 Statehands |
| 713 Freight Handlers | 734 Stevedores |
| 714 Garbage Collectors | 735 Stock Handlers |
| 715 Grave Diggers | 736 Street Cleaners |
| 716 Hod Carriers | 737 Unskilled Factory Workers |
| 717 Hog Killers | 738 Truckmen, R.R. |
| 718 Hospital Workers, Unspecified | 739 Washers, Car |
| 719 Hostlers, R.R. | 740 Window Cleaners |
| 720 Janitors, Sweepers | 741 Woodchoppers |
- 750 Relief, Public, Private, (DPW, PA)
- 760 Unemployed (No Occupation)
- 770 Sharecroppers

Miscellaneous

- 800 Housewife
- 810 Student

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13. ABSTRACT <p>The purpose of this project was to collect and analyze habitability data from Civil Defense University Extension Program (CDUEP) school exercises. As initially defined, the data were to include: (1) information related to experimental manipulations, where introduced into the exercises, (2) background information on participating students, and (3) other data related to the occupancy exercises (supplies and equipment, general feelings about the experience, and management data).</p> <p>Two data collection instruments were developed, both self-administering; one for the students and one for the instructor of the course.</p> <p>Procedures were developed for coding this data and entering codes onto punched IBM cards for later transference to magnetic tape for purposes of ultimate storage and analysis. Marginal distributions for student and instructor questionnaire data are exhibited in table form and discussed. Selected cross tabulations are exhibited and discussed. Suggested ideas for future research are listed.</p>		

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