Curriculum suggestions for the teaching of civil defense in the schools of Montana

Annette Jean Thomson

The University of Montana

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CURRICULUM SUGGESTIONS
FOR THE TEACHING OF CIVIL DEFENSE
IN THE SCHOOLS OF MONTANA

by

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B. A. Billings Polytechnic College, 1945

Presented in partial fulfillment of the
requirements for the degree of
Master of Education

MONTANA STATE UNIVERSITY
1958

Approved by:

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Chairman, Board of Examiners

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Dean, Graduate School

AUG 22 1958
Date
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CHAPTER I

INTRODUCTION

For several years, the question of training all the population in civil defense practices has received wide publicity in magazines, newspapers, radio, and television, lectures and movies. The importance of the subject is recognized.

Many states, under the leadership of the Federal Civil Defense Administration, have considered ways and means to fit into the educational programs suggestions for plans of a local nature and importance.

Definition of Terms. (1) Civil Defense: All activity measures designed or undertaken to minimize the effects upon civilian populations caused by an attack upon the United States; to deal with emergencies, emergency repairs to vital facilities, and the recruitment and training of personnel for anticipated attack; measures to be taken during an attack; measures to be taken following an attack and other classes as described by Public Law, United States Statutes at Large, 81st Congress, Part I,

(2) Functional Defense: relates to a keen sense of interdependence and group solidarity; a broad understanding of interpersonal responsibilities; a broad knowledge of world policies and politics, modern scientific and social problems, and a development of skills to meet dangers and tensions of emergency situations.¹

The Problem. This study presented four problems: (1) to become informed concerning an educational background for a training program on a national basis; (2) to make a comparative survey of civil defense for schools as found in state courses of study, handbooks, and bulletins of the nation and the territories; (3) to compare Montana's achievement in this field with the work of other states and territories; and (4) to prepare a handbook of curriculum suggestions for the teaching of civil defense which could be used in the schools of Montana.

General Importance and Justification of the Problem. One of the greatest problems facing the United States today is to achieve world peace while we are under a constant threat of war. Teachers are aware of all the difficulties of the task facing them in these times of world misunderstanding and tension. Not only have they the opportunity of teaching youth how best to achieve this peace but also how to prepare for living fully and, at the same time, staying alive in today's world.

Any threat to our national and personal security makes it necessary to analyze the danger. In time of catastrophe, all avenues of strength must be enlisted. A nuclear war would mean a fight for survival of one race against another, one philosophy of life against another philosophy.

On the international level, the strained and uncertain
relationships among the nations of the world make one pause and consider causes and effects; makes one critical concerning our ability to remain safe. One becomes increasingly cognizant that if this America of ours is to be strong and survive, then a long range safety program for all persons should be instituted that would include the one big objective--SURVIVAL. Only by placing such courses in the schools can our citizens be adequately trained in civil defense. The curriculum, when disaster threatens, must assume the extra burden of developing those qualities needed in emergencies for self-help, self-protection, and self-preservation.

Purposes of the Study. Montana does not have a state plan for the teaching of civil defense techniques in the schools. It was felt that an instrument of some kind to guide teaching procedures in this field would be timely. The purposes of this study were (1) to become familiar with the suggestions of the Federal Civil Defense Administration's plans for schools through its three pilot studies and other printed source materials; (2) to compare many handbooks on civil defense to find what the various state departments of education had stressed; (3) to evaluate materials that seemed pertinent to the State of Montana from these representative samplings, and (4) to submit a handbook of suggested civil defense activities and demonstrations with a bibliography of source materials for teachers' use.
Delimitations of the Study. This study is limited to the development of suggestions of curriculum, mainly in the science and social science fields, that could be used for the teaching of civil defense in the schools of Montana. No assumption is made that this handbook will be accepted by the State Board of Education. Rather, it is planned to introduce and inform the general public of practical ways and means by which civil defense training and practices could be built into the present curriculum for state and national security. This has been done through careful study of new materials for curriculum making issued by the U.S. Department of Health, Education, and Welfare; The Federal Civil Defense Administration; The Pilot Studies from California, Connecticut, and Michigan, and twenty state Courses of Study.

The remainder of the study will consist of information and data taken from many sources of civil defense materials which have a bearing on curriculum planning for schools, (Chapter II); an overview of educational defense programs as found in other states, a study of the Federal Civil Defense Annual Reports for the comparative costs of civil defense for the nation, the regions, and the states; and the probable strength on Montana’s position, (Chapter III); Procedures, (Chapter IV); and Conclusions with Recommendations, (Chapter V).

The handbook entitled, Curriculum Suggestions for the Teaching of Civil Defense in the Schools of Montana, will be found in the Appendix.
CHAPTER II

SURVEY OF RELATED LITERATURE

A survey of the literature dealing with education for civil defense on all levels, shows wide scope of subject matter and gives many sources.

I. THE LEHIGH PROJECT

In June of 1952, the Federal Civil Defense Administration requested the Stanford Research Division to bring together in form useful for civil defense training, data and information on the impact of air attack during World War II from the records of the U.S. Strategic Bombing Survey (USSBS). In carrying out the project, "Civil defense was considered in the broad sense. It was to include all aspects of non-military defense."\(^1\)

The principal objective was to review a wide range of documents on the impact of air attack in World War II and to bring together the most relevant data, these data to be collected and assembled for use by the Federal Civil Defense Administration in planning and research


-5-
applicable for civil defense purposes. The second objective was to evaluate this vast body of materials.

These objectives were met by what is known as the Lehigh project. This project, based as it was on data and experiences, may be expected for years to come to form the bases for curriculum planning for classroom performance in all fields of study. The weight of importance is felt particularly in the fields of science and the social studies.

II. THE OFFICE OF CIVIL DEFENSE EDUCATION

January 24, 1955, S. M. Brownell, Commissioner of Education, notified the nation that the Office of Education was to be responsible for the planning, development and distribution of materials through appropriate channels in order "to integrate the teaching of defense skills, knowledge, and fundamentals of behavior in all possible subjects."²

At this time, Mr. Brownell announced that agreements had been reached with three state departments of education to establish pilot centers for the development of instructional materials at all levels in various subject areas. These pilot studies were to be prepared by

teachers, supervisors, administrators, and curriculum specialists in state and local schools.

The three state departments that contracted to work through committees, conferences and selected curriculum specialists were the State Departments of Education of Connecticut, Michigan, and California.

III. PILOT STUDIES

CURRICULUM GUIDE FOR EMERGENCY EDUCATION

The Connecticut Pilot Project in Civil Defense Education, Curriculum Guide for Emergency Education, 1956, was developed around five areas. The plan included kindergarten through grade twelve. The following titles are self-explanatory and indicate the scope of the subjects covered:

1. An understanding of the skills necessary for living in emergency situations.

2. A scientific understanding of the dangers we face in war time and natural disasters.

3. An understanding of the protection measures which have been developed to combat the effects of a disaster.

4. An understanding of the individual and his relation to disaster.
5. An understanding of the world issues which involve us in an emergency program.¹

The Connecticut State Department of Education thought it wise to offer practical suggestions to teachers concerning the preparation necessary to meet emergencies likely to occur during war or major disasters. This was to be done on all grade levels.

This guide does not try to indicate the unity that may exist between various fields of subject matter. Nor does it superimpose another area of content matter with little respect for the existing curriculum. Logically, the school must be the final judge, and the problem selected should reflect the needs of the people and the community.

CIVIL DEFENSE IN THE CLASSROOM

The Michigan State Department of Instruction, in conducting the pilot project under contract with the United States Department of Health, Education, and Welfare, worked with many teachers on the elementary and secondary level, educational experts and consultants from state and national bureaus, and representatives of state departments of education. Representatives from thirteen adjoining and neighboring states met with the Michigan Department of Instruction at Saulte Ste.

Marie, as a workshop, to give comments and suggestions. The publication, *Civil Defense in the Classroom*, was the result of this workshop.

The chapters in this handbook are entitled:

1. Education for National Security
2. Why Civil Defense?
3. Developing a Civil Defense Program in Your School and Community
4. Objectives of Instruction in Civil Defense
5. Civil Defense in the Elementary School
7. Civil Defense Education in College and Teacher Education Institutions
8. Summary

As these titles suggest, the first half of this handbook states reasons why civil defense training is needed and needed now, and the difficulties that are likely to be encountered by any community or committee in developing this type of program.

"Education for National Security," the first chapter in this handbook, gives the problems faced by the classroom teacher. Teachers

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have the responsibility to prepare a generation of youth who can achieve and maintain peace while about us the world represents tension and fear. Good will among men and nations may eventually eliminate the need of defense measures, but so far as is known, we must be able to cope with natural disaster. Today we are faced with the fact that at present and in the foreseeable future, there is the danger of an atomic attack. To preserve our civilization, our democratic way of life, we must recognize, as Americans have done in the past and throughout our history, any danger that threatens. We must plan how we may protect ourselves to survive these dangers.

The particular need for the Michigan study was to give the teacher a guide that would be consistent with the democratic philosophy of America and which would be forward looking in its efforts to meet the realities of present civil defense problems, "while still holding a healthy understanding of America's primary objective, world peace."5

Civil defense training for the emergency must be done within the framework of democratic principles. A successful civil defense program will only be successful when there is wide acceptance and participation of the people as they adhere to democratic principles. People will act willingly and most effectively when they understand the reasons for their actions. They want to have a part in the planning.

5Ibid., p. 11.
They want to accept the responsibility in carrying out what they plan. However, the individuality of the citizens and the individuality of each community must be maintained. Each community must set up its own program that best can meet its own needs as related to the larger framework of county, state, and national organizations.

Chapter III "Developing a Civil Defense Program in Your School and Community" considers the fact that one-fourth of the nation's population are enrolled in the nation's schools, and the largest segment of adult population can be reached through the school. Schools can channel information and encourage participation in millions of American homes. Parent-Teacher Associations can be reached through educators, the key person being the individual teacher. Each school system should have its own plan for improving instruction.

Regardless of the individual plan used, Michigan wishes three facts to be considered when developing a civil defense plan of training in the schools: (1) all teachers should accept civil defense as a part of the instructional program; (2) each school must have its own individual plan for civil defense; and (3) that community-wide programs of civil defense are in various stages of development; therefore, for the community in which no civil defense plan exists, school personnel must give the leadership to develop a functional, coordinated plan.\(^6\)

\(^{6}\)Ibid., p. 16.
In this case, the over-all objectives for the instructional plan would include: (1) finding, facing, filtering, and following the known facts about civil defense; (2) instilling ideas for protection and insurance against natural disasters; (3) strengthening our emotional and spiritual resources as bulwarks against fear; (4) including appropriate aspects of civil defense in the curriculum; and (5) demonstrating that civil defense can be planned and carried out in the democratic way. 7

"How to Get Started" and "Some Problems With Which School Staff and Community Will Be Faced" are sub-topics offered in Chapter III of the Michigan handbook as possible springboards from which to initiate a community civil defense educational plan. "How to Get Started" suggests (1) conferences of staff and community leaders; (2) use of the city, county, and state libraries; (3) use of curriculum committees of a school staff; (4) the assuming of responsibility of key persons and supervisory personnel; and (5) make use of all forms of communications to publicize and to stimulate the program.

Chapter V, "Civil Defense in the Elementary School," listed many topics that could be correlated with regular class work. When studying government, democratic and totalitarian ideologies could be compared; the concept of "One World" could be developed; the basic beliefs of our freedoms as compared with those of people other than

7 Ibid., p. 17.
ourselves could be investigated. Early American history lends itself readily to contrasts and comparisons with today's civil defense in time of emergency and stress. Food, clothing, shelters, the family and home, the total responsibility of the family in the total defense programs, struggles for independence, or the responsibilities of elected officials, all of these and practically every topic considered in the schools of today can find a counterpart in civil defense training, understandings, and concepts.

In similar manner, other suggestions are listed whereby the teacher can develop concepts and understandings: (1) the practice of health and safety, blood bank and blood derivatives, developing the use of leisure; (2) communications, Conelrad, function of the telephone, radio; (3) weather including fall-out and the development of atmospheric conditions that cause tornadoes, dust storms, blizzards, hurricanes, and floods; and (5) through the observances of the special days such as Armed Forces Day and Memorial Day, the American heritage would be strengthened.

In Chapter VI the subcommittee for secondary schools suggests that many items in chapter V could be included in a program for the high school. Because of the greater maturity of the high school students and because of the more specialized sources available to them, these students can be of help in gathering materials and in preparing themselves for active participation in school and community
civil defense programs. Among the facts and concepts which should be included in all civil defense instruction for high schools, Michigan lists the following headings as units:

1. The Student Should Understand World Issues Which Involve Us in an Emergency Program.
2. The Student Must Understand the Civil Defense Structure and Plan for His School and Know the Classification of His and Surrounding Communities.
3. The Student Must Know the Special Communications Systems.
4. The Student Must Know How to Behave in an Emergency Situation.
5. The Student Must Know What to do in Impending Disaster.
6. The Student Must Know the Elements of First Aid.
7. The Student Must Know About and Participate in the Self-Identification Effort.
8. The Student Must Know Self-protection Measures Under Conditions of Atomic and Chemical, and Biological Attack.®

SOME SUGGESTIONS FOR INTRODUCING CIVIL DEFENSE EDUCATION INTO THE SCHOOL CURRICULUM

The California Course of Study is the third of the pilot series of curriculum planning under contract with the United States Department of Health, Education, and Welfare. The various courses were developed along simple lines to show how the teaching of "civil defense skills,

®Ibid., pp. 23-32.
knowledge, and fundamentals of behavior during emergencies in all possible subjects" could be superimposed on existing curriculum without great change or expense.9

The plan for incorporating this course into this study lies mainly in the science and the social science areas. The emphasis of the foundational work rests mainly on grades 4, 7, 9, or 10 and 12. This structuring of the curriculum at these levels would permit all subject matter learned previously in preceding grades to be drawn together. As the child would grow older, the training would intensify at each new level to more detailed and advanced work in civil defense.

This pilot study is an intensive document for the training of skills and knowledge, for self-help and self-protection, for character building and individual responsibility.

"Making the Problems of Civil Defense Seem Real To Students and Teachers, Grades 4 to 9, in California Schools," written by Oreon Kessler, Coordinator of Secondary Education in Santa Clara County, submits plans for dealing with natural disasters and subjects pertaining to war and nuclear weapons.

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Some Suggestions for Introducing Civil Defense Education into the School Curriculum, discusses the following subjects at length:

1. Disaster Preparedness for the Junior High School
2. Physical Education and Civil Defense
3. Teaching Protection from Radioactive Fall-out
4. Principle Underlying the Teaching of Civil Defense in Schools
5. A Suggested Method of Incorporating a Study of Civil Defense into the Social Studies Courses on Community Living or Local Government
6. Civil Defense Education in the Senior High School and Junior College.¹⁰

The chapter "Suggestions to Aid Curricular Planning in Civil Defense" by B. Frank Gillette and J. R. Haworth was written:

to provide a district or a school committee on curriculum with a basic scheme of allocation . . . this scheme to serve chiefly as a point of reference in plotting the educational job locally. It is intended . . . as a basic checklist for insuring that the major facets of civil defense are provided for in the curriculum.¹¹


¹¹Ibid., p. 1.
Grade levels are indicated. Suitable civil defense materials are chosen for subject matter according to grade levels and appropriate age. "Concepts and Understandings" and "Skills and Habits and Evaluation" conclude an article for thoughtful study to the group contemplating the building of a curriculum of civil defense for the schools of the nation.

**EDUCATION FOR NATIONAL SURVIVAL, A HANDBOOK ON CIVIL DEFENSE FOR SURVIVAL**

The fourth in the series of Pilot Studies is a compilation of:

proposals and experiences of school administrators, curriculum coordinators, teachers, and others in the three State pilot centers of California, Connecticut, and Michigan in co-operation with the Office of Education.\(^{12}\)

To these programs have been added many details on procedures and information from the files of the United States military. This handbook will become an essential part of the development of a practical school protection program. Its primary purpose is to "alert and enlighten children, youth, and adults to the need for being prepared to

meet natural, man-made disasters and to minimize their serious consequences.\textsuperscript{13}

*Education for National Survival*, a handbook on civil defense for schools, was prepared by the Federal Civil Defense Administration for the Department of Health, Education, and Welfare Office of Education. It contains information and suggestions for school administrators and teachers in planning a protective program that is essential in school for defense efforts as part of the national plan for civil defense preparedness.\textsuperscript{14}

**IV. STATE COURSES OF STUDY ON CIVIL DEFENSE**

Twenty states were contacted concerning their programs for the teaching of civil defense in the schools. The states chosen for comparison and study fell into three categories: (1) those that bordered Montana; (2) those whose defense would probably be similar to those of Montana; and (3) those having strategic positions making defense an immediate problem of urgency. Some of these states had several handbooks on different aspects of defense for schools.

The states that responded with handbooks for civil defense training in the schools were: Arizona, California, Colorado, admirably.

\textsuperscript{13}Ibid., p. iii.

\textsuperscript{14}Ibid., p. iii.
Connecticut, Delaware, Massachusetts, Michigan, Minnesota, New York, Texas, Utah, Wisconsin, Wyoming, and Hawaii.

Letters were received from Idaho, South Dakota, North Dakota, Wyoming and Montana. Little or nothing had been done (1956) to incorporate systematic, graded civil practices in the schools of these states. Four regretted this lack for one reason or another. Two of the reasons given were: failure of the state legislature to appropriate funds; state not affiliated in any way with the defense movement, but that a state plan was being revised from the state director on down; that a need was felt for a program for some specific plan with specific materials.\footnote{Appendix D (Letters received from State Departments of Instruction pertaining to the teaching of civil defense in schools of respective states.), p. 187.}

From Helena, Montana, Mr. K. W. Bergen, Director of School Transportation, Montana State Department of Public Instruction, representing the State Department on Civil Defense, wrote July 9, 1956:

For two years, we have not sent out any materials because none was available. Within the next month, however, we have obtained considerable new material which will be provided to the schools this fall . . . .

During the past two years, one article has been written each year from the Department of Public Instruction in our publication, The Montanagram. . . .\footnote{Ibid., K. W. Bergen, Appendix D, p. 192.}

In August of 1956, again representing the State Department of Public Instruction, Mr. Bergen, in an interview, indicated a possible
need for such a handbook as proposed by this study, and plans were
discussed concerning this material being placed into the hands of
administrators for consideration and criticism as an initial step
toward introducing civil defense into the schools of the state.

In July 1957, Mr. Hugh K. Potter, State Director of Civil Defense
recommended the study be finished.

V. CURRICULUM GUIDES

From the files on curriculum making, Florence E. Stratemeyer's Guides to Curriculum for Modern Living was chosen for its
practical approaches. Co-authored by Margaret McKim, University
of Cincinnati, and Mayme Sweet, Denver Public Schools, the Guide
was written for the Horace Mann Lincoln Institute of School Experi-
mentation. It is a booklet of outstanding interest on curriculum
planning.

The psychology and the philosophy of the Guide is practical. The
format is unique, very modern in its appeal, and the work is based on
the core method of presentation which would prove a fine vehicle for
the teaching of civil defense.

"An Overview" gives a clear and interesting preview of the
contents.

Part I Discusses the significance for curriculum development of
the nature of society and its values
the nature of the learner and the way learning takes place
Part II Relates society and the learner through a concept of the curriculum in which
   . the everyday concerns of the children and youth are the starting point for learning activities
   . these everyday concerns are related to persistent life situations

Part III Shows how the persistent life situation concept as applied when teachers and learners develop
   learning experiences, by
   . identifying the everyday concerns of learners
   . selecting from these everyday concerns those with which boys and girls need help of the school
   . co-operatively planning and developing learning experiences relating everyday concerns to persistent life situations
   . evaluating progress

Part IV Deals with the responsibilities of teachers who apply this curriculum concept, for
   . the development of skills
   . the development of concepts and generalizations
   . the utilization of subject matter. 17

The following excerpt from Part II Section fifth of the Guides to a Curriculum for Modern Living with suggestions for civil defense
added to it, shows how easily new relationships could become a part of the concepts expressed by Florence Stratemeyer. In every instance of her work, the curriculum would be broader in scope and more realistic in its "persistent life situations" if the phase of civil defense training were to be added to the content of each chapter and in every division.

The following italicized sections were added by the writer to

illustrate this idea.

Part II Fifth. "Persistent Life Situations are a part of all aspects of the learner's daily life." Persistent life situations are faced by the learner at home, at school, in the neighborhood, at church, at the movies, at camp, and in the host of other places where he works and plays. The same persistent life situations may be a part of several experiences which the learner may have in one day ... Using Safety Measures is a persistent life situation that occurs in the home:

. when deciding where to keep playthings, tools
. when using tools
. when using matches
. when repairing household appliances
. when deciding where to keep medicines

... when installing Grandma's pantry
when applying first aid
when constructing an emergency cabinet
for the shelter
when installing a battery radio
when tuning in to Conelrad
when turning off electric, gas, water controls on emergency

in the school
. when participating in a fire drill
. when working with traffic control
. when participating in active sports...

or

when participating in an emergency drill of evacuation
when practicing "duck and cover"
when seeking shelters provided by the school because of certain signals

\[18\] Ibid., p. 15.

\[19\] Ibid., p. 16.
in the community
  . when riding a bicycle, driving a car, using
    other means of transportation
  . when crossing streets
  . when picnicking in the woods
  . when taking action on legislation
    regarding safety measures ....20
  or
  when supporting the Civil Defense by
    doing well whatever duty assignment
    has been given for emergency training
    when training to work co-operatively with
    civic leaders in charge of emergency
    program

The above italicized suggestions that were added to Guides to
Curriculum for Modern Living show how materials of regular studies
could be expanded to include defense training. If a civil defense curri-
culum could be structured as simply and effectively as is done in this
book, civil defense training in Montana would have a vehicle of practi-
cal philosophy and psychology that would clarity and make workable
much that is unknown by teachers and therefore untried.

VI FEDERAL CIVIL DEFENSE ADMINISTRATION PUBLICATIONS

Since the Federal Civil Defense Act of 1950, Public Law 920,
81st Congress, was approved, the Federal Civil Defense Administra-
tion has published materials on every subject pertaining to civil
defense. These publications are available for sums amounting to a
few cents to less than two dollars.

20ibid., p. 16.
Annotated Civil Defense Bibliography for Teachers, Section A, lists General civil defense information. Section B lists Natural Disasters and wartime emergencies. B-1 through B-5 includes materials under the following headings: General, Natural Disaster, Atomic attack, Biological attack, and Chemical attack. Section C includes works on Civil Defense in schools, colleges, and universities. Section D lists First aid. Section E is on Special civil defense services, and includes from E-1 through E-10, materials on Engineering, fire, Health and Special weapons defense, Police, Rescue, Shelter, Transportation, Warden, Warning and communications, and Welfare. Sections F, G, and H are on the work of Industry and civil defense, Atomic energy and its uses, and Additional sources of information respectively.21

Not only the teacher, but anyone interested and working in the field of civil defense would find listed basic materials for curriculum planning to a degree that was not possible prior to December, 1955.

A partially annotated civil defense bibliography for teachers will be placed in the Appendix following the Handbook. A complete library of civil defense materials for instruction in schools can be obtained at a small cost. All of these materials relate to more than

one specialized area. These are publications by the Federal Civil
Defense Administration; publications of other agencies, both
governmental and non-governmental; and writings prepared by indi-
viduals interested in the subject.

Much of the above materials listed has been issued as bulletins
by the United States Department of Health, Education, and Welfare,
Office of Education. They are numbered from 1 to 36 and are entitled
Civil Defense Education Project Information Sheets. These publica-
tions may be obtained by any group organizing courses for the teaching
of civil defense.22

Annual Statistical Reports and the Progress Reports, Interim
Statistical Reports (Quarterly) are financial statements concerning
Federal and state spending for civil defense. From these sources, it
was possible to determine what money Montana had spent within the
last six years in her support of civil defense under the Federal con-
tributions programs. It was possible to know which programs were
not utilized; which received assistance without much output of money;
and which were completely developed by the Federal Government.23

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22 U. S. Department of Health, Education, and Welfare, Office of
Education, "Civil Defense Education Project, Nos. 1 through 36"

23 Federal Civil Defense Administration, The Annual Statistical
Report of the Federal Civil Defense Administration (Washington:
The National Plan for Civil Defense Against Enemy Attack reflects the current trends in civil defense thinking based on today's authorities and policies. It is not an operational plan, but it does provide a broad base upon which operational plans can be built and developed. It served in this study to pinpoint local, county, and state civil defense work as related to subjects chosen for the proposed Civil Defense Course of Study for Montana Schools. The Appendices are detailed information on Public Law 920, 81st Congress, Part 1. The Federal Civil Defense Act of 1950; Part 2. Federal Civil Defense Regulations; Part 3. Executive Orders Affecting Civil Defense; Part 4. Civil Defense Delegations to other Federal Agencies; (Health, Education, etc.); Part 5. A Model Civil Defense Act; Part 6. A Model Civil Defense Compact; and Part 7. A Civil Defense Bibliography on Programs and Services.24

Congressional hearings were held in Washington D. C. on May 27, 28, 29, and June 3, 1957. The subject considered was The Nature of Radioactive Fall-out and Its Effect on Man.

"The primary purpose of these hearings was to bring together in one form competent scientific opinion on the

various aspects of the fallout problem."\textsuperscript{25}

The Special Sub-Committee on Radiation of the Joint Committee of Atomic Energy hoped "through expert scientific testimony, to trace the fall-out cycle from the moment of the nuclear explosion, through the scattering of radioactive debris in the atmosphere, its descent to the ground, and finally its effect on human beings, livestock, and agriculture."\textsuperscript{26}

Ideas taken from testimony were selected only as they seemed pertinent to the concepts to be stressed in the civil defense training in schools. Much emphasis is needed in science classes to give students working knowledge of radio-activity. This study does not pretend to do more then suggest a few of the many topics that should be common knowledge to ALL the population in protective self-preservation and self-help. It is true that lower grades would not understand technical implications of mutations, however, the children in these grades are not too young to learn how to protect themselves from physical disaster by learning to take precautions when around any situation that would include radioactivity.

Much emphasis was placed on somatic and genetic effects between danger per se and standards developed to protect against damage.

It has been definitely proven and established that anemia, cancer, Leukemia, neoplasms, still births, sterility, reduced longevity, and others are often caused and are often results of radioactivity. The range of sensitivity of cell structure from the most sensitive—(gonads, thyroid, lens in the eye)—, to the least sensitive—(nerve, muscle, bone)—was emphasized. The nature of genetics showed 2% mutation as a natural rate and to double that rate, it would take 50 r. exposure or intake. The fact that genetic mutation may be delayed for several generations, gives some inkling to the very seriousness of too much exposure to radioactivity by the individual and the serious effects that can happen to the generations of the future.

It is not practical for a paper of this kind to go into greater detail of dangers that can occur to cells when one is exposed to too much radioactivity. It would be well, though, that the population should know that there are dangers involved in X-ray, fluoroscopes and fall-out and that one must avoid excessive amounts. The use of any radioactive elements can mean recovery in certain cases, but when any cell is exposed to this activity it is changed or mutated and will remain in that form carried on to future generations by heredity forever. The only safe procedure is to not expose oneself needlessly.
to radioactive elements and never to exceed the amounts stated by the international commissions on Radiological Protection who have experimented with these hazards and "hope" they are right. Our schools must assume the responsibility of supplying this knowledge and training.

IX. MONTANA SURVIVAL PROJECT

(A.) Montana Survival Project, November 1957, was issued by Governor J. Hugo Arenson giving to the State plans to be set in motion after July 1, 1958 for a state-wide civil defense operational survival project. Under "X. TENTATIVE ASSIGNMENTS AND RESPONSIBILITIES, Section G., Superintendent of Public Instruction, State Board of Education, is assigned and responsible for 'Protection and evacuation of school children, civil defense training in schools and warden training'." 27

(B.) Planning Directive. Under the leadership of Hugh K. Potter, Montana State Director of Civil Defense, the State of Montana issued a pamphlet "To the Directors and Heads of Boards and Departments of State, Boards of County Commissioners, Chief Executives

of Cities, Towns, and Villages, Civil Defense Directors, and others Concerned."^{28}

The mission of the plan as set forth in this pamphlet is to develop an operational survival plan which will: (1) be practical and adaptable to Montana's situation, (2) embody the best thinking on civil defense at the national, state, and local levels, (3) provide for the development of leadership within all levels for emergencies, and (4) spell out who does what, where, when, why, and how in preparation for the emergency and during the emergency.

The plan was authorized under contract No. CD-SP-58-20 between the United States and the State of Montana, Industry, commerce, and agriculture have been brought in on a sustenance time basis, and to puplpmement the national need. The Superintendent of Public Instruction and the State Board of Education are responsible for "the protection and evacuation of school children, civil defense training in schools and warden training."^{29}

The final revision of the drafts were completed by June 30, 1958. Annexes will be developed for a particular place---city, county

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^{28}Appendix D, p. 176.

or district, and each will be a complete and workable civil defense
operational service or administrative plan. These Annexes will
become effective October 1, 1958.30

30State of Montana, Montana Operational Survival Plan,
Montana Survival Project, Annex W, Training and Education
CHAPTER III

MONTANA'S ROLE IN CIVIL DEFENSE

This study does not intend to cover in detail the scope of Montana's active participation in the immediate community, country, and the state co-ordinated Civil Defense program. This can be found elsewhere. Rather, it seems best to confine information to statistics as found in The Annual Reports, FY 1954-55-56-57\(^1\), and the Progress Reports, Interim Statistical Reports (Quarterly)\(^2\) as issued by the Federal Civil Defense Administration.

This review will describe those federal civil defense programs where the resources of Montana were supplied to match federal support on a 50-50 basis. It will also list those programs in which Montana did not seek the aid of the Federal Contribution Program but solved her problems without federal aid. This background material has been chosen as a brief sampling of Montana's participation and accomplishments in this vital program. The fields considered relate directly or


-32-
indirectly to the training of youth along lines of self-help, self-protection, and self-preservation.  

I. MISCELLANEOUS STATISTICS

The Organization. The United States and the territories and possessions are divided into seven civil defense regions. The members of Region 7 are Arizona, California, Idaho, Montana, Nevada, Oregon, Utah, Washington, American Samoas, Guam, and Hawaii. Headquarters for Region 7 is located at Santa Rosa, California.  

Regional offices operate under the authority of Sec. 401 (C) of the Federal Civil Defense Act of 1950 (P. L. 920, 81st Congress). Each region is responsible for "Necessary coordination and guidance to states, counties and cities." Natural disasters which would include hurricane, tornadoes, earthquakes, drought, floods, fire, or any other form of major disaster, are under the control of the region to which each state belongs.  

The seven FCDA Regions approximate geographically the commands of the Armed Forces.

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3 Appendix E, p. 204.

4 "Ibid., Annual Report, 1956, p. IV. (A map is included in Appendix C of this paper.)"

Critical Target Areas. The target areas and the critical target areas have been designated on the basis of population and industry. It is assumed that an aggressor will select Montana targets from the following categories with priorities determined by objectives at any particular time.

1. Critical Target areas as defined in "Target Areas for Civil Defense Purposes."
2. Civil and military airfields with hard surfaced runways of 7,000 feet or more, with major servicing and maintenance facilities.
3. ....
4. AEC facilities
5. Major military command and control headquarters such as Strategic Air Command, Continental Air Command and Tactical Air Command.
6. . . . , including all State Capitals.
7. Major military service supply depots.6

Helena, the capital of Montana is listed as target area. Other target areas assigned by the Federal Civil Defense Administration are: Anaconda, Billings, Butte, Columbia Falls, Glasgow, Great Falls, and Missoula.7

The Director of Civil Defense in the State estimated July, 1957, the present population at 675,000. Because the statistical reports give the Census of 1950 as their basis for computation, the following

reports will also use the 1950 figures for this research. However, the increase in population should be taken into consideration in the following statistics.

Montana's population in 1950 was 638,000, or .3745 per cent of the total population of the United States; the total Helena Target Area population is 24,540 or .0278 per cent of the United States.®

In 1956, there were 575 Ground Observer Corps posts organized within the state, or 62 per cent of the needed 748 that the program then required. Of the 575 organized, 464 were placed at required locations and 61 were operating on a twenty-four hour basis. Volunteers then numbered 10,166.9 June 30, 1957, the Air Force reported the following:

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volunteers</td>
<td>497,551</td>
</tr>
<tr>
<td>Active member</td>
<td>336,271</td>
</tr>
<tr>
<td>Members in reserve capacity</td>
<td>161,180</td>
</tr>
<tr>
<td>Posts needed</td>
<td>23,144</td>
</tr>
<tr>
<td>Posts, G. O. C.</td>
<td>19,278</td>
</tr>
<tr>
<td>Posts organized to maintain operational efficiency</td>
<td>15,800</td>
</tr>
<tr>
<td>Posts classified as &quot;Augumentation&quot;</td>
<td></td>
</tr>
<tr>
<td>Posts, which are established in certain places and considered to have surveillance potential during an emergency</td>
<td>3,478</td>
</tr>
</tbody>
</table>

®Federal Civil Defense Administration, op. cit., p. 25.

9Ibid., p. 21.

10Annual Report, 1955, op. cit., p. 209. (A map is included in Appendix C of this paper.)
Montana's G. O. C. was greatly affected by this new planning.

**Warning and Communications.** In 1955, public audible warning systems were expanded with the addition of a warning system at Butte.

In 1956, *The Annual Report* listed the following as approved for procurement by Montana under the Federal Contributions Program:

1. 19 Siren units  
2. 24 Transmitter-receivers, Base Stations  
3. 95 Transmitter-receivers, Mobile  
4. 24 Transmitter-receiver, Portable

**Training for Civil Defense.** Persons completing basic civil defense courses, in Region 7, during the years 1951-1956, numbered 620. Montana listed but four.12

**National Civil Defense Personnel.** Region 7 has an enrollment of 702,537. Montana's total reaches 23,589.13

Montana has two full-time employees on salary, one part-time employee on salary and 305 volunteers.14

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12 _Ibid.,_ p. 53.


The 29th Air Division (Defense) Organization. In March, 1957 an answer to a request for information concerning Malmstrom Base at Great Falls was received. The following excerpts are taken from that letter written by William E. Jones, 1st Lt. USAF, at that time in charge of the Base:

"The 29th Air Division is concerned with the air defense of four states: Wyoming, Montana, North and South Dakota. There are four Filter centers in this division, one of which is in Montana, at Billings. These Filter Centers receive reports from the GOC, report them to the Aircraft Control and Warning (AC&W) squadrons more commonly called 'radar sites'. These are relayed to the Air Defense Control at Malmstrom Air Base, Great Falls, Montana.

Montana has five of the eight AC&W squadrons within the four state area: the 681st at Cutbank, the 778th at Havre, the 779th at Opheim, the 902nd at Miles City, and the 801st at Malmstrom Base, Great Falls.

The purpose of the 29th Air Division (Defense)...is to defend from aerial attack a localized segment of the United States of which Montana is a part. ...The 29th Fighter Interceptor Squadron (FIS) with its 'Spitfire' jets, is located at the Malmstrom Air Force Base in Great Falls and is the only one of its kind in Montana.

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15William E. Jones, 1st Lt. U.S. A. F. (A personal letter written about the Malmstrom Air Base at Great Falls, Montana, June 21, 1951. Exhibit 1 and 2 are included in Appendix D of this paper.), p. 193.
The Federal Defense Agency at Great Falls serves 'round-the-clock' in the military Air Defense Control Center at Malmstrom AFB. In event that hostilities were to begin, the function of the agency would be to inform key civilians throughout Montana which in turn, would inform others until the respective city civil defense and evacuation plans were underway.\textsuperscript{16}

\begin{flushleft}
\textbf{Weather Bureau Stations.} Anaconda, Billings, Butte, Columbia Falls, Glasgow, Great Falls, Helena, and Missoula are eight of the forty-seven Weather Bureau Stations of Region 7. There are a total of 229 in the United States.\textsuperscript{17}
\end{flushleft}

\begin{flushleft}
\textbf{Radioactive Fallout Forecast.} The need for necessary defensive measures to deal with possible radioactive fallout from nuclear explosions lead to the establishment of a forecast program by the United States Weather Bureau in June, 1955.

The system is based on observations from sixty-eight Rawin Observatories (Radio and Radar Wind Direction Finding Observatories) covering the Nation's seventy-two Critical Areas, plus eight in Canada and two each in Alaska and Hawaii.
\end{flushleft}

\begin{flushright}
\textsuperscript{16}\textit{Ibid.}, Postscript. p. 194.

\textsuperscript{17}\textit{Federal Civil Defense Administration, Annual Statistical Report}, 1957, pp. 33-34.
\end{flushright}
Twice daily, the balloon-born transmitters called rawin-sondes, are released to obtain atmospheric pressure, temperature, and humidity. Data on wind, speed, and direction at various levels (often as high as 100,000 feet) is obtained by tracking the balloon with radar. Data thus obtained is transmitted by the United States Government Teletype service "C" to the 229 Weather Bureau Offices throughout the nation.

Civil defense authorities, state and local, may obtain readings by calling the Weather Bureau Office of their respective area. From this data, state and local civil defense offices may obtain coded messages covering the area within a five hundred mile radius (one thousand miles in winter) of home base. With training, a complete plot can be constructed in less than five minutes.\(^{18}\)

Rawin Observatories are located at Great Falls and at Glasgow. Others serving the area under the 29th Air Command are located at Bismark, North Dakota; Rapid City, South Dakota; and Lander, Wyoming.\(^{19}\)

**Interstate Civil Defense Compacts.** Montana has given state authorization for civil defense forces to take immediate action concerning natural disasters within the state. This compact also

\(^{18}\)ibid., pp. 21-22.

represents Montana's agreements with thirty-nine states, the District of Columbia, and the five territories and possessions of the United States. This compact indicates Montana's willingness to enter into the Model Interstate Civil Defense Compact sponsored by the Federal government with all other states. The Congress of the United States and the states of the Union have been so notified.\(^{20}\)

**Workman's Compensation.** Thirty-eight states have some form of Workman's Compensation for the civil defense personnel. Montana has not provided for such compensation.\(^ {21}\)

**State Civil Defense Councils and Advisory Committees.** All states, except eight, have a Civil Defense Council, an Advisory Board, or both. Montana has a functioning Council but does not report the type, whether a council or a committee.\(^ {22}\)

**Emergency Hospital Plan.** Federal Civil Defense has purchased 1,932 emergency hospitals. Each accommodates 200 beds. These hospitals have been purchased from various manufacturing agencies and are to be assembled and distributed to the states on loan for the purposes of education and training in field techniques. They are designed to be


\(^{21}\)Ibid., p. 17.

\(^{22}\)Ibid., p. 20.
set up in churches, schools or other suitable buildings. Experience in the staffing and in knowing the requirements necessary to manage such institutions efficiently in times of emergency, is technical knowledge that is given in this training.

One such hospital is stored at Warm Springs, Montana for training purposes. Nine are placed in Region 7. In receiving an emergency hospital, Montana signed a formal loan agreement under which it accepted the custody of the hospital and agreed to pay all charges for its transportation from one city to another within the state, and accepted the responsibility for loss or damage to any part of its equipment. Under this agreement, the Federal Contribution Program will provide that one-half of the costs are to be returned to the state.\(^2^3\)

II. FINANCIAL ASPECTS

The Federal Contribution Program. The Federal Contributions Program under authority of the Federal Civil Defense Act of 1950, (Public Law 920, 81st Congress) provides means whereby the states may obtain Federal matching funds for civil defense materials, equipment, and training.\(^2^4\)

The purpose of this federal aid is to promote uniform programs

\(^2^3\)Ibid., p. 100-101.

\(^2^4\)Ibid., p. 77.
and standards approved by F.C.D.A. All states, territories, and possessions, except Alaska, are required to match funds on a 50-50 basis.

This plan was to help the states and their political subdivisions acquire essential civil defense materials, to promote a civil defense education and training program. This law authorizes the administrator of F.C.D.A. to make financial contributions to the states on the basis of projects that are approved by the Regional Administrator.

Civil Defense Expenditures of the State Governments.

FY 1953 through 1956.25

<table>
<thead>
<tr>
<th></th>
<th>U. S. Total</th>
<th>Region 7</th>
<th>Montana</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$83,034,000</td>
<td>18,982,000</td>
<td>171,000</td>
</tr>
</tbody>
</table>

Federal Contributions Program. (1952-1958) Obligated.26

<table>
<thead>
<tr>
<th></th>
<th>United States Expenditures</th>
<th>Region 7</th>
<th>Montana</th>
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<tbody>
<tr>
<td></td>
<td>$65,362,736</td>
<td>10,777,874</td>
<td>90,984</td>
</tr>
</tbody>
</table>

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Montana's Civil Defense Budget. 27

<table>
<thead>
<tr>
<th>Fiscal year</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1953-1954)</td>
<td>$10,000</td>
</tr>
<tr>
<td>(1954-1955)</td>
<td>13,500</td>
</tr>
<tr>
<td>(1955-1956)</td>
<td>14,000</td>
</tr>
<tr>
<td>(1956-1957)</td>
<td>14,000</td>
</tr>
<tr>
<td>(1957-1958)</td>
<td>17,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$68,500</td>
</tr>
</tbody>
</table>

Montana's Total Defense Spending (1951-1957)

Federal Contribution Program
Montana (1951-1957) $90,984

Montana's Civil Defense Budget (1951-1957) 68,500

**Total** $159,484

Conclusions. 28

- Amounts per capita on the contribution program $ .142
- Amount per annum, per capita on Montana's Budget (1951-1958) .045

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27 Hugh K. Potter, Director of Civil Defense, State of Montana. (Personal letter on Montana's civil defense budget, 1953-1958), July 19, 1957. This letter is included in Appendix D of this thesis.), p. 188.

Civil Defense Personnel

Full-time in the United States on C. D. Funds (1957) 2,635

Full-time in the states and locals on S. C. Funds 1,564

Volunteers in the nation without pay 3,342,306

Volunteers in Montana without pay 305

Salaried personnel in Montana
  Full-time 2
  Part-time 1

Conclusions: Montana, led by the state administrator and co-ordinator, with the aid of 23,589 volunteers, has succeeded in establishing programs that will have unbelievably far reaching results on the National Defense Program as a whole.

The 29th Air Division; the Ground Observer Corps; and the Civil Defense Organization in communities, counties and state; the

two Rawin Observatories; the seven weather stations with the weather charting of fallout as well as weather forecasting; the use of interstate Civil Defense compact for interstate mutual help and aid in natural disasters; the giving of authority to civil defense personnel "to take over in time of crisis; the Montana Advisory Board and its planning on state and national levels; the work of volunteers in the many fields of training such as Red Cross first aid, and advanced first aid; the units of people directing civil defenses, without fanfare, preparing a readiness for the state should need arise; these, and many more accomplishments add up to the organized effort found in Montana today to meet the urgency of the times.

These dimensions spell out strength of purpose. These practices reflect the thinking of a few Montanans that are dedicated to a policy of democracy in action. Tax money, apparently, does not enter into the picture; the results of the labor of certain Americans, called Montanians, unpaid and without publicity, have, alone and unaided by the great body politic in general, succeeded in organizing a "Going Institution" for the protection of all here in our state.

Civil Defense is a program for the preservation of our American way of life. This program must, of necessity, be built around the individual. He, in turn, must be able in an emergency, first, to care for himself and secondly, he must be willing to help and care for those less fortunate than himself.

In an estimated population of 675,000 there are listed 23,589
who are carrying the load for the whole state, Civil Defense volunteers are but 305, and with three others receiving a salary. The 10,166 volunteers in the Ground Observer Corps man the observation towers and receive no pay. The Federal Civil Defense program in Montana controls only three and one-half per cent of Montana's population.

As we seriously consider international situations and our national foreign policy, the need for state preparedness is greater than ever before, and that need begins at the grass-roots. What of the ninety-six and one-half per cent of Montana's population untrained in practices of self-help, and self-preservation? Would they contribute enough aid to produce a victory if or when an enemy should seek to cross the frontiers of the skies and a nuclear war started? Would Montana be able to stop the invasion, or support a program of receiving refugees to be fed, house, and given nursing? Is the basic knowledge concerning survival in relation to the fallout problems sufficiently and thoroughly ingrained so that our citizens are prepared for such an eventuality? Are the people prepared to win a victory or might the victory be lost through lack of training?

The answer is not found in the four and a half cents per person per annum spent by the Montana taxpayer in the present civil defense movement, (1957). Again, a defense program of such vast dimensions, must of necessity, rest squarely on the individual who can in an emergency, first, help himself, and secondly, can help others in greater need than himself. This plan is an individual responsibility as
well as a co-operative movement of many individuals working for self-help and self-preservation.

The problem involves first, getting more recruits willing to train in civil defense techniques; secondly, providing a systematic plan of indoctrination of these techniques and lastly, the applying of the principles involved.

As each year’s graduating class steps forth into body politic, they should also go as participating members of civil defense programs of the state—joining community civil defense organization before graduation. With careful planning these young people should have a broad, working knowledge of the many aspects of the National Civil Defense Program and the importance of the individual in all safety measures whether personal or in relation to others. By the senior year, each graduate will have selected the C. D. job most suited to his interests and performance, and will have been trained to be skilled in his chosen field. This defense training should be the result of well-planned courses offered in our schools. Such classes would soon fill lay ranks, and it would be but a matter of a few years when the people of the state would think in basic terms of civic needs and responsibilities, and be prepared to act defensively.

To arrive at this goal, there is but one way and this is special training in the schools in aims, practices, and performance of civil defense.

One must remember that in such fields of knowledge as science,
health, social understandings, government, and international relations, the teacher seeks to convey to boys and girls real understanding of today's many problems. These subjects provide the real information which is needed to continue to help them to develop and to grow toward maturity. No significant change in the content of the present programs is needed to make the present classes vehicles for emergency education. The phenomena which result in emergencies are customarily included in every up-to-date class anyway. The change which is needed seems simply to place emphasis on civil defense practices within the required subject matter now offered. This training should be practical and workable.

There may be need for in-service training for the teachers whose schooling was obtained before the present emergency, but there should be no need of special teachers of classes for defense training. The newcomer into the teaching field will have had one or two courses in civil defense skills and techniques in his academic training.

Montana's greatest need of the hour is to have an informed citizenry, so that critical insight into the problems of defense and the courage to face these revealing facts, may be evident.

The success in meeting disaster is related only to the degree by which people are capable of avoiding panic and taking quick, decisive and rational actions which are not habitual with them. In emergencies, physical damage is often paralleled by mental and emotional damage. However, there is seldom panic if knowledge of the true nature of the
need is understood. Understanding, practices, skills for disasters or emergencies are stabilizing factors just as specialized training fits anyone for the special work of the professions or of the layity.

Civil defense in Montana would receive its greatest impetus when the policy of education for ALL of Montana's youth in practices of civil defense becomes a reality. Then, and only then, will youth have the basic knowledge of the implications of war and peace. Then and only then, will the State of Montana have fulfilled its obligation to them. Action is needed now to fulfill the mission and the vision of Montana Civil Defense Act of 1951 and Montana Survival Project of 1957. This latter is the GREEN LIGHT for 1958 and the future. The "set-up" is right to get action. It is up to the people. Will they respond?

If the established forces who are responsible for civil defense practices, will provide, publicize, and inform the people of the state of the dangers involved realistically, the people of Montana will respond favorably. Public servants are too often only as good as the demands made upon them. If the public will become an informed, enlightened, and CRITICAL people in regard to civil defense, demanding much, then and only then will a sound, safety program be assured.
CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

The suggestions in the accompanying handbook concerning the teaching of facts on the nuclear weapons, fire, flood, earthquake, and all types of disaster and catastrophies are presented with the conviction that children will react to emergencies with greater intelligence and control, with less fear and more courage if they are informed of the causes, the effects, and what behavior will be expected and which will be best for them when need arises.

To act intelligently, one must be aware of the problems he might be asked to face, and then be able to face them intelligently. His chances of survival will be greatly increased if he has acquired a working knowledge of self-helps and a knowledge of self-protection. The survival of each individual may well depend on his own intelligence and a working log of self-direction and safety precaution.

The plan of suggestions in the handbook is based on assumptions that (1) the factual ideas or concepts concerning disasters are things we want children to know and to understand, (2) a list of suggested activities may be developed by which the teacher may provide experiences that will demonstrate to herself and her pupils tangible ideas that are real and workable, and (3) a bibliography of resources that pertain to the topic which will aid in the presentations of experiments for the
real experiences will be useful.

Montana schools are in key positions to make a vital contribution to the defense movement and to assist persons to face disaster with purposeful and intelligent action.

It is with this in mind that Curriculum Suggestions for the Teaching of Civil Defense in the Schools of Montana was chosen as a vehicle to show how civil defense instruction can give to the individual a broad and comprehensive personal awareness of the times; can develop a sense of group consciousness and oneness with his community; can evolve and bring into being a responsible, healthy attitude for national public safety and disaster relief and still not disrupt the school's existing program of classes.

To train for defense against wartime hazards develops to a large extent, the skills and abilities needed to cope with natural hazards. The same basic operational procedures are employed in both cases. The obligation of the schools in this program are twofold: First, to organize personnel and set up a school plan ready to function at a moment's notice and second, to incorporate into the existing curriculum the long range civil defense training required to meet all threatened dangers whether they be from hurricanes, floods, earthquakes, explosion, fire, or war.

Many sources, including the experiences of teachers, supervisors, and administrators in the field of education, were used to develop this plan. Information and guidance were found in Federal,
state and individual sources. The ideas presented are but a part of the sum total of knowledge required for the informed citizen in matters involving nuclear experimentation and international unrest. The suggestions submitted are but a few that could prove helpful to teachers who are introducing civil defense instruction for the first time in the elementary, intermediate, and secondary schools of Montana and who need guidance to get started.

It is hoped that perhaps in some way this attempt to provide a handbook in civil defense subject matter for average classrooms, will focus public attention on the pressing needs for long-range and short-range planning in defense practices at the public school level.

If a beginning could be made, there is the conviction that the results obtained would be so outstanding that the Department of Public Instruction would feel justified to place the work of constructing such a handbook in the hands of a committee composed of members appointed from the state, county, and district levels. This group representing all state interests could work with the Federal Government as a team to **fulfill the destiny of Montana in the national defense scheme.**
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D. PERIODICALS

A HANDBOOK

CURRICULUM SUGGESTIONS FOR THE TEACHING OF CIVIL DEFENSE
IN THE SCHOOLS OF MONTANA

by

JEAN MCKERLIE THOMSON
PREFACE

There is much to be said concerning the need of training in civil defense in the schools of Montana.

People have a responsibility to protect children under their care in the event of an emergency. An emergency program should involve experiences and practices until safety measures become routine. It is a well-known fact that with this knowledge that comes through training, casualties can be reduced fifty per cent in times of emergencies and natural disasters.

The vulnerability of large groups in any disaster increases the necessity for intensive training of ALL groups and all ages. Even the very young should be trained in principles of self-protection and self-help. The self-reliance thus built up tends to allay fears and terrors.

Brigadier General J. Wallace West, Civil Defense Director, Utah, states, "Civil Defense is the key to keeping alive and participation in a dynamic training program is just good citizenship."

Youth trained in civil defense and knowledge, stand ready to not only help themselves but to help others. In times of disaster, the vigor and native ability of the Nation's youth makes it inevitable that a very large part of any job connected with civil defense will fall to them. That they will respond with skill and intelligence will depend much on the training they will have had in the schools of the state.

It is assumed that should our Nation be attacked by a foreign
nation, one line of the invasion would be from the North. Montana, in that event, would be a dispersal point for enemy aircraft to the east, south, and to the west. The national plans for civil defense provide the use of our State as a reception center for the states to the west thus creating a need for the knowledge of mass-feeding, mass-housing, and mass-nursing for great numbers of displaced persons.

In the event of war, the courage and skills that are represented by the school-age youth of Montana, would be called upon for service, first in personal training in self-help and self-preservation, next in services for family safety and welfare, and lastly in action for community survival. Common sense demands that these young people be prepared with training for survival to meet disaster wherever it is found. The goal of 100 per cent membership in a program for individual, local, county, state, and national disaster preparedness will be realized only when the potential strength of the youth will be utilized by training ALL for civil defense in all the schools of ALL the states throughout the nation.

Federal Civil Defense Act of 1950, Public Law 920, 81st Congress, Chapter 1228, 2nd Session, H. R. 9798, approved January 12, 1951, created the Federal Civil Defense Administration, giving an Administrator the authority, among other powers, that of training "people in civil defense organization, operations and techniques; to disseminate appropriate civil defense information to the public; and to make available Federal funds to the States, on a matching basis, for

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civil defense programs approved by the FCDA.

This was followed by Montana's Civil Defense Act of 1951, effective March 5, 1951 as amended by House Bill 235, which provided for a civil defense Director who should provide...and institute training programs and public information....¹

On November 22, 1957, Governor J. Hugo Aronson issued the following statement: The State of Montana has contracted with the Federal Civil Defense Administration to develop a Montana State Operations Plan. Among the "Tentative Assignments and Responsibilities" is listed section G which provides "That the State Superintendent of Public Instruction will be responsible, jointly with the State Board of Education, for the protection and evacuation of school children, Civil Defense training in schools, and warden training."²

¹Montana Civil Defense Act of 1951, effective March 5, 1951, as amended by HB 235, March 5, 1953. Appendix A, p. 166.

FOREWORD
CIVIL DEFENSE IS HERE - LET'S RECOGNIZE IT

Civil Defense has traveled over a rather erratic course during the last few years but has attained a permanent position in the minds of those who recognize the awful power of nuclear weapons.

Civil Defense is here to stay and educators must and should recognize that instruction in Civil Defense matters is a necessary part of modern education. Had Civil Defense been introduced in the schools five years ago we would have a vast army of Civil Defense personnel who would recognize the threat to their Country and would be ready to combat that threat whenever it might occur.

It is true that the American people are not easily frightened and greatly inclined to take care of most any situation that might arise, even unexpected ones. However, the tremendous power of atomic and hydrogen weapons is so awesome that only those who have witnessed these explosions have a clear concept of what they can do.

If the schools will include Civil Defense as a part of their curriculum the young people of this Country will be thoroughly indoctrinated in measures of self preservation and the ability to withstand an attack and

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come back fighting. No weapon has ever been invented that did not have a counter-part in defense against that weapon and so it shall be in this hydrogen age.

Recognition of the danger, education as to self preservation and our young people studying the progress of Civil Defense can and will enable this Country to withstand an attack from any nation and back-up the powerful retaliatory capabilities of our armed forces.

Education is our most powerful weapon. We have the means. Let us have the will to assure the young people that they can be a most important power in the defense of their Country by acquiring knowledge in Civil Defense.

Hugh K. Potter  
Director of Civil Defense  
State of Montana
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THE IMPACT OF CIVIL DEFENSE CONCEPTS
ON THE CURRICULUM

Philosophy

Each school system should decide how much time it will need to complete a program but all schools should set a date when readiness must be completed. The program has its foundation in good citizenship. Safe living is good living, and mutual help is good living. 3

In planning Civil Defense Education, all orientation should be toward the local level of the school and its problems, and whether the school is located in a critical area or a non-critical area. The following is an excerpt from McGill and Humphrey's article showing the weight of civil defense concepts on education.

I. Basic Principles:
A. Social Principles:
   1. The school curriculum should not be standardized but should be localized according to local civil defense needs.
   2. The final school curriculum should emerge from the cooperative efforts of the local schools, the parents, and the civil defense organization.
   3. There will be a need for a long-range and short-range planning. Any differences that occur should be provided for.
   4. Civil defense programs cannot be packaged programs. The subject cannot be taught for a time and then laid aside, but it must be included at many points in a

3 William L. McGill and Dr. Joe R. Humphreys, The Impact of Civil Defense Concepts on the Curriculum (Austin, Texas: State of Texas Executive Department, Division of Defense and Disaster Relief, July 1, 1953), p. 1. (Mimeographed.)
complete curriculum where its application is compatible with classroom activities.

5. Ethical, moral spiritual, and intellectual values should be stressed.

6. The elementary school curriculum is designed to train children in habits of orderly thinking and to help them become mentally alert, observant, and emotionally balanced.

7. All resources of the community should be known by the schools and made use of wherever it is possible to do so.

8. The school should do its part in cooperating with the civil defense agencies and organizations.

9. In turn, the community should make use of the schools and school organizations.

10. Maximum use should be made of student controlled organizations (eg. Junior Red Cross, student council, and other organized clubs).

B. Psychological Principles:

1. We cannot separate content from emotional needs.

2. The maturity of the child should determine the subject matter to be presented and the techniques to be used.

3. All materials should be presented with the mental health of the child considered the number one problem.

4. The building of morale in children must receive special attention. Every child's school experience should help him recognize his own individuality. He must be helped to have a firm belief that life IS good in spite of any major or personal disaster so he may face real danger with a sense of assurance and not of fear.

5. One aspect of education at work is the shading which primary experience assumes as the result of the expressed feelings of others about that experience. So the leadership of the teacher will tend to condition the behavior of the child.

C. Educational Principles:

1. If an emergency is to be met, we will teach the skills and the practices that the emergency demands.

2. There is not area apart from civil defense. Civil defense is just another facet of the school program and the educational civil defense practices is the vehicle.

3. In presenting civil defense problems, the best techniques and "Know-how" must be used.
4. Film, movies, assemblies, bulletins to parents, television, radio, posters, speakers, plays, newspapers--these and many more will form a media for the creating of interest among parents and the public at large.

5. Greater use should be made of teacher talent and special abilities.

6. Civil defense should not completely color the curriculum but "should emerge from it".

7. Readiness for all learning should be the first concern of the teacher. Concepts on terminology should fit the level at which instruction can begin. The development of the core by teacher-pupil planning methods will provide achievable goals in most subjects presented giving a sense of belonging, and an opportunity to develop satisfying relations with others to the pupil.

8. The planning of civil defense programs should include active child participation.4

II. Characteristics of Age Groups.

A. Primary Children:

Civil defense training for the primary child is designed to train him in orderly thinking, to become mentally alert, observant and emotionally balanced. What the child experiences during these early formative years usually remains with him throughout life. Since it is apparent that civil defense is now a permanent national institution, the elementary grades is where this work should be started.

The attention span of the primary child is limited and instruction periods should be short and brief. Raid drills, like the fire drill, should be initiated with a minimum of tension. Every care should be taken to avoid stress and strain that might develop. Calm leadership by the teacher will usually release any emotional situation.

Explanation and reasons "why" the children should take part in drills is necessary so that undue excitement will not develop. The "unknown" breeds fear in the human, whether young or old, therefore knowing "what to expect" could avoid panic.

To strengthen the morale of our children, a firm attitude

4Ibid., pp. 1-3.
that life is worth living in spite of disaster, whether physical or personal, will enable them to face real danger with a sense of assurance rather than that of fear. It is the presentation of a topic that creates the impression. The emotional stability of the teacher will tend to condition the behavior of the child.

1. **Specific Suggestions for the Language Arts:**
   a. Develop concepts through listening and story telling.
   b. Increase vocabulary through new experiences, (e.g. dramatic plays, personal experiences, field trips, talking about home, knowing their names, addresses, and parent's names).
   c. Make use of the literature that will develop attitude of self-help and self-protection.
   d. Develop good attitudes of citizenship.
   e. Teach children the necessity of following orders immediately and without question during an emergency.
   f. Learn the emergency signals for the school and for the community.

2. **Citizenship: Specific Suggestions for the development of the concept of American Democracy.**
   a. That one helps his neighbor.
   b. That one learns to follow directions.
   c. That one must know about the different kinds of fires, natural disasters, and wartime emergencies.
   d. That one must learn the beginning of loyalty and patriotism.
   e. That one is introduced to elections, to some self-government, to recognize a friend in the policeman, to recognize that rules as well as laws give safety, protection, and at the same time, freedom.
   f. To learn the Pledge of Allegiance.
   g. To learn "The Star Spangled Banner" and other patriotic songs using pictures and talking about their meanings.
   h. One is interested in how people of other lands live. (Use of dramatics is suggested.)

3. **Health: Specific suggestions for the development of simple first aid and general hygiene.**
   a. Stress that all cuts and scratches need attention.
   b. Explain that any injured playmate must NOT be moved.
   c. Teach to whom the child should go for help.
   d. Teach when food and water are clean.
e. Teach the protection of food and water in proper containers.

4. **Play Activities**: Specific suggestions for physical reactions.
   
a. Determine and then teach games that can be used during periods of confinement.

b. Teach the child to be a useful member of the group through games and physical development activities.

c. Provide practices that can be worked into drills.
   1. Know the meanings of signals as ringing of bells, blowing of sirens, or notes on a piano.
   2. Help through drill practices to develop an immediate recognition and reaction to all commands.
   3. Teach games that will make the child socially conscious and sufficient so that he becomes a useful member of his group.

5. **Art and Music**:
   
a. Make the very most use of art and music activities to reduce strain and tensions.

b. Make use of pictures, newspaper clippings, and announcements of Civil Defense in community activities simple and introductory.

B. **Intermediate Children**:

Many characteristics and activities of this group are similar to those for the primary group. This group is older, and therefore they can and should assume greater responsibility. The attention span is longer, and they will be able to receive more detailed instructions. They read newspapers, listen to the radio, see television and attend movies. They are much aware of and intensely interested in people and the actions of the world around them. Their actions are positive and energetic. They will ask many questions concerning the activity of the community and the adults. They are still very impressionable and tend to be excitable. They are members of gangs and enjoy doing things as groups.

Any program built for this age group must consider their needs very carefully. All of the skills and practices for primary people apply here with strong additions.

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5Ibid., p. 6.
This study is stressing civil defense practices mainly in the science and social science fields and for the groups beginning with Grade 4 the curriculum suggestions will follow that lead.

One word of caution. Remember that civil defense is not to color the program to the exclusion of everything else. Rather, it "should emerge" from the core instead. This work in civil defense should establish concepts and understandings that will give a sense of security through having a "Know-how" to meet emergencies of every day living. In gaining this knowledge, the students are making themselves more capable to take care of themselves and to be of help to others in need. They will become more self-assured which will in turn minimize the possibility of panic and fear in case of disaster.

1. **Suggested Curriculum for the Intermediate Grades (3-6):**
   a. Acquaint students with school and community emergency drills and emergency signals.
   b. Study the different types of fires and how they can be extinguished.
   c. Introduce radiant heat and thermal radiation.
   d. Learn the skills and practices of out-door living.
   e. Introduce first aid rules and practices.
   f. Analyze the disasters which have been faced by the students and their community. (Fire, flood, drought).
   g. Explain elements of fire safety; use of sand, blankets, fire extinguishers, fire hazards, waste, trash, exits, electrical equipment.
   h. Teach the care of food and its protection.
   i. Stress responsibility for the younger boys and girls.
   j. Teach the geography of food supply, clothing, travel, communications, etc.
   k. Develop the concepts of past heritage, democracy, government and some of the divisions and sub-divisions of government.
   l. Teach oral and written expression through the various media: letter writing to "pen pals", the making of scrap books, the conduction of panel talks, the giving of reports on community civil defense efforts and activities, dramatization of civil defense concepts, book exchanges, etc.
m. Use hobbies as related subjects on civil defense
n. Teach the means of demonstrations and experiments.\(^6\)

Remember that civil defense is just another link in a school safety program.

C. Junior High Teenagers:

Young people of this class can and should undertake many activities. However, these people should share in the making of plans and in deciding what they are to do. This is the age of gangs, and the ideals of friendship and citizenship traits can be developed. Specialized courses, such as chemistry, biology, world history, occupations, etc., are excellent to present effectively the technical information on disasters. This age group will enthusiastically work to develop skill in survival techniques, and will be interested in the organization of civil defense, its problems and responsibilities. Citizenship values and duties will receive attention from this group, for they are proud to achieve and to perform efficiently tasks that require skills.

1. Consult Appendix B of this Handbook for suggested activities and study plans.

D. Senior High School and Junior College Level:

The responsibilities of these grade groups are: (1) to carry on at an advanced level, the civil defense program of the lower grades and (2) to evaluate not only the effectiveness of the teaching program of earlier grades but to provide according to Edward J. Beechert, "a reinforcement of the necessary attitudes and skills. The student leaves this level with the heavy responsibilities facing him as a citizen.\(^7\)

The appropriate place to coordinate the efforts of all subject areas dealing with civil defense is in those subjects of senior high school pertaining to world affairs, orientations, and psychology.

Beside this matter of evaluation, there is a primary need of reaching the main objective of developing in the student a healthy and positive attitude toward civil defense.

\(^6\)McGill and Humphrey, op. cit., p. 7-8.

defense. These attitudes are those of the junior high emphasized somewhat differently:
1. Confidence in the ability of a community to survive a nuclear war.
2. The replacement of fear by basic knowledge in skills and procedures.
3. The deeper understanding of the need of civil defense today in a nuclear age. Here we have co-operation on a world level for mutual survival as the keynote for curriculum planning. Civil defense may have military implications, but it is also an agency for maintaining PEACE and through peace—happiness.
4. The obligations of the schools are twofold: (1) to organize personnel and to set up a school plan ready to function at a moment's notice; and (2) to incorporate into the general curriculum the long range civil defense training required to meet all threatened dangers, whether they be hurricane, flood, earthquake, explosion, fire, or war.
5. Mutual co-operation should be the keynote of all constructive planning.

INCORPORATING CIVIL DEFENSE FACTS INTO THE SOCIAL STUDIES AND SCIENCE STUDIES OF THE CURRICULUM

The value of studying ways in which an individual may save his own life and help save the lives of others in time of disasters, whether major or minor, is unquestioned. The following outline introduces suggested subject matter on the organization for civil defense and the citizen's relationship to them. This outline makes no attempt to add a new, or complete course to the present curriculum of existing study

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8Ibid., p. 1.
units, but rather it is an attempt to emphasize certain aspects of local
government that so often are over-looked. It is an attempt to gather
together some of the basic concepts of the social science field to make
the civil defense problems involved seem more real and useful. It is
an effort to promote continuous growth as generalizations are extended
and skills are improved and developed to deal more effectively with
our complex society.

"To the 3R's must be added the skills necessary to a scientific
approach to problems, to conferences and discussion techniques, to
sound leadership and effective group membership."^ Although this
quotation refers to the existing curriculum of the 3R's, it can be
basically applied to the incorporation of civil defense into the present
course of study.

**Grade 4.** According to the California Pilot Study, the basic
beginnings of cause and effect with results are begun in Grade 4.\(^{10}\)
Such incidental training that the child has had in the previous grades
should be drawn together. Protective citizenship and civilian defense
should be introduced. Since the knowledge of the cause of disasters is
scientific, the unit on natural disasters should be introduced into the
science class. Correlate citizenship values with civil defense. How to

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\(^9\)Stratemeyer, *op. cit.*, p. 60.

\(^{10}\)John H. Caples, "Principle Underlying the Teaching of Civil
Defense in Schools," *California Pilot Study* (December 20-23, 1955),
p. 1.
take shelter, how to proceed in responding promptly to disaster and
fire drill procedure, safety in the home, are some of the basic survi-
val techniques.

Grade 7. The basic civil defense learnings in Grade 4 are again
stressed and reviewed in Grade 7. In many schools the children of the
community are concentrated into larger classes in junior high. This
means new concepts of citizenship.

The training should now contain definite information on the
nature and the causes of disasters, techniques of personal and group
survival. It should contain the study of community resources as well
as the local civil defense organization and facilities. It seems best to
place this study in the science department.

The concepts of protective citizenship which are inherent in civil
defense, should be stressed at this level. Students should survey
community resources, learn civil defense patterns, plans as well
as work with community officials.

In the field of teaching skills, the entire curriculum should be
structured to stress civil defense. In the industrial arts shop and
science class student projects should construct equipment for
disaster preparedness; in homemaking, the management of foods
under disaster conditions; in physical education, the beginning
principles and performance of first aid should be started as a part
of civil defense training.

The structuring of the curriculum to stress or identify civil
defense principles should be a major consideration of the admin-
istration. A definite plan should be made assigning particular
skills or knowledge areas of instruction. This method, with the
science unit on civil defense, should give the student a compre-
hensive background in civil defense principles and skills.\(^{11}\)

Continuing John H. Capless's article on "Principles Underlying

\(^{11}\)Ibid., p. 1.
the Teaching of Civil Defense in Schools, we have:

**Grades 9 or 10.** The above approach to civil defense training should be followed at this level. The civil defense course would be given to all students. It is recommended that this unit be placed in the social science studies, if possible, so that citizenship concepts and understandings may be emphasized.

Specialized high school courses, such as physics, chemistry, and biology, world history, etc., will be able to present effectively the technical information about disasters. The civil defense unit, if in the social studies, should serve to train and instill in disaster and survival techniques, civil defense organization, and citizenship duties and responsibilities.

**Grade 12.** At this age, students are on the threshold of assuming adult status. The civil defense unit at the senior level should re-emphasize the civil defense concepts and skills with the aim of identifying the responsibilities of civil defense with the obligations of citizenship in the community and nation.\(^\text{12}\)

Problems that will arise with incorporating into the schools training courses in civil defense as outlined above might be:

1. How much civil defense training should be included at the various levels?
2. Where should civil defense courses be placed, in science or the social studies?
3. Which are the basic concepts and which are subjects that may be "farmed out" to other areas of the curriculum?
4. What is the need for teacher training: (1) in civil defense (2) in the teaching of civil defense principles and skills, (3) inservice training?
5. What major units can be "farmed out" units with the coordination of the civil defense training in district and in the community?
6. What materials for teachers and pupils are needed?\(^\text{13}\)

\(^{12}\text{Ibid., pp. 2-3.}\)

\(^{13}\text{Ibid., p. 3.}\)
PRINCIPLES INVOLVED IN THE INCORPORATION
OF CIVIL DEFENSE INTO THE CURRICULUM

The teaching of civil defense in the schools has a twofold purpose: (1) to prepare the individual to meet and to survive dangers, and (2) to provide him with knowledge and skills by which he may save himself and his family, to be of service to his community, and to strengthen his nation in the event of a war or natural disasters.

Civil defense, then, has two functions. It must prepare the individual with the skills to protect himself in times of danger in order to survive; it must teach him to integrate and coordinate his efforts with the action of the members of his community for the good and the safety of his community.

Civil defense, thus, aims at protecting the citizens. It involves both the individual and the group. Because it is protective, then the program affects the whole nation. Thus the nation must be responsible for the training of civil defense as a public obligation.

Since civil defense is recognized as a public obligation, a national institution, it is reasonable that the schools of the nation should be concerned with the education of the American youth in the principles of self-help, self-protection, and self-preservation. Since the structure of civil defense organization rests on the nation, the state, the county, and the community levels, the responsibility for this training will rest, as it rightly should, upon the local community and school authorities to inaugurate a suitable training course.
in safe living.

Montana Civil Defense Act of 1951 provides that the duties of
State Civil Defense Director are:

to institute training programs and public information; ... to insure
the furnishing of adequately trained and equipped forces of civil
defense functions and to insure ... adequately trained and equipped
forces of civil defense personnel in time of need.\(^\text{14}\)

to prepare and implement plans for the dissemination of informa-
tion concerning civil defense to the public. Should establish,
coordinate and implement an effective training program for civil
defense personnel and the general education of the public in
techniques of civil defense ... Should utilize state educational
facilities as media in furtherance of its mission ... \(^\text{15}\)

The survival projects, authorized last November, 1957, are
planned for nine strategic locations in Montana and are to be released
October 1, 1958.

There are three ways by which civil defense training can be
taught most effectively:

(1) by incorporating the concepts and principles into the now
existing curriculum just as honesty, health, citizenship traits, and
safety are introduced whenever it is possible to do so.

(2) by structuring the curriculum in such a way that children
will receive this training at specific levels and in specific subject

\(^{14}\)Montana Civil Defense Act of 1951 as found in Appendix
D.

\(^{15}\)Ibid., Appendix A, p. 166.
areas of knowledge and skills such as fire fighting, First Aid, etc.

(3) by including definite units or blocks of civil defense training in the school curriculum. This could occur at four levels in the public schools, in Grade 4, Grade 7, Grade 9 or 10, and 12, as a part of the social science courses as well as the science classes.

CHARTS ON SUBJECT CLASSIFICATIONS

FOR GRADE LEVELS

The purpose of the accompanying charts of curricular topics is to provide a district or a school curriculum with a basic scheme of allocations—this scheme to serve chiefly as a point of reference in plotting the educational job locally. It is not intended to be an arbitrary plan but to serve as a basic check-list for insuring that the major subjects of civil defense shall be provided for in the curriculum.¹⁶

Certain recommendations are included to add further effectiveness to any plan that a local committee may use in constructing its curriculum. These are:

1. Each grade subject area must be worked out to include specific activities and subject matter content with its responsibilities.
2. Outcomes must include appropriate categories of attitudes, concepts, understandings, skill and behaviors.

3. Actual training for some specific job in civil defense should be emphasized. Everyone should have selected a job to do.

4. The monthly drill should be considered as an educational opportunity for discussions and understanding of civil defense problems.

5. The refined draft should include places on assembly, classrooms, student councils, homerooms, etc.

6. Evaluation is not listed or mentioned in the charts which follow. Desired outcomes and needs should be planned realistically. Many areas will differ in the results required to be successful. ¹⁷

All aims in civil defense are:

1. to save lives
2. to save property
3. to prevent panic and sustain morale
4. to restore life to normalcy as quickly as possible. ¹⁸

WHY CIVIL DEFENSE?

The suggestions that follow are presented almost verbatim to assist the local school boards to allocate specific defense education at appropriate grade levels. Used as a checklist, the teacher can determine what subject matter to present. ¹⁹ Another more complete checklist can be found in Education for National Survival. ²⁰

¹⁷Ibid., p. 1.

¹⁸Ibid., p. 3.

¹⁹Ibid., p. 1.

I. Why Civil Defense?

<table>
<thead>
<tr>
<th></th>
<th>Elementary</th>
<th>Junior High</th>
<th>Senior High</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. World unrest</td>
<td>Social Studies</td>
<td>Social Studies</td>
<td>Social Studies</td>
</tr>
<tr>
<td>B. Nuclear warfare, atom bomb and civilian status</td>
<td>Social Studies</td>
<td>Social Studies</td>
<td>Social Studies</td>
</tr>
<tr>
<td>C. Mutual help and the American tradition</td>
<td>Grade 5 Social Studies</td>
<td>Grade 8 Social Studies</td>
<td>Grade 11 Social Studies</td>
</tr>
<tr>
<td>D. The interdependence of states (rural, urban, industrialization)</td>
<td>Social Studies</td>
<td>Social Studies</td>
<td>Social Studies</td>
</tr>
<tr>
<td>E. Civil defense as a deterrent to aggression</td>
<td>Social Studies</td>
<td>Social Studies</td>
<td>Social Studies</td>
</tr>
<tr>
<td>F. Civil defense as a workable solution to natural disasters and catastrophes</td>
<td>Social Studies</td>
<td>Social Studies</td>
<td>Social Studies</td>
</tr>
<tr>
<td>G. Montana's yearly experiences with disasters.</td>
<td>Science</td>
<td>Science</td>
<td>Science</td>
</tr>
</tbody>
</table>

II. The Nature of Natural Disasters

(Note: This chapter will overlap the succeeding chapters on "Protective Measures Against Disasters" and Function of Civil Defense Organization)

A. Natural catastrophes

1. Physical effects of natural disasters
   a. Explosions Science Science Science
   b. Earthquakes Science Science Science
c. Floods Science Science Science

d. Fires Science Science Science

e. Others

Elementary Junior Senior

High High

2. Personal, social, economic effects of natural disasters

a. Fires Social Social Social

Studies Studies Studies

b. Explosions Social Social Social

Studies Studies Studies Chemistry

c. Earthquakes Social Social Social

Studies Studies Chemistry

d. Floods Social Social Social

Studies Studies Studies

e. Others

B. War-caused disasters

1. Physical effects of specific catastrophes

a. Atom-hydrogen bombs Science Science Science

b. Biological warfare Science (Life)

c. Chemistry warfare Chemistry

2. Personal, social economic effects*

*Other effects to be considered would be panic, hysteria, and loss of morale. These should receive thoughtful attention.
### III. Protective Measures Against Disasters

(Note: This part of the defense story must be correlated closely and integrated with the treatment of disasters in Part II).

<table>
<thead>
<tr>
<th>Elementary</th>
<th>Junior High</th>
<th>Senior High</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Self-protection measures</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Optimum physical fitness</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>2. First Aid skills and understanding</td>
<td></td>
<td>Physical Education</td>
</tr>
<tr>
<td>3. Fire fighting skills and understandings</td>
<td>Science</td>
<td>Science</td>
</tr>
<tr>
<td>4. Awareness of drills, alerts, shelters</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>5. Knowledge of Conelrad</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>6. Knowledge of panic prevention</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>7. Morale-sustaining activities</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**B. Extended self-protection measures**
-91-

<table>
<thead>
<tr>
<th></th>
<th>Elementary</th>
<th>Junior High</th>
<th>Senior High</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The family action program (individual duties, food, shelter, communications, etc.)</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>2. Neighborhood planning (warden, shelters, evacuation plans, communications, etc.)</td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>3. School provisions (shelters, drills, alerts, first aid, communications, fire-fighting, etc.)</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

C. Mutual aid provisions

1. Inter-community Social Studies Social Studies Social Studies
2. Inter-state aid Social Studies Social Studies Social Studies
3. Federal aid Social Studies Social Studies Social Studies

IV. Organization for Defense

(Note: This part of the story of civil defense is essential in showing how protective measures outlined in Part III are systematically welded together in an organization stemming from government.

<table>
<thead>
<tr>
<th></th>
<th>Elementary</th>
<th>Junior High</th>
<th>Senior High</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Laws and ordinances authorizing the establishing of civil defense measures</td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>
| B. Civil defense service divisions. (personnel and functions).
1. Communications and air raid warning services | x | x | x |
<table>
<thead>
<tr>
<th></th>
<th>Elementary</th>
<th>Junior</th>
<th>Senior</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Evacuation and welfare services</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>3.</td>
<td>Engineers services</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>4.</td>
<td>Fire services</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>5.</td>
<td>Food and nutrition services</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>6.</td>
<td>Medical and health services</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>7.</td>
<td>Law enforcement services</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>8.</td>
<td>Training services</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>9.</td>
<td>Transportation services</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>10.</td>
<td>Radiological services</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>11.</td>
<td>Sanitation services</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>12.</td>
<td>Public utilities</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>13.</td>
<td>Rescue service</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>14.</td>
<td>Public information, education, service</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>15.</td>
<td>Warden service</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

C. Control center of operations

(Minor) (Minor) (Participation)

(Attention)

\[22\] B. Frank Gillette and J. R. Haworth, op. cit., pp. 2-5.
MAJOR OUTCOMES

Because of the very nature of civil defense, with its reliance on individual performance and his co-working with others, it is necessary that the program will be acceptable to the community as well as to the civil defense organization itself. The building of a civil defense curriculum, to be practical, should have for its planning committee representatives from the school, the city, or district, and the local civil defense organization. The following OUTCOMES are suggestive only of results that can be expected from incorporating a Civil Defense training program in the schools of the state.

**Attitudes**

Civil defense is the practical way by which modern communities can handle the emergencies which effect the whole community.

In our closely-packed communities a major disaster can only be handled through mutual aid and co-operation.

Every individual must do his part in the civil defense program of action.

We can do something about disasters if we understand and plan for such eventualities.

We can do something about survival from nuclear disasters.

We need morale, courage, and hope to survive a disaster of atomic attack.

Survival will go to the nation composed of individuals who have the initiative to combat and conquer disaster.

To endure hardships may be a necessary facet of survival.
We must gain knowledge of the types of disasters which occur and counter them with techniques for survival.

**Concepts and Understandings**

Civil defense is a way of preserving the American way of life in the face of dangers that threaten this democracy.

The idea of civil defense is not a new concept in the American way of life but is based upon a national background of protective citizenship built up over years of American growth.

Civil defense may deter an aggressor from attacking.

Self-protection is the primary goal of civil defense. Self-protection extended to families, neighborhoods, and communities organized to cope with disaster conditions.

Mutual aid and understanding are necessary parts of all civil defense operations.

Maintenance of communications is an essential part of civil defense.

Civil defense operations rest ordinarily upon the usual peacetime municipal operations expanded to cope with disaster conditions.

Civil defense obligations and commitments, before, as well as after disaster are as important as any other community involvements.

**Skills and Habits**

Planning family survival techniques.

Planning evacuation procedures for self and family.

Looking for shelter areas whenever entering a new building.

Reassuring groups about civil defense operations as one means of preventing panic.

Learning to rely on other means of communications from the customary use of the telephone.
Construction of equipment, tools, and materials for use in shelter.

Evaluations

Results of "dry-runs" involving civil defense.

Classroom tests involving maps.

Sample interviewing of parents as to home responsibilities in such areas as first aid, first aid kits, food shelf, warden duties, fire, and safety, primitive living, etc.

Classroom tests of verbal, problem-solving nature.

Check list of civil defense readiness in school and home drills.23

Understandings

1. A student should know of the place that civil defense holds in the general framework of the local government.
2. He should know the mutual aid pacts of civil defense.
3. He should know of the help that the organization of civil defense can give in times of disaster.
4. He should be informed about how a citizen can participate in civil defense.
5. He should become aware of the importance of civil defense training in the world of international affairs.

Behavior Patterns

1. A student should show an ever increasing interest in civil defense.
2. He should participate in the jobs needed for the defense organization that are suitable for his age and maturity.

Generalizations

A student who has studied community organization of civil defense in the community should have formulated some very basic generalizations.

23John H. Capless, op. cit., pp. 3-5.
1. A sound civil defense organization is necessary to the welfare of the nation.
2. Each citizen must know what to do for survival.
3. Each person should take his place in the civil defense organization in order that the program might succeed or be successful. Only through mutual cooperation and aid can a civil defense be set up and the obligation and standards be reached and maintained.\footnote{Madeline Miedema, "A Suggested Method of Incorporating a Study of Civil Defense in the Social Studies Courses on Community Living or Local Government," Some Suggestions for Introducing Civil Defense Education into the School Curriculum (Claremont: California State Department of Education December 20-23, 1955), pp. 1-2}
Section B

Part I. Civil Defense and the Social Sciences

Part II. Initial Steps in Civil Defense Planning

Part III. Detailed Lesson Plans

Part IV. Civil Defense and Science
INTEGRATION OF CIVIL DEFENSE EDUCATION

Integration of civil defense education into the curriculum takes place in the social science field. Integration, however, may well require increased emphasis on some units, addition of new content and material in others, as well as new methods of procedure. Teachers should examine their presentations carefully to determine where civil defense might best emerge.

A major function of the citizenship education program is the development of local responsibility and initiative. This is particularly important on the community level. Teachers of citizenship training must help pupils to acquire understanding and skills necessary to become effective, active participants in problems of a local nature. Civil defense is one means of acquiring this training.

Instituting civil defense programs means acquiring an understanding of techniques in solving social and community problems as they relate to civil defense.

Courses dealing with civil defense in the classroom recognize the importance of mental health, emotional, spiritual, and other pertinent implications of the individual.

As civil defense progresses from the primary to the secondary grades, each and every level will find understandings developing suited to the grade level of the pupil. New and broader horizons will open up. With new knowledge and the newly awakened response processes, new incentives to know more, to become better acquainted with all phases of the world of today, would be a major outcome. Our Nation's responsibility as a foremost leader of democratic nations of the world necessitates doing something about it.

Civil defense, well taught in the social sciences, will give all of the ideals, all of the purposes stated, and more if integrated properly into the work of the classroom.
PART I

CIVIL DEFENSE AND THE SOCIAL SCIENCES
(For Senior High Schools)

Section 1

Column 1

1. The Federal Civil Defense Administration:
   A. Administrators
      The Administrator
      The National Advisory Council
      Assistants to Administrator
      The Deputy Administrator
      The Executive Director
   B. Staff Officers
      Military Liaison
      Congressional Liaison
      Field Administration
      Public Affairs
      General Counsel
   C. Major Operational Officers
      Technical Services
      Management
      Training and Education
      Health and Welfare
      Operational Services
      Plans and Policies
   D. Division Within Various Operational Offices
      Technical Services
      Engineering
      Facilities
      Fire
      Police
      Rescue
      Transportation
      Warden
      Management

A. Reasons for a civil defense program:
   1. The development of nuclear weapons.
   2. There can be no adequate military defense against military attack.
   3. Our lives, great industrial powers, natural resources and security must be protected.

B. Duties of Civil Defense Administration are:
   1. To develop plans and programs for civil defense and the dissemination of information to the public.
   2. To estimate the total manpower, material and fiscal requirements for carrying out the program, and to disburse such federal aid to states as provided by law.
   3. To develop a program of research.
   4. To develop and coordinate a program for educating and training the general public and volunteer workers.
   5. To stockpile medical and other supplies to be issued to the States in times of disaster.
   6. To assist states in negotiating mutual aid compacts.
   7. To provide for communications and dissemination of warnings of enemy attacks to the civilian population.
   8. To coordinate civil defense operations in the event of a national emergency.
D. (cont.)
Administrative Services
Budget and Fiscal
Organization and Procedures
Personnel
Security

C. Organizational plans include:

1. Training and Education
   Staff College and Technical Schools
   General Training and Methods
   Leadership Training

2. Health and Welfare
   Emergency warfare
   Health and Special Weapons Defense
   Atomic, Biological and Chemical Warfare.

3. Operational Services are:
   Attack Warning
   Communications
   Shelter
   Supply

4. Plans and Policies include:
   Intelligence
   Program Coordination
   Requirements
   Research

Section 2

2. The State Civil Defense Organization:
   A. Administrators
      The Governor
      The Advisory Council
      The Civil Defense Director
      The Deputy Director
      Public Affairs
      Legal Counsel

   A. Divisions and services may follow the Federal plan or substitutions may
      be made as needed.

   B. The following considerations should be observed in establishing an
      organization:
      1. A state civil defense organization should be established by the
         Governor.
      2. The state civil defense organization should be based on existing
         state governmental agencies as far as possible.
      3. The state will determine the character of its own civil defense
         organization.
      4. In disaster, the state civil defense organization would assume
         active command over state civil defense operations. If state
         facilities are inadequate, other states through prearranged
         plans should be called upon for assistance.
5. State and local organizations should be built around existing state, municipal, on county departments, adding those new services would be needed primarily for civil defense.

C. Responsibilities of the State Civil Defense Organization:

1. Organizes and operates state training programs.

2. Assists local authorities in establishing and operating their training programs.

Section 3

The Local Civil Defense Organizations:

A. Administrators
   - The Mayor or Chief Executive
   - The Advisory Council
   - The Civil Defense Director
   - The Deputy Director
   - Public Affairs
   - Legal Counsel

A. The duties of the local civil defense administrator are:

1. To establish and direct operation of local civil defense organizations.

2. To coordinate and direct local civil defense activities of private and public agencies or groups.

3. To formulate and negotiate mutual aid plans and agreements.

4. To direct the program in accordance with federal and state plans.

5. To establish primary and one or more secondary control centers to serve as command posts during an emergency.

B. The duties of a local control group or center are:

1. To receive and disseminate air-raid warnings.

2. To alert the various services.

3. To marshal and disperse civil defense services.

4. To warn the public to take shelter.

5. To order the civil defense services into action.

6. To assess the nature and extent of damage.

References:

Ibid., pp. 2-4.
Appendix C, p. 176.

4. Financing Civil Defense:

A. Financing Civil Defense:
   - Government at all levels should bear the burden.
   1. Federal Government will supply fifty percent of organizational equipment costs on a matching basis.

2. State and local government will supply fifty percent of the organizational equipment costs.

References:

Ibid., pp. 3-4.
5. Civil Defense Legislation:

Ibid., p. 4.
Appendix A, pp. 164-166.

6. State Civil Defense Legislation:

References:

National Law, Appendix A, p. 164.
Montana Law, Appendix A, p. 166.

7. Local Civil Defense Legislation:

References:

See Montana's Enabling Act 1951,
for Schools, Appendix A, p. 166.
Montana Survival Plan, Appendix C, p. 176
Annexes, loc. cit.
Ibid., p. 3.
Part II

Initial Steps in Civil Defense Planning
(For Senior High Schools)

Section 1

Column I

1. The Civil Defense Plan

The plan indicates:

A. The Civil Defense Director will:

1. Determine responsibilities and assign these to officials, departments, etc.
2. List resources, personnel, supplies and equipment.
3. Provide for additional resources.

B. A state of readiness will not exist until:

1. Deficiencies in resources have been filled and funds have been made available for planning and operation.
2. A force of volunteer civil defense workers has been trained.
3. The public knows what to do in times of emergency.

Reference:
Civil Defense in Outline, pp. 1-6.

Section 2

2. The Public Affairs Program

A. Major responsibilities are:

1. Mission: The Public Affairs program discharges a major responsibility of disseminating information to all kinds of organizations.
2. Purpose: Public understanding must be based on the knowledge of facts.
   a. Minimum loss of life
   b. Minimum fear of panic and fear
   c. High public morale
   d. Full individual participation in civil defense
   e. Maximum public support of the war effort
3. Activities:
   a. General public education, by which the people are told the truth about the dangers from various types of warfare, how to protect themselves, how effective a program of civil defense can be or cannot be.
   b. Public information through regular reports through all media.
   c. Public liaison, the purpose of which is to develop cooperation between civil defense organizations and organized community groups.
Section 2, (Cont.)

4. Releases: The Federal Civil Defense releases and reviews basic information
   
e. A public affairs advisor should serve on the staff at each level. 
   Duties are: (1) to advise on all matters affecting public opinion and be consulted on policy decisions, and (2) administer the operational phases of his own organization.

Reference:
Ibid., p. 7.

Section 3

A. "Attack warning system is a mechanism by which civil defense authorities disseminate attack warnings to the general public."

References:
Ibid., p. 8.
Rawin Observators
Control Centers,
C.D. IG 3-2, p. 7.
Conelrad, GPO: 1953, O-273037
Appendix B, p. 173.

4. Shelter Program

References:
"Shelter From Radioactive Fallout, "
A Digest of Technical Information, FCDA
Home Protection Exercises, FCDA, p. 8.
"Information Sheet, No. 35" FCDA.

Section 4

A. Shelters should be provided for all people in all places where they are needed, particularly in the critical target area.

References:
"Shelter From Radioactive Fallout, "
A Digest of Technical Information, FCDA
Home Protection Exercises, FCDA, p. 8.
"Information Sheet, No. 35" FCDA.
5. **Priority Evacuation**

A. **Definition**: Evacuation in civil defense means the organised removal of special groups of civilians from a given area.

1. **Voluntary Class**: people who leave the area under supervision with the assistance of constituted authorities, taking place in advance of attack.
2. **Organized Compulsory**: mandatory removal. This may take place prior to attack, but it usually follows.

B. **The State's Responsibility**:

1. Rests with the state civil defense organization.
2. Finds and secures reception areas for people away from critical areas, (housing, feeding and other welfare services).
3. If state laws are inadequate, then interstate evacuation is in order with the FCDA through the Federal regional offices.
4. In combat zones, the military has the responsibility.
5. Prior to ordering evacuation, encouragement may be given to non-essential civilians who can establish homes elsewhere.

C. **Order of Evacuation**:

1. Hospitalized, sick and injured.
2. Pre-school children accompanied by mothers and guardians.
3. Children of school age up to and including 15 years of age.
4. Pregnant women, the aged, and the infirm.
5. All other priority groups except those serving in essential capacities.

(The sick will be taken care of by the civil defense health services, and medical care will be provided. The groups will be directed to predesignated gathering point by the warden service and then moved by categories to assembly points and ultimately to reception centers.)

D. **Personnel of the Local Boards are**:

1. The local civil defense director
2. The chief of evacuation service
3. The chiefs of police, transportation, welfare, health, warden service, and others.

E. **The Chief of Evacuation through the C. D. director**:

1. Chief issues regulations and instructions for selecting, training and supervising personnel assigned to evacuation or reception duties.

References:

*Civil Defense In Outline*, pp. 11-12.
6. **Warden Service**

A. **The Warden:**
   1. Is the point of contact between Civil Defense Corps and the public.
   2. Tenders on-the-spot assistance and guidance to mobile civil defense units.
   3. Must be a leader, well-respected and whose leadership is acceptable.

B. **The Importance of the Family Unit:**
   1. Family unit would be self-sufficient:
      a. First aid
      b. Individual self-protection
      c. Training in chemical, atomic courses
      d. Rescue work

C. **First line of Defense:**
   1. Take training or refresher courses in measures of self-protection; fire prevention; bacteriology, chemical, and atomic warfare defense; rescue methods.
   2. Equip homes with necessary tools, supplies, and all needed essentials for the preservation of the home and the family.

D. **Extended Self-protection for Critical Areas:**
   1. Where people live.
   2. Where people work.
   3. Where people assemble.

E. People of these areas should be organized under the warden's service into teams or units for fire fighting, rescue, first aid, etc.

F. **Outside of critical areas, a similar but modified extended self-protection organization should be established by the warden to:**
   1. Organize reception of evacuees and provide support programs needed as essential.
   2. Afford protection in case of other attack.

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**References:**


**A. Major Tasks**

Reference:

6. **Warden Service, (Cont.)**

- Organize the self-extended, self-protection program.
- Instruct the public on civil defense of current defense developments.
- Assemble pertinent data and essential information concerning occupants, buildings, businesses, physical features, and available protective equipment.

**B. Postattack Functions**

A. Following an attack, wardens will:

1. Mobilize organized self-protection units.
2. Report casualties, damages, and general conditions.
3. Render first aid, fight fires, assist in rescue work, prevent panic, utilizing the community's resources.
4. Call for assistance from mobile units when events get out of control of the organized self-protection forces of the immediate area.
5. Assist in unexploded ordnance reconnaissance.
6. Assist mobile support units or teams at the scene of disaster.
7. Collaborate with civil defense officials responsible for evacuation, police, fire, communications, and other services.
8. Assist families during rehabilitation and reconstruction programs.

**C. Training**

**References:**

**Civil Defense in Outline, pp. 13-14.**

Warden's Handbook, H-7-1, (December 1951), FCDA.


**Film:** Film Catalog, FCDA

7. **Police Service**

A. Comprehensive warden training is required in the following:

1. Organization, duties, response
2. First Aid
3. Firefighting
4. Chemical Warfare defense
5. Biological warfare defense
6. Basic Rescue procedures

**Section 7**

A. **Emergency Problems:**

1. In an emergency more police will be needed to cope with the conditions that would be caused by large-scale destruction from an enemy attack or serious natural disasters.

2. Police will be particularly needed to control traffic. This requires extensive planning and manpower.
A. Auxiliary Police

B. The auxiliary police will be subject to the policy and procedures of the local police force. The auxiliaries will:

1. Assist the regular police in handling traffic.
2. Insure emergency equipment and personnel priority to move where needed.
3. Maintain or restore order.
5. Guard critical installations where normal security measures have been reduced because of damage, or where additional strength is needed for security.
6. Guard supplies and equipment.
7. Assist other civil defense services.
8. Give first aid when needed.
9. Assist regular police in explosive ordinance reconnaissance and establishment of safety measures.
10. Assist in maintaining police communications.
11. Assist in evacuation.
12. Assist regular police in special capacities such as photographer, fingerprint technician, and communications technician.
13. Undertake routine duties (jailer, booking officer, wagon guard, or driver).
14. Take temporary charge of persons unable to care for themselves (for example: elderly people, children).
15. Assist in panic prevention and control.
16. Assist in guarding prisoners to be evacuated.
17. Assist in other police work that is assigned.

References:

- Basic Course for Civil Defense, FCDA Pub. 1G 3-2, p. 10.

8. Engineering Services

A. Duties at the State Level

1. Assist local engineering services to organize adequately.
2. Develop mobile support plans within the state.
3. Arrange for coordinated use of existing supplies.
4. Arrange for the procurement of reserve supplies as well as provide for the storage of reserve stocks.
8. **Engineering Services** (Cont.)

**B. Pre-attack Functions**

B. The pre-attack functions of the engineering services:

1. Recruit all existing groups attached to organizations associated with engineering construction, repair, and maintenance.
2. Recruit organizations and train an adequate number of civil defense workers to augment existing groups.
3. Adopt measures to safeguard water, gas, electricity, food supplies and sewage and waste disposal systems; apply protective design standards.
4. Assist in organizing, training, equipping, and operating the rescue service; controlling illumination, and instituting other passive defense measures if required.
5. Study local water-supply systems.
6. Stockpile materials for emergency repair as well as standard equipment, auxiliary power, and tank trucks for emergency use.
7. Study existing buildings for resistance to bombing attacks.
8. Furnish advice and information to other civil defense services, to industry and utilities, and to the public.
9. Plan close liaison with governmental and technical agencies for improving techniques for protective construction. This could include adjustments in building codes, zoning ordinances, and city planning policies.

**Reference:**


**C. Post-attack Functions**

C. Following an attack, the engineering services would include:

1. Construction and repairs essential for emergency restoration of essential services where skilled mechanics, substantial quantities of materials or major pieces of construction equipment would be required.
2. Clearance of debris and demolition of structures to gain passageway, create firebreaks, and remove hazards.
3. Assistance to the rescue squads.
4. Assistance and support for fire fighting and evacuation units and to effect emergency repairs to essential service facilities.

(1) **The volunteer forces**

(1) The volunteer forces to be coordinated by the engineering services will include persons who have construction skills or are familiar with the use of equipment such as cranes, bulldozers, dump trucks, welding machines, and explosives.

**D. Training in Civil Defense for Engineering Services**

D. Those in engineering will probably require little training in their field of work. The need of training in the following field is recognized:

1. A basic course in the organization of the civil defense, its purpose, its scope as well as courses covering his particular duties as a member of the team.

**References:**

*Basic Course in Civil Defense,* FCDA.
9. Communications

A. The nerve system of civil defense is communications. Effective and rapid communication must be maintained between all defense organizations of the states and the Federal civil defense.

B. Plans must be provided for all contingencies that might arise; some form of communication must always be available.

C. Security problems will arise in the use of communication channels which may be subject to enemy interception; radio is particularly vulnerable.

D. The Federal Civil Defense Administration is responsible for the overall planning for civil defense (see Appendix B-1) and for the coordination with the Department of Defense, the Federal Communications Commission, and other government agencies, commercial communications and broadcasting networks.

A. State, Local Organizations

A. Plans involving the state and local organizations are:
1. To identify the communication needs that would exist in an emergency and anticipate the kind of traffic, the volume and special problems.
2. To make inventories of existing communication facilities and to make arrangements for their emergency use.
3. To provide in every instance secondary systems of communications.

B. Normally, communication requirements in critical areas would include facilities for:
1. Communication between civil defense control centers.
3. Communication systems for:
   a. fire  e. warden
   b. police  f. health
   c. transportation  g. engineering
   c. rescue  h. reconnaissance teams

C. Local communication plans should include all forms of communication including telephone, telegraph, AM broadcasting, short wave radio, teletype, messenger service, etc.

B. The Control Center

A. Control centers should be able and capable of maintaining communications for the following purposes:
1. Receipt and dissemination of air-raid information
2. Operation of sirens and public-address systems to alert and convey warnings to the public, to industrial installations, to civil defense and to volunteer workers.

References:
Appendix B, p. 173.
Appendix B, p. 171.
Appendix B, p. 170.
Communications (Cont.)

9. Communications (Cont.)

3. Summoning key civil defense personnel to duty.
4. Reports and requests for assistance from the established local services and the civil defense operating units.
5. Contact with state and other control centers for exchange of assistance.
6. Constant two-way communication with local police, fire, rescue, medical, engineering, and other operating services and with key broadcasting services.

B. Provisions should be made for messenger services which would enlist messengers, automobiles, motorcycles, bicycles and other transportation.

C. Broadcasting stations (including television) should be used to inform the public of its responsibility in civil defense and to teach procedures. AM broadcasting will be available for disseminating civil defense instructions during and after air raids but operating on regulations prepared by the Federal Communications Commission. Review CONELRAD.

A. Radio amateurs, through the Radio Amateur Emergency Services (RACES) are to augment the service during emergency. Schools are urged to tie in with these communications networks wherever local organization permits.

B. Rules to achieve coordination:

1. Provide for communications between each unit at school as well as within. (Isolation and lack of knowledge as to what is going on, could create fear and panic.)
2. Provide for communications between the school and the local civil defense organization.
3. Publicize the codes and drill to the point of automatic response.
4. Use the standard signals developed by FCDA. Teach any supplementary signals needed to meet any special need.
5. Set up control points to clear all messages to prevent rumor, confusion or misunderstandings. (Control, drill and facts are the best weapons against panic and fear.)
6. Incorporate communications into everyday use so as to develop maximum sensitivity to it. (Use of the emergency communication system and messenger services to accomplish your daily work.)
7. Develop several alternate channels of communications.
8. Take advantage of the enthusiasm and skills of hobby and amateur groups.

References:

Civil Defense in Outline, FCDA Pub., pp. 31-34.
Interim Civil Defense, TEB 3-1 FCDA Pub., p. 23.
Appendix C. pp. 182-183
Appendix B. p. 170
Appendix B. p. 173.
10. Other topics to investigate under this heading of INITIAL STEPS IN CIVIL DEFENSE PLANNING

A. The following divisions for civil defense coordination between organizations will be found in extended readings on the subjects listed. The breadth of the subject can only be partially understood as investigation of the civil defense activities takes place. This study can't fail to impress the student on the importance of participation in a field of his interest as a patriotic duty to himself and to society at large.

1. Mutual Aid and Mobile Support
2. Transportation
3. Health Services and Special Weapons Defense
4. Emergency and Welfare Service
5. Rescue Service
6. Civil Defense for Industry and Institutions
7. Supply Services
8. Civilian Auxiliaries to Military Activities

References:

Civil Defense in Outline,
Material Unlimited. Many sources and writers. FCDA has inexpensive bulletins on all civil defense subjects for a few cents per copy. See Bibilography for lists.

Glossary:

FCDA - OCDM since June 1, 1958.
PART III

DETAILED LESSON PLANS

INVESTIGATING CIVIL DEFENSE

In government, history, or occupation classes, the framework and working principles of local, state, and federal governments are studied. Civil defense can become a part of each division of subject matter. The relationship that exists between departments can be shown effectively by the study of mutual pacts, city with neighboring city, city with county, or each one with the state. In the international field, mutual pacts and treaties are entered into to establish upon an international basis a program of understandings and concepts that may keep peace for the nations.

This course in relation to civics and current history will require a library of civil defense materials as well as the current news magazines and periodicals if far-reaching results are to be gained. Causes and effects pertaining to social problems, home and its relation to the civil defense movement, --these are only two of many problems of first importance and magnitude, but answers can be found usually, in the various publications of Federal Civil Defense Administration. These pamphlets and bulletins may be bought at very low cost to the school to form the texts and sources for research. The authority is unquestioned.

Discussions, talks, debate, panel groups, reports -- all of these activities can be used to clarify civil defense subjects. Many are topics that would make fine program material for service clubs, P. T. A.'s, and the civic organizations for information, for training in public performance, and for the dissemination of facts regarding civil defense principles to the general public. Radio, television, newspapers, magazines, movies, etc., combine to present views and opinions to classes which need to have broad interpretations and discussions so that these young people may understand the cultures, not only of American ways of life, but will understand other existing geopolitical divisions and ideologies for an international outlook.
Nowhere in the whole field of education can be found a greater opportunity for the teaching of citizenship as can be
and in the social science studies when the topic of civil defense is the basis of the presentation. Concepts, understandings,
principles of democracy, ideas, forms, ideals of service, morals, leadership, integrity, honesty, character, --
se and others can be given in the building of the ideal future American citizen found in the classrooms of today's

Section 1

SUGGESTED TOPICS FOR INVESTIGATING CIVIL DEFENSE

The Federal Civil Defense Administration
and What It Does.

State Responsibility to the Federal Plan of
Civil Defense.

Civil Defense--A Natural Disaster Agency

The Responsibility of Local Government to Civil
Defense

The Armed Forces and Civil Defense

The Ground Observer Corps

Control Centers

Police and Emergency Police

Wardens, Their Duties and Responsibilities

The Local Fire Department and Nuclear Firefighting

11. Rescue Services

12. The Engineer and Civil Defense Planning

13. Health and Medical Services -- casualty care

14. Transportation

15. Communications

16. Industrial Protection and Federal Aid

17. Supplies of Food, Water, Clothing in Atomic Warfare

18. Shelters

19. Radiological Monitors

20. Evacuation

Section 2

A SUGGESTION ON THE BUILDING OF A GLOSSARY OF CIVIL DEFENSE TERMS

To build a glossary of civil defense terms is one way to enlarge understandings of the vast reaches to be found in civil
defense. Using one of several standard glossaries on civil defense terms, United States Civil Defense, Civil Defense Glossary, H-25-2(Handbook), a FCDA publication at (25¢), we find such terms as the following in this valuable book:

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC Warfare</td>
<td>Civil Defense</td>
</tr>
<tr>
<td>Aerosol</td>
<td>Civil Defense Loan</td>
</tr>
<tr>
<td>Air Burst</td>
<td>Continuity of Government</td>
</tr>
<tr>
<td>Alpha particles</td>
<td>Damage Rings</td>
</tr>
<tr>
<td>Basic Key Stations</td>
<td>Zone of Damage</td>
</tr>
<tr>
<td>Blood Services</td>
<td>Deconcentration</td>
</tr>
<tr>
<td>Civil Defense Equivalent Roentgen</td>
<td>State of Extreme Emergency</td>
</tr>
<tr>
<td>Neutrons</td>
<td>Nuclear Fission</td>
</tr>
<tr>
<td>Radiation Syndrome</td>
<td>Urban Analysis</td>
</tr>
<tr>
<td>Warden</td>
<td></td>
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</tbody>
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Section 3

SUGGESTED ACTIVITIES FOR CIVIL DEFENSE

1. List local, county, state or national disasters in recent years. How was each met?
2. Bring to class clippings, magazine articles on civil defense activities in the community.
3. Show films that point up the importance of civil defense.
4. Assemble a library of civil defense materials, using the inexpensive books and leaflets issued by the Federal Civil Administration. Many states, i.e., California, Texas, Michigan, New York, Delaware, Connecticut, have excellent bulletins on a wide variety of civil defense information.
5. Make maps of the local community. Include facilities important to civil defense, such as schools, parks, playgrounds, telephone offices, police stations, power plants, fire houses, food stores, warehouses, defense headquarters, hospitals, industries, railroads, highways, evacuation routes, airports, oilways, water-ways, reception centers, and any other place of importance.
6. Prepare a handbook on local government. Include in its structure the officials (elected or appointed) with their duties, terms of office, election and other responsibility of citizenship and the civil defense organization.
7. If the school has observance of "City Government Day," one student may be assigned to spend time in the civil defense office and report on the activities to his social studies class on impressions he received, how important is the work, and how practical is this work to the community.
8. Assign students to visit the heads of the departments such as civic administration offices, chief engineer, local civil defense director, to see how civil defense works.
9. Conduct an investigation on shelters. Reports on proposed types recommended by the government with illustrations to supplement the actual situation. What are the reactions?
10. Prepare an outline of home and school civil defense activities to be presented to civic groups.

Show how divergent and conflicting are the ideals of government. Show how these ideals often effect world tensions. (Make similar comparisons with many combinations such as the lesson plan on "Democracy—Communism.") List the advantages of a democracy for an individual.
12. List the qualities of character that make up the ideal American citizen and support your contentions. In the follow-up discussions and debate, students may emphasize activities that develop intelligent reliable action in relation to citizenship.

13. Study relationships of polar geography to the world of affairs using air-age maps, globes, and reports.

14. Beginning at the turn of the century, show how events have led to the present world situations. Show why civil defense is the only way by which a modern state may hope to survive in case of a war of nuclear power.

15. Study propaganda techniques. How to recognize propaganda. Why it is essential to understand propaganda techniques. Show how and why propaganda is of vital importance. Give examples of the American types of propaganda as well as of those of other nations, and their effectiveness.

16. Incorporate school defense planning into the work of the student council or the student government body.

17. Develop an appreciation for other cultures making use of all resource material.

18. Develop popular concepts as a background for civil defense.

19. Investigate the check-list for schools. (See Appendix)

20. Stress sound intellectual, intergroup, human-relationships as a means of developing local and regional unity and providing backgrounds for international understandings and cooperation.

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1Education for National Survival, loc. cit., pp. 44-45

Section 4

PSYCHOLOGICAL DEFENSE AGAINST ATOMIC WEAPONS
(For Senior High School)

Column I

PANIC

Panic defined: Panic is irrational behavior due to uncontrolled fear.

Fear in itself is not panic; it's a natural, even healthy, reaction.

The great importance of everyone is to be trained for the tasks or specific jobs to do in relation to his own survival and defense, and for his neighborhood and community.

People should be informed of the facts about probable destruction.

People should know whom to look to for leadership--to the block warden, the apartment house warden--and if they belong to a team, then the team leader

All skills needed for emergencies should be automatically performed regardless of whatever obstacles may confront him.

It is a fact that panic can be greatly controlled by calm leadership. Statistics from World War II indicates the ability of people to adjust under competent leadership

Leaders must be especially trained for panic prevention.

Column II

A. Three steps which are basic for the control of panic:

1. Informing the public beforehand of what is possible and what to do about it.

2. Training defense leaders, down to the family level, to prevent panic when it starts.

3. Establishing emergency information facilities to give the people a quick, full account of what is happening--before, during and after attack.

B. To carry out the first step, widespread program of public education using all means of communications is being undertaken by FCDA as well as state and local organizations. Newspaper, magazines, booklets, pamphlets, radio, television, plus movies of definite operational movements, i.e., "Operation Ivy" are examples of the way information is disseminated to people

C. Plans are made for information to be issued from emergency stations outside critical target areas, i.e. in the Niagara Falls area such arrangements are on an international basis.

Column III

References:


"Panic, the Ultimate Weapon." Collier's, August 21, 1953.


Research:

Find examples of panic. Seek causes.

The effect of panic on large groups can be illustrated by such panics that occurred in:

1938 "Men from Mars" radio broadcast.

1947 The Texas City Disaster

1954 The Hindu Stampede of Pilgrims in India involving 3,000,000.

Panic statistics as founded W. W. II during the bombings in Great Britain, Germany, as found in Impact of Air Attack.

Stress the fact that panic can be controlled best by knowledge, by training in skills required for self-help, self-preservation.
DEMOCRACY VS. COMMUNISM
(For Senior High)

Column I

DEMOCRACY

Democracy teaches that the individual counts; that the state exists for the individual.

Democracy is concerned with the greatest good for the greatest number.

Democracy believes in man's inherent right to determine his own form of government and social development.

Democracy believes in a Supreme Being who has endowed him with "certain inalienable rights of Life, Liberty, and Pursuit of Happiness."

It expects man to choose his own religious beliefs.

True democracy is a government of "The People, by the People, and for the People."

References:


Column II

COMMUNISM

Communism teaches that the individual is subordinate to the State; that nothing is important except the advancement of the State and the maintenance of its power.

Communism teaches that whatever contributes to the supremacy of the State, is right. All which fails to do this is wrong. Ideology, "World Supremacy."

Communism believes in world supremacy even to the destruction of peoples or the involvement of slavery for conquered peoples.

Communism believes that a "Divine Being or God" is but a drug, an "opiate of the people."

Communism is a form of Totalitarianism.

References:

Communism, Challenge to Americans, by Carroll Hawkins, Michigan State University, East Lansing, 1953.


Column III

REFERENCES FOR THE TEACHER

The two philosophies are opposing and irreconcilable. Students must gain an understanding of the principle underlying each form of ideology before a genuine insight can be developed.

Guiding principles:

1. All orientation should be done in existing classes.

2. Civil Defense activities must be compatible to the tenets of our democracy.

3. Civil Defense teaching must be based on the constant premise of the worth of the individual--his right to self-determination.

4. One must accept fear as a "component of readiness, a stimulated preparedness, and a builder of individual and community confidence."

References:

Current basic texts in use.

Magazine articles.

Newspapers:

The New York Times
Christian Science Monitor.
PART IV

CIVIL DEFENSE AND SCIENCE

Science and Civil Defense Can Work Together

Introduction: Civil Defense education should be a part of the experience of each age group.

In the science courses, there are many ways and opportunities to present the technical aspects of civil defense. Senior classes and junior high can use data on technical developments which have lead to modern warfare and the facts concerning the energy released by atom and hydrogen bombs. Teachers can clarify terms regarding atomic explosions, such as fission and fusion, and radio-active fallout.

Fire prevention and fire fighting are listed in the science courses. Most standard texts treat the subjects of fire, health, and first aid as units. Food and water contamination, radiation and its effects on the human body, radiological contamination and its control, are also legitimate topics for biology study. The relative penetrating rays of alpha, beta, and gamma, the operation of detection instruments, the need of protection against radiation, and the preferred type of shelters are all instructions which can be integrated into existing science classes. This would give students a clearer perspective of the problems involved.

The alert science teacher will find important additions to append to this list; many substitutions can also be made. With the addition of more facts and details, the scope of the subject matter involved will be increased, and the understanding of pupils made broader. The field of civil defense is boundless and it is challenging.
Section 1

SUGGESTED PROBLEMS IN CIVIL DEFENSE
(Grades 4 through 9)

Column I

Facts

FLOODS AND THEIR EFFECTS

1. Floods occur somewhere every year, particularly in the spring and the fall.

2. Some floods are caused by cloud-bursts in the mountains or over plains, badlands, and deserts. A heavy thunderstorm over a mountain is blue-black, shaped much like an anvil over head, and lightning flashes intermittently in the distance. Motorist and camper should get to high ground out of the danger of floods. It may not be raining where they are, but to take a chance of a flash flood by staying on the floor of the canyon is unwise and could be dangerous.

3. Many floods are caused by dams giving way. This is unusual today, for good engineering is making better plans and better construction.

4. Melting snows, heavy spring and fall rains are causes of many floods in Montana. When flood exists and heavy flood damage with sometimes loss of life, the mayor of the city or town involved may call on the governor of the state to declare a state of emergency and bring state and national civil defense forces into operation.

Column II

Demonstrations--Experiments

The children may search for news records of floods or get stories from "old-timers" or stories of modern floods in the state.

Use blackboard sketches to show the development of thundershowers, the mechanism of thunderheads, the quick run-off of torrential rains in canyons, bare mountain slopes and bare hillsides, then into canyons and unwooded mountain valleys.

Study the flood areas of the Missouri, the Yellowstone, the watershed, and other rivers of the state. Find out the damages that were done to farms, towns, cities, and ranches. Study how burned-over ground is affected by heavy rains.

Check over your country side for dam sites; locate dams that protect you from floods. Make a map of the school's location and mark water courses and flood control if any. Locate dams, levees, and irrigation projects.

How does the National Guard function in an emergency when answering the call of the Governor to a "state-of emergency"? Check the work of the Red Cross, ham radio operators, the sheriff's office, the city police, the fire department, and the forces of civil defense in the community.

Column III

Aids---References

CIVIL DEFENSE is geared to all types of disasters and calamities—not just with the air attack upon this nation.

This day of sight seeing and prospecting in areas of Montana calls for knowledge of flash floods from distant mountains, caused by distant thunderstorms. Study how steady rains in the rainy season cause the overflowing of many rivers and creeks.

Great Falls, Havre, Miles City, Harlowton, and many other places in the state have history of floods, and stories of how the government gave relief to stricken areas.

During the fiscal year, 1956, the United States Government paid out $37,410,205 for major natural disasters.

The hurricane and floods in August, 1955 on the east coast and the floods in December 1955 in California caused the greatest damage. Montana had no major disasters in 1955-56-57.

In some of the towns of the state, the agencies of the community come to the aid of the community in an emergency. This plan of relief is well organized and co-ordinated under civil defense.
List other damages beside the loss of homes or of drowning:

1. Closed highways
2. Ruined lands and farms
3. Communications destroyed
4. Power failure
5. Railroad wash-outs
6. Others

Make a list of jobs that Civil Defense workers would perform in connection with floods.

Describe what every citizen can do in time of emergency.

Find out what the local Civil Defense would be expected to do. Notice how local efforts will fit into plans of relief with the State and National flood relief and restoration plans and problems.

Section 2

In the United States, civil defense deals with hurricanes, tornadoes, industrial explosions, and other emergencies.

In all of these, civil defense practices the procedures that would be needed. In the event of war, practices concerning nuclear, invasion tactics, first aid, and etc. would be used.

References:

Federal Civil Defense Administration Publications:
"Clearance and Restoration of Street and Highways, etc.", 1954, pp. 20-42
Red Cross First Aid Textbook, Supplement on Atomic 1945, p. 254.

Montana has an earthquake history.


Slippage may be measured in terms of an inch or so, and it can be much greater. It may be seen on the surface or it may be hidden many feet underground. The earth's surface or crust behaves as though it were jelly or like elastic, and the reverberation of the initial jolt spreads outward from the epicenter like ripples and quivers of jelly.
Notice how trees, telephone poles, wires, street lamps, and many things will sway and move.

3. If one is indoors, the doors may slam, articles may fall from cupboards, light fixtures may sway and plaster may fall. Windows may break.

If one is indoors, seek shelter under desk or tables. The safest place to stay is inside the school-room.

The greatest danger from earthquakes lies in being struck down, and pinned under falling objects. All earthquake drills should be organized with this in mind.

4. If one is out of doors, he should seek the open for safety and away from walls, power lines, trees, etc.

5. Stay until the teacher tells you what to do.

6. Whenever you are at school, turn for your directions to the teacher or the one in charge.

7. Nearly all earthquakes are followed by "after-shocks" as the new crust needs to adjust to the new pressure pattern of stresses.

Make a list of damage effects of an earthquake if one is indoors:

- Falling objects
- Falling plaster
- Falling ceilings, walls
- Settling of foundations
- Fires from shorts
- Jammed doors and windows
- Possible asphyxiation from leaking gas pipes
- Others

Practice "Duck and Cover" technique, using desks and tables for cover and protection.

Assess the possible dangers of the classroom.

- Pictures and charts
- Lighting fixtures
- Falling plaster
- Window glass

Locate the safest places in the room in event of an earthquake.

Assess the possible dangers if out of doors.

- Falling brick
- Falling limbs of trees
- Falling roof tile
- Live wires

Make the children believe, as indeed they must, that they have their part to do in meeting such a disaster as a major earthquake.

Continue to train away from the details of panic and fear.

Try to make the children expect "after-shocks" and to look upon them as normal events and experiences

Be sure you have full instructions what to do and know your responsibilities in event of an earthquake.

Safety precautions during drill
Safety precautions after drill
Roll call
First aid
Evacuation of pupils

Stress the fact that all new schools built since 1935 are built with heavy reinforcements for such emergencies. If children remain in the classroom, the worse that can happen is cracked plaster or a light fixture dislodged.

Absolutely discourage all thought of children running for the door to get out of the building. The physical danger during earthquakes is from falling walls, store fronts, etc.

The local response will be governed by the Civil Defense authorities. As a school teacher you are expected to be responsible for the comfort and safety of the children under your care and you will do all that is in your power to see that they are restored to their parents safely after the emergency. It is important that you obey the regulations and directions of the Civil Defense authorities to the letter in doing all of this.

Some after-shocks may be as severe as the first one but generally the tremors diminish and are more like the rumbling after a clap of thunder, gradually diminishing.
8. Stress the sensation of a "quake" which is very unique and usually harmless and painless.

Some after-shocks may be severe but generally they are more likely to be like the rumbling of thunder, gradually becoming less and less, until they cease altogether.

An important rule to stress: Keep away from all wires on the ground after an earthquake.

Wire fences may become charged and extremely dangerous from a fallen power line.

Section 3

THE EFFECTS OF THE A OR H BOMB

A nuclear detonation produces three major characteristics. If one is to improve his chance of survival in such an emergency, these should be understood:

1. The Flash (initial radiation and heat).
2. The Blast
3. The Fallout (residual radioactivity).

The following suggestions are keyed to the possibility of a nuclear disaster while working in the classroom. The details on fallout have been stressed as the number one civil defense problem facing Montana's civil defense authorities. The organized efforts and plans for the state are not treated here. They are local. However, they should be investigated and understood thoroughly. All instruction should be adjusted to the details of local needs, and to the local civil defense authority.

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<td><strong>Facts</strong></td>
<td><strong>Demonstrations--Experiments</strong></td>
<td><strong>Aids--References</strong></td>
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<tr>
<td>A OR H BOMB</td>
<td></td>
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<tr>
<td><strong>1. The Flash:</strong> It is instantaneous at the moment of explosion.</td>
<td><strong>Experiment A:</strong> Fire a large foil type photoflash bulb in the room to show the suddenness and the intensity of light and heat radiation.</td>
<td><strong>Teacher Aids:</strong> Light travels at the rate of 186,000 miles per second which is equivalent to circling the earth seven times in one second.</td>
</tr>
<tr>
<td>a. Nuclear bombs may be exploded (1) in the air (2) at the earth's surface or (3) under the surface, (under ground or under water). No. 1 is the most dangerous.</td>
<td>(Warn students not to look directly at the bulb, but to look elsewhere. This demonstration may help to condition against the</td>
<td>Radiant heat, the light and the gamma rays travel outward from the center of the explosion.</td>
</tr>
</tbody>
</table>
b. It is so bright that its brilliance
is as the sun a few miles away. The
"induced" radiation hazard from
dust and tiny particles made radio-
active by the explosion of unfissioned
material, is especially dangerous.
It cannot be seen, felt, or tasted,
and the effects do not show up until
hours and days after exposure.

2. Shelter: Getting behind a thick
core wall or seeking shelter in a base-
ment will shield one from radiant
heat. Thick concrete walls and
three feet of packed earth will also
protect from gamma rays.

a. The blinding flash and intense
heat may be the first inking that
an H-Bomb has been exploded.
b. If you lack time for good shel-
ter, Duck and Cover, particularly
your eyes, from the flash of light
with your forearm. Protect the back
of neck with the other arm and hand.

d. Heat from the explosion will
reach you as soon as the light
from the flash does.

e. In addition to light and heat, the
bomb burst will give off gamma
rays which are closely related to
the X-ray.

dangers of looking directly at a
bomb burst for permanent blind-
ness may result from such an act.)
Several might stand close enough
to feel the "flick" of heat against
the skin as the light bulb flashes.

Experiment B: Use an infra-red
light with a parabolic reflector, if
possible, to throw the light the dis-
tance of the room against the students
faces. Point out that the beam of
light is instantaneous in its flight.
Cut off the beam with cardboard or a
book and then jerk the screening
material away suddenly—and the heat
is felt the full length of the room
instantaneously.

Experiment C: Exhibit an X-ray
showing the rays penetrate the human
flesh and bone.

Gamma rays cannot be seen, tasted
or felt, but they penetrate much like
X-ray, and they can be very dangerous
or even fatal, if one were to get too much.

Experiment D: Repeat the photo-
flash demonstration, using a very
large and powerful bulb, and have the
pupils shield their faces with a piece
cardboard. Heat will be felt on the
back of their hands but not on their
faces behind the shields.

Read "Duck and Cover," the story
of a wise turtle who protected himself
from danger by seeking shelter in
his shell.

Dramatize Duck and Cover. Work
with co-ordinated time, and prompt
action to any warning that may be
given. Practice Duck and Cover with
demonstrations of flash bulbs.

This demonstration is suggested
in order to show that the burning or
searing of exposed skin occurs at the
instant of bomb burst, even though it
is miles away. If caught in the open,
one cannot hope to dodge the flash of
heat.

References, Films:

The March of Times Film,
"Atomic Power," contains a short of
Almagordo test explosion.

Radiological Decontamination in
Civil Defense TW 11-6 FCDA.

Health Service and Special
Weapons Defense A-6 11-1, FCDA.

Basic Course for Civil Defense IG
3-2 FCDA.

Introduction to Radioactive Fallout
IG 19-1 FCDA.

Duck and Cover FCDA.

See Appendix B: Air Raid and fallout
charts.

An airburst at 2000 feet will send
heat and lighting slanting downward.
If time permits, draw drapes or
shutters to protect against flying
glass, and shield against burns.

Remember, the light precedes the
blast of the shock wave that will
destroy and damage greatly.
c. If you have time (several minutes, several hours) go to shelter and await orders from the Civil Defense Headquarters.

d. Any covering is better than exposing the skin to the flash. Light colors are better than dark because they do not absorb the radiant heat as the darker ones will.

e. Any kind of covering is better than none in protecting skin from flash and radiant heat.

3. **THE BLAST:** A huge ball of fire shoots out in all directions followed by blast and sound waves. The "jolt" travels outward from the bomb burst with approximately the speed of sound.

b. If a bomb explodes several miles away, there is time between the flash and the shock wave to drop to the floor.

Conduct interviews with local civil defense representatives about the community organization, the important aspects of an atomic explosion, or any related subject.

Experiment with two thermometers.
1. Lay them in the sun and then read the temperatures.
2. Cover each with a cloth, one light and one dark. After a few minutes read the findings.

Discuss (1) burns, (2) sunburn, (3) treatment of burns, and (4) permanent scarring.

Consider the need concerning covering the face for a period of several seconds to guard against flash burns. (Even a coat over the head will give protection.)

Use the motion picture of Bikini A-bomb shots showing the "expanding smoke ring" effect of condensed water vapor in the air of rarefaction wave as it follows the compression wave (shock) outward from the bomb center. Seen from a distance of twenty miles, this will demonstrate the speed of sound.

To show that time elapses between the flash and the shock wave, the example of time between lightning and thunder will illustrate the time lag between the flash and the shock to the observer. The greater the distance, the longer one waits for the shock.

Practice Duck and Cover when the warning is a flash. Use the photoflash outfit with an improvised trigger and unexpectedly fire the bulb and check student's ability to Duck and Cover.

You should feel the "shock" before you hear the noise of the explosion, and it will feel as if you had been pounded with a sledge hammer over every inch of your body--particularly in the region of the chest which is filled with air and is highly compressible.

Lightning is seen instantaneously regardless of the distances involved. Sound travels about a mile in five seconds (at 1080 feet per second).

At the beginning of the conditioning period, instruct the pupils to drop to a sitting position on the floor, whatever they may be doing. The primary aim is Prompt Action. Details of how and where it is best to be on the floor,
c. The shock wave would shatter windows, knock down poorly constructed buildings, and send loose things flying at high speeds. The dangers to you and the pupils would be flying glass, or loose objects or falling walls and ceilings.

Let the class pick out the safest places to be on the floor in event the windows were to be blown in. Drop flat on the floor, hide your eyes in the crook of your elbow. That will keep flying objects and will protect your face and eyes from flash burns and temporary blindness.

If out of doors, drop and flatten at the base of a wall or at the bottom of a bank.

Thermal radiation * (heat) is very destructive to the eyes.

Practice the art of taking a prone position quickly—from standing, sitting or walking.

Vital organs are shielded better from concussions or blows from flying objects from the back than from the front. Also a prone figure is less likely to be struck by objects flying through the air horizontally and it is less likely to be thrown into the air by the force of the explosion.

Section 4

RADIATION---FALLOUT
(Montana's Number 1 Problem in Civil Defense)

Neutron and Gamma Ray Radiation:

Radioactivity is the only way—besides size—in which the effects of A and H Bombs differ from ordinary bombs. With exception of underwater or ground explosions, the radioactivity from atomic bursts is much less to be feared than blast or heat.

Neutron and Gamma rays travel outward with the speed of light at the instant of explosion and last for two or three seconds.
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Is radiation new? The answer is "No." Radioactive exposure normally is present in nature through the food we eat, the sun's rays, etc.

Radioactive rays and dust particles cannot be seen but are very dangerous immediately after a nuclear explosion.

Dust may not fall to earth quickly thus permitting radioactivity to decay.

Radioactive rays are found: (1) cosmic rays of the skies, (2) luminous watch dials, (3) rays are absorbed when we have an X-ray taken, (4) our physical bodies, (5) what we have eaten and breathed in small amounts.

Radioactive rays can be very dangerous to animals, fowls, plants, crops and un-packaged foods. It can contaminate homes, car yards, fields, and water supplies.

Radioactive materials may or may not be visible, but would be revealed by radiation-detection instruments such as a Geiger counter. Any falling dust or ash should be regarded as radioactive until measured by detection instruments. Several models are obtainable. 36 - (1-9)

Experiment with a Geiger counter for radioactivity in articles like watches, soil, etc. Investigate the 52 Rawin Observatories and their work.

Watch a bonfire or a trash bumer in operation. Notice how the cinders and ash are often carried high from the earth, into the air only to float down later on surrounding ground.

Imagine what it would be like to stir up a dust storm many times as dense as Montana dust storms, and try to eat and sleep in it safely, knowing at best it is deadly poisonous.

List what might be the way to control such an event.

Experiment with a Geiger counter by placing cardboard shields, cloth shields foil, etc., between the counter and the

In quantity, the radioactive particles which will settle on clothing can effect the blood forming cells of the bone marrow. Lesser amounts can cause burns and damage to uncovered parts of the body.

You can become seriously ill--or even fatally--by breathing the dust, drinking or eating contaminated water and food. This danger is far less than direct exposure.

The United States Weather Bureau issues weather forecasts for the continental United States, Hawaii, and Alaska. These forecasts are recorded often at 80,000 to 100,000 feet high and indicate the regions which would be infected by radioactive fallout. These forecasts also indicate the approximate time of fallout at the surface of the earth and are available twice daily.

Rawin Observatory at Great Falls, Yearbook; 1956, FCDA.
(See Education for National Survival pp. 6-9 for details on the fallout from the H-Bomb.) Also: Appendix B, pp. 171, 172, 173.

The greatest danger occurs during the first few seconds and over the first day. Radioactivity decreases rapidly at first and then very slowly later on. The longer it is in the air, and the farther it travels from the explosion point, the less danger.

The heavier particles settle to the ground at once causing great danger but dust may drift windward many miles before falling to the ground; their fineness makes them harder to
the source of radiation and note whether radiations are cut down.

Realize that radioactive dust penetrates clothing as if it isn’t there.

Investigate shielding (earth and concrete filtering systems and the dangers present in filters) also. investigate contamination of food and water. Can the problem be solved and how? Water officially declared radioactive must not be used for any purpose.

4. Lesser contamination may be expected at more distant points: (1) the particles are finer, and (2) the radioactivity has started to decay.

5. Any kind of shelter is better than none, or being out in the open.

6. Fallout protection against nuclear radiation:
   a. Distance
   b. Shielding
   c. Decontamination
   d. Education and Training

   Study weather maps about prevailing winds to learn possible effects of fallout on evacuation plans. Appendix B-5, B-6.

   a. Distance: Putting distances between people and dangerous radiation (does not necessarily mean the movement of people out of a contaminated area).

   b. Shielding: Going below ground is effective against radiation. A cyclone cellar with three feet of dirt over it affords almost perfect protection. People in basements will receive less than one-tenth the radiation they would receive on the outside of a building. Persons caught in a highly contaminated district should "dig-in". A foxhole or a trench that enables a person to get below ground is effective.

   c. Special investigation on Decontamination in No. 5 reference.

   Investigate Conelrad and the need of a battery radio set.

   Study the amounts and choice of emergency supplies for a family. (Do not forget song books and games.)

   The heavier particles, falling at once, do not permit the lethal effects (induces radiation) to decay as rapidly. Any weather that hastens the fallout (wind, rains, or snow) makes fallout more dangerous.

Geiger Counter may be on loan at the Helena Headquarters.

References:

Information Sheet No. 36, Geiger, Radiological Instruments for Civil Defense.

Education for National Survival (pp. 38-41) "Radiological Monitoring Services."

Information Sheet, No. 23. FCDA Pamphlet Answers Questions About Fallout.


Definition: Conelrad is a plan to deprive the enemy of electron magnetic radiation as an aircraft navigational aid without depriving the public of standard broadcast radio as a source of news and instruction. Using dial 640 and 1240 on battery radio, keep in touch with Civil Defense headquarters for directions.
8. Civil Defense, following Weather Bureau fallout predictions and using radiological detection instruments, will determine when an area is safe. Question Civil Defense authorities.

9. There is only one way to decontaminate a person, a house or a neighborhood, and that is by thoroughly cleaning.

10. Radioactive substances cannot be killed by any ordinary means such as:
1. Boiling
2. Burning
3. Solution in acids or other chemicals
4. Mixing with other materials

11. Leave telephones free.

Borrow desimeters from your state civil defense office for training purposes:

When to consider special clothing:
Decide what type of clothing to wear, i.e. woolen vs. plastic; overalls vs. little covering.

Rules for decontamination:
(removing radioactive particles)
1. Washing with soap and water, or hosing streets and houses.
2. Flowing under contaminated land to make the radiation less effective.
3. A vacuum if used inside the home is good, but remember, the bag becomes dangerous and must be destroyed, preferably by burning or flushing down the drain.
4. Water used for decontamination need special disposal.

Operation Alert:
Excellent and challenging materials for evaluation concerning all phases of attack. The exercises are detailed and graphic.

Dial 640 or 1240 on the A.M. dial in areas served by standard broadcasting stations licensed to operate Conalrad (Radio Alert) period.

Montana has received on loan five desimeters from the Federal Procurement for training purposes.

References:
Introduction to Radioactive Fallout, 10-19-1, pp. 3-10.
Information Sheet No. 23, 1955.
FCDA pamphlet answers questions about fallout (No. 23).
Information Sheet No. 35 FCDA
"Protection Against Radioactive Fallout." 1956.
Information Sheet No. 2, "Residual Radiation In Relation to C.D."
Information Sheet No. 36, 1956.
"Radiological Instruments for Civil Defense."
Standards for Operation Alert."
See Appendix B, pp. 170-172.
"Attack Phase" May 6, 7, 1958 is an operational plan for control, dispersal and protection units.
SOME TYPICAL DEMONSTRATIONS FOR THE TEACHING FACTS ABOUT RADIOACTIVE FALLOUT

In order that content of science courses can be up to date, high school science departments should possess at least one sensitive Geiger counter, and a good cloud chamber. Although commercial models usually give far better results, students can build either of these instruments to satisfactory standards. The following demonstrations require these radiation detection devices.

A. Demonstrating the nature of radioactive fallout.

1. To demonstrate the "invisible" nature of radioactive rays, let the students observe two rocks, one which contains uranium ore (may be obtained for approximately $3.00 from standard scientific houses), the other containing no radioactive material. Next place each rock on separate pieces of fast speed photographic film (use dental X-ray film) in a darkened container such as a desk drawer. After 24 hours remove the film (being careful not to expose to light) and develop in the standard procedure. Let the students compare the negatives. What has caused the exposure of the film which was under the uranium ore?

2. Set up a cloud chamber in a darkened room saturated with methyl alcohol and cooled on a cake of dry ice. (The chamber may be either purchased or one that is student built. For details of construction, see Laboratory Experiments With Radioisotopes for High School Science, pp. 15-16, August 1953, Atomic Energy Commission, Washington 25, D. C. An excellent chamber can be purchased from the Atomic Laboratories Inc., Box 343, Berkeley, California, for $32.50. Let the students observe the tracks formed by the cosmic rays and other radioactivity always present in the atmosphere. Here is an excellent time to point out that small amounts of radioactivity are not dangerous. Now let the students observe the number of "tracks" or "condensations" within the chamber when radioactive ore or other radioactive sources are brought near the chamber. (This demonstration shows the "invisible" nature of radioactivity as well as the ionization power of the rays since the condensation within the chamber results from the formation of ions as the rays pour through the gases of the chamber.)

3. Nature of radioactivity may be easily demonstrated by using the Geiger counter. After the set has been warmed up, let the class observe the "background" rays which are always present. (It might be interesting for comparative study to take readings at a certain time daily. This is particularly interesting when tests are being conducted at the Nevada Proving Grounds.) Such articles as luminous dials or paints can be shown to be radioactive. With the sensitive Geiger counter, more technical aspects of the nature of radioactivity can be demonstrated. Some examples are: (a) effect of distance away from source varies inversely as the square of the distance; (b) effects of decay or half-life; using a source such as phosphorus-32 radioactivity can be measured at definite time intervals. A graph can be plotted using intensity against time which will visibly show the fact that intensity drops sharply at first, and then tapers off more slowly. (The "Classmaster" radioactivity demonstrator
A. Demonstrating the nature of radioactive fallout, (cont.)

B. Effects of fallout. (No demonstrations)

C. Protection from or against fallout

References:


distributed by Braun Corporation, Los Angeles, costing approximately $200 is very versatile and is excellent for this and many other demonstrations. In any event the Geiger counter should include the Beta window, metal shield for Alpha particles, and should give readings in counts/minutes. (Small vials containing solutions of 10 micro-curies of radioactive isotopes such as P-32 from the laboratory of Dr. L.B. Finkle of Santa Monica. Ten microcuries cost about $1.00 and are safe for classroom use.)

The greatest danger from radiation comes from external exposure, from radioactive particles on clothing or dust settling on clothes.

1. In quantity, these can destroy any living tissue, especially the blood forming tissues.
2. A lesser amount can cause skin burns and damage to uncovered parts of the body.
3. Although you may become seriously—even fatally ill from breathing radioactive dust, or eating or drinking contaminated food or water, this danger is far less than from direct exposure.

Rays which emanate from radiation fallout have a different penetrating power. It is possible to study relative types of shielding from Alpha rays which have a very short range, and gamma ray sources such as I-131 for gamma radiation, or P - 32 for Beta radiation. The great energy imparted by A-bombs and H-bombs cannot be (and should not be) duplicated in high school laboratories, but the results obtained by using the above sources will be illustrative of the effects of shielding.

Materials: G-M tube and counter, radioactive source such as P-32, I-131, or uranium ore, shields such as newspaper, wooden box, concrete block, assorted pieces of metal, and some soil.

Method:

1. Turn on the Geiger counter and record the background rate.
2. Mount the G-M probe in a fixed position so that equal distance can be maintained from the source and shields throughout the various tests.
3. Mount the radioactive source in a fixed position and measure counts/minutes with no shielding.
4. Next check the effects of shielding using some of the following:
   a. Newspaper —— single sheet.
   b. Newspaper —— multiple sheets.
   c. Aluminum or other metal squares of uniform thicknesses.
   d. Wooden box—(can be related to a hallway of a frame house)
   e. Wooden box, surrounded by concrete blocks—(can be related to basements, etc.).
   f. Wooden box—surrounded by concrete box, covered with soil, (related to recommended shelter).

Note: It is not assumed that radiation from a thermo-nuclear will be controlled as easily as demonstrated from these small demonstrations.
Any effort to incorporate civil defense into an existing curriculum, needs of necessity, a briefing on chemical and biological warfare that could be used against the United States.

There is a greater urgency for alertness in the case of biological warfare that is not found in chemical warfare or natural disaster. War and natural disasters are of a specific character and the methods of dealing with them are clear-cut and well defined. A biological attack, on the other hand, is insidious and would in all probability be a "sneak attack," secretly launched and so dangerous in its approach that any actual proof that such an attack had been made might be very difficult to prove. Any widespread epidemic of disease among humans, animals or plants may not have been caused by foreign agents. Because of the nature of this threat to health and security, and the extreme difficulty of being specific in instruction on so grave a subject with young people while still treating this subject honestly so that its importance is realized, partially at least, presents to the instructor a grave problem.

The following is but a brief presentation of the principles involved. If the maturity of the students is found to be sufficient for well-balanced understandings, this subject should receive wider coverage than this which is presented in the following suggestions for curriculum.

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<td><strong>Aids—References</strong></td>
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<tr>
<td>A. There are three types of biological warfare agents:</td>
<td>A. Facts about biological warfare:</td>
<td>Terms to learn:</td>
</tr>
<tr>
<td>1. Living germs</td>
<td>1. Never used on a large scientific scale</td>
<td>parasites</td>
</tr>
<tr>
<td>2. Bacterial toxins</td>
<td>2. Tried by Germany in World War I</td>
<td>exotic</td>
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<tr>
<td>3. Plant growth regulators</td>
<td>3. Evidence that both Germany and Japan used BW before World War II</td>
<td>toxic</td>
</tr>
<tr>
<td></td>
<td>4. The establishment of Bacterial Center by U.S. Army for preparedness purposes</td>
<td>aerosol bombs</td>
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<td></td>
<td></td>
<td>Historical significance:</td>
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<tr>
<td></td>
<td></td>
<td>1. Bubonic plague or Black Death (300 B.C. and 1300 A.D.)</td>
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<td></td>
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<td>2. Dysentry in Napoleon's army at Moscow</td>
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<td></td>
<td>3. Typhoid during the Boer War</td>
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<tr>
<td></td>
<td></td>
<td>4. Influenza during World War I</td>
</tr>
</tbody>
</table>
5. Aerosol bombs are often placed in ventilating systems in industry and public buildings.

6. List other kinds of bombs

B. Advantages of BW:

1. It is relatively cheap.
2. It affects large numbers of people.
3. It is difficult to detect because it is often odorless, and some bacteria will lie dormant for long periods of time and then become effective.
4. It is a good weapon for a saboteur.

B. Well-known, bacterial controls:

1. DDT and insects
2. Blackleaf 40
3. Other sprays

B. Defense against BW:

1. Services of Federal, state, and local civil defense organization
2. Immunisation
3. Vaccination
4. Therapy
5. Training in First Aid and Home Nursing

D. Avoid contamination in food and water:

1. Store food in sealed containers.
2. Clean well the outside before opening.
3. Refrigerate foods.
4. Cooperate with medical authorities.

References:

Biological Warfare
Before Disaster Strikes—What the Farmer Should Know About Biological Warfare, FCDA Publication (H-11-2).
Civil Defense Against Biological Warfare, (TM 11-10), FCDA Publication.
Handbook on Aerosols (2) FCDA Publication
What You Should Know About Biological Warfare, (PA-2) FCDA Publication
Rules for Combating Biological Warfare:

1. Cleanliness, both personal and in surroundings
2. In rural districts; any increase in the number of diseased cattle or if increased infection in crops, consult the veterinarian or official authority at once.
3. Take no chances with food or water in open containers.
2. Chemical Warfare:

Three types of chemical agents used in warfare:

1. Gaseous
2. Liquids
3. Solids

Three groups of chemical agents:

1. War gasses
2. Smokes
3. Incendiaries

Definition:

Chemical warfare is the intentional use of chemical agents to cause death, injury or irritant effects.

A. Facts about chemical warfare:

1. Knowledge and information concerning gases can provide much of the needed protection for people to defend themselves against, and to treat casualties from chemical disasters.

2. Following the explosion of chemical munitions, liquid contamination may result.

3. Ordinarily, a contaminated area will be roped off by appropriate workers.

Symptoms, first aid treatment, are on accompanying chart.

Demonstration of gas masks.

Four types of masks:

1. Heavy duty masks are designed for rescue teams or fireman.

2. The organizational type to be worn by civil defense wardens, medical personnel and other.

Review types of shelters:

1. Sealed rooms, or unventilated rooms.

2. Type controlled by use of airplanes.

Best defenses: (1) warning, (2) detection, (3) identification, (4) protection, (5) treatment after exposure, and (6) decontamination.

3. Shelters under garages give maximum protection.

References:


Civil defense workers who have to enter a contaminated district.

3. An inexpensive type for general use.

4. Protective measures for infants and small children are in experimental stage.

Urban districts or rural districts do not require masks.

C. Two types of gases:

1. Persistent--usually liberated as a liquid and upon liberation, it gives off poisonous vapor and contaminates an area for a long time.

2. Non-persistent--liberated as airborne liquid droplets, minute particles or true gases--mix with air and soon disperse.

D. Famous German Chemists:

1. Professor Nernst (electrochemistry)

2. Professor Haber

3. Gerhard Schrader

References:


Education for National Survival, Army, Department of the Field Behavior of Chemical Agents, Washington, D.C. May 1951.


(V. Gas classifications on the basis of effect on humans:

1. Nose gases - non persistent; causes sneezing, general discomfort, vomiting; duration only a short time; not injurious.)
<table>
<thead>
<tr>
<th>GAS</th>
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<tbody>
<tr>
<td>ORE GASES</td>
</tr>
<tr>
<td>Odor—usually odorless; if any, may be faint, sweet, fruity</td>
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<tr>
<td>Appearance—colorless to brown liquid</td>
</tr>
<tr>
<td>RISTER GASES</td>
</tr>
<tr>
<td>Odor—may smell like fish, garlic, geraniums</td>
</tr>
<tr>
<td>Appearance—colorless to dark brown, liquid may be oily</td>
</tr>
<tr>
<td>OOD GASES</td>
</tr>
<tr>
<td>Odor—very faint, if any like peach kernels or bitter almonds</td>
</tr>
<tr>
<td>Appearance—colorless</td>
</tr>
<tr>
<td>OKING GASES</td>
</tr>
<tr>
<td>Odor—New mown hay, green silage, green corn, fly paper</td>
</tr>
<tr>
<td>Appearance—Colorless</td>
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<tr>
<td>MITING GASES</td>
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<tr>
<td>Odor—Practically none</td>
</tr>
<tr>
<td>Appearance—Canary yellow or white smoke</td>
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<tr>
<td>AIR GASES</td>
</tr>
<tr>
<td>Odor—May have light, agreeable odor, or none</td>
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<table>
<thead>
<tr>
<th>DETECTION</th>
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</thead>
<tbody>
<tr>
<td>Odors are not dependable guides; may vary with different persons. Many war gases have no odor when pure.</td>
</tr>
<tr>
<td>(Symptoms are progressive depending on concentration of agent and duration of exposure)</td>
</tr>
<tr>
<td>(Odors are not dependable guides; may vary with different persons. Many war gases have no odor when pure)</td>
</tr>
<tr>
<td>Appearance—colorless</td>
</tr>
<tr>
<td>Inflammation of the nose, throat, eyes; headache, pain and tightness in chest; tears; uncontrollable coughing; violent sneezing;ropy saliva flow; nausea; vomiting mental depression.</td>
</tr>
<tr>
<td>Sharp irritating pain in eyes, copious flow oftears desire to rub eyes, irritation in nose.</td>
</tr>
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<tr>
<th>PROTECTION</th>
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<tbody>
<tr>
<td>Protective mask and clothing</td>
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<tr>
<th>FIRST AID</th>
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<tbody>
<tr>
<td>Speed is essential. As soon as symptoms appear, inject atropine. For liquids splashed in eye or on skin, wash with water. Victim should be given artificial respiration. Remove casualty from contaminated area.</td>
</tr>
<tr>
<td>For liquids: in eyes—flush out; use eye ointment; on skin—blot off, use protective ointment. Cut away and discard contaminated clothing. Remove casualty from contaminated area.</td>
</tr>
<tr>
<td>Give amylnitrate, artificial respiration if breathing has stopped or is weak. Remove casualty from contaminated area.</td>
</tr>
<tr>
<td>Lift mask from face briefly to drain saliva to vomit. Recovery should be prompt without medical treatment. Few cases need medical attention if mask is left on.</td>
</tr>
<tr>
<td>When gas cloud passes, take off mask, face wind, loosen clothing. Blot eyes, do not rub. Effects last only a short time.</td>
</tr>
</tbody>
</table>

Reference: Basic Course for Civil Defense, FCDA-IG-3-2.
FIRE AND FIRE TECHNIQUES

Great loss of human life and property could have been prevented in some of our national catastrophes if people had had previous training and workable knowledge of how to act under emergency conditions. Certainly, the loss of life by fire has been greatly reduced by fire drills, the knowledge of how fire acts, and the means of control.

The human loss from tornadoes and other natural forces have been reduced by precautionary means and the application of knowledge concerning cause and effect of these forces.

The explosion of an H. or an A. Bomb would require greater skills in preventative and protective measures beyond anything required of man throughout the ages.

<table>
<thead>
<tr>
<th>Column I</th>
<th>Column II</th>
<th>Column III</th>
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<tbody>
<tr>
<td>Facts</td>
<td>Demonstrations--Experiments</td>
<td>Aids--References</td>
</tr>
</tbody>
</table>

**FIRES AND THEIR CONTROL**

1. Firefighting in atomic warfare

2. Control of small fires

3. Attack conditions in nuclear warfare means many small fires and many large and great ones difficult to control.

**Human Behavior:**

1. Fire may be spontaneous in a wrecked building, so one must be aware and on the look-out for fires in or near their shelter.

2. Calm behavior is more effective than hurried action.

3. Knowing what to do in an emergency is essential to save life and property.

**Column II**

**A. 1st line of defense against fire:**

1. The home membership
2. On the job

**B. Personnel should consist of:**

1. Every industrial worker
2. Every household and family member
3. Every housewife

**C. 2nd line of defense:**

1. Local fire department
2. Need auxiliary help, several times the number of professional fighters.

**Column III**

**A. Film strips dealing with human behavior, its causes and effects.**

1. How to fight fire

**Special topics that are related and should be investigated:**

1. Police duties
2. Auxiliary police and duties
3. Engineering problems
4. Evacuation
5. Rescue

**References:**

- Basic Course of Civil Defense, pp. 10, 11, 22, 13.
- Fire Effects of Bombing Attacks T.M.-9-2-195 20f
- "Atomic Blasts Creates Fires!" FCDA.
- "Water Versus Fire," Department of Agriculture.
- "Role of Warden in Panic Prevention," TB 7-1, FCDA.
- "Psychological First Aid in Community Disaster," American Psychiatric Association.
5. Practice drills are essential to orderly mass behavior in an emergency.

6. Forest and grass fires.

C. Check home town on the number of fires a year, the approximate cost and causes

D. Check insurance company rates on fire insurance, in towns with fire protection and those without insurance.

E. Conclusions:

1. How Civil Defense operates in the emergency of fire.

2. Forest and prairie fires are usually man-made hazards. Early spring, after snows are gone and there is little or no green grass and late fall after leaves have fallen or grass is dead from frosts, are the dangerous fire seasons.

3. Hunting, camping, and driving rules should be formulated.

D. Individual Fire Fighting

1. The Triangle of Fire:
   a. fuel
   b. aid
   c. heat

2. Three Classes of Fires:
   a. Class "A" burning ordinary materials, wood, cloth, etc.
   b. Class "B": Flammable liquid fires

A. Fires spread by means of:

   1. Conduction
   2. Convection
   3. Radiation
   4. Burning fragments

B. Means of extinguishing fires:

   1. Cooling - lower the temperature by water, etc.
   2. Smothering - reducing the supply of oxygen by using sand, fine spray, rugs, etc.

Information Aids:

A. Chemical Extinguishers:

   1. Type A for Class "A" fires
   2. Type B for class "B" fires
   3. Type C for class "C" fires

B. Use of chemical Extinguishers:

   1. Water--use on any fire that water can be used against.
   2. Anti-freeze type - 1 plus calcium chloride. Good for 40 degrees below zero.

References:

"Basic Training Course for Civil Defense," 1G-3-12, FCDA

Fire Effects of Bombing Attacks
c. Class "C": Electrical fires

3. Fuel reduction; often very difficult while fire is burning.

C. Basic Fire Equipment:
1. Buckets of water
2. Buckets of dry sand or dirt.
3. Good hose, and hose adapter for inside faucets
4. A ladder in good condition
5. Fire Extinguisher
6. Buckets and shovels

D. Attacking a fire:
1. Jet of H₂O close to the heart of the fire.
3. Reconnaissance before starting to fight a fire.
4. Stay close to the door.
5. Cool surrounding area to prevent spread.
6. Check an oil fire with a fine spray or sand—not a jet of water.

3. Foam extinguisher:
   For class "B" fires
   Recharge annually and keep from freezing.

4. Vaporizing Liquid:
   For class "B" fires, do not use in a confined space or on an incendiary bomb because of poisonous fumes.

5. Loaded Stream:
   For class "A" and "B" fires; anti-freeze. Do not direct at the surface of a burning liquid.

6. Carbon Dioxide:
   For class "B" or "C". Weigh semi-annually to determine loss of gas.

7. Dry Chemical:
   For class "B" and "C" fires. Examine often
   Use refills from the manufacturing company only. Will not extinguish a magnesium bomb.

Reference:
Information Sheet, No. 24, Basic Civil Defense Course
Texas on the Alert, p. 38.
4. Basic Rescue Techniques

A. Practice the following techniques:

1. Check doors first, for forced entry use methods of least damage.

2. Work in pairs. Search building; start at the top. Devise a pattern for search, (follow walls; floors may be unsafe; if floors are safe, go diagonally. Check under beds, etc., for people). If a fire in a room, open door cautiously, foot against the bottom of door and turn knob gently; crouch low to permit gases and flame to go over head; do not open door until equipment is ready.

5. Moving An Insensible Person

1. Turn him over on his back. Tie his wrists or hands together. Kneel across him; place your head in loop of arms; crawl on hands and knees dragging him with you. To move him downstairs, place hands under armpits so head will rest in crook of your arm. (See F-6).

6. Basic Methods of Escape

A. Practice the following techniques:

1. If fire gets out of control, RUN

2. A wet cloth over the mouth and nose is protection for face, nose and throat.

References:

Information Sheet, No. 24
Basic Civil Defense Course
"Atomic Blasts Creates Fire,"
leaflet, FCDA Publication.
The ABC of Fires and Fire Protection, Chart, FCDA Pub.
Rescue Techniques and Operations TM-14-1, 1952. (Illustrated Manual)
U.S. C. D. Emergency Rescue Training
FCDA PM-14-1, (Pocket Manual), not to replace full lessons.
Emergency Medical Treatment U.S. C. D. TM -11-8, April 1953

Related subjects:

A. Fire Services:

1. School organization
Techniques (cont.)

3. Follow walls to exit—center floors may be weakened.

4. Go down stairs backward hugging wall, and feeling weight before releasing or stepping on each step.

5. If escaping from a window, lower self as far as possible, or use hand over hand on a sheet or blanket fastened securely.

6. If you cannot escape, shut the door and call for help from the window.

7. Burns:
   a. First degree
   b. Second and third degree
   c. Chemical
   d. Chemical in eyes

A. Symptoms and Treatment:

1. Skin reddened; apply 5% tannic acid solution or ungentine on gauze.

2. Blisters or charring, cooking of tissues, shock. Treat by applying cloth soaked in warm soda solution, picric acid gauze, tannic acid solution or jelly. Keep warm and treat for shock.

3. Corrosion or charring, usually third degree. Wash with much water; cut soaked clothing, apply oil ointment dressing.

4. Excruciating pain. Wash out over drinking fountain or from eye cup. Several drops of oil, castor or olive compress

Related subjects, (cont.)

2. School fire chief and duties
3. Fire Guards and equipment
4. Student assignments
5. Fire drills
6. Liaison with local Civil Defense Fire Services
7. Post Attack Duties
8. Police Duties

References:

Civil Defense In Schools, TM-16-1, pp. 11-13.

Basic Civil Defense Course, Information Sheet, No. 24, pp. 7-10.

Red Cross Manual and C. D. Supplement

First Aid Wheel by W. J. Wittich
SUGGESTED CIVIL DEFENSE ACTIVITIES FOR YOUNG HOME MAKERS AND ADULTS
(IN HOME AND FAMILY LIFE EDUCATION)

<table>
<thead>
<tr>
<th>Column I</th>
<th>Column II</th>
<th>Community Experiences</th>
</tr>
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<tbody>
<tr>
<td><strong>Class Experiences</strong></td>
<td><strong>Home Experiences</strong></td>
<td><strong>Participate in local campaign on safety and fire prevention.</strong></td>
</tr>
<tr>
<td><strong>SAFETY</strong></td>
<td>Survey the home for safety hazards; repair as well as remove hazards.</td>
<td><strong>Contribute to the National Blood Bank. Have identification tags and blood typed.</strong></td>
</tr>
<tr>
<td>Know the warning signals, local shelters, and procedures in emergency.</td>
<td>Plan procedure for family members in cases of emergency.</td>
<td><strong>Enroll in Red Cross First Aid classes.</strong></td>
</tr>
<tr>
<td>Determine the role of each family member, each one being assigned to certain duties in cases of emergency.</td>
<td>Collect equipment for the home for protective uses.</td>
<td><strong>Register family members with local civil defense administration.</strong></td>
</tr>
<tr>
<td>Work out a plan for using protective equipment.</td>
<td>Provide the first aid kit for the home.</td>
<td><strong>Volunteer in the Ground Observer Corps.</strong></td>
</tr>
<tr>
<td>Become acquainted with first aid techniques</td>
<td>Determine available shelter areas in the home.</td>
<td><strong>Become acquainted with the local plans and places for shelter during emergencies.</strong></td>
</tr>
<tr>
<td>Improvise first aid equipment.</td>
<td>Build shelters in the home.</td>
<td></td>
</tr>
<tr>
<td>Know the Conelrad procedures.</td>
<td>Collect emergency supplies (clothing, paper, bedding, eating equipment, etc.).</td>
<td></td>
</tr>
<tr>
<td>Investigate fire fighting methods.</td>
<td>Arrange storage for equipment.</td>
<td></td>
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</table>

**FOODS AND NUTRITION**

Plan and prepare nutritious meals for the family based on the 7-day food supply.  
Collect 7-day food and water supply for the family.  
Distribute 7-day food supply list.

Collect 7-day food and water supply for the family.  
Provide storage for food and equipment.  
Set up exhibits of improvised cooking utensils, heating equipment, foods in the 7 day list.
Foods and Nutrition (cont.)

Determine short cuts in food preparation.

Cook meals out of doors; provide equipment for cooking.

Use short cuts in preparing the meal.

Prepare foods using dry milk.

Can and preserve foods.

Prepare one dish meals for the family.

Health and Sanitation

Determine emergency methods of sanitation.

Improvise equipment for the care of the sick.

Determine necessary equipment for emergency sanitation.

Examine available information on health.

Keep home free from insects; well-drained.

Plan family health practices.

Provide equipment for emergency sanitation.

Provide storage for sanitation equipment.

Participate in local health and sanitation campaigns.

Enroll in the Red Cross classes on home nursing, etc.

Set up exhibits of improvised equipment for home care of the sick; emergency sanitation.

Child Care

Find out the local plans for child care from the local Civil Defense Administration, in an emergency.

Consider ways of feeding, caring for and entertainment for babies and small children during emergencies.

Collect emergency clothing for children, and others.

Plan storage for emergency clothing.

Provide opportunities for children to unite with the family in recreation; in making repairs; in food preparation.

Assist with the community program for young children.

Set up exhibits of games and toys in a kit to carry in emergency.

Set up a neighborhood plan for the sharing of care for children in emergency.
Child Care (cont.)
Consider ways of giving care to the school program for child care

Home Experiences (cont.)
Provide each one with flashlights (Batteries must not be stored in the flashlight itself.)

CLOTHING
Determine clothing needs for times of emergency

Collect clothing supply
Practice good clothing care habits.
Provide storage for bedding as well as wearing apparel.

Practice good buying habits.

BUILDING STRONG MORALE
Define role of a family in a family plan for action in civil defense.

Establish a reading center on civil defense for family members for the community in some central place of business, some place where all interested can read and use materials on civil defense.

Increase personal and family knowledge by working out together plans on recreation, work, worship.

Purpose: Procedures to follow if disaster strikes and damage is done to the following:
Utilities destroyed
Transportation
Homes, restaurant, etc.
Sewage destroyed.
Damage to food and water
Salvaging materials
Emergency cooking
Improvised Equipment for Emergency mass feeding.

Emergency Mass Feeding, Instructor Course, Jointly developed by the Dept. of Defense and FCDA, 1953. Use as text.

Food and Amounts: pp. 27-32.
Purifying water: pp. 33-34.

Home Safety: pp. 3-17.
Shelter: pp. 5-7.
Fire Fighting: pp. 11-15.
Safe Food and Water: pp. 23-26

References:
Texans On The Alert For Civil Defense and Disaster Relief, Executive Department, Division of Defense and Disaster Relief, 1956. pp. 23-26.

STUDY CARDS

Flash cards and study cards are means for drills in subject matter. Perhaps the same would hold true in mastering the facts of behavior in times of danger and disaster. The following are suggestions that could be used for children. Subject matter which children in the lower grades are using could be put on flash cards and taken home for study, asking the parents to assist in the work. In this way the parents would also become familiar with certain behavior patterns during periods of stress. Parents would become more aware of the instructions in civil defense that the children are receiving in school. Regardless of the age of the pupil, each home should be made aware of the topics under consideration and assist in making every member a trained participant in the civil defense plan of the community. Learning through action is all important. Each division could be entered on one card. Questions could be stated on one side with the answers on the reversed side for flash card drill or the study card with all facts on one side only could be kept in the desk for frequent reviews, or send home for home work.

CARD ONE

CIVIL DEFENSE AIR RAID INSTRUCTIONS

TAKE COVER SIGNAL
Wailing tone or short blasts for three minutes on sirens, etc.

WHAT TO DO
At Home: Get into your home immediately. Shut all outside doors and windows and take cover in the basement or a first floor room.

OUTDOORS: Seek the best available cover until you get word to come out.

IMPORTANT: If you see a bright flash of light, take cover instantly.

Alert Signal: A steady blast of 3 to 5 minutes on sirens, whistles, horns, similar devices.

CARD TWO

AIR RAID WARNING SIGNALS
Air raid or attack signals are uniform throughout the United States. At present there are two. However it is possible that a modification of those now in use may be changed through research and developments in the field of communications. The two public warning signals are:
(1) ALERT SIGNAL: A steady blast of three to five minutes on sirens, whistles, horns, etc.
(2) TAKE COVER SIGNAL: A wailing tone, or a series of blasts, by public warning devices continuing for three minutes. People should seek shelter.
Conelrad

Emergency broadcasting systems will relay directions from local, state, and national sources.

Dial 640 or 1240 on radio dial. (Portable, table or battery sets are best for this reception.)

Reception will be on and off at intervals, so do not be alarmed. The only program at that time will be on your standard radio at 640 and 1240.

Listen for official instruction, news and official information.

The Intercontinental Command, U.S. Air Force, will order the attack warning which will activate the Conelrad system.

Card Three

Card Four

What to do about air raid drills during school hours:

1. When the signal is given for an air raid drill, you must do the following things very quickly, quietly, and orderly.
2. Go to the designated shelter.
3. Wait for directions over Conelrad.
4. Remember an air raid drill is like a fire drill. It is only a precaution we must take for an emergency should it come.
5. You must be very quiet so orders from your teacher may be heard.

Card Five

What you must do in a shelter:

1. When you get to a shelter, remain standing and await orders.
2. Remain until the "all clear" is sounded.

Card Six

How to be safe on the way to and from school:

If you are going home and hear an alert, do the following things, quickly:

1. If buildings are near, try to get inside.
2. Look for marked "shelters".
3. If you cannot get into a building, take a prone position near an outside wall.
4. If you can get into a building, seek shelter in the basement.
5. If you must take shelter on the first floor, it should be near an inside wall.
6. If there is no building near, take any shelter available, a ditch, stone wall or depression in the ground.
CARD SEVEN

Student Safety:

1. In event of an actual alert or raid, students and faculty shall stay in building and none will be excused until the all clear has sounded.

CARD EIGHT

Should you be separated from your friends or your family be sure to know the following things so that it will be easy for you to be located.

1. Identification tags which are often made from plastic or metal can be worn around the neck or on the wrist.

2. Identification tags should contain the following information:

   - Name
   - Home address
   - Parent's names
   - Telephone number
   - School and class

CARD NINE

(older groups)

What to do if there is damage from a disaster to Public Utilities Services.¹

1. Gas: lead pipes can be hammered flat and closed with plugs of soap, soft wood, and other soft, pliable materials.

2. Water leaks can be stopped or reduced with wooden plugs, clay or cloth binding.

3. Electric cables can be removed by the use of a broom handle, rubber hose, rubber gloves, or properly insulated scissors. (Use extreme caution).

¹ The State of Texas, Civil Defense Plan for Texas Colleges and Public Schools, Division of Defense and Disaster Relief, 1954.
EARTHQUAKES

WARNING SIGNS:

1. Outdoors: Trees, telephone poles, street lamps, and many things sway.
2. Indoors: Doors slam, things fall from cupboards, fixtures and plaster may fall.

WHAT TO DO

If outdoors, seek safety away from walls, power lines, trees, and anything that could fall.

GREATEST DANGER is being STRUCK DOWN and PINNED under falling objects.

If indoors, "Duck and cover" under desks, beds, tables, etc.

If at school, STAY WHERE YOU ARE until the teacher tells you what to do.

FIRE

Fire needs fuel, air, and heat to burn.

1. TAKE AWAY FUEL
   (Remove burning material before fire spreads if possible)
2. TAKE AWAY AIR
   (A wet rug will smother the fire.)
3. TAKE AWAY HEAT
   You can't have too much water on hand. It will put out most fires. (Exceptions, electric and oil.

Take away any ONE of the three things a fire needs, and it will not burn.
CARD TWELVE

RADIATION PROBLEMS

LESSEN CONTAMINATION by putting distance between people and dangerous area.

SHIELDING BY GOING UNDER GROUND IF POSSIBLE

1. by digging-in–if outside, in trench or foxhole or similar place.

2. by seeking the first floor if no basement or shelter is to be had:
   a. becoming prone, shielding face and head in crook of arm.
   b. cloth or any type of material over head would help to protect from blast and contamination.

CARD THIRTEEN

RULES FOR DECONTAMINATION

1. Washing with soap and water, hosing streets and houses

2. Plowing under contaminated land.

3. Use a vacuum cleaner indoors. Bag must then be destroyed by burying or flushing down drain.

4. Water used for decontamination must have special disposal.
"An enemy's temptation to strike against the United States will shrink in proportion to the advance measures this Nation adopts to protect its people and its institutions, thus making attack unprofitable to the enemy. Civil defense preparedness is one of the surest, most convincing way which a potential aggressor can be deterred."¹

"There must be a knowledge on the part of the enemy that this nation cannot be demoralized, that it cannot be panicked, that it cannot be thrown into a state of chaos, by the kind of bombing that is possible under modern warfare conditions and the use of nuclear weapons."²

"Civil defense will assume a recognized and proper place in our schools as teachers find appropriate ways to include it in the usual courses and activities in which students customarily engage."³

¹Val Peterson (source unknown)
²Dwight Eisenhower (source unknown)
³Val Peterson (source unknown)
BIBLIOGRAPHY

A. UNITED STATES PUBLICATION ON CIVIL DEFENSE HANDBOOKS


B. PUBLICATIONS FROM STATE DEPARTMENTS OF EDUCATION


State of Texas. Division of Defense and Disaster. The Place of Youth in Civil Defense and Disaster Relief. Austin: Executive Department, November, 1952.


C. **STATE HANDBOOKS ON CIVIL DEFENSE EDUCATION**


Texas. Division of Defense and Disaster Relief. The Place of Youth in Civil Defense and Disaster Relief. Austin: Executive Department, 1952.


D. TEXT LIST

SELECTED PUBLICATIONS OF INTEREST FOR THE EDUCATORS

TITLE

BIOLOGICAL WARFARE


Civil Defense Against Biological Warfare, TM-11-10. 1953.

FIRE SERVICE


Fire Services, AG-9-1. 1951


GENERAL CIVIL DEFENSE

Annotated Civil Defense Bibliography for Teachers H-3-1. 1955
Basic Course for Civil Defense. IG-3-2. 1955.


Emergency Action to Save Lives PA-5. 1951


Facts About the H Bomb. 1955.

Four Wheels to Survival. 1955.


Operation Cue. 1955.

Operation Doorstep. 1953.


Selected Reading in Atomic Energy. 1955.


Target Areas for Civil Defense Purposes. 1953.

This Is Civil Defense (Revised) PA-3. 1951.


What You Can Do Now. 1956.
HEALTH AND WELFARE SERVICE

Casualty Service in Facilities TB-16-1. 1953.
Emergency Welfare Services AG-12-1. 1952.
Mental Health Implications In Civilian Emergencies. May, 1953.
American Red Cross - Mass Care in Disaster (ARC-1540).
American Red Cross - Home Care of the Sick
Emergency Care When You Need It, FCDA
Health Services and Special Weapons Defense, AG 11-1, FCDA. 1950
Mental Health Implications in Civilian Emergencies, 1953.

HOME DEFENSE

Rural Family Civil Defense, 1956.
Civil Defense Household First-Aid Kit, TB 11-12, FCDA, 1954.
Fire Fighting for Householders, PA-4, FCDA, 1956.
Home Protection Exercises, FCDA. 1953.
Home Shelters for Family Protection in an Atomic Attack, TM 5-5, FCDA. 1953.
What to Do About Emergency Sanitation at Home, FCDA. 1953.
Home Nursing in Civil Defense. 1956.

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Atomic Energy Commission.

Facts About Fallout, (leaflet), FCDA. 1954.

Psychological First Aid - American Psychiatric Association Training Program for First Aid System Personnel, TB 11-17, FCDA

Twenty-seven Questions and Answers About Radiation and Radiation Protection, Atomic Energy Commission

Introduction to Radioactive Fallout. IG-.19-1. 1955.

RESCUE

Basic Rescue Course (Instructor's Guide) IG 14-1. 1956.

Rescue Techniques and Operations, TM 14-1, FCDA

SHELTERS

Shelter From Radioactive Fallout TB 5-2, FCDA

Shelter from Atomic Attack in Existing Buildings (2) TM 5-1 and TM 5-2.

Lean-to Shelters, for Family Protection in an Atomic Attack. n. d.


TRAINING

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Filmstrips for Training and Orientation, FCDA. 1954.


Training Course for Civil Defense, TM 3-1, FCDA

You can Understand the Atom, Atomic Energy Commission


Skills Training Films (Rescue, Firefighting, First Aid), 1954.


WARDEN SERVICE

Role of the Warden in Panic Prevention TB-7-1. 1955.


Warden Service AG-7-1. 1951.

WARNING AND COMMUNICATIONS

Conselrad (leaflet), 1955.

Effectiveness of Sonic Outdoor Warning Devices TR-4-1. 1954.

Outdoor Warning Device Systems TM-4-1. 1951.
E. BOOKS: COMPARATIVE GOVERNMENTS


F. CIVIL DEFENSE IN SCHOOLS

The following checklists are designed primarily as thought provoking devices. They are also used to reveal any gaps in the school civil defense program.

These Civil Defense Checklists are made available through the cooperation of the United States Office of Education, Washington 25, D. C.

CIVIL DEFENSE CHECKLISTS

Part I Checklist for the School Administrator
Part II Checklist for Instructors
Part III Checklist for Schools' Community Relations Program
Part IV Checklist for the School Nurse
Part V Checklist for the Engineer/ Custodian
Part VI Checklist for the Bus Driver

OTHER MATERIALS TO AID THE SCHOOL BOARD IN PLANNING A DISASTER PROGRAM


United States Civil Defense, Civil Defense in Schools (Technical Manual), FCDA
APPENDIXES
FEDERAL CIVIL DEFENSE ACT OF 1950

Section 2 Declaration of Policy:

It is the policy and intent of the Congress to provide a plan of civil defense for the protection of life and property in the United States from attack. It is further declared to be the policy and the intent of Congress that this responsibility for civil defense shall be vested primarily in the several States and their political subdivisions. The Federal Government shall provide necessary coordination and guidance; shall be responsible for the operations of the Federal Civil Defense Administration as set forth in this Act; and shall provide the necessary assistance as hereinafter authorized.

(The following report is a deleted form of the Act. There are five Titles. Only three of them are briefly stated.)

TITLE I ORGANIZATION

Section 101:

a) There is hereby established in the executive branch of government a Federal Civil Defense Administration at the head of which shall be appointed a Federal Civil Defense Administrator, appointed from civilian life by the President with the advice and consent of the Senate. ... Salary, $17,500.

b) Deputy Administrator, appointed as above, "Shall perform as the administrator, shall act as the Administrator shall prescribe and shall act and exercise the powers of the Administrator during his absence or disability.... Salary, $16,000.

c) The Administrator shall perform his function subject to direction and control of the President.

TITLE II POWERS AND DUTIES

Section 201: The Administrator is authorized ... to:

a) prepare national plans and programs for civil defense of United States, ....

b) delegate, with the approval of the President, responsibilities to the several agencies of the Federal Government appropriate civil defense activities ....

c) make appropriate provision for communications ....
d) disseminate civil defense information ... research ... shelters ... measures of protection ...

i) make financial contributions on the basis of programs or projects approved by the Administrator to the States for civil defense purposes, including ... procurement, leasing or renovating materials ... use of funds ... restriction on contributions ... sale and disposal of materials ... 

TITLE III EMERGENCY AUTHORITY

TITLE IV GENERAL PROVISIONS
Administrative Authority

Section 401: considers the following provisions

a) civilian personnel

b) number limited to a hundred ...

c) utilization of Federal, etc., services over the Nation ...

d) U. S. Civil Defense Corps ...

e) Printing, binding ...

Section 403: Security Regulations.¹

APPENDIX A - 2

MONTANA CIVIL DEFENSE ACT OF 1951

Section I: Short Title

Section II: Policy and Purpose
Because of the existing and increasing possibility of the occurrence of disasters and the destructiveness resulting from enemy attack, sabotage, or other hostile action, and in order to insure the preparation of this state will be adequate to deal with such disasters and emergencies, and generally to provide for the common defense, and to promote the public peace, health and safety, and to preserve the lives and property of the people of the state, it is hereby found and declared to be necessary:

(I) To create a State Civil Defense and to authorize the creation of local organizations for Civil Defense in the sub-divisions of the state; and

(II) To provide for the rendering of mutual aid among the sub-divisions of the state and with other states, and with the Federal Government with respect to carrying out Civil Defense functions

Section III: Definition:

Section IV: State Civil Defense Agency

Section V: Duties of the Director:

(III) In accordance with such a plan and program for Civil Defense of this state or Political Sub-division thereof for food and clothing or other necessities of life in the event of attack and to plan for the procurement of supplies, medicines, and materials and equipment that may be necessary; to make surveys of industries resources and facilities within the state...to institute training programs and public information, and to take all other preparatory steps, including the partial or the full mobilization of Civil Defense organization in advance of actual disaster; to insure the furnishing of adequately trained and equipped forces of Civil Defense functions, and to insure the furnishing of adequately trained and equipped forces of Civil Defense personnel in time of need.
Section VI: Public Information and Training
should prepare and implement plans for the dissemination of
information concerning Civil Defense to the public. Should
establish, coordinate and implement an effective training
program for Civil Defense personnel and the general education
of the public in problems and techniques of civil defense.
Should act as a coordinating agency for all technical services
requiring special technical training. Should utilize state
educational facilities as media in furtherance of its mission.
Should work in concert with the Red Cross in performing
these functions.\(^1\)

\(^1\)Montana State Law, Plan for Civil Defense of the State of
Size of zones of damage from blasts of various sizes—A, B, C and D rings.

EDUCATION FOR NATIONAL SURVIVAL

Alt. (ft.)
150,000—
100,000—
50,000—
SURFACE
A-bomb H-bomb Thunderstorm

-171-
At Malmstrom AFB

1. 801st AC&W squadron
2. 29th Fighter squadron (jet planes)
3. Division Headquarters

29TH AIR DIVISION LAND AREA

This Division's Slot in the ADC Family

ADC
Air Defense Command

ENT AFB, COLO

Air Defense Forces

WADF
HAMILTON, AFB
CAL.

CAADF
GRANDVIEW, AFB
M.O.

EADF
STEWART, AFB
N.Y.

29 AD
Malmstrom
AFB Mont.

31 AD
SNELLING AFB
MINN.

33 AD
TINKER AFB
OKLA.

34 AD
KIRTLAND AFB
N.M.

Cumulative dosage

<table>
<thead>
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<th>Daily</th>
<th>Weekly</th>
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<tr>
<td>0.00r</td>
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C. What do these cumulative dosages represent?

1. The cumulative dosage in 30 years, on the order of 400 roentgens, represents a dosage which would be 50 percent fatal if it were absorbed in 24 hours in a spot contaminated by an atomic bomb. The same cumulative dosage over 40 years represents a 100 percent mortal dosage under the same conditions.

2. For comparative purposes, we may say that for a period of 30 years the natural sources—the soil and cosmic radiation—supply a cumulative dosage of 3 roentgens at sea level. By way of exception, the inhabitants of Tibet, where the cosmic radiation is more intense, absorb a cumulative dosage of 5 roentgens per 50-year generation.

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REVISED CIVIL DEFENSE
Air Raid Instructions
Published by the Federal Civil Defense Administration

TAKE COVER SIGNAL

Wailing tone or short blasts

for 3 minutes on sirens, whistles, horns, or similar devices.

WHAT TO DO

At Home: Get into your home shelter immediately. If you have none, shut all outside doors and windows and take cover in the basement or a first-floor room.

Outdoors: Seek the best available cover.

Stay Put until you get word to come out.

Important: If you see a bright flash of light, take cover instantly.

ALERT SIGNAL

A steady blast of 3 to 5 minutes on sirens, whistles, horns, or similar devices.

WHAT TO DO

Do not use the telephone.

Tune your AM radio to a Conelrad station (640 or 1240 kc) for emergency instructions.

Do not become panicky if your radio is silent for a short time.

This is necessary to switch to emergency broadcasting frequencies.

Know your local civil defense emergency plans. Obey police and civil defense instructions.

640—REMEMBER CONELRAD IS THE KEY—1240
I. MISSION & SITUATION.

A. MISSION.

1. To provide supervision, instructors, class room space, and material for training personnel to carry out Civil Defense functions at all levels; and to make use of special skills and abilities in the event of an emergency of any kind.

B. SITUATION.

1. The enemy has the capability of launching an attack on the United States with sufficient weapons to strike a high proportion of our military, industrial, and population targets. It is assumed that nuclear weapons, including those of megaton yield, will be used primarily. These may be delivered by manned aircraft, supplemented by missiles delivered from land bases, submarines, or surface ships. It is also assumed that these weapons will be detonated at or near the ground to cause the greatest possible fallout of radiating particles.

The possibility of use of other weapons, such as biological, chemical, and psychological warfare, and sabotage is recognized.

It is assumed that there are eight possible Target Areas in the State of Montana.

There are no courses set up in the State at this time covering Civil Defense subjects. The State Superintendent of Public Instruction, County Superintendents, schools, and teaching staffs are available for instruction and training in the various subjects.

II. ORGANIZATION & RESPONSIBILITY.

A. ORGANIZATION.

1. The State Superintendent of Public Instruction is the Chief of Training and Education.

2. The line of succession is:
   a. Deputy Superintendent.
   b. Executive Assistant.
   c. High School Supervisor.
   d. Assistant Supervisor of Vocational Agriculture.

3. The State Board of Education is the Training and Education Advisory Committee.

B. RESPONSIBILITY.

1. The Chief of Training and Education will:
   a. Train the line of succession for the duties of the chief.
eral Civil Defense courses at all levels of the stem to teach the basic principles of Civil Defense private, and parochial schools and urge their adoption.

c. Urge all local school authorities to assist in Civil Defense training programs and make available all resources. (See Resources Data Book).
d. Assist each Chief of Service in accomplishing the training mission of their respective services by furnishing space, instructors when possible, setting up courses of study when requested or practical, and furnishing training aids when available; to include all levels and areas in the State. Each Chief of Service is responsible for filling his manning tables and organization chart personnel requirements with personnel qualified through this assistance and guidance.

2. The Advisory Committee will assist in incorporating Civil Defense courses into school curriculum.

3. All personnel of the Department of Public Instruction will be well versed on the Montana Operational Survival Plan and this annex in particular and will specialize in the administrative functions of the Control Center operation.

4. Participation in Disaster Relief and Civil Defense activities by Department of Public Instruction officials and employees is a continuing function inherent to public employment and will not be treated as a special duty activity of a brief duration.

5. In order to assure their presence on duty in an emergency, all Training and Education personnel are responsible for pre-arranged plans for the safety or evacuation of their respective families without the head of the family being present.

III. OPERATIONS.

A. Actions During Pre-attack Period.

1. The Chief of Training and Education will carry out the program in II B above in order that the training required to fulfill the needs of all services will be accomplished. (See Appendix 3 of each Annex).

B. Actions on Receipt of Strategic Warning.

1. The Chief of Training and Education will inform the State Director as to the status of training programs in progress at the time and continue classes.

C. Actions on Receipt of Tactical Warning. (Time Available to Evacuate)

1. All training will cease and personnel will evacuate, if ordered.

D. Actions on Receipt of Tactical Warning. (No Time to Evacuate).

1. All personnel in danger areas will "take cover" and remain under cover until the "all clear" is given.
E. Actions During Post Attack Period.

1. Instructors will institute "crash" training programs where necessary.

2. Most training during this period will be the "on-the-job" type, to provide relief workers for second and third shifts.

IV. SUPPLY & TRANSPORTATION.

A. SUPPLY.

1. Supplies of a technical nature will be procured by each Service Chief. Supplies common to normal school activities will be furnished by the schools where classes are held. See M-25-1 Revised, "Federal Contributions.

B. TRANSPORTATION.

1. Personal vehicles will be used and additional transportation will be secured through the local Director.

V. COMMUNICATIONS & CONTROL.

A. COMMUNICATIONS.

1. Through the Civil Defense message Centers if normal facilities are disrupted.

B. CONTROL.

1. The Chief of Training and Education, acting under the Civil Defense Director and in the name of the Governor will operate from the State Control Center with a minimum staff. The Chief will supervise and coordinate all functions of the service as outlined in this plan.

VI. MAPS & CHARTS.

A. MAPS.

1. None.

B. CHARTS.

1. Organization Chart.

VII. REFERENCES.

A. FCDA PUBLICATIONS.

1. IG-3-1 Skills, Training Films.
2. IG-3-2 Basic Course for Civil Defense.
3. IG-3-3 Civil Defense Instructors Course.
4. TM-3-1 Training Courses for Civil Defense.
6. Training and Education in Survival Planning.
B. OTHER PUBLICATIONS.

1. Red Cross First Aid Handbook.
2. School of Mines First Aid Handbook.

II. APPENDICES & COMPENDIUMS.

A. APPENDICES.

1. Operation Order.
2. Radiological Effects and Defense.
3. Training. (This annex).

B. COMPENDIUMS.

1. Personnel resources.
2. Physical Resources.
3. Legal. (None).

APPROVED: May 27, 1958
(Date)

Chief of Training and Education

State Director of Civil Defense
OPERATION ORDER

1. Under the provisions of Paragraph 3, Section 6, Montana Civil Defense Act of 1951, all provisions of the pre-attack organizational, planning, and training paragraphs of the Montana Operational Survival Plan and this annex are operational, effective this date.

2. Effective immediately on a proclamation of an emergency by the Governor of the State of Montana, or a surprise attack, or a Tactical Warning, all provisions of this plan and annex become fully operational.

3. Under the provisions of the Montana Civil Defense Act of 1951, and the Montana Operational Survival Plan, during a state of emergency, all personnel involved are considered full time members of the State Civil Defense organization and will fully carry out their assigned duties until properly relieved.

Chief of Training and Education

APPROVED: May 27, 1958
(Date)

State Director of Civil Defense
RADIOLOGICAL EFFECTS AND DEFENSE

1. Radiation becomes a problem as soon as a nuclear weapon is detonated anywhere in the Northwestern part of the United States.

2. Initial radiation in the perimeter of the explosion is a localized hazard, whereas, fallout may cover a very large area.

3. The only protection from initial radiation at the time of explosion is from a protective shelter.

4. Later protection from residual radiation in the blast area is afforded by monitoring of the area, zoning levels of radiation, and prohibiting entrance beyond established limits.

5. Fallout contamination may be avoided in two ways, by moving out of the area or by remaining in refuge.
   a. Movement out of a fallout area though not always possible due to the size and direction of a fallout pattern, may be very practical in some instances in Montana due to the long stretches of open, uninhabited highways.
   b. The basement of the average home or commercial building affords 50% protection from fallout radiation. This may be increased to nearly 100% by sandbagging or other means of earth or concrete additions, inasmuch as three feet of earth or two feet of concrete give protection from fallout. FCDA publications on shelter construction are available.

6. People will remain in fallout refuge until radioactive particles have decayed sufficiently or until teams have cleared a way so that radiological monitoring indicates they may move with safety.

7. People who have been contaminated with radioactive dust may decontaminate themselves by bathing with soap or detergent and water giving special attention to their hair which attracts and holds dust. Animals may also be washed to remove radioactive dust. If bathing facilities are not available a vacuum cleaner will remove much of the dust from clothing and hair. Water used for decontamination should be carefully disposed of in outside sumps and covered with earth. The dust of vacuum cleaners used should also be buried.

8. Food in cans, jars, plastic containers, or sealed packages would be safe for use, but first should have any radioactive dust washed or wiped off with a damp cloth.

9. Machinery, vehicles, and equipment contaminated by fallout should be washed with soap or detergent and water to be made safe for use. They should be monitored frequently to determine the need for further decontamination.
PERSONNEL RESOURCES

1. The Chief of Training and Education has available sixty-two people, twenty-three male and thirty-nine female; in the office of the State Superintendent of Public Instruction.

2. There is only one graduate of the Basic and Advanced Instructors Course at Olney, Maryland, in the State of Montana. (Year 1957).

3. There are two hundred and fifty trained rescue men in the Anaconda Company at Butte available for rescue work, anywhere in the State.

4. There are five qualified radiological instructors in Montana capable of training monitoring and decontamination teams.

5. There are several qualified persons available to train personnel in accurate plotting of fallout patterns.

PHYSICAL RESOURCES

1. There is one state owned and thirty privately owned vehicles available for use.

2. Local schools. (See Resources Data).

3. School facilities and equipment. (See Resources Data).
IA OPERATIONAL SURVIVAL PLAN

Chart 1 to Annex X, Command & Control

ORGANIZATION CHART

GOVERNOR
Pres. of Senate
Speaker of House
Secy. of State

DIRECTOR REGION 7
F.C.D.A.

CIVIL DEFENSE ADVISORY BOARD
(Chiefs of All Services)

COMMAND & CONTROL

ADMINISTRATION
(Deputy Director)

WELFARE
(Administrator Pub. Welfare)

FISCAL
(Chm. Bd. of Examiners)

MOVEMENT
(C. D. Director)

PUBLIC AFFAIRS & EMERGENCY INFORMATION
(Pub. Rel. Dir. Hiway Dept.)

ECONOMIC CONTROLS
(Controller)

FAMILY PREPAREDNESS
(C. D. Director)

HEALTH, MEDICAL & SPECIAL WEAPONS
(Exec. Dir. Public Health)

EDUCATION & TRAINING
(Supt. Pub. Instruction)

POLICE
(Supr. Hiway Patrol)

INTELLIGENCE
(Pub. Rel. Dir. Hiway Dept.)

FIRE
(State Forester)

RELIGIOUS AFFAIRS
(Welfare Chief)

WARDEN
(Dep. Dir. & Co-city Police)

MANPOWER
(Chrm. Unemp. Comp. Comm.)

ENGINEERING
(Hiway Engineer)

WARNING
(Helena Police Chief)

RESCUE
(Chm. Industrial Accident Board)

TRANSPORTATION
(Chm. R. R. Comm.)

SUPPLY
(Controller)

COMMUNICATIONS
(Hiway Communications Engr.)

COUNTY DIRECTOR
Co. Commissioners

CITY DIRECTORS
City Council

INDIVIDUAL CITIZENS

TARGET AREA
County-City Director
Co. Commissioners & City Councils

INDIVIDUAL CITIZENS

RECEPTION AREA
County-City Director
Co. Commissioners & City Councils

INDIVIDUAL CITIZENS

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STATE OF MONTANA
OFFICE OF THE DIRECTOR OF CIVIL DEFENSE
Helena, Montana
June 19, 1956

Mrs. Jean McKerlie Thomson
Turner Hall
Missoula, Montana

Dear Mrs. Thomson:

Going over your material for the Civil Defense thesis, I have written a "Forward" that I hope is appropriate.

I have no maps showing the three Air Defense Districts, however, I believe that it be quite sufficient to state that Montana is in the Central Air Defense area (C.A.D.F.). Maps showing strategic points of value are not available. The three most important are Malmstrom Air Force Base, Fort Peck Dam and the Anaconda Smelter. Power Dams are not on the target list.

Airplanes entering Montana could come from any direction but our main concern is that planes attacking from the north would no doubt travel over the east slope of the Rocky Mountains and divide anywhere from Edmonton south to proceed to targets in the eastern and western parts of the United States. It must be remembered that at times the high altitude jet stream could bring aircraft into this Country from the west across the central part of the United States from which positions they could take off in all directions. It is well to feel that attack could come from not only one but any direction.

I am enclosing shelter plans and also a booklet "Annotated Civil Defense Bibliography for Teachers" together with other factual information.

I am greatly interested in your thesis and am anxiously awaiting a copy when it is finished. If I can be of further help to you, please do not hesitate to let me know.

Sincerely,

Hugh K. Potter
Director of Civil Defense
State of Montana

HKP:wmb  -187-
Mrs. Jean McHerlie Thomson
704 Eddy Avenue
Missoula, Montana

Dear Mrs. Thomson:

I offer the following comments that might be of some assistance to you.

I am happy to state that Civil Defense is gradually becoming a reality in Montana but still has a long way to go. The P.T.A. Association has done some excellent work and I feel confident that they will continue to do so throughout the State.

We are greatly concerned with the fall-out problem but "Operation Alert 1957" proved to us at least that with the proper key figures at the various levels of government, Civil Defense can be made to work. If we can overcome this apathy there is no reason why anyone in Montana should lose his life even from an atomic attack.

Knowledge is power and the power of Civil Defense must be based upon educating our people to learn what to fear. Fear of the unknown is a fear that cannot be pinpointed and successfully combated and when we know what to fear we adopt an aggressive attitude of combat toward the instrument of destruction directed at us. We must remember that an aggressive feeling of combat dispels fear and leaves us in an excellent overall position of defense.

I am not familiar with your method of computing the amounts spent for Civil Defense in Montana but you must include the State Civil Defense budget of $10,000 per annum (53-54), $14,500 - $13,255 (55-56) and the present budget of $17,000 per annum (57-58). However divided among the population of 638,000 people, no one can be accused of being spendthrift. The matching fund program has been of great assistance with the State using a comparatively small amount and it has been and is the function of the State Office of Civil Defense to advise, aid and assist the people of Montana, through the counties and cities and in
organizing strong local Civil Defense departments.

May I wish you the greatest success regarding your thesis and when it comes to the oral part, remember that as long as you know what you are talking about your listeners will pay attention, especially when they are less informed on the subject than you. Please let me know how you come out.

Mrs. Bishop and I wish you the best of luck.

Sincerely yours,

HUGH K. POTTER
Director of Civil Defense
State of Montana

HKP/wmb
Director of Civil Defense  
State University--Survival Project  

Missoula, Montana  
July 23, 1958  

Mrs. Jean McKerlie Thomson  
704 Eddy Street  
Missoula, Montana  

Dear Mrs. Thompson:  

There follows information you requested on the Civil Defense Survival Project.  

Last October, the Federal Civil Defense Administration and the State of Montana entered into a contract in which the F.C.D.A. sponsors a project for developing a Civil Defense Operational Survival Plan for Montana, under the Montana Civil Defense Agency.  

The project, which will be completed this fall, is developing an Operational Plan for the State and for the eight designated target areas of Anaconda, Billings, Butte, Columbia Falls, Glasgow, Great Falls, Helena and Missoula, along with a prototype plan as a guide for other counties, cities and towns and a compilation of resources data deemed essential to the implementation of the plan.  

Inasmuch as Civil Defense is a responsibility of government at all levels, State, County and City officials have been utilized wherever possible in the plan.  

Your interest and work with Civil Defense is certainly to be commended. Regarding the teaching of Civil Defense in schools, this has been incorporated in the Training and Education Annex of the State Operational Plan as well as the Target Area plans,
encouraging all schools to place Civil Defense courses in their curriculum.

This project and the Operational Plan will undoubtedly stimulate Civil Defense activities in the State in all phases.

Training and education is certainly essential for sound Civil Defense planning and operations at all levels and the proper place to start such training and education is in the schools.

Yours very truly,

Howard C. Schmid
Project Manager

HCS:lb
Mrs. Jean Thomson  
Turner Hall  
Montana State University  
Missoula, Montana  

Dear Mrs. Thomson:

I have your letter in regard to Civil Defense Education in the State of Montana. The civil defense project on the national level has been very quiet until recently. For two years we have not sent out any material because none was available. Within the past month, however, we have obtained considerable new material which will be provided to the schools this fall. Previous to the last two years, quarterly bulletins were sent to the schools in regard to civil defense information that was available. During the past two years, one article has been written a year from the Department of Public Instruction in our publication, the Montanagram, of a general nature because no new material was available.

If you are interested in our materials, we will be pleased to loan them to you for two weeks time.

Very truly yours,

K. W. Bergam, Director  
School Transportation

KWB:nl
Mrs. F. N. Thomson
Turner Hall
Montana State University
Missoula, Montana

Dear Mrs. Thomson:

Your letter of June 18 in which you requested information about Air Defense in Montana was most welcome. We are pleased that you are to write a thesis on this worthy and important topic.

We of the 29th Air Division at Malmstrom Air Force Base are concerned with Air Defense of four states: Wyoming, Montana, and North and South Dakota. As you are interested only in Air Defense of Montana, the following information will be limited in that respect; however, please keep in mind that the 29th Air Division is based on a more extensive scope than the defense of one state.

Doubtless you have heard of the Ground Observer Corps (GOC), which consists entirely of non-paid volunteers who, by working in shifts on a 'round-the-clock system, watch the skies for aircraft. These volunteers are trained to approximate the altitude of an aircraft, what type it is, and in what direction it is flying. This data is relayed by the GOC volunteer to the filter center in his particular area.

There are four filter centers in the Division, two of which are in Montana--one at Billings, the other at Helena. These filter centers report GOC spotter reports to the Aircraft Control and Warning (AC&W) squadrons--more commonly known as "radar sites."

Montana has five of eight AC&W squadrons within the aforementioned four-state area: the 681st at Cut Bank, the 778th at Havre, the 779th at Opheim, the 902nd at Miles City, and the 801st at Malmstrom Air Force Base.
Radar can't drop into valleys, can't circle mountains, can't spot planes at low altitudes; thus, civilian volunteers are tremendously important to Air Defense. However, once a plane is spotted by the radar scope, and maps, flight plans, and schedules have been consulted as to whether an aircraft is designated to fly over that area at that particular time, it is possible to determine the aircraft as friendly or an "unknown." And, as such, the accumulative findings of the GOC and the AC&W squadron are relayed to the Air Defense Control Center, headquarters, Malmstrom Air Force Base, wherein all pertinent information is charted upon a huge floor-to-ceiling plotting board.

If the aircraft is determined as friendly, well and good; however, be it an "unknown", then the "scramble" horn is sounded that sends 29th Fighter Interceptor Squadron (FIS) "Starfire" jets into the air to intercept—or destroy, if need be. The 29th FIS is located at Malmstrom Air Force Base in Great Falls, and is the only one of its kind in the state.

The 29th Air Division (Defense) is not concerned directly with the actual civil defense of particular cities; our purpose is to defend from aerial attack a localized segment of the United States of which Montana is a part--Each city sets up its own civil defense procedures.

For particulars on the state's civil defense program, you may receive information from:

Mr. Hugh K. Potter
State Director of Civil Defense
National Guard Building
Helena, Montana

We are inclosing a map of the 29th Air Division area of responsibility with the Fighter Squadrons, Aircraft Control and Warning squadrons, and Ground Observer squadrons marked.

Thank you for your interest in our work.

Sincerely,

William E. Jones
1st Lt. USAF
Information Services Officer
P.S. An additional fact that may help with your thesis is the relationship of the FCDA (Federal Civil Defense Agency) located at 29th Air Division headquarters to the military.

This federal agency has a representative serve 'round-the-clock in the military Air Defense Control Center at Malmstrom AFB. In the event that hostilities begin, the function of this agency would be to immediately inform key civilians throughout the state, who would in turn, inform others until the respective city civil defense and evacuation plans were underway.

W.E.J.
June 21, 1956

Mrs. Jean Mc Kerlin Thomson  
Turner Hall, M.S.U.  
Missoula, Montana  

Dear Mrs. Thomson:  

This is to acknowledge your communication of June 17, 1956.  

The Civil Defense Program in the State of Idaho is not actively functioning. The last Legislature failed to support the office of Civil Defense with finances sufficient to carry on a state office.  

There is, of course, the Ground Observers Corps and Civil Defense Centers at various locations in the state under the direction of the United States Air Force, but separate state activities are not established.  

I trust this information will aid you in your thesis on civil defense.  

Sincerely yours,  

Alton B. Jones  
State Superintendent  
of Public Instruction  

KS/rn
Dear Sir:

Replying to your request for material on Civil Defense for schools in North Dakota, I am sorry to say that we do not have any material in a form that is available for sending. Some work was done in Civil Defense in the schools and this work was largely on the basis of the information and material secured from the Civil Defense program of the federal government, which you presumably have.

We agree that there is need of a program in this state and some specific material would be very helpful to us too.

Sincerely yours,

Department of Public Instruction

A. R. Nestoss
Deputy Superintendent

ARN:1cp
June 30, 1956

Mrs. Jean Thomson
Turner Hall - MSU
Missoula, Montana

Dear Mrs. Thomson:

I am very sorry to say that South Dakota does not have a course of study on Civil Defense for use in its schools. In fact, our schools have been affiliated in no way whatever with Civil Defense.

Our state plan is being revised all the way from the State Director of Civil Defense down through all of the state departments, and clear on down to the county levels. There has been no money appropriated in the Department of Public Instruction for such purposes, and it has only been in the past year that a part-time coordinator has been named to work with the State Plan Committee for Civil Defense.

I realize the answers I have given you will not be of any value for such a booklet as you have proposed, but I do hope it will give an idea of the status of Civil Defense in South Dakota. I do believe that the South Dakota Plan for Civil Defense will eventually bear a reasonable amount of fruit.

Sincerely yours,

R. K. Reed, Supervisor

RKR:ms
June 25
1956

Mrs. Jean Mc Kerlie Thomson
Turner Hall, M.S.U.
Missoula, Montana

Re: Civil Defense

Dear Mrs. Thomson:

Your letter concerning Civil Defense in the schools is an apt one. In our recent Rural Week, we did include "Education for Safe Living", which is an emphasis on Civil Defense.

Assistant U. S. Commissioner of Education, Wayne O. Reed, of the U. S. Office of Education, was the featured speaker and he briefly reviewed a proposed guide for teaching Civil Defense in the schools which his office is preparing. I suggest that you communicate with Dr. Reed for complete information.

Our role, so far, has been to plan for possible emergencies in the school lunch program and expansion of our facilities should evacuation from nearby centers be necessary. I am sure Mr. Reed can give you additional help.

Sincerely,

Velma Linford
State Superintendent
of Public Instruction

cc: Wayne Reed
Mrs. F. N. Thomson
Colstrip, Montana

Dear Mrs. Thomson:

I regret that I have been so long in answering your letter, but it arrived when I was out of the office and I am just catching up with the correspondence.

Enclosed is an assortment of literature which I believe will be helpful to you in the preparation of the Handbook for the Schools of Montana.

Have you talked with Mr. Hugh Potter, Civil Defense Director for the State? I am sure that if you have not, he would be most helpful to you. His address is: State Arsenal, Box 1157, Helena, Montana.

You will note that four of the pamphlets have my name on them. They are my file copies. Will you return them when you are through with them. No hurry, but I would like to get them back.

May I suggest that you write to the Department of Education, Health Education and Welfare, Washington, D.C. Under the Delegation of Authority of FCDA to other governmental agencies, they are working on plans for Civil Defense in the Schools. There are three surveys being made now, in California, Michigan and Connecticut. Their recommendations may be nearing completion.

It would seem that much emphasis needs to be placed on the role of your state in assistance to others. Yours is considered as a "reception area" and would undoubtedly have to feed and house hundreds of thousands of evacuees temporarily and perhaps permanently in the event of a nuclear attack.

The importance of Rural Family Defense should be stressed as pointed out in the leaflet on that subject.
If we may be of further assistance, please feel free to write. You might like to write to Dr. Gayle Starnes, Director of Training and Education, FCDA. His office could be of further assistance to you.

Sincere best wishes,

Mrs. Jean Wood Fuller
Director, Women's Activities
FEDERAL CIVIL DEFENSE ADMINISTRATION
National Headquarters
Battle Creek, Michigan
May 25, 1956

Mrs. F. N. Thomson
Colstrip, Montana

Dear Mrs. Thomson:

Thank you for your letter requesting information concerning civil defense. You are entirely right about the need for civil defense education in the schools, and are to be congratulated on your proposed thesis on this subject.

Under a delegation of responsibility from the Federal Civil Defense Administration to the Department of Health, Education, and Welfare, Office of Education, there has been some work done in this area. At the present time there is a civil defense handbook for teachers in the process of preparation by that office. You could undoubtedly secure additional helpful information by writing to Doctor John R. Ludington; Chief, Secondary Schools Section and Director, Civil Defense Education Project; Department of Health, Education, and Welfare; Office of Education; Washington 25, D. C.

You will find enclosed a number of FCDA publications which should be of value in furnishing background information on this subject. Also included is a handbook prepared by the Michigan State Department of Public Instruction as a pilot project under the above mentioned delegation.

It is hoped that this material will give you some assistance. If we can be of further service, please call on us.

Sincerely,

Paul Miller,
Training Officer
Training and Education Office
APPENDIX E
APPENDIX E

SUMMARY OF EMERGENCY CONDITIONS IN A DISASTER

It is impossible to predict all the events of a given disaster. However, every community should be prepared to cope with the following conditions which could be the result of either wartime attack or a natural disaster:

1. Entire communities may be evacuated to reception centers to reduce danger or to provide emergency living arrangements for people if their cities have been destroyed. This means advanced planning to cope with a situation requiring a town to possibly quadruple its population in a few hours. (In case of an attack on the west coast, Montana would become the reception area for the people of the areas from Washington).

2. Very likely members of many families would become separated during a period of disaster. Identification becomes extremely important during this phase of an emergency and can become a serious problem. Skills and procedures of identification must be developed by evacuees and reception centers personnel. Small children should be taught how to give pertinent information about themselves or have the necessary data provided.

3. Homes must be provided for people who have lost all. Designated places must be set aside for shelters. Arrangements must be made for mass feeding. (This phase of disaster is one that is of first importance to Montana. As a reception center, mass feeding would become a problem for the state).

4. Some people will be in dangerous positions. Old people and the very young will need to be evacuated.

5. Many people will be injured. Mass health, nursing, first aid, will require many trained volunteers familiar with the emergencies.

6. Electric power will be knocked out. Telephone communications will be out. Radios will be off. Since our modern living depends so much on outside power, there will be the need of some auxiliary means for heating and cooking. There is a definite need of training for primitive living. There is a definite need of many ham operators throughout the communities so that communications can get through. Battery sets that can be
tuned to Conelrad at 640 and 1240 kilocycles will also enable one to keep in touch with authorities.

7. Health problems concerning pure drinking water, food safe to eat as well as problems of sanitation of sewage disposal and garbage disposal must be dealt with properly to avoid the spread of disease and epidemics.

8. Roads, bridges, and railroads may be destroyed, thus isolating communities, thus requiring rationing of foodstuffs and to prevent hoarding. Helicopter service may be the only contact with the base of supplies. This also means the need of an organization to start to work on reconstruction as rapidly as possible.

9. Water mains may be destroyed. This greatly increases the hazards from fire dangers. Substitute drinking water supplies must be tested before using for safety reasons of contamination.

10. To prevent the very few who would engage in looting, the services of organized auxiliary police and wardens will be necessary to patrol the streets.

11. Disaster from nuclear bombing will involve the question of radiation. The processes of decontamination are intricate and difficult and do need the services of trained personnel to direct the civilian population in procedures.

12. Wartime also brings the need for constantly being on the alert. Many volunteers will be needed, not only for airplane spotting, but to engage in any one or more of the kind of activities listed above. (If the intercontinental missile proves to be the dread weapon that it is said to be, then the need for trained personnel in civil defense practices will have increased many times. Time could be running out; the need more pressing then we think for our state to prepare her people with the skills necessary to save life.)

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REGULATIONS OF BICYCLES, MOTORCYCLES
AND MOTOR SCOOTERS

Stop at all "STOP" signs.

Obey traffic lights, stop, go arrows, etc.

Signal when slowing, stopping, or changing course.

Give right of way to pedestrians.

Use sounding device before passing another vehicle or pedestrians.

Stop before leaving alleys, private roads, and driveways.

Obey prohibitive ordinances such as no U turns, no left turns, etc.

Give right of way to the vehicle on the right when approaching non-controlled intersections.

Obey all orders from the police officers when they are directing traffic.

Report to a police officer any accident when personal injury, death, or property damage is sufficient to prohibit the driving away of any vehicle involved in the accident.

Refrain from riding carelessly and heedlessly in wilful manner or disregard for the rights or the safety of others.

Ride at a careful speed and be able to stop in the assured, clear distance ahead.

Obey "no passing" signs and marking on curves, hills at railroad crossings, etc.

Approach and make right turn as close to the right hand curb or edge of roadway as possible.

Have bicycle in safe condition so as not to endanger any person.
GOOD RULES FOR CYCLISTS

1. GENERAL

Ride near right hand curb, not more than five feet from it wherever possible, and a distance of four feet from a parked line of cars.

Ride under your own power and do not "hitch on."

Cross streetcar and railroad tracks at nearly right angles.

Ride single file on busy streets and never more than two abreast on any street or road.

Ride in a straight line.

Keep both hands on handlebars.

Remember that bicycle with one seat are designed for one person. Do not carry a passenger.

Keep well behind a moving vehicle ahead of you as it may stop suddenly.

Instead of making an inside left turn, it is safer for cyclists to proceed straight across the intersection, keeping close to the right hand curb; then wait at the far corner until the light changes or it is safe to start off in a new direction.

2. AROUND THE SCHOOL GROUNDS

Bicyclists should stop at crosswalks before entering or leaving school property.

Bike riders should be assigned a specific route on school grounds to the bicycle storage area.

Walk, not ride bicycles on school property.

Bicycles should be locked when parked.

Riders should use extreme care when leaving the school grounds or driveway.
At school crossings supervised by school patrols, bike riders should be required to dismount and wheel bike on cross-walk following those on foot.

 Owners of bicycles, motor scooters, and motorcycles should offer their services to the local civil defense organization to act as messengers in the event of a disaster that disrupts normal communication and transportation. ¹

REFERENCES

GAMES

O'Keefe, P. R. and Fahey, Helen, Education Through Physical Activities, (St. Louis, Missouri, C. V. Mosby, 1949).


__________, Picnics Programs (MP251)

__________, Dances and Their Management (MP313)

National Committee on Boys and Girls Club Work. Games for Small Groups. 59 East Van Buren Street, Chicago: National 4-H Recreation and Rural Arts Program.

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Progress Report Fiscal Year 1957
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