This report describes shelter occupancy experiments designed to investigate shelter management problems involving shelteree needs and responses, control of the shelter environment, shelter oganization and the operation of shelter ventilation equipment. Evaluations were accomplished through three shelter occupancy tests in which the materials under study were utilized by people inexperienced with Civil Defense emergency procedures. In each test GARD observers noted shelter management problems resulting from the simulated emergency conditions.

The equipment utilized in the test sessions was developed by GARD under SRI Subcontract No. 11616(6300-A180), Task Order 1423A and OCD Contract No. DAHC 20-68-C-O123, Task Order 1423D, The 36" pedal ventilator (PV), evaluated for shelteree ease of recognition, assembly, deployment and operation under simulated emergency conditions in TEST 0NE, was subsequently modified to include reduction of the fan diameter to 30 inches. The PV was also modified further after TESTS TWO and THREE based upon design recommendations from these tests.

Other equipment evaluated included a four-man pedal-operated ventilator similar to the one-man PV and upright, doorway, and A-frame Kearny pump ventilator (KPs) which are arm-powered air-moving devices. These were tested in the same manner as the PV. Resulting recommendations included minor design modifications to the A-frame and doorway KPs. The upright Kearny and the four-man ventilator were dropped from further consideration.

The instruction material provided in the ventilator kits to show the correct sequence of tasks to be followed was tested also. Modifications in the booklet resulted from each test. The final version based on the results of all three tests is included in Appendix E of this report.

Also evaluated in the test series was the adequacy of alerting devices used to inform shelterees of the hazards that exist. Wall signs and packaging messages as alerting devices were tested for their ability to initiate proper action.

Finally, shelteree organization was studied to determine the effects of management structures within the participating group of subjects. Resulting recommendations included the addition of an organizational directive to the instruction manual.