A PROPOSED PROGRAM OF SAFETY EDUCATION FOR THE
ELEMENTARY SCHOOLS OF ARIZONA

by
Warren F. Hill

A Thesis
submitted to the faculty of the
Department of Education
in partial fulfillment of
the requirements for the degree of
Master of Arts
in the Graduate College
University of Arizona
1940

Approved: L. S. Carnow
Director of Thesis
A PROPOSED PROGRAM OF EARLY EDUCATION FOR THE

ELEMENTARY SCHOOLS OF ARIZONA

By

Henry T. Hitt

A Thesis

UNIVERSITY OF ARIZONA

Department of Education

for the Degree of

Master of Arts

in the Graduate College

UNIVERSITY OF ARIZONA

1918
I. INTRODUCTION

Accident Situation in the U. S. ........................................ 1
Early History ........................................................................ 2
Effects of New Products ...................................................... 6
Recent Statistics on Accidents .............................................. 8
Occupational Accidents ....................................................... 13
Motor Vehicle Accidents ...................................................... 14
Public Accidents .................................................................. 16
School Accidents .................................................................. 17
Home Accidents .................................................................... 18
Accident Situation in Arizona .............................................. 19
Agencies for Safety ............................................................. 33
Changing Concepts Regarding Accidents ............................. 35
Statement of the Problem ..................................................... 36
Mode of Attack ...................................................................... 36

II. SAFETY EDUCATION IN THE SCHOOLS

Present Practices ................................................................... 38
Extent to Which Instruction is Offered ................................. 38
Place in the Curriculum ....................................................... 39
Supervision of the Program ................................................... 42
Methods of Teaching Safety .................................................. 43
Relative Value of Certain Methods ........................................ 46
Extent to Which Highly-Rated Methods are Used ................ 48
Suggested Techniques in Teaching Safety .............................. 48
Agencies Providing Effective Help ........................................ 51
Ideal Place in the Curriculum ............................................... 52
Urgent Needs in Safety Instruction ....................................... 52
Evaluation of Some Courses of Study in Safety Education .... 55
Condensed Outline of H. B. Bruner's
"Criteria for Evaluating Course-of-
Study Materials .................................................................. 55
Results of Evaluation ........................................................... 58

III. PROPOSED PLAN OF SAFETY EDUCATION,
GRADUES 1-VIII

Introduction ......................................................................... 61
General Objectives of Safety Education ................................. 61
Specific Objectives for Elementary Grades ............................. 63
Fundamental Philosophy ....................................................... 63

Chapter

Safety Considerations in School Buildings ............................ 64
Accident Situation in Arizona .............................................. 19
Agencies for Safety ............................................................. 33
Changing Concepts Regarding Accidents ............................. 35
Statement of the Problem ..................................................... 36
Mode of Attack ...................................................................... 36

IV. COMPLAINTS

Condensed Outline of H. B. Bruner's
"Criteria for Evaluating Course-of-
Study Materials .................................................................. 55
Results of Evaluation ........................................................... 58
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>III. PROPOSED PLAN OF SAFETY EDUCATION,</td>
<td>61</td>
</tr>
<tr>
<td>GRADES I-VIII</td>
<td></td>
</tr>
<tr>
<td>Introduction</td>
<td>61</td>
</tr>
<tr>
<td>General Objectives of Safety Education</td>
<td>61</td>
</tr>
<tr>
<td>Specific Objectives for Elementary Grades</td>
<td>62</td>
</tr>
<tr>
<td>Fundamental Philosophy</td>
<td>63</td>
</tr>
<tr>
<td>Part I.- A Guide for School Administrators</td>
<td>64</td>
</tr>
<tr>
<td>Safety Considerations in School Buildings</td>
<td>64</td>
</tr>
<tr>
<td>Safety Considerations on the Playground</td>
<td>65</td>
</tr>
<tr>
<td>Safety Considerations in Pupil Transportation</td>
<td>65</td>
</tr>
<tr>
<td>Fire Protection</td>
<td>66</td>
</tr>
<tr>
<td>Safety Regulations for Pupils</td>
<td>67</td>
</tr>
<tr>
<td>Pupil Accident Records</td>
<td>68</td>
</tr>
<tr>
<td>Provision for First-Aid Treatment</td>
<td>58</td>
</tr>
<tr>
<td>Part II.- Units of Instruction</td>
<td>68</td>
</tr>
<tr>
<td>Safety Education in the Primary Grades</td>
<td></td>
</tr>
<tr>
<td>Unit I.- Safety at Home and on the Farm</td>
<td>68</td>
</tr>
<tr>
<td>Unit II.- Safety at School</td>
<td>73</td>
</tr>
<tr>
<td>Unit III.- Safety on the Streets and Highways</td>
<td>74</td>
</tr>
<tr>
<td>Unit IV.- Safety in Play and Recreation</td>
<td>77</td>
</tr>
<tr>
<td>Unit V.- Safety against Fire</td>
<td>79</td>
</tr>
<tr>
<td>Safety Education in the Intermediate Grades</td>
<td></td>
</tr>
<tr>
<td>Unit I.- Safety at Home and on the Farm</td>
<td>82</td>
</tr>
<tr>
<td>Unit II.- Safety at School</td>
<td>85</td>
</tr>
<tr>
<td>Unit III.- Safety on the Streets and Highways</td>
<td>87</td>
</tr>
<tr>
<td>Unit IV.- Safety in Play and Recreation</td>
<td>90</td>
</tr>
<tr>
<td>Unit V.- Safety against Fire</td>
<td>95</td>
</tr>
<tr>
<td>Safety Education in the Upper Grades</td>
<td></td>
</tr>
<tr>
<td>Unit I.- Safety at Home and on the Farm</td>
<td>99</td>
</tr>
<tr>
<td>Unit II.- Safety at School</td>
<td>102</td>
</tr>
<tr>
<td>Unit III.- Safety on the Streets and Highways</td>
<td>105</td>
</tr>
<tr>
<td>Unit IV.- Safety in Play and Recreation</td>
<td>108</td>
</tr>
<tr>
<td>Unit V.- Safety against Fire</td>
<td>112</td>
</tr>
<tr>
<td>IV. CONCLUSIONS AND RECOMMENDATIONS</td>
<td>116</td>
</tr>
<tr>
<td>Major Conclusions</td>
<td>116</td>
</tr>
<tr>
<td>Major Recommendations</td>
<td>122</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>125</td>
</tr>
<tr>
<td>APPENDIX</td>
<td>136</td>
</tr>
<tr>
<td>Number</td>
<td>Title</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>I.</td>
<td>TYPES OF ACCIDENTAL DEATHS IN ARIZONA, 1927 TO 1936</td>
</tr>
<tr>
<td>II.</td>
<td>COMPARISON BY YEARS OF FATAL MOTOR VEHICLE ACCIDENTS TO TOTAL MOTOR VEHICLE MILES DRIVEN</td>
</tr>
<tr>
<td>III.</td>
<td>COUNTIES COMPARED IN PER CENTS OF TOTAL TRAFFIC, TOTAL REPORTED ACCIDENTS, AND PERSONS INJURED</td>
</tr>
<tr>
<td>IV.</td>
<td>COUNTIES RANKED ACCORDING TO AVERAGE NUMBER OF FATALITIES PER HUNDRED MILLION VEHICLE MILES DRIVEN IN EACH COUNTY</td>
</tr>
<tr>
<td>V.</td>
<td>MOTOR VEHICLE DEATHS PER HUNDRED THOUSAND POPULATION FOR CITIES IN ARIZONA WITH MORE THAN FIVE THOUSAND POPULATION</td>
</tr>
<tr>
<td>VI.</td>
<td>TRAFFIC ACCIDENTS ACCORDING TO TYPE AND THE AGE GROUP OF PERSONS KILLED AND INJURED</td>
</tr>
<tr>
<td>VII.</td>
<td>LOCATION OF MOTOR VEHICLE ACCIDENTS</td>
</tr>
<tr>
<td>VIII.</td>
<td>ACTS OF PEDESTRIANS AT TIME OF INJURY BY MOTOR VEHICLE</td>
</tr>
<tr>
<td>IX.</td>
<td>EXTENT TO WHICH SAFETY EDUCATION IS OFFERED AS REPORTED BY CITY SCHOOL TEACHERS</td>
</tr>
<tr>
<td>X.</td>
<td>PRESENT PLACE OF SAFETY INSTRUCTION IN CURRICULUM</td>
</tr>
<tr>
<td>XI.</td>
<td>INDIVIDUAL RESPONSIBLE FOR SAFETY PROGRAM IN THE SCHOOL</td>
</tr>
<tr>
<td>XII.</td>
<td>METHODS OF SAFETY TEACHING USED BY CITY SCHOOL TEACHERS</td>
</tr>
<tr>
<td>XIII.</td>
<td>DIFFERENCES IN TEACHER OPINION AS TO CURRENT AND IDEAL PRACTICES REGARDING SAFETY IN THE SCHOOL CURRICULUM</td>
</tr>
</tbody>
</table>
XIV. URGENT NEEDS IN SAFETY INSTRUCTION AS REPORTED BY CITY SCHOOL TEACHERS ................. 54

XV. EVALUATION BY MEANS OF H. B. BRUNER'S CRITERIA OF ELEVEN COURSES OF STUDY IN SAFETY EDUCATION ......................... 60

The application presented here is that united States is a host coun-
try that has seen a number of accidents increased every year. It is a terrible incident against the intelligence of our people to allow such a situation to exist. Our people must be made aware of the facts and be interested in the prevention, by their own cooperation, they will not in vain for the sake of our children and our nation, but our schools and colleges must also be the center of this cooperation.

I. Principal Types of Fatal Accidents in 1938


I. Incidents of school children

a. Incidents of the industrial sector
b. Incidents of the transportation sector

2. Incidents of the industrial sector

a. Incidents of the transportation sector
b. Incidents of the recreation sector

3. Incidents of the transportation sector

a. Incidents of the recreation sector
b. Incidents of the community sector

4. Incidents of the recreation sector

a. Incidents of the community sector

5. Incidents of the community sector

a. Incidents of the community sector

6. Incidents of the community sector

a. Incidents of the community sector

7. Incidents of the community sector

a. Incidents of the community sector

8. Incidents of the community sector

a. Incidents of the community sector

9. Incidents of the community sector

a. Incidents of the community sector

10. Incidents of the community sector

a. Incidents of the community sector

11. Incidents of the community sector

a. Incidents of the community sector

12. Incidents of the community sector

a. Incidents of the community sector

13. Incidents of the community sector

a. Incidents of the community sector

14. Incidents of the community sector

a. Incidents of the community sector

15. Incidents of the community sector

a. Incidents of the community sector

16. Incidents of the community sector

a. Incidents of the community sector

17. Incidents of the community sector

a. Incidents of the community sector

18. Incidents of the community sector

a. Incidents of the community sector

19. Incidents of the community sector

a. Incidents of the community sector

20. Incidents of the community sector

a. Incidents of the community sector

21. Incidents of the community sector

a. Incidents of the community sector

22. Incidents of the community sector

a. Incidents of the community sector

23. Incidents of the community sector

a. Incidents of the community sector

24. Incidents of the community sector

a. Incidents of the community sector

25. Incidents of the community sector

a. Incidents of the community sector

26. Incidents of the community sector

a. Incidents of the community sector

27. Incidents of the community sector

a. Incidents of the community sector

28. Incidents of the community sector

a. Incidents of the community sector

29. Incidents of the community sector

a. Incidents of the community sector

30. Incidents of the community sector

a. Incidents of the community sector

31. Incidents of the community sector

a. Incidents of the community sector
CHAPTER I

INTRODUCTION

The Accident Situation In The United States

The apalling accident situation in the United States is a most serious problem. Certain classes of accidents have increased out of all proportion to what would normally be expected from the contributing factors involved. It is a terrible indictment against the intelligence of our people to allow such a situation to exist. Our people must be made safety-conscious and be educated to the point where, by their own volition, they will act in a relatively safe manner.

Various agencies are doing valiant work in safety education, but our schools and colleges must, necessarily, take a great share of this responsibility. As one writer on traffic says:

"The school's contribution to traffic safety has been large, probably much larger than we know, for we lack adequate measures of achievement. Yet safety education is still but an infant. By far the greatest problem we shall have to solve is our acceptance of the traffic accident. Statistics and news stories of accidents are so familiar they no longer impress us. The belief that popular indifference to the accident situation cannot be changed constitutes a serious problem. Compared with it other difficulties are insignificant. Our salvation lies in the education of school children; a persistent educational drive, generation after generation. We must somehow give future generations of adults a new psychology, the conviction that the chance of accident can be foreseen and eliminated. The trend in safety education today is very definitely in that direction."

The writer's interest in the matter of safety education was aroused by newspaper and magazine articles, by books on the subject, and by the feeling that greater emphasis should be placed on safety education in the public schools of Arizona. It is the intention of the writer to try to develop a course of study in safety education which may be employed to advantage in the teaching of safety in the elementary grades of the public schools of Arizona. In order to acquire a proper point of view, an investigation was made of the accident situation in the United States and in Arizona in particular.

Early History: A generation or so ago people believed that mass disasters, caused by man's stupidity, were acts of God and that man could do very little about them. And it required long, painful years for the clouded human mind to understand the real cause of certain disasters to the individual. Since that part of our country known as New England was the first to feel the impetus of the Industrial Revolution, it was quite natural that the first demands for improved working conditions should appear there. Hundreds of young women, some as young as ten years of age, worked in the textile mills of Lowell, Haverhill, Manchester, and a score of other towns. The usual hours of labor were from twelve to fourteen hours a day. Girlish fingers and sometimes hands were frequently lopped off by the long rows of wholly unguarded machines. Conditions became intolerable. A few agitators for improved conditions for work in the industry appeared such as John McNeil. He was given able support by John Greenleaf Whittier, the poet, and Wendell Phillips, the former Abolitionist firebrand. In 1874 Massachusetts passed the first enforceable ten-hour law for women, and three years later, enacted the first legis-
lation in the United States to force adoption of safeguards on machinery.

The hazards to life and limb in the coal mines and the steel mills of the country in the last half of the past century were so great that accidents were almost a daily occurrence. A coal mine was any old hole in the ground from which the product could be removed. No attention whatever was paid to the possible collapse of the ground being mined, nor to the possible flooding by water. Due to improper ventilation in the mines, the various gases generated in the mines took their toll of miners lives — firedamp by explosion, blackdamp and whitedamp by subtly overcoming their victims. And wherever there were many coal mines, there were sure to be the belching furnaces of the steel mills.

The steel mills made business very good for the undertakers. Funerals were an everyday occurrence and caused very little comment among the people of the smoky steel towns. Accidents and litigation were common, but in those days before workmen's compensation laws came to be it was not easy to win a case against an employer. Judgments for personal injuries were small and insignificant. It took the shrewd mind of the late Judge Gary, head of the country's largest steel corporation, to realize that protection of the employee from undue hazards in his work would soon be required of an employer. Accordingly, he had issued the following general order: "The United States Steel Corporation expects its subsidiary companies to make every effort practicable to prevent injury to its employees. Expenditures necessary for such purposes will be authorized. Nothing which will add to the protection of the workmen should be neglected."

That was a revolutionary order in its day. Judge Gary was criti-
cized severely by large numbers of other employers. But it concerned the largest single group of employees in the country and it was bound to have an effect towards the improvement of the lot of the employee in other industries. A year later the American Institute of Social Science displayed in New York City the first exhibit of safety appliances ever held in this country. And in the fall of 1912, the "First Co-operative Safety Congress" was held in Milwaukee, Wisconsin. There was a fair attendance at this Congress from various industries. Perhaps the most important step taken at this meeting was the decision made by the group to form "a permanent body devoted to the promotion of safety to human life in the industries of the United States." Committees from the electrical engineers and other groups then formed the National Council for Industrial Safety in 1913. The next year the name was changed to the National Safety Council. The idea of the National Safety Council was to act as coordinator for all organized accident prevention work in American industry by collecting and disseminating information to its members, much like any trade association.

One must remember that 1913 is an early date in American industrial history. There was little use in trying to interest industrial executives in the social responsibilities involved in accidents. The approach had to be made in a different way. It had to be shown that safety work is really a factor of efficient production, and that money saved through accident prevention is just as important as profits built up through purchasing, production, and selling. That was the task that the National Safety Council took upon themselves.

Another industry whose early history was marked by accidents which happened with sickening regularity is the transportation industry. Dur-
the decade of the forties an average of more than one hundred steamboats were blown up, burned, or sunk by collision every year on American inland waterways alone. Likewise, the early railroads had a bad accident record. S. H. Holbrook in his book, "Let Them Live," quotes from an editorial which appeared in Harper's Weekly of that time:

"Boilers are bursting all over the country – railroad bridges breaking and rails snapping – human life is sadly and foolishly squandered – but nobody is to blame. Boilers burst themselves. Rails break themselves. And it may be questioned whether the consequent slaughter of men, women and children is not really suicide."

Safety devices for the railroads were slow in being developed and even slower in being accepted and put into use by the railroad officials. No one man deserves more credit for bringing about the enactment of legislation requiring the railroads to adopt certain safety appliances and to put into effect certain safety regulations than Lorenzo Coffin. This farmer and ex-preacher from Iowa was deeply affected by the constant loss of life and limb in railroad accidents, particularly among the trainmen themselves. He became a crusader against the railroads demanding that they adopt Mr. Westinghouse's newly patented air brake and to install also the new automatic coupler. He wrote articles condemning the railroads for their lack of interest in the safety of their employees. He addressed gatherings on the subject and even carried on his crusading in Washington, D. C., among the senators and congressmen. He wrote a safety appliance bill and on March 3, 1893 this bill became Federal law. Among other things, this law required all railroads engaged in interstate commerce to use air brakes and automatic coupling equipment. The railroads soon learned that safety devices paid big dividends for it not only increased

their efficiency but also attracted a greater volume of traffic.

The rapid growth of the railroads, increasing the development of the country, opened up the forests to lumber camps. These same camps often were the funeral pyres of hundreds of unfortunate people trapped in the forest fires which swept the lumbering regions of those earlier days. One of the worst of these disasters was the fire which swept through the lumbering camps in and around Peshtigo, Wisconsin, in 1871 killing more than eleven hundred people. Regulations against fire were very few and the means of combatting fires woefully weak.

Chicago has been the scene of at least two fire tragedies which have had a great deal to do with bringing about stricter building codes and regulations against fire. In the same year of the terrible fire at Peshtigo, Wisconsin, fire swept through dozens of city blocks in Chicago destroying millions of dollars worth of property and killing about two hundred people. Some thirty years later in 1903, the Iroquois Theater burned killing some six hundred people, mostly women and children, and injuring two hundred and fifty. This is the greatest theater tragedy our country has ever known and out of the wake of it has come a theater building code which requires fire walls, more numerous exits, unobstructed alleyways, real asbestos curtains, non-inflammable scenery, and doors which open outward.

Effects of New Products: Modern developments have introduced new hazards to human life. New products of all kinds, new modes of transportation, as the airplane and the automobile, new home and industrial equipment, new chemicals, – these and many more have added to the uncertainties of life on one hand while adding to the comforts of and greater utility to life on the other. The motor vehicle has become an essen-
tial part of modern life, yet its use, or rather misuse, is the cause of a large share of our accidental deaths and injuries. Aviation is fast becoming a necessary part of our every-day life. But the accidental death rate for private or non scheduled flying was especially high, being 114.2 deaths per 100,000,000 passenger miles, in the year 1938. Modern farm machinery, for example, has increased the efficiency of farm work and reduced the amount of manual labor, but this machinery was the chief cause of accidental deaths on the farm in 1938.

An editorial in a magazine on health a few years ago said: "As our life has become more and more complex and as we have taken increasing advantage of the discoveries of modern chemistry and engineering science, we have gradually increased our life expectancy. We have eliminated the danger from many diseases but we have, at the same time, introduced new hazards into living which are all the more dangerous because people are unaware of them."

"Let the buyer beware" is a phrase which continues to have real significance. The gullible public is exposed to all sorts of nostrums, cosmetics, and adulterated foods to name only a few things which may or may not be harmful. In her book, "American Chamber of Horrors", Ruth de Forest Lamb tells some startling facts which are based on date taken from the files of the United States Department of Agriculture. These data are in the form of chemical analyses, correspondence, inspector's reports, transcripts of court trials and government hearings, reports of scientific investigations, and the like. She writes:

"Are there really products in common use so dangerously fraudulent as to menace not only your economic welfare but

4. Ibid., p. 17.
your health, and even your life? If these things do exist, why doesn't the Government do something about them? 

"It is all too true that a pretty young woman was blinded by an eyelash dye. It is also true that scores of others suffering from paralysis and impaired vision have been sent to hospitals for long and expensive treatment as the result of using a rat poison to banish superfluous hair. A prominent business man really was killed by a radium-charged drinking water that dissolved the bones of the skull instead of curing the ailment for which it was advertised. Three sisters, one after another, rubbed horse liniment on their cough-racked chests in the pathetic belief that it would cure them—and died of tuberculosis. At this very moment, men and women all over the country are literally burning their tissues to death in trying to reduce their weight with deadly dinitrophenol.

"All these tragedies and countless others have actually happened, not because Government officials are incompetent or callous, but because they have no real power to prevent them. Of the four Federal agencies commonly supposed to control such conditions, not one has the legal authority to do it."

The Copeland Bill was designed to meet the limitations of the present pure food and drug laws. It was introduced in Congress June 12, 1933, but failed to command the necessary votes for passage. Similar bills have been introduced by members of Congress since then, but they have failed to pass largely because of the strong influence exerted by certain interests who would not be permitted to exploit the public should a bill of this nature become law.

Recent Statistics on Accidents; Causes: Figure 1 shows that two types of accidents resulted in 62 per cent of all accidental deaths in 1938. Motor vehicle accidents led with 32,400 fatalities, or 34 per cent of the total. The next chief cause of accidental deaths was falls, which accounted for 26,700 or 28 per cent. Thus motor vehicles and falls cause about two-thirds of our accidental deaths. Drownings and fatal burns are next in the order of causes with 7,500 deaths by drowning and 7,400 deaths

from burns. Railroad accidents caused 4,850 deaths, fatal firearm accidents, 2,500, deaths from poisons other than gas, 2,100, and poisonous gases, 1,500 deaths. 7

In 1937, the total accidental deaths were 105,205; in 1938, approximately 94,000, a decrease of 11 per cent. The total deaths caused by motor vehicles in 1937 amounted to 39,643, but a decrease of 18 per cent was made in 1938 with approximately 32,400 deaths from this cause. Accidents in the home caused 32,000 deaths in 1937, while in 1938 there were approximately 31,500 deaths from this cause, a decrease of about 2 per cent. Occupational accidents caused 19,000 deaths in 1937. In 1938, approximately 16,500 deaths were due to accidents in the occupations; a decrease of 13 per cent. Public accidents, not including motor vehicle, took 18,000 lives in 1937. A reduction in the number of accidental deaths from public accidents was registered in 1938 with a total of approximately 16,500; a decrease of about 8 per cent. This means that about 11,000 lives were saved in 1938 from accidental causes. Since 1923 the accidental death rates per 100,000 population have decreased with the exception of deaths by motor vehicles and from falls. Deaths from motor vehicles increased 51 per cent and deaths from falls, 61 per cent in this period. 8

In 1937 deaths due to falls made up two-thirds of all fatal accidents among persons 65 years old or older. The death rate for this age group was 205.4 per 100,000 population. In no age group under 25 years of age did the death rate exceed 4.8 per 100,000 population. Among adults 25 to 65 years of age the rate was only 12.7. Approximately 61 per cent of the

Fig. 1. Principal Types of Fatal Accidents in 1938

(Source: National Safety Council Approximations Based on United States Census Bureau Data and State Reports)
fatal falls happened in the home, 22 per cent were occupational, 12 per cent were public (not motor vehicle), and 5 per cent were connected with motor vehicles.9

Children under 5 years of age and adults over 65 years were the chief victims of fatal burns in 1937. The death rate per 100,000 population for the former was 17.1 and for the latter group, 19.2. Seventy per cent of all fatal burns occurred in the home.10

The best record in the reduction of fatal accidents has been achieved by the school age group, 5 to 14 years of age. In 1913 this age group had an accidental death rate of 37.5 per 100,000 population. By 1938 this rate had dropped to 27.9.

For children under five years of age, the rate was 89.4 per 100,000 in 1913. It decreased slowly until 1924 when it was 86.7. From 1922 to 1932 the death rate decreased steadily, reaching 63.9 in the latter year. It rose slightly in 1936 to 73.1, but went down again to 68.7 in 1938.

The rate for the age group of 65 years and over has not been so satisfactory. In 1913 the accidental death rate for this age group was 281.2 per 100,000. Since 1928 it has never been below 300. In 1938 the rate was 331.5.11

The monthly variation in accidental deaths shows, that for children under five years of age, more accidental deaths occur in July and August than in any other two months. For children 5 to 14 years old, the months of June, July, and August are the worst for accidental deaths. The month-

10. Ibid., p. 5.
11. Ibid., p. 6.
ly variation in accidental deaths in 1938 for the age group from 25 to 64 years rose from 6.9 per cent of the year's total in February to 9.3 per cent in September and to a high of 9.7 per cent in December. The monthly variation in deaths for the age group from 65 years or more ranges from a low of 7.6 per cent in February to a high of 9.9 per cent in December.\footnote{12}

The principal types of fatal accidents vary somewhat with the various age groups. With children under five years of age, fatal burns made up 25 per cent of the all-accident total. Motor vehicles account for 19 per cent. Mechanical suffocation, principally by bed clothes, totalled 14 per cent and poisonings (not gas), 9 per cent.

In the age group from 5 to 14 years, motor vehicles caused 39 per cent of the all-accidental total. Drowning was the second chief cause with 19 per cent of the total. Burns and falls follow in order with 11 per cent and 9 per cent respectively.

Motor vehicles caused 55 per cent of the accidental deaths in the age group between 15 and 24 years of age. Drownings, falls, and firearms were responsible for 12, 8, and 6 per cent of the total deaths in the order given.\footnote{13}

In the age group from 25 to 64 years of age, motor vehicles caused 44 per cent of the total accidental deaths. Falls caused 17 per cent of the total. Drowning and burns caused 7 and 6 per cent, respectively, of the total.

For those in the age group of 65 years and over, falls caused 59 per

\footnote{13} Ibid., pp. 8-9.
cent of the total accidental deaths. Motor vehicles caused 23 per cent, burns, 6 per cent, and railroad accidents, except those involving motor vehicles, 2 per cent.\textsuperscript{14}

The death rate for accidents in all states was 72.2 per 100,000 population in 1938. The states of the Rocky Mountain area had the highest regional rates with an average of 102.6 deaths per 100,000 population. Arizona had the second highest rate in the nation with 113.1 per 100,000 population. Nevada lead the states with an accidental death rate of 141.6 per 100,000 population. Arizona's accidental death rate per 100,000 population decreased 14.3 per cent in 1938 over the year 1937, while the national death rate decreased 11 per cent. The national accidental death rate in 1938 was about equal to that of 1932. However, Arizona's accidental death rate increased 13.2 per cent in this same period.\textsuperscript{15}

Occupational Accidents: Accidents in industry caused 16,500 deaths and 1,350,000 injuries in 1938. Estimates show an economic loss of some $650,000,000 due to these deaths and injuries. The number of deaths from accidents in industry in 1938 showed a reduction of 13 per cent over 1937. In only three years of the ten-year period from 1928 to 1938 has the total number of deaths from industry been under the figures for 1938.

Agricultural pursuits claim more lives through accidents than are claimed by any other one industry. In 1938 the total deaths from agricultural occupations reached 4,300 of which 50 per cent were caused by farm machinery and farm animals. Occupations of trade and service claimed 4,000 lives or 24 per cent of the total. The building trades claimed 2,700 lives. Transportation and public utilities cost the lives of 2,000

\textsuperscript{15} Ibid., pp. 10, 58.
people although employee deaths on steam railroads dropped 60 per cent in the ten year period from 1928 to 1938. Manufacturing caused another 2,000 deaths while the mining and petroleum industries together took 1,500 lives. Some 2,800 occupational deaths in 1938 were due to motor vehicle accidents. Industrial accident rates, both in frequency of occurrence and in severity, have decreased quite steadily since 1926. The severity rate shows a 45 per cent decline and the frequency rate, a 68 per cent decline from 1926 to 1938.\textsuperscript{16}

Motor Vehicle Accidents: Motor vehicle accidents were responsible for 32,400 deaths, 1,150,000 personal injuries, and an economic loss estimated at $1,500,000,000 in 1938. The death toll was equivalent to the destruction of a city like Tucson, Arizona. In comparison with the death rate per 100,000 population for 1937, the total for the year 1938 showed a decrease of 18 per cent. This represents a saving of some 7,200 lives. There were some 250,000 fewer injuries.\textsuperscript{17}

Accidents to pedestrians were responsible for 12,500 deaths and 275,000 non-fatal injuries in 1938. This was the most important single type of motor vehicle accidents, being responsible for 39 per cent of the total. The proportion was much higher among children and elderly persons, reaching about 65 per cent of the total. The age group from 15 to 24 years had by far the best proportion since only 13 per cent of the total pedestrian deaths occurred among this group.\textsuperscript{18}

An encouraging sign pointing toward the effectiveness of safety education in the public schools is the reduction in the motor vehicle death

\textsuperscript{17} Ibid., p. 23.
\textsuperscript{18} Ibid., pp. 24-25.
rate among children from 5 to 14 years of age. Since 1922, this rate has been reduced 30 per cent while the rate for all ages increased 79 per cent. This group has a lower motor vehicle death rate than any other age group. Every age group had a lower motor vehicle death rate in 1938 than in 1937, the age group from 15 to 24 years making the greatest decline with 19 per cent less than in 1937.19

An analysis of traffic accidents by the National Safety Council shows that about half of the drivers involved in fatal accidents commit some violation of law or of good driving practice. "Exceeding the speed limit" or "too fast for conditions" were the chief causes of fatal accidents. State reports show that 9 per cent of all drivers and 13 per cent of all pedestrians involved in fatal accidents in 1938 had been drinking. Since these percentages were based generally on observation rather than chemical tests, authorities believe the actual percentages would be from three to five times higher.20

Results of tests made to determine the concentrations of alcohol in the brains of persons killed in traffic accidents in New York City during 1935, 1936, 1937 show that 38 per cent of the pedestrians had been drinking, and that 33 per cent of the pedestrians had more than 0.10 per cent of alcohol in the brain. The results also show that 51 per cent of the drivers had been drinking and that 42 per cent of the total number had more than 0.10 per cent of alcohol in the brain.21

Many drivers violate traffic rules and good driving practices because they lack a knowledge of the law or are deficient in proper train-

20. Ibid., pp. 30-31.
ing to make them good drivers. Children are not always taught the dan-
gers of playing or walking in traffic hazards. Older persons expose
themselves to traffic dangers when their judgment is poor on distances,
speeds, and other traffic conditions. Other causes of motor vehicle ac-
cidents are improper attitudes on the part of drivers and pedestrians,
defective motor vehicles, bad weather conditions and bad road conditions.

Bicycle-motor vehicle collisions caused the deaths of 700 persons
and injuries to approximately 35,000 others in 1938. There was no im-
provement shown over 1937. The number of bicycle versus motor vehicle
deaths has doubled since 1932. So has the number of bicycles in use
doubled in that time while motor vehicle mileage has increased 38 per
cent. The age group between 5 and 14 years had 300 fatalities and 17,500
injuries in 1938. There were 270 deaths and 13,000 injuries among those
in the age group from 15 to 24 years. 100 deaths and 3,500 injuries were
registered for the age group from 25 to 64 years of age. Other deaths
and injuries occurred when the cyclist struck other vehicles, pedestrians,
and fixed objects.22

Public Accidents (Not Motor Vehicle): In the division known as
public accidents, almost two-thirds of the total of 48,900 deaths in
1938 were caused by motor vehicles. Other deaths from public accidents
in the numerical order of their occurrence were drownings, 4,700, rail-
road accidents (not with motor vehicles), 2,800, falls, 2,700, firearms,
1,300, water transportation, 950, other vehicles (except motor vehicles),
600, conflagration, burns, and explosions, 350, street car (not with motor
vehicle) accidents and air transportation, 300 each. All other accidental

deaths, classified as public, amounted to 2,500. About half the drownings and half the deaths by firearms in public accidents were among persons less than 25 years of age. About three-fourths of the deaths caused by falls in public places were from the age group over 65 years.  

The number of accidental deaths caused by the railroads and by aviation also decreased in 1938 from 1937. There were 4,879 deaths in railroad accidents in 1938, compared with 5,784 in 1937. In aviation, scheduled airlines reported 38 per cent fewer passenger fatalities in domestic flying in 1938 than in 1937. The accidental death rate for private flying showed an improvement of 17 per cent over 1937 and a 51 per cent improvement over 1930.  

School Accidents: The smallest number of accidental deaths in over twenty-five years was achieved in 1938 by children of the ages, 5 to 14 years. In 1922 the death rate from accidents was 40.8 per 100,000 children of this age group. In 1938 it was only 27.9. This is the best record for any age group.  

From statistics gathered from school systems with more than 800,000 pupils enrolled during the seven months from September 1938 to March 1939, the information showed that 19 per cent of all student accidents, resulting in lost time or doctor's care, occurred in school buildings, 18 per cent on school grounds, 7 per cent occurred while going to or from school, 24 per cent occurred at home, and 32 per cent occurred at places away from the school or home and outside school hours. Stated in

24. Ibid., p. 45.
25. Ibid., pp. 52-53.
rates per 100,000 student days, the statistics showed that the accident rate was only 6 per 100,000 student days in the kindergarten, 11 in the first grade, 12 in the second grade, advancing to 17 per 100,000 student days in the sixth, seventh, and eighth grades, and declining to an average of 15 per 100,000 student days in the high school grades.26

Home Accidents: Accidental deaths from home accidents were approximately 31,500 in 1938, decreasing less than two per cent from the number of deaths in 1937. About 4,650,000 persons had non-fatal injuries happen to them in homes. The total economic loss from home accidents in 1938 amounted to about $600,000,000. About 16,500 deaths or about 52 per cent of the total deaths from home accidents were due to falls. Burns and explosions were the next chief cause of accidental deaths in the home. Poisonings not caused by gas were the next important cause, followed by deaths from mechanical suffocation, poison gases, and firearms. Burns and explosions caused 17 per cent of the accidental deaths in the home; poisonings (except gas) caused 5 per cent of the total; mechanical suffocation was responsible for 4 per cent, firearms and poison gases each were responsible for 3 per cent.27

In a study made several years ago of hospitalized home accidents in Chicago and reported by the National Safety Council,28 it was found that 64 per cent of all accidents had some mechanical cause, and that 68 per cent had a personal cause, indicating that the majority of cases had both a mechanical and a personal cause. The most frequently noted mechanical causes were: disorder; improper equipment, and improper use of

27. Ibid., pp. 54-55.
28. Ibid., pp. 54-55.
equipment. The more common personal causes were: poor judgment, adult faults resulting in child injuries, and physical frailty.

Accident Situation in Arizona: For a safety education program to be adequate, it must be fitted to local needs. Some types of accidents are common to all sections of the country such as motor vehicle accidents. Other kinds of accidents occur with a higher rate of frequency in one locality than in another due to varying conditions which make the hazards greater or less as the case may be. Arizona has relatively few accidents which are attributed to excessive cold. Some states where extremely low temperatures occur in the winter have a considerable number of deaths from this cause. In a desert region like Arizona where high temperatures occur, many accidental deaths are due to excessive heat.

The United States Census Bureau publishes annual reports on the number and kind of accidental deaths in each state with other information regarding these accidental deaths. These reports furnished the data for Table I which shows the types of accidental deaths and the number of deaths of each type occurring annually in Arizona from 1927 to 1936. The most common cause of accidents in this state is the motor vehicle. This type of accident will be discussed in more detail later.

The first part of Table I classifies the accidental deaths in Arizona from 1927 to 1936 by their causes. Traumatism, or injury, by falls and by crushing or landslide were two of the leading causes of accidental death during this period. Each of these was the cause of about fifty-five deaths a year on the average. Burns, excluding death by conflagration, drowning, and excessive heat caused an average toll of about thirty accidental deaths. Injuries caused by firearms resulted in an
average of twenty-four deaths. Death by conflagration killed an average of nine persons a year. Acute accidental poisonings, not including poisoning by food or the absorption of poisonous gas, resulted in an average of ten deaths. Each of the following causes killed an average of about six persons a year: attack by venomous animal, poisoning by food, mechanical suffocation, injury by cutting or piercing instruments, and accidents due to electric current. The classification, "other accidents" includes all accidental deaths whose cause cannot be definitely determined or which cannot be classified under the other headings. The United States Census Bureau includes legal executions under the list of accidental deaths. Cataclysm, as a cause of death, means "death by a deluge."

The chief known causes of accidental deaths as given in Table I are enumerated above to emphasize their relative importance. The second part of this table shows where some of the fatal accidents occurred. It classifies some of the fatal accidents according to the kind of machinery or type of transportation involved. Every one of the deaths in the lower part of the table is also classified somewhere in the upper part of the table. Fatal railroad accidents, which include accidents to employees as well as others, are quite numerous with two trunk line railroads crossing Arizona. Accidents in mines and quarries claimed a number of lives according to the information in this table. Mining is carried on extensively in Arizona and it is a hazardous occupation. Mining naturally claims a number of lives yearly.

Phoenix is the only city in Arizona where street cars are now in use. Buses have replaced some of the street car services in Phoenix so that street car accidents are quite uncommon in Arizona. Water trans-
### TABLE I

#### TYPES OF ACCIDENTAL DEATHS IN ARIZONA, 1927 TO 1936

<table>
<thead>
<tr>
<th>Type of Accident</th>
<th>1927</th>
<th>1928</th>
<th>1929</th>
<th>1930</th>
<th>1931</th>
<th>1932</th>
<th>1933</th>
<th>1934</th>
<th>1935</th>
<th>1936</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Accidental Deaths</td>
<td>481</td>
<td>483</td>
<td>516</td>
<td>510</td>
<td>481</td>
<td>485</td>
<td>457</td>
<td>457</td>
<td>503</td>
<td>521</td>
</tr>
<tr>
<td>Attack by venomous animal</td>
<td>10</td>
<td>5</td>
<td>10</td>
<td>9</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Poisoning by food</td>
<td>9</td>
<td>5</td>
<td>13</td>
<td>7</td>
<td>8</td>
<td>6</td>
<td>4</td>
<td>3</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Absorption of poisonous gas</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Other acute accidental poisonings (gas excepted)</td>
<td>10</td>
<td>13</td>
<td>14</td>
<td>18</td>
<td>11</td>
<td>11</td>
<td>8</td>
<td>10</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Conflagration</td>
<td>9</td>
<td>15</td>
<td>8</td>
<td>4</td>
<td>6</td>
<td>11</td>
<td>11</td>
<td>2</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>Burns (conflagration excepted)</td>
<td>23</td>
<td>37</td>
<td>28</td>
<td>37</td>
<td>34</td>
<td>33</td>
<td>30</td>
<td>31</td>
<td>24</td>
<td>39</td>
</tr>
<tr>
<td>Mechanical suffocation</td>
<td>7</td>
<td>4</td>
<td>6</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>4</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Drowning</td>
<td>24</td>
<td>28</td>
<td>25</td>
<td>17</td>
<td>39</td>
<td>20</td>
<td>33</td>
<td>30</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>Traumatism by firearms</td>
<td>27</td>
<td>26</td>
<td>46</td>
<td>43</td>
<td>34</td>
<td>20</td>
<td>15</td>
<td>21</td>
<td>27</td>
<td>13</td>
</tr>
<tr>
<td>Traumatism by cutting or piercing instruments</td>
<td>4</td>
<td>8</td>
<td></td>
<td>6</td>
<td>5</td>
<td>8</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Traumatism by fall</td>
<td>57</td>
<td>52</td>
<td>50</td>
<td>47</td>
<td>42</td>
<td>50</td>
<td>52</td>
<td>72</td>
<td>86</td>
<td></td>
</tr>
<tr>
<td>Traumatism by crushing or landslide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cataclysm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Injuries by animals</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Hunger and thirst</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excessive cold</td>
<td>1</td>
<td>5</td>
<td></td>
<td>4</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Excessive heat</td>
<td>15</td>
<td>12</td>
<td>29</td>
<td>14</td>
<td>57</td>
<td>26</td>
<td>45</td>
<td>33</td>
<td>28</td>
<td>45</td>
</tr>
<tr>
<td>Lightning</td>
<td>7</td>
<td>6</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>6</td>
<td>3</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Accidents due to electric current</td>
<td>8</td>
<td>10</td>
<td>13</td>
<td>9</td>
<td>8</td>
<td>4</td>
<td>8</td>
<td>6</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Foreign bodies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other accidents</td>
<td>30</td>
<td>45</td>
<td>24</td>
<td>226</td>
<td>164</td>
<td>154</td>
<td>133</td>
<td>173</td>
<td>208</td>
<td>245</td>
</tr>
<tr>
<td>Accidents in mines &amp; quarries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accidents from agricultural machinery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elevator accidents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other machinery accidents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Railroad and automobile collisions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other railroad accidents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Street car and auto collisions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other street car accidents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automobile accidents (primary)</td>
<td>140</td>
<td>125</td>
<td>153</td>
<td>181</td>
<td>149</td>
<td>147</td>
<td>205</td>
<td>205</td>
<td>234</td>
<td></td>
</tr>
<tr>
<td>Motorcycle accidents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other land transportation accidents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water transportation accidents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Air transportation accidents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11</td>
</tr>
</tbody>
</table>

Note: In the upper portion of this table all accidents are classified by means of injury. In the lower portion of the table some of them are classified by place of accident, or kind of machinery or transportation. Every death in the lower part of the table is also classified somewhere in the upper part of the table. Deaths due to collisions of motorcycles and automobiles are included under "Automobile accidents (primary)". Information is not available where blank spaces appear. Source of data: United States Census Bureau, Mortality Statistics.
Portation accidents are few in number since Arizona has limited facilities for water transportation. Although Arizona has several hundred thousand acres of land under cultivation, fatal accidents from agricultural machinery are rather unusual. The average number of deaths from this cause is about one a year.

According to information issued by the National Safety Council,^29 four hundred sixty-six accidental deaths were reported in Arizona in 1938 of which two hundred and eleven were due to motor vehicles, one hundred and seventeen were public (not motor vehicle), ninety-three occurred in homes, and forty-five were occupational.

The most serious problem in the prevention of accidents in Arizona today is the situation caused by motor vehicle accidents. The Traffic Engineering Division of the Arizona Highway Department reports^30 two hundred persons killed and two thousand, five hundred eighty-three persons injured in motor vehicle accidents within the state in 1938. This is a tremendous and needless loss. Attention is called to the apparent discrepancy in the number of deaths in motor vehicle accidents as reported by the Arizona Highway Department and the National Safety Council. The difference lies in the method of classifying deaths in motor vehicle accidents. The Traffic Engineering Division of the Arizona Highway Department, like most traffic safety authorities, includes only accidents occurring in traffic. It does not include accidents occurring on home or industrial premises. The method of reporting used by bureaus of

---

vital statistics is to classify all deaths caused by motor vehicles under the heading of motor vehicle accidents regardless of where these accidents occur.

The logical way to successfully attack a problem is to know a good deal about the problem. For this reason some information on motor vehicle accidents is presented here. In order to have a rather accurate method of comparing accident records for motor vehicles, traffic engineers have worked out a unit called "the motor vehicle mile". The total annual volume of gasoline or motor vehicle fuel used on the streets and highways of the state multiplied by a figure which is the average mileage per gallon for all classes of motor vehicles and motor vehicle fuels gives the total motor vehicle mileage for the entire year. On information furnished by the Petroleum Economics Division of the United States Bureau of Mines, the National Safety Council found that thirteen miles per gallon of motor vehicle fuel was a fairly accurate figure for this purpose.

A comparison of the deaths due to motor vehicles in each year from 1932 to 1938 with the total motor vehicle mileage for the same year is shown in Table II. As can be seen, the tendency has been toward a steady increase in both fatalities and vehicle miles up to the year 1938, with the exception of a slight decrease in vehicle miles during the year 1933 over the year 1932. Fatalities per hundred million vehicle miles have declined since 1934 with 1938 marking the most pronounced decline. This would seem to indicate an improving accident condition which may be attributed to more intelligent and improved accident prevention methods.
<table>
<thead>
<tr>
<th>Year</th>
<th>Total motor vehicle miles driven on streets</th>
<th>Total fatalities</th>
<th>Fatalities per 100,000,000 vehicle miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1932</td>
<td>775,587,373</td>
<td>121</td>
<td>15.62</td>
</tr>
<tr>
<td>1933</td>
<td>726,390,080</td>
<td>154</td>
<td>21.23</td>
</tr>
<tr>
<td>1934</td>
<td>836,288,180</td>
<td>205</td>
<td>24.54</td>
</tr>
<tr>
<td>1935</td>
<td>930,758,036</td>
<td>217</td>
<td>23.31</td>
</tr>
<tr>
<td>1936</td>
<td>1,092,722,397</td>
<td>244</td>
<td>22.31</td>
</tr>
<tr>
<td>1937</td>
<td>1,185,083,016</td>
<td>258</td>
<td>21.77</td>
</tr>
<tr>
<td>1938</td>
<td>1,157,144,027</td>
<td>200</td>
<td>17.28</td>
</tr>
</tbody>
</table>

1. Based on accident and traffic statistics for years 1932-38, Traffic Engineering Division, Arizona State Highway Department.
By taking the amount of gasoline sold in each county as an indication of the total travel in each county, the total vehicle mileage can be obtained as a basis for comparison between the counties of the state. All the gasoline sold in any county is not necessarily used on the highways of that county. Neither is all the gasoline used in any county necessarily sold in that county. With a few exceptions, the two probably fairly well balance each other. Using the figures obtained in this way for the total vehicle mileage in each county for 1938, Table III shows the percentage of total traffic, total accidents, persons killed, and persons injured in each county for the year 1938.

Maricopa County, containing the state's largest city and largest congested area, naturally shows the largest percentage of traffic, accidents, killed and injured. Pima County, containing the state's second largest city and second greatest congested area, ranks second in these totals. Santa Cruz County was the only county having no fatalities for the year 1938.

Table IV shows the ranking of the counties of Arizona on the basis of the average number of fatalities per one hundred million vehicle miles for the year 1938. Quite likely Yuma and Pinal Counties appear to have a worse accident record in this table than they actually have due to the fact that a large percentage of the traffic of these counties is "through traffic" that does not buy gasoline within the county. Consequently their fatality rate appears to be higher than it actually is.

Table V shows the number of fatalities and the fatalities per hundred thousand population in 1938 for the cities of Arizona with five thousand population or over. The population shown for these cities is
<table>
<thead>
<tr>
<th>County</th>
<th>Per cent of total traffic</th>
<th>Per cent of total accidents</th>
<th>Per cent of total fatalities</th>
<th>Per cent of total injured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cochise</td>
<td>6.2</td>
<td>4.6</td>
<td>7.0</td>
<td>5.1</td>
</tr>
<tr>
<td>Coconino</td>
<td>6.4</td>
<td>5.3</td>
<td>5.5</td>
<td>5.4</td>
</tr>
<tr>
<td>Graham</td>
<td>2.9</td>
<td>3.1</td>
<td>2.5</td>
<td>3.4</td>
</tr>
<tr>
<td>Maricopa</td>
<td>38.3</td>
<td>45.1</td>
<td>33.5</td>
<td>39.5</td>
</tr>
<tr>
<td>Mohave</td>
<td>3.0</td>
<td>3.1</td>
<td>4.5</td>
<td>3.1</td>
</tr>
<tr>
<td>Navajo</td>
<td>4.6</td>
<td>2.2</td>
<td>2.5</td>
<td>3.3</td>
</tr>
<tr>
<td>Pima</td>
<td>14.0</td>
<td>14.7</td>
<td>15.0</td>
<td>16.5</td>
</tr>
<tr>
<td>Pinal</td>
<td>4.6</td>
<td>4.5</td>
<td>7.0</td>
<td>4.3</td>
</tr>
<tr>
<td>Santa Cruz</td>
<td>1.2</td>
<td>1.1</td>
<td>5.0</td>
<td>6.4</td>
</tr>
<tr>
<td>Yavapai</td>
<td>6.4</td>
<td>6.3</td>
<td>5.0</td>
<td>6.4</td>
</tr>
</tbody>
</table>

1 Based on accident and traffic statistics for 1938, Traffic Engineering Division, Arizona State Highway Department.
TABLE IV

COUNTIES RANKED ACCORDING TO AVERAGE NUMBER OF FATALITIES PER HUNDRED MILLION VEHICLE MILES DRIVEN IN EACH COUNTY

<table>
<thead>
<tr>
<th>County</th>
<th>Fatalities per hundred million vehicle miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Santa Cruz</td>
<td>0.00</td>
</tr>
<tr>
<td>2. Navajo</td>
<td>9.47</td>
</tr>
<tr>
<td>3. Yavapai</td>
<td>13.59</td>
</tr>
<tr>
<td>4. Graham</td>
<td>14.84</td>
</tr>
<tr>
<td>5. Coconino</td>
<td>14.89</td>
</tr>
<tr>
<td>6. Maricopa</td>
<td>15.12</td>
</tr>
<tr>
<td>7. Apache</td>
<td>16.31</td>
</tr>
<tr>
<td>8. Greenlee</td>
<td>18.31</td>
</tr>
<tr>
<td>9. Pima</td>
<td>18.58</td>
</tr>
<tr>
<td>10. Cochise</td>
<td>19.43</td>
</tr>
<tr>
<td>11. Gila</td>
<td>21.71</td>
</tr>
<tr>
<td>12. Mohave</td>
<td>25.76</td>
</tr>
<tr>
<td>13. Pinal</td>
<td>26.29</td>
</tr>
<tr>
<td>14. Yuma</td>
<td>32.36</td>
</tr>
</tbody>
</table>

1 Based on accident and traffic statistics for 1938, Traffic Engineering Division, Arizona State Highway Department.
<table>
<thead>
<tr>
<th>City</th>
<th>Population in 1930</th>
<th>Total fatalities in 1938</th>
<th>Fatalities per hundred thousand population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nogales</td>
<td>6,006</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Miami</td>
<td>7,693</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Bisbee</td>
<td>8,023</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Tucson</td>
<td>32,506</td>
<td>2</td>
<td>5.15</td>
</tr>
<tr>
<td>Prescott</td>
<td>5,517</td>
<td>1</td>
<td>18.13</td>
</tr>
<tr>
<td>Phoenix</td>
<td>48,118</td>
<td>9</td>
<td>18.70</td>
</tr>
<tr>
<td>Douglas</td>
<td>9,823</td>
<td>2</td>
<td>20.35</td>
</tr>
<tr>
<td>Globe</td>
<td>7,157</td>
<td>2</td>
<td>27.94</td>
</tr>
</tbody>
</table>

1 Based on accident and traffic statistics for 1938, Traffic Engineering Division, Arizona State Highway Department.
the latest official figure available, the United States Government census of 1930.

Attention is directed to certain items in particular in Table VI. "Collisions with other motor vehicles" were responsible for 53.9 per cent of the total motor vehicle accidents and were responsible for 16.5 per cent of the total number killed. This means that about one out of every two motor vehicle accidents reported was a collision with another motor vehicle, and that one out of every six fatalities was due to this same cause. Non-collision accidents were about one-fourth of the total number of accidents, but they were responsible for one-half of the fatalities. Since a large number of non-collision accidents are due to excessive speed, the frequency of fatalities for this type of accident indicates their seriousness.

As shown in Table VII, the greatest percentage of motor vehicle accidents in 1938 occurred on the state highway system outside of municipalities, with the next largest number occurring within incorporated cities. In 1938, the mileage of the State Highway system included only 3,701 miles or 13.4 per cent of the state's total mileage of roads outside municipalities. But state highways carried about half of the total traffic of the state. This probably accounts for the fact that about sixty-three per cent of the fatal accidents occurred on state highways. When the percentage of total accidents is compared to the percentage of total traffic, the incorporated cities show a higher frequency of accident occurrence. This is quite natural due to the greater congestion of traffic in the cities.

Table VIII shows what pedestrians were doing when they became in-
<table>
<thead>
<tr>
<th>Type of accident</th>
<th>Number of accidents</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Per cent of total</td>
<td>Total</td>
<td>Fatal</td>
<td>Non-fatal</td>
</tr>
<tr>
<td>Collision with</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pedestrian</td>
<td>9.8</td>
<td>296</td>
<td>44</td>
<td>252</td>
</tr>
<tr>
<td>Other Motor vehicle</td>
<td>53.9</td>
<td>1,622</td>
<td>27</td>
<td>708</td>
</tr>
<tr>
<td>Railroad train</td>
<td>0.7</td>
<td>20</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Electric car</td>
<td>0.2</td>
<td>7</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Bicycle</td>
<td>3.3</td>
<td>99</td>
<td>4</td>
<td>95</td>
</tr>
<tr>
<td>Horse-drawn vehicle</td>
<td>0.1</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Fixed object</td>
<td>4.9</td>
<td>147</td>
<td>10</td>
<td>61</td>
</tr>
<tr>
<td>Animal</td>
<td>2.4</td>
<td>73</td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>Non-Collision</td>
<td>24.7</td>
<td>743</td>
<td>69</td>
<td>419</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of accident</th>
<th>Number of persons killed</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Per cent of total</td>
<td>All</td>
<td>0-4</td>
<td>5-14</td>
<td>15-24</td>
</tr>
<tr>
<td>Collision with</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pedestrian</td>
<td>22.0</td>
<td>44</td>
<td>2</td>
<td>3</td>
<td>21</td>
</tr>
<tr>
<td>Other motor vehicle</td>
<td>16.5</td>
<td>33</td>
<td>2</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>Railroad train</td>
<td>2.5</td>
<td>5</td>
<td>1</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Electric car</td>
<td>2.0</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Bicycle</td>
<td>1.0</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horse-drawn vehicle</td>
<td>0.5</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed object</td>
<td>5.5</td>
<td>11</td>
<td></td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Animal</td>
<td>0.5</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Collision</td>
<td>50.0</td>
<td>100</td>
<td>2</td>
<td>21</td>
<td>63</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of accident</th>
<th>Number of persons injured</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Per cent of total</td>
<td>All</td>
<td>0-4</td>
<td>5-14</td>
<td>15-24</td>
<td>25-64</td>
</tr>
<tr>
<td>Total</td>
<td>2,583</td>
<td>68</td>
<td>280</td>
<td>709</td>
<td>1,452</td>
<td>74</td>
</tr>
<tr>
<td>Collision with</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pedestrian</td>
<td>10.5</td>
<td>270</td>
<td>20</td>
<td>76</td>
<td>27</td>
<td>124</td>
</tr>
<tr>
<td>Other motor vehicle</td>
<td>47.1</td>
<td>1,216</td>
<td>32</td>
<td>62</td>
<td>339</td>
<td>724</td>
</tr>
<tr>
<td>Railroad train</td>
<td>0.4</td>
<td>12</td>
<td>1</td>
<td></td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Electric car</td>
<td>0.1</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bicycle</td>
<td>3.7</td>
<td>95</td>
<td></td>
<td>51</td>
<td>31</td>
<td>13</td>
</tr>
<tr>
<td>Horse-drawn vehicle</td>
<td>0.1</td>
<td>4</td>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Fixed object</td>
<td>5.6</td>
<td>144</td>
<td>1</td>
<td>11</td>
<td>52</td>
<td>77</td>
</tr>
<tr>
<td>Animal</td>
<td>1.2</td>
<td>30</td>
<td>1</td>
<td>2</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>Non-Collision</td>
<td>31.3</td>
<td>806</td>
<td>13</td>
<td>56</td>
<td>245</td>
<td>484</td>
</tr>
</tbody>
</table>

1 Based on accident and traffic statistics for 1938, Traffic Engineering Division, Arizona State Highway Department.
## TABLE VII

<table>
<thead>
<tr>
<th>Road</th>
<th>Per cent of Total</th>
<th>Per cent of Traffic Accidents</th>
<th>Total</th>
<th>Fatal</th>
<th>Non-fatal</th>
<th>Property Damage Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>3,011</td>
<td>181</td>
<td>1,590</td>
<td>1,240</td>
</tr>
<tr>
<td>County roads</td>
<td>25.5</td>
<td>20.3</td>
<td>611</td>
<td>48</td>
<td>317</td>
<td>246</td>
</tr>
<tr>
<td>Incorporated cities</td>
<td>24.7</td>
<td>35.4</td>
<td>1,067</td>
<td>19</td>
<td>592</td>
<td>456</td>
</tr>
<tr>
<td>State highways</td>
<td>49.8</td>
<td>44.3</td>
<td>1,333</td>
<td>114</td>
<td>681</td>
<td>538</td>
</tr>
</tbody>
</table>

1 Based on accident and traffic statistics for 1938, Traffic Engineering Division, Arizona State Highway Department.
### TABLE VIII

**Acts of Pedestrians at Time of Injury by Motor Vehicle**

<table>
<thead>
<tr>
<th>What pedestrians were doing</th>
<th>Per cent</th>
<th>of total:</th>
<th>Total:</th>
<th>Fatal:</th>
<th>Non-fatal:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total pedestrians</td>
<td></td>
<td>314</td>
<td>44</td>
<td>270</td>
<td></td>
</tr>
<tr>
<td>Crossing at intersection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with signal</td>
<td>1.7</td>
<td>5</td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>against signal</td>
<td>1.0</td>
<td>3</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>no signal</td>
<td>24.0</td>
<td>71</td>
<td></td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>diagonally</td>
<td>1.7</td>
<td>5</td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Crossing -- not at intersection</td>
<td>88.3</td>
<td>113</td>
<td></td>
<td>17</td>
<td>96</td>
</tr>
<tr>
<td>Hitching on vehicle</td>
<td>1.0</td>
<td>3</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Playing in roadway</td>
<td>7.5</td>
<td>22</td>
<td></td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>Walking in roadway</td>
<td>13.6</td>
<td>40</td>
<td></td>
<td>15</td>
<td>25</td>
</tr>
<tr>
<td>Working in roadway</td>
<td>3.4</td>
<td>10</td>
<td></td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Waiting for or getting on or off street car</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>at safety zone</td>
<td>0.7</td>
<td>2</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>no safety zone</td>
<td>3.0</td>
<td>9</td>
<td></td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Getting on or off other vehicle</td>
<td>4.4</td>
<td>12</td>
<td></td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Not in roadway</td>
<td>4.1</td>
<td>19</td>
<td></td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>Not stated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Based on accident and traffic statistics for 1938, Traffic Engineering Division, Arizona State Highway Department.
involved in a motor vehicle accident. Pedestrians, crossing the street or roadway between intersections, incurred the highest percentage of the injuries. Pedestrians, crossing streets at intersections where there was no signal, ranked next in order of frequency of injury. And persons, walking in the roadway, incurred the third highest frequency of injury to themselves.

Statistics furnished by the State of Arizona show that, in about ninety per cent of the total motor vehicle accidents reported in 1938, no defects were found in either the driver or the motor car. These percentages are probably high as defects of a physical or mechanical nature are not always readily or easily determined. It has been found through experience with cars checked in a "safety lane" that a large percentage of cars have defects of at least a minor nature. Only seven per cent of the drivers involved in accidents in the state in 1938 were reported under the influence of liquor. This figure is doubtless very low due to the casual manner in which investigations to determine intoxication are usually made. "Going to sleep at the wheel" was responsible for ten fatal and fifty non-fatal injuries in 1938.

Agencies for Safety: Numerous agencies are engaged in the promotion of safety through education in safety, engineering for safety, or enforcement of safety measures. An outline of some of these agencies follows:

I. Governmental Agencies
   A. Federal
      1. United States Department of Commerce

a. Bureau of Air Commerce
b. Bureau of the Census
c. Interstate Commerce Commission

2. Department of the Interior
a. Bureau of Mines
b. National Park Service
c. Office of Education

3. Department of Agriculture
a. Bureau of Public Roads
b. Forest Service

4. Treasury Department
a. Public Health Service

B. State

1. Highway Department
a. Highway Patrol
b. Traffic Engineering Division
c. Bureaus of Registration and Licensing

2. Board of Health

3. Industrial Commission
4. Corporation Commission

5. Board of Education
6. Departments of Inspection for Safety
   a. Mine Inspection
   b. Building Inspection

C. Local

1. County Sheriff
2. County Health Office
3. City Police Department
4. City Health Office
5. Fire Department
6. City Building Inspection
7. City Recreation Department
8. Educational Institutions

II. Non-Governmental

A. Civic

1. Chamber of Commerce
2. Safety Council
3. American Red Cross
4. American Legion
5. Parent-Teacher Association
6. Service Clubs

B. Commercial

1. Safety Councils
2. Insurance Companies
3. Automobile Associations
4. Testing Laboratories
5. Transportation Companies
6. Manufacturers
7. Publishing Houses
Changing Concepts Regarding Accidents: The "devil may care" attitude regarding accidents is gradually giving way to a safe and sensible one. Certain organizations and certain localities have become so imbued with safety-consciousness that they have made outstanding records in safety. Milwaukee, Wisconsin, once had a record for accidents on its streets that was one of the worst in the nation. By means of safety education, well-conceived and well-executed methods in traffic engineering, and strict enforcement of traffic regulations, Milwaukee has become a model for the practical application of methods of safety.

The manufacturing industry was probably the first to change its ideas about accidents. Thirty years ago business executives believed that accidents in industry were to be expected. Very little was done to help the situation. But once it was shown by a few pioneers in industrial safety that prevention of accidents was really profitable business, industry began to put safety measures into practice until today most industries have safety records of which they are very proud. Most employers and employees today want reasonably safe conditions for work because accidents are costly to the employer as well as the employee.

People in civil life who are beyond school age are the hardest to educate in safety. The main trouble is reaching them in any plan of safety education. More use will have to be made of such agencies as the radio, newspapers, and forms of visual aid. When necessary, stricter regulations for accident prevention must be invoked by the government. An indication that people in civil life are becoming more interested in safety is found in the increasing demands from them that the schools do something about the accident situation.
The changing concept toward accidents and safety education by the schools is quite evident. The more progressive schools and colleges are introducing specific safety courses in their curricula. Studies are being made of local needs as well as the general accident situation in order to work out courses of study which may be followed most profitably.

Teachers are asking school administrators and others for help in planning the teaching of safety. As evidence that many school administrators are alive to the situation, courses of study in safety education are becoming quite common.

Statement of the Problem: The present study was undertaken in an attempt to build a course of study in safety education for the elementary schools of Arizona. Special attention has been given to the following questions:

I. What are the objectives of safety education as found in studies made by investigators of the subject?

II. Which of these objectives apply particularly to Arizona?

III. What apparently is the best way to attain these objectives in the elementary schools of Arizona?

IV. What tentative standards of attainment should be set up?

V. What methods of measurement should be outlined and used?

Mode of Attack: The data for this study were obtained from a variety of sources. Information on accidents, their causes, and ways and means of preventing them was obtained from insurance companies, Federal publications, the National Safety Council, the American Red Cross, the American Automobile Association, the Boy Scouts of America, the International Harvester Company, the National Conservation Bureau, the North-
western University Traffic Safety Institute, the Traffic Engineering Division of the Arizona Highway Department, the Arizona Safety Council, the Cleveland Safety Council, books, magazines, et cetera.

Courses of study in safety education were obtained from several states and municipalities. These were analyzed and evaluated. The research bulletin of the National Education Association, "Safety Education thru Schools," was particularly helpful for its analysis of current school practices in safety education, etc. In order to determine the types and principal causes of accidents in Arizona, the mortality statistics for accidental deaths, as published annually by the United States Census Bureau, were analyzed for a number of years. Further information on motor vehicle accidents in Arizona was obtained from reports of the State Highway Department. After careful analysis and appraisal of the data obtained, a course of study in safety education was constructed for the elementary schools of Arizona.

Results were obtained from 1,500 children tested. Their five and six year old test pupils were from elementary school teacher and from junior high school teacher. Approximately one-third of the pupils were from cities of less than 10,000 population, one-third from the 10,000 to 50,000 group, and one-third from communities of more than 100,000 population.

Nearly half of the elementary school teachers reported that a good
in Arizona following in a year or less in five principal sections of the junior high school teachers reported, nearly half the teachers in smaller
CHAPTER II

SAFETY EDUCATION IN THE SCHOOLS

Present Practices

Extent to Which Instruction Is Offered: The Research Division of the National Education Association wanted to know the extent to which safety instruction is offered in the schools of the United States, the place of safety education in the curriculum, the way it is supervised, the methods used, the sources of instructional materials, and the opinions of classroom teachers on needed improvements of safety instruction. In November 1937, questionnaires were mailed to a random selection of 100,000 members of the Association. Only classroom teachers in elementary, junior high school, and senior high schools were asked to reply since it was their opinions that were wanted. Replies were received from 14,584 classroom teachers. About five out of ten replies were from elementary school teachers; two from junior high school teachers; and three from senior high school teachers. Approximately one-third of the replies were from cities of less than 10,000 population; one-third from the 10,000 to 100,000 group; and one-third from communities of more than 100,000 population.

About half of the elementary school teachers reporting were employed in schools enrolling from one hundred to five hundred pupils. Of the junior high school teachers reporting, nearly two-fifths taught in schools enrolling from six to nine hundred pupils; and only a little more than one-third taught in schools enrolling from one thousand until five thousand pupils.
enrolling from five hundred to one thousand pupils. About half of the
senior high school replies were from schools enrolling more than one
thousand pupils. Since the majority of the replies were from teachers
in larger schools, this survey is most representative of practices in the
largest cities. The larger communities are most likely to have organized
safety programs upon which to report. The summary probably gives a bet-
ter than average picture of safety practices in the schools of the coun-
try. Table IX shows the extent to which safety instruction is offered
as reported by city school teachers. Only 2.6 per cent of the teachers'
replying failed to report some kind of instruction in safety. The ele-
mentary schools surpass the junior and senior high schools in respect to
the proportion of teachers reporting safety instruction.

Place in the Curriculum: Opinions vary regarding the place safety
education should have in the curriculum. Local conditions often alter
the emphasis placed on safety instruction. The procedures in one school
will not necessarily meet the needs in another school. It is desirable,
however, to discover what has been done about fitting safety instruction
into school curriculums. Table X shows the present place of safety in-
struction in the curricula of the schools from which replies were ob-
tained in the survey made by the Research Division of the National Edu-
cation Association.

About a third of the elementary school teachers reported safety
education being taught as a distinct unit in other subjects. This method
is employed to a less degree in the junior and senior high schools ac-
cording to the replies received. Nearly 29 per cent of the elementary
school teachers reported that safety is referred to only incidentally in
### TABLE IX
### EXTENT TO WHICH SAFETY EDUCATION IS OFFERED AS REPORTED BY CITY SCHOOL TEACHERS

| Extent to which instruction is offered | Per cent of teachers reporting |  
|----------------------------------------|--------------------------------|---|
|                                        | Elementary schools : Junior : Senior : Total high | |
| By all teachers                        | 82.8 : 41.6 : 20.5 : 54.8 | |
| By some teachers                       | 16.5 : 55.9 : 73.9 : 42.6 | |
| By none of the teachers                | 0.7 : 2.5 : 5.6 : 2.6 | |
| Number of teachers reporting           | 6,939 : 2,786 : 4,573 : 14,298 | |

Total: 100.0 : 100.0 : 100.0 : 100.0
<table>
<thead>
<tr>
<th>Place in curriculum</th>
<th>Elementary</th>
<th>Junior</th>
<th>Senior</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Separate course</td>
<td>13.8</td>
<td>5.6</td>
<td>9.8</td>
<td>10.9</td>
</tr>
<tr>
<td>Distinct unit in other subjects</td>
<td>32.1</td>
<td>27.8</td>
<td>22.6</td>
<td>28.2</td>
</tr>
<tr>
<td>Auditorium programs</td>
<td>6.7</td>
<td>10.6</td>
<td>13.2</td>
<td>9.5</td>
</tr>
<tr>
<td>Extracurriculum activities</td>
<td>8.5</td>
<td>15.2</td>
<td>8.2</td>
<td>9.7</td>
</tr>
<tr>
<td>Referred to incidentally</td>
<td>28.9</td>
<td>23.9</td>
<td>25.3</td>
<td>26.8</td>
</tr>
<tr>
<td>Combinations of above</td>
<td>9.9</td>
<td>16.6</td>
<td>19.7</td>
<td>14.4</td>
</tr>
<tr>
<td>Not taught in any way</td>
<td>0.1</td>
<td>0.3</td>
<td>1.2</td>
<td>0.5</td>
</tr>
</tbody>
</table>

In order to determine the conditions under which the courses were taught, the teachers were asked to identify the individuals on the basis of the following classifications: (1) superintendent, (2) principal, (3) cooperating principal, (4) director of physical education, (5) committee chairman, (6) safety supervisor, and (7) subject matter. The teachers were asked to name the individuals for the program in the school, the number of times, and the time they were in charge.

In Table IV, the term "Safety Education" is used in a general way to include all safety instruction which may be taught in the schools. The following is a list of the terms used:

- **Table X**
  - **Present Place of Safety Instruction in Curriculum**
  - **Number of Teachers Reporting**
  - **Per cent of Teachers Reporting**

<table>
<thead>
<tr>
<th>Place in Curriculum</th>
<th>Elementary</th>
<th>Junior</th>
<th>Senior</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Separate course</td>
<td>13.8</td>
<td>5.6</td>
<td>9.8</td>
<td>10.9</td>
</tr>
<tr>
<td>Distinct unit in other subjects</td>
<td>32.1</td>
<td>27.8</td>
<td>22.6</td>
<td>28.2</td>
</tr>
<tr>
<td>Auditorium programs</td>
<td>6.7</td>
<td>10.6</td>
<td>13.2</td>
<td>9.5</td>
</tr>
<tr>
<td>Extracurriculum activities</td>
<td>8.5</td>
<td>15.2</td>
<td>8.2</td>
<td>9.7</td>
</tr>
<tr>
<td>Referred to incidentally</td>
<td>28.9</td>
<td>23.9</td>
<td>25.3</td>
<td>26.8</td>
</tr>
<tr>
<td>Combinations of above</td>
<td>9.9</td>
<td>16.6</td>
<td>19.7</td>
<td>14.4</td>
</tr>
<tr>
<td>Not taught in any way</td>
<td>0.1</td>
<td>0.3</td>
<td>1.2</td>
<td>0.5</td>
</tr>
</tbody>
</table>

In order to determine the conditions under which the courses were taught, the teachers were asked to identify the individuals on the basis of the following classifications: (1) superintendent, (2) principal, (3) cooperating principal, (4) director of physical education, (5) committee chairman, (6) safety supervisor, and (7) subject matter. The teachers were asked to name the individuals for the program in the school, the number of times, and the time they were in charge.

In Table IV, the term "Safety Education" is used in a general way to include all safety instruction which may be taught in the schools. The following is a list of the terms used:
the curriculum. This incidental method of instruction in safety is employed almost to the same extent in junior and senior high schools on the basis of the replies received. Nearly 14 per cent of the elementary school teachers, 6 per cent of the junior high school teachers, and 10 per cent of the senior high school teachers reported that safety instruction is given as a separate course.

Supervision of the Program: The teachers were asked to indicate in the questionnaire whether or not major responsibility for the safety programs of their schools is assigned to one individual. 8,777 teachers of the 14,242 who answered this question indicated that the safety programs of their schools are not assigned as a major task to any one individual.32

In order to determine the positions held by those who have the chief responsibility for the safety programs in the various schools, the teachers were asked to identify the individuals on the basis of the following classification: (1) superintendent, (2) principal, (3) assistant principal, (4) director of physical education, (5) classroom teacher, (6) safety supervisor, and (7) various others. Table XI shows on whom the responsibility for the safety program is placed in the schools covered in the questionnaire. It appears that the major responsibility for the program is borne by classroom teachers and principals.

Methods of Teaching Safety: Deciding to make safety instruction a definite part of the curriculum is one thing. Employing effective methods to teach safety is another thing. The difficulty was recognized by the White House Conference on Child Health and Protection in the following

TABLE XI

To determine that the responsibility in the school for the safety program rests with the individual responsible for safety program in the school, a question concerning methods of selecting the responsibility in the school was included in the questionnaire. The results indicate the individuals who are generally reported to have the responsibility for safety in schools. These results are presented in Table XI, which shows the number of teachers reporting for each position and the percentage of teachers reporting for each position in different types of schools.

<table>
<thead>
<tr>
<th>Individual</th>
<th>Per cent of teachers reporting for:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Elementary</td>
</tr>
<tr>
<td>Superintendent</td>
<td>2.9</td>
</tr>
<tr>
<td>Principal</td>
<td>28.6</td>
</tr>
<tr>
<td>Assistant principal</td>
<td>3.6</td>
</tr>
<tr>
<td>Director of physical education</td>
<td>6.8</td>
</tr>
<tr>
<td>Classroom teacher</td>
<td>45.1</td>
</tr>
<tr>
<td>Safety supervisor</td>
<td>5.3</td>
</tr>
<tr>
<td>Various others</td>
<td>7.7</td>
</tr>
<tr>
<td>Total (100.0)</td>
<td></td>
</tr>
</tbody>
</table>

Number of teachers reporting: 2,505 1,118 1,585 5,208

The results indicate that the responsibility for safety in schools is generally reported to be with the principal or the assistant principal. The percentage of teachers reporting for each position varies depending on the type of school (elementary, junior, senior). The total percentage of teachers reporting for each position does not exceed 100% due to rounding errors.

Confiscation: "The focus will vary on the other aspects of the curriculum, safety is considered a necessary measure of a good education. The learning starts in..."
statement: "In common with many of the other subjects of the curric- 
ulum, safety has suffered considerably because of a lack of validated 
teaching methods." 33

In order to determine what methods are now in use in the various 
schools a question concerning methods of teaching was submitted to the 
teachers who participated in the study made by the Research Division of 
the National Education Association. Over 13,000 teachers replied to 
this request. Fourteen methods were listed in the questionnaire and the 
teachers were asked to check the methods which they use in their classes. 
Table XII shows these fourteen methods and the percentage of teachers 
reporting the use of each method. The table indicates that the first 
two methods are the most popular, namely, (1) bulletin board display of 
posters and pictures on safety, and (2) classroom forums and general dis-
cussion of accidents and safety problems.

The following seven methods were reported in use by about 50 per 
cent of the school teachers: (1) lectures by non-school people, (2) 
safety discussion directly related to use of equipment and materials in 
certain courses, (3) motion pictures on safety, (4) pupil monitors or 
patrols within the school buildings, (5) school patrols outside the 
school buildings, (6) dramatization of safety lessons and of safety plays, 
and (7) library and leisure time reading of pamphlets and booklets on 
safety.

The use of dramatization of safety lessons and plays was reported 

33. White House Conference on Child Health and Protection. Safety Edu-
cation in Schools. Report of the Subcommittee on Safety Education. 
### TABLE XII

<table>
<thead>
<tr>
<th>Methods of teaching</th>
<th>Per cent of teachers reporting for</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Elementary</td>
</tr>
<tr>
<td>Bulletin board display of posters and pictures on safety</td>
<td>87.7</td>
</tr>
<tr>
<td>Classroom forums and general discussions of accidents and safety problems</td>
<td>75.0</td>
</tr>
<tr>
<td>Lectures by non-school people (e.g., fireman) on accidents, first aid, and similar topics</td>
<td>52.3</td>
</tr>
<tr>
<td>Safety discussions directly related to use of equipment and materials in science, shop, etc.</td>
<td>41.7</td>
</tr>
<tr>
<td>Motion pictures on safety</td>
<td>44.0</td>
</tr>
<tr>
<td>Pupil monitors or patrols for corridors, stairway, and cafeteria traffic in school building</td>
<td>50.6</td>
</tr>
<tr>
<td>Schoolboy patrols for direction of pupil traffic outside the building and on nearby streets</td>
<td>58.0</td>
</tr>
<tr>
<td>Dramatization of safety lessons and safety plays</td>
<td>64.0</td>
</tr>
<tr>
<td>Library and leisure-time reading of pamphlets and booklets on safety</td>
<td>47.3</td>
</tr>
<tr>
<td>Essay contests on safety and related subjects</td>
<td>22.1</td>
</tr>
<tr>
<td>Safety, traffic, and auto clubs as extracurriculum organizations in school</td>
<td>18.7</td>
</tr>
<tr>
<td>Driving instruction by regular teachers</td>
<td>5.7</td>
</tr>
<tr>
<td>Laboratory lessons in safety facts by excursions to factories, congested highways, etc.</td>
<td>7.9</td>
</tr>
<tr>
<td>Driving instruction by motor club officials</td>
<td>3.2</td>
</tr>
<tr>
<td>Number of teachers reporting</td>
<td>8,476</td>
</tr>
</tbody>
</table>
by 64 per cent of the elementary school teachers. Few of the junior and
senior high school teachers checked this method as being in use in their
schools. The junior high school teachers use it to a greater extent
than do the senior high school teachers. Harriet E. Beard, supervisor
of safety education in the public schools of Detroit, has recommended the
use of dramatization in the elementary grades for providing practical les-
sons in accident prevention. 34

The use of schoolboy patrols was reported by 56 per cent of the ele-
mentary school teachers and by 46.6 per cent of the junior high school
teachers, but by only a few of the senior high school teachers. Pupil
patrols within the school buildings were reported by slightly more than
half of the elementary and junior high school teachers reporting.

Relative Value of Certain Methods: Persons charged with the re-
ponsibility of safety instruction are not always sure of the best
methods to employ. This uncertainty is due partly to varying types of
local needs. At times the teacher lacks a knowledge of methods which
are considered effective by classroom teachers. In the study 35 made by
the Research Division of the National Education Association, the teach-
ers were asked in the questionnaire to rate fourteen methods of teaching
safety on the basis of the following standards: (1) indispensable, (2)
valuable, (3) useful, (4) ineffective, and (5) harmful.

At least one in five elementary or junior high school teachers

Macmillan Co., New York, 1924.
35. Research Bulletin of the National Education Association, Safety
considered three methods as indispensable: (1) safety discussion directly related to use of equipment and materials in certain courses, (2) schoolboy patrols outside the school buildings, and (3) classroom forums and general discussion of accidents and safety problems.

Nearly seven teachers in ten reported two of the methods listed as valuable, namely, "Motion pictures on safety" and "Lectures by non-school people." The other methods that were rated as valuable by five teachers in ten were: (1) bulletin board display of posters and pictures on safety, (2) dramatization of safety lessons and of safety plays, (3) classroom forums and general discussion of accidents and safety problems, (4) driving instruction by motor club officials, (5) laboratory lessons in safety facts by excursions to scenes of accidents, and (6) safety, traffic, and auto clubs as extracurriculum organizations in school.

The elementary and junior high school teachers (over 50 per cent) emphasized the value of dramatization, designating it as "valuable". Over half of the junior and senior high school teachers declared driving instruction by motor club officials to be valuable.

The methods appraised as "ineffective" by as many as 10 per cent of the junior and senior high school teachers are as follows: (1) essay contests on safety and related subjects, (2) driving instructions by regular teachers, and (3) library and leisure-time reading of pamphlets and booklets on safety.

Of the elementary school teachers 3.6 per cent declared laboratory lessons in safety facts by excursions to scenes of accidents to be
harmful; 4.4 per cent rated as harmful the item, driving instruction by regular teachers.

**Extent to Which Highly-Rated Methods Are Used:** In the same questionnaire the teachers were asked to indicate the extent to which they used those methods which they consider valuable and indispensable. In the opinion of the majority of teachers reporting, the most effective methods are: (1) safety discussion directly related to use of equipment and materials in certain courses, (2) motion pictures on safety, and (3) lectures by non-school people.

The next best methods, according to teacher opinion, are: (1) classroom forums and general discussion of accidents and safety problems; and (2) schoolboy patrols outside the school buildings.

Other methods believed by the teachers to be valuable are the following:

1. Bulletin board display of posters and pictures on safety.
2. Driving instruction by motor club officials.
3. Dramatization of safety lessons and safety plays.
4. Laboratory lessons in safety facts by excursions to scenes of accidents.
5. Safety, traffic, and auto clubs as extracurriculum organizations in schools.
6. Pupil monitors or patrols within the school building.

**Suggested Technics in Teaching Safety:** Experimentation with different methods of teaching safety has been carried on ever since safety became a subject of consideration by the schools. In 1919, E. George
Payne showed how accident prevention might be taught in the schools without the addition of another subject to the curriculum. The plan he suggested was to stress habits of safety in the home, in the school, and on the streets. Language, arithmetic, and drawing were primary channels for safety instruction. Dramatizations, demonstrations, essays, excursions, and discussion groups were the specific devices most frequently used.

The Twenty-fifth Yearbook of the National Society for the Study of Education gives some suggested techniques in teaching safety. A contributor to this yearbook, Mary N. Arrowsmith, then Executive Secretary, Educational Division, National Safety Council, New York, writing on "The Subject Matter of Safety Education" says, "The term 'subject matter' is used in the sense of 'content' — that is, the information regarding accidents and their prevention which the teacher must have as a background for her safety instruction. She must know the causes and frequency of common accidents, the means of preventing them, and the types of accidents with which children in the various age groups are most likely to meet.

"On the basis of these facts, certain hazards will be stressed in each grade. At the same time, local occurrences, such as a fire or an accident to a child in the school, will give a natural opportunity for the teacher to bring out in clear relief the cause, effect, and prevent-

tion of the particular type of accident involved. Also, each month, with its changing weather conditions, sports, games of the season, special holiday celebrations, cleanup weeks, campaigns for thrift, better babies, fire prevention, public safety, and so on, offers many opportunities for safety lessons based on the immediate experience of the children and helps also to place the safety movement in its true relationship to other movements for social and civic betterment.-----It is desirable for the teacher to base most of her safety instruction on local conditions."

The Michigan Department of Public Instruction cites some methods commonly used which are stated by the department as "good ones if properly used." These methods are as follows:

(1) Informal discussion of right practices and hazards.
(2) Plays and dramatizations.
(3) Motion pictures and other visual material.
(4) Safety patrols.
(5) Scrapbook and bulletin boards.
(6) Use of school paper.
(7) Radio broadcasts
(8) Writing of compositions, poems and stories, and letters to parents.
(9) Traffic surveys and other similar activities.
(10) School assembly programs.
(11) Cooperation in social action.

(12) Programs for parents.

(13) Other methods such as talks, posters, safety club activities, and stories.

Agencies Providing Effective Help: Certain public agencies are supposed to provide help to teachers in safety instruction. Some private agencies such as insurance companies and automobile associations find it good business to assist in this problem. In order to discover which agencies are providing effective help in safety teaching, the questionnaire sent out by the Research Division of the National Education Association asked the teachers to check any of ten agencies which provided effective help to them. They were also asked to check the particular agency which provided the most effective help. These ten agencies were:

1. national safety organizations; 2. automobile associations and clubs;
3. officers and staffs of local school systems; 4. insurance companies;
5. state department of education; 6. chamber of commerce, service clubs, et cetera; 7. state departments other than department of education; 8. automobile manufacturers; 9. manufacturers of safety devices; 10. various other agencies.

At least 50 per cent of the 13,258 teachers reporting give national safety organizations and automobile associations and clubs credit for effective help. The state department of education was checked by only 23.4 per cent of the teachers. "Officers and staff of local school system" was checked by 30.5 per cent of the teachers. The only other agency checked by more than 20 per cent of the teachers was insurance companies.\(^{39}\)

\(^{39}\). Safety Education Thru Schools, Research Division of the National Education; op. cit, p. 258.
The most effective help is received from automobile associations and clubs and from national safety organizations as the National Safety Council, the American Red Cross, et cetera. On the basis of the replies received, state departments of education and local school officers should do more than they are doing at present to provide effective help for teachers who are responsible for instruction in safety.

Ideal Place In Curriculum: The information in Table XIII was obtained from teachers replying to the questionnaire which has been referred to several times previously. Nearly 44 per cent of the teachers favor the teaching of safety as a distinct unit in other subjects. Teaching safety as a separate course in the curriculum was favored by 28 per cent of the teachers. Only 9 per cent would refer to safety only incidentally.

Urgent Needs in Safety Instruction: It is enlightening to learn the urgent needs in safety instruction as reported by nearly 14,000 city school teachers who answered the questionnaire. Table XIV gives their opinions on the matter. The two most urgent needs as reported are: (1) better organized courses of study on safety, and (2) more motion pictures on safety. There is also urgent need for lesson plans showing how other teachers have taught safety, more space given to safety in textbooks, booklets on common accidents in the home, lists of books on the teaching of safety, more safety posters, and checklists for discovering traffic hazards en route to and from school.

A summary of some of the points of view regarding future development of better safety programs follows:

401 Research Bureau of the National Education Association, op.cit. p.264.
TABLE XIII

DIFFERENCES IN TEACHER OPINION AS TO CURRENT AND IDEAL PRACTICES REGARDING SAFETY IN THE SCHOOL CURRICULUM

<table>
<thead>
<tr>
<th>Place in curriculum</th>
<th>Per cent of teachers reporting</th>
<th>Current practice</th>
<th>Ideal practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distinct unit in other subjects</td>
<td>28.2</td>
<td>43.6</td>
<td></td>
</tr>
<tr>
<td>Separate course</td>
<td>10.9</td>
<td>28.2</td>
<td></td>
</tr>
<tr>
<td>Referred to incidentally</td>
<td>26.8</td>
<td>9.2</td>
<td></td>
</tr>
<tr>
<td>Auditorium programs</td>
<td>9.5</td>
<td>7.0</td>
<td></td>
</tr>
<tr>
<td>Extracurriculum activities</td>
<td>9.7</td>
<td>4.9</td>
<td></td>
</tr>
<tr>
<td>Combinations of above</td>
<td>14.4</td>
<td>7.0</td>
<td></td>
</tr>
<tr>
<td>Not taught in any way</td>
<td>0.5</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Number of teachers reporting: 14,339 | 13,929
### TABLE XIV

URGENT NEEDS IN SAFETY INSTRUCTION AS REPORTED BY CITY SCHOOL TEACHERS

<table>
<thead>
<tr>
<th>Need</th>
<th>Per cent of teachers reporting for</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Elementary schools</td>
</tr>
<tr>
<td>Better organized courses of study on safety</td>
<td>57.7</td>
</tr>
<tr>
<td>More motion pictures on safety</td>
<td>57.1</td>
</tr>
<tr>
<td>Lesson plans showing how other teachers have taught safety</td>
<td>35.4</td>
</tr>
<tr>
<td>More space given to safety in textbooks</td>
<td>32.7</td>
</tr>
<tr>
<td>Booklets on common accidents in the home</td>
<td>26.2</td>
</tr>
<tr>
<td>Lists of books on the teaching of safety</td>
<td>22.8</td>
</tr>
<tr>
<td>More safety posters</td>
<td>21.2</td>
</tr>
<tr>
<td>Checklists for discovering traffic hazards to and from school</td>
<td>16.6</td>
</tr>
<tr>
<td>Rating scales to check accident hazards in pupil's home</td>
<td>6.3</td>
</tr>
<tr>
<td>Pamphlets on how to drive a car</td>
<td>3.0</td>
</tr>
<tr>
<td>Rating scales to check safety of playground apparatus</td>
<td>5.4</td>
</tr>
<tr>
<td>Various other needs</td>
<td>5.7</td>
</tr>
<tr>
<td>Number of teachers reporting</td>
<td>6,733</td>
</tr>
</tbody>
</table>
(1) Make provision for teaching safety as a distinct unit in other subjects or as a separate course in the curriculum.

(2) Supply the teachers with better organized courses of study and with more motion pictures on safety.

(3) Provide lesson plans which show how other teachers have taught safety and give more space to the subject of safety in textbooks; also provide booklets on common accidents in the home, lists of books on the teaching of safety, and more safety posters.

(4) Leadership in providing the foregoing aids should be taken by (a) state departments of education, (b) national safety organizations, and (c) officers and staff of local school systems.

Evaluation of Some Courses of Study in Safety Education: Several courses of study in safety education for the elementary and junior high school were obtained from state departments of education and from boards of education in cities of various states. These courses were analyzed and evaluated. H. B. Bruner's "Criteria for Evaluating Course-of-Study Materials" were used. A condensed outline of these criteria follows:

I. Philosophy
   A. Social Philosophy
      1. The social philosophy should be one which would do most in forwarding the ultimate aims of a liberal democracy.
      2. It should recognize the dynamic character of society and should demand that the school be an active conscious agent for social improvement.
   B. Educational Philosophy
      1. The educational philosophy should be based upon the social philosophy.
      2. It should be the dominating force in determining the character of the subsequent parts of the course of study.
      3. The chief aim of education should be to assist individuals to become increasingly self-directive in improving society through satisfying individual growth.

C. Principles of Learning
   1. The course of study should be consistently based on the soundest principles of psychology.

II. Content
   A. Authenticity
      1. The materials should be accurate and authentic.
      2. The materials should be based upon the most scholarly findings and concepts.
   B. Utility
      1. The materials should be stated in such fashion that they can be utilized in the solution of life problems.
   C. Adequacy and Significance
      1. The materials should be adequate and appropriate in the treatment of those areas of human activity which are most significant for the welfare of society and the growth of the individual at his level of maturity.
   D. Organization
      1. The material should be organized around major areas of experience.
      2. The material should assist the pupil in discovering and developing promising immediate interests.
      3. The material should satisfy those needs which have value.
      4. The material should assist the pupil in securing an enriched experience.

III. Activities
   A. Pupil Purposing
      1. The activities should provide for real purposing and planning which will stimulate in the pupil a desire to proceed on his own initiative.
      2. The activities should result from a problem-solving attitude on the part of the pupil.
      3. The activities should give opportunity for the pupil to assume responsibility and to control his experience to an increasing degree.
      4. The activities should provide for a clarification of pupils' purposeful ideas through various mediums of creative expression, such as language, painting, drawing, modeling, dramatization, etc.
      5. The activities should furnish adequate opportunities for practicing and developing valuable work and study habits needed in accomplishing pupil purposes.
   B. Interests and Needs
      1. The activities should be so closely related to the
pupil's present life that his own interests will become the natural driving force in initiating and carrying the activities through.

2. The activities should promote sensitivity on the part of the pupil to significant needs and problems of his own.

3. The activities should, if successfully carried through, result in satisfying present interests and needs and also create new and still more valuable interests.

C. Social Values
   1. The activities must provide experiences which, through meeting the demands of an ever-changing dynamic society, will help the child to be a more valuable member of that society.

D. Reality
   1. Activities should be provided which are selected from real life situations and which are considered interesting and important by the child because he finds in them many opportunities to satisfy his needs.

E. Variety
   1. There should be sufficient variety of interesting desirable activities to provide for the kind of individual and social growth implied in the sections above.

F. Approach
   1. The approach to any series of experiences or areas of work should so challenge every member of the group that each has a chosen desire to initiate and carry to its conclusion the projects which the group has planned.

G. Culminating Activity
   1. The culminating activity should constitute a method by which the group and each member of the group realizes the purposes which they have set for themselves.

   2. The culminating activity should relate and put into the most valuable and meaningful patterns the ideas and materials employed during the entire period of work.

IV. Evaluation of Pupils' Work

A. Purpose
   1. The process of evaluation should be conceived of as an integral part of the learning experience.

   2. The process of evaluation should provide optimum opportunities for furthering the growth process of the individual.
3. The suggestions for evaluating pupils' work should indicate the probability that they will contribute constantly to the improvement of educational procedures.

4. The evaluation procedures should contribute to a realization of the extent to which the accepted educational objectives are being realized and achieved.

B. Variety

1. The evaluation process should incorporate a variety of techniques and devices of measurement.

2. The evaluation process should provide for self-evaluation as well as teacher appraisal of pupils' work.

C. Validity

1. The evaluation procedures should be set up in such a way that they become a natural part of an actual learning situation.

2. The course of study should offer suggestions that will lead to the "acceptance" by the pupil of need for evaluation.

3. The evaluation procedures should be such that they not only permit but tend to encourage the whole-hearted cooperation of the individual in the evaluation process.

4. The pupil growth should be measured in terms of the actual maturation levels of the individual at the time the evaluation takes place.

5. The devices and techniques of evaluation should have a reasonably high reliability.

D. Areas of Growth

1. Evaluation of pupil progress should include the measurement of physical, emotional, and social, as well as mental development.

E. Interpretation

1. The course of study should provide definite suggestions for interpreting all evaluation data in the light of known limitations and as nearly as possible in terms of the whole organism.

Results of Evaluation: The evaluation of the eleven courses of study in safety education was entirely subjective. A rating scale was arranged as follows: Excellent, 4; Good, 3; Fair, 2; Poor, 1; and, Not in course, 0. Each course of study was evaluated on the basis of H. B. Bruner's "Criteria for Evaluating Course of Study Materials."
courses of study and their respective ratings are as follows:

1. Courses of Study in Safety Education for Grades and High School, State of Iowa; ---- 74 points.

2. A Course of Study in Safety Education for Elementary and Junior High Schools, published by the Cleveland Safety Council and the Cleveland Board of Education; --- 68 points.


5. A Course of Instruction in Safety Education for the Schools of Rhode Island, published by the State Department of Education of Rhode Island; ---- 61 points.

6. Safety in the Curriculum, a Course of Study for the Kindergarten, Grades I-VI, Elementary Schools, published by the Board of Education, Kansas City, Missouri; ---- 59 points.

7. The Course of Study for the Elementary Schools of Arizona in Health and Physical Education, which includes sections on first aid and safety, published by the Arizona State Department of Education; ---- 55 points.

8. Course of Study in Health Education including Safety for the Elementary Schools of Wyoming, published by the State Board of Education of Wyoming; ---- 43 points.

9. Safety Education in the Elementary Schools of Utah, published by the Utah State Department of Public Instruction; ---- 40 points.

10. Safety Education, Grades I-VIII, Portland Public Schools, Portland, Maine; ---- 29 points.

**TABLE XV**

EVALUATION BY MEANS OF H. B. BRUNER’S CRITERIA OF ELEVEN COURSES OF STUDY IN SAFETY EDUCATION

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating Scale:</td>
<td>Excellent, 4; Good, 3; Fair, 2; Poor, 1; Not in course, 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Possible Score, 76</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Philosophy**
- Social Philosophy: 2 4 4 2 3 1 2 2 3 4 3
- Educational Philosophy: 2 4 4 2 3 1 2 2 3 4 4
- Principles of Learning: 2 4 4 3 3 2 3 4 4 3 4

**Content**
- Authenticity: 3 4 4 3 3 2 3 2 4 4 4
- Utility: 3 4 4 4 4 2 3 3 4 4 4
- Adequacy and Significance: 3 4 4 3 3 2 3 3 4 4 4
- Organization: 3 4 4 4 4 2 3 3 3 4 4

**Activities**
- Pupil Purposing: 1 4 4 4 3 2 3 3 3 4 4
- Interests and Needs: 1 4 4 4 4 2 2 2 4 4 4
- Social Values: 1 4 4 4 4 2 3 3 4 4 4
- Reality: 2 4 4 4 4 2 3 3 3 4 4
- Variety: 2 4 4 3 4 2 3 3 3 4 4
- Approach: 1 4 4 4 3 2 3 3 3 4 4
- Culminating Activity: 1 2 4 4 3 2 3 2 2 4 4

**Evaluation of Pupil’s Work**
- Purpose: 1 1 4 3 3 3 0 1 1 1 2 3
- Variety: 0 1 3 3 3 0 1 1 1 2 3
- Validity: 0 1 4 4 3 0 1 1 2 3 2
- Areas of Growth: 1 2 4 3 2 0 1 1 2 3 2
- Interpretation: 0 0 3 2 2 0 0 0 2 2 2

**Total Score**: 29 59 74 61 61 26 43 40 55 67 68
CHAPTER III

PROPOSED PLAN OF SAFETY EDUCATION, GRADES I - VIII

Introduction

General Objectives of Safety Education: The general aims and objectives of safety education as well as the specific aims and objectives should be stated clearly in a well-constructed course of study in safety education. The White House Conference on Child Health and Protection made the following statement as to the aim of all safety education:

"The development of such safety habits, safety attitudes and safety skills as will cause a decrease in the number of accidental deaths and injuries to children, produce safer adults for the future, and give to each individual freedom from fears and conditions which may restrict his enjoyment of life.

3. To develop skills and habits of conduct which will assure Many excellent statements of the general objectives of safety education are to be found in courses of study in safety education. The National Safety Council, Chicago, Illinois, a well-organized group of study in safety education, has prepared a set of general objectives in safety education. The writer believes them to be quite comprehensive. They are as follows:

"To develop an appreciation of the need for personal safety and its relation to adventurous living;"

42. White House Conference on Child Health and Protection, op. cit.
43. Telford, Marian, Director, Education Division, National Safety Council, Chicago, Ill., Education Memo No. 1, March, 1939.
To develop an appreciation of the relationship between personal conduct and the safety of others and a willingness to act in accordance with that understanding.

To develop an appreciation of the necessity for group control in the interests of safety and a willingness to cooperate in sound safety activities by suggested official and private agencies.

To develop an appreciation of the relationship between physical and mental fitness and safety.

To give children and youth opportunities to develop habits and skills essential to their protection from the hazards of their environment.

Statements of the general objectives of safety education as conceived by the writer follow:

1. To develop desirable habits of thought and action so accidents may be avoided.

2. To create desired attitudes toward:
   a. Law and law enforcement
   b. Personal safety and the safety of others
   c. Cooperation with organized efforts for the promotion of safety

3. To develop skills and habits of conduct which will function quickly and intelligently in the presence of actual hazard.

Specific Objectives for Elementary Grades: Specific objectives for a well-organized course of study in safety education must cover a wide range of understandings, habits, skills, and attitudes. In Safety Education, the Eighteenth Yearbook of the American Association of School Administrators, published in February 1940, a partial list of specific objectives for the elementary school are listed. These objectives are:

1. To help children recognize situations involving hazards.

---

2. To develop habits of conduct which will enable children to meet situations of daily life with as little danger as possible to themselves and others.

3. To develop habits of carefulness and obedience to safety rules at home, on the streets, in school, or at play.

4. To teach children to read, understand, and obey safety rules and regulations.

5. To teach children safe conduct in the use of streetcars, private automobiles, and buses.

6. To develop habits of orderliness and carefulness in the use of playthings, tools, common articles of the home and school, and in the use of fire.

7. To develop alertness, agility, and muscular control through rhythmic exercise, play, games, and other physical activities.

8. To teach children to cooperate to prevent accidents and the taking of unnecessary risks involving physical dangers.

9. To develop wholesome attitudes concerning: (a) law and law enforcement officers; (b) the safety of themselves and others; and (c) organized efforts to assure safety for all.

10. To give children actual experiences in desirable safety practices. These are frequently cited to influence their attitudes.

**Fundamental Philosophy:** The purpose of a safety program is to develop certain attitudes, understandings, habits, and skills in the individual which will make him a continuing useful, efficient, and careful member of society by making him aware of the hazards of life and by teaching him how to react successfully or at least intelligently toward those hazards.

The purpose of teaching safety is not to develop in the individual an attitude of fear toward adventurous undertakings. As simple a thing as crossing a street is an adventure. To take the spirit of adventure out of life would rob life of its zest. Safety instruction teaches the individual how to react successfully or at least intelligently toward hazardous situations rather than to avoid those hazards.
individual to weigh the value of his acts to see whether the chance taken is really worth while. It saves the individual from accident for purposeful adventurous living.

The safety program should be consistent with the soundest principles of learning. Provision should be made for the individual's aptitudes, ambitions, interests, present and future needs. The reaction of the whole child to any influence of his environment should be considered. Self-activity is fundamental to learning. The problems of safety and well-being should be related to or should be a part of modern life. Both present and future needs of the individual should be kept in mind. The individual should experience satisfaction from engaging in activities of the safety program.

Part I - A Guide for School Administrators

Safety Considerations in School Buildings: The administrators of a public school system are frequently able to influence their communities in the selection of safe school sites and in the construction and equipment of safe buildings. The following points are recommended for consideration:

1. School building sites should be selected with regard to safety as well as many other factors.

2. Buildings should be constructed of fire-resistive materials throughout.

3. Buildings should be at least fifty feet from all non-fire-proof structures.

4. No trunk line for gas or other fuel should be under any part of the building.

5. Stairways should be made of fire-resistive materials, well-lighted, provided with handrails, with steps of uniform width and height and finished with satisfactory non-skid treads.
6. Fire escapes should meet the requirements of the National Board of Fire Underwriters.

7. All schoolhouse doors, including classroom doors, should open outward. Doors and exits must be unlocked during school hours. It should always be possible to open them easily from within.

8. Heating equipment should be made as fireproof as possible.

9. Proper safeguards should be provided in the handling of inflammmable materials.

10. Electric light and power lines should be properly insulated and guarded.

11. School furniture and equipment should be safe and kept in a good state of repair.

12. Equipment in the lunchroom, shops, laboratories, gymnasium, and auditorium should be made reasonably safe and be properly supervised.

Safety Considerations on the Playground: School playgrounds should meet the following requirements:

1. Play space should be adequate for the number of children in the school.

2. Play space adjacent to streets should be protected by a fence.

3. Playgrounds should be adequately supervised.

4. Playgrounds should be properly surfaced, drained, and kept free from rocks, glass, and refuse.

5. Play equipment should be sturdily built and properly erected.

6. Play equipment should be spaced to prevent interference.

7. Play equipment should be inspected regularly and repairs and replacements made promptly.

Safety Considerations in Pupil Transportation: Administrators in the public school systems of Arizona have a great responsibility in the matter of safe practices in pupil transportation. Some four hundred
fifty school buses move out upon the public highways of the state each morning and evening of each school day, covering approximately fifteen thousand three hundred miles daily in the transportation of pupils to and from school. An excellent opportunity to teach safety is offered by the efficient and safe transportation of pupils. The Arizona State Board of Education issued regulations on school transportation in 1938, with which every school administrator, school bus driver, or other person responsible for transportation should be familiar. These same persons handling pupil transportation should see that these regulations are enforced. Although school administrators do not, as a rule, hire school bus drivers or award contracts for the private transportation of pupils, they should use all the influence they have toward maintaining safe standards in pupil transportation.

Fire Protection: Another responsibility of school administrators is the matter of fire protection and fire prevention in the schools.

Some of the important things to consider in the way of fire protection and fire prevention in the schools are:

1. Elimination of fire hazards in and around the school.
2. Adequate fire extinguishing apparatus.
3. A signal system of fire alarm which is inspected and tested at least twice per month.
4. Teachers and pupils are instructed in the method of turning in fire alarm.
5. Fire drills which are held at irregular intervals.

45. Arizona State Board of Education, School Transportation Regulations, 1938, p. 2, the Department.
6. Orderly evacuation of buildings.

7. A pre-arranged system of checking at time of drills to see that no one is left in buildings.

Safety Regulations for Pupils: The school administrator and his teaching personnel have the task of enforcing safety measures in the schoolrooms, halls, shops, laboratories, gymnasiums, and on the playgrounds. Some schools have found that pupil monitors or schoolboy patrols do effective work in promoting safety and enforcing safety measures in and around the school buildings.

Three potentially dangerous places in the schools are the school shop, the gymnasium, and the school playground. Adequate supervision is necessary for safety in all three of these places. Attention is called to the "Recommendations for School Shop Safety" issued by the Arizona State Department of Education in January 1939. These regulations should be followed carefully in the operation of school shops.

Lloyd, Deaver, and Eastwood state that in high schools thirty-one per cent of all accidents and thirty per cent of all days lost from school are caused by improper leadership controls in school athletics such as inadequate officiating, inadequate supervision, and inadequate conditioning of students.

The school administrator and the bus driver should see that proper regulations for safety are enforced while pupils are getting on or off the bus or while riding on the bus. Schoolboy patrols can be of much

46. Hendrix, H. E., Superintendent of Public Instruction, Department of Education, State of Arizona, Recommendations for School Shop Safety, the Department, Jan. 1939.
assistance while loading or unloading the bus at the school grounds.

Pupil Accident Records: Accidents to school children are a matter of great concern to all who are charged with their protection and training. A study of accidents to children in any locality gives specific information on what children need to know in order to avoid such accidents. Every school should have a system of reporting and recording accidents which occur to children of that particular school. The National Safety Council, Chicago, Illinois, has prepared a standard student accident report form and a form for summarizing student accidents by the month. These forms are not copyrighted and may be used by any school system wishing to use them.

Provision for First-Aid Treatment: Adequate provision for first-aid treatment of injuries to children while they are at school should be made. Schools which are large enough to employ a school nurse may delegate the responsibility of first-aid treatment to her. In the smaller schools where no school nurse is employed at least one of the school personnel should be charged with the task of administering first aid. This person should have special training in first aid and should have the necessary equipment for rendering the same. Neglect of proper provision for first-aid treatment may lead to serious consequences.

Part II - Units of Instruction

I. Safety Education in the Primary Grades: Unit I
A. Unit Objective: To teach safety at home and on the farm.

B. Specific Objectives:

1. Understandings
   a. Knows the danger in handling hot liquids.
   b. Knows the dangers of playing with matches or with fire.
   c. Knows that sharp-edged articles should be handled carefully.
   d. Knows the dangers in the careless use of gas and electrical appliances, electric light sockets and electrical fixtures, hot water, medicine, and the common explosive and inflammable materials.
   e. Knows that stairs and floors should be kept clear of objects over which one might stumble.
   f. Knows that abrasions to the skin should be cleaned and sterilized immediately.
   g. Knows the danger in putting foreign objects in the mouth, nose, and ears.
   h. Knows what the more common dangers are about the home.
   i. Knows that removal of hazards protects other members of the family.

2. Habits and Skills
   a. Avoids hot liquids, stoves, boilers, etc.
   b. Avoids playing with matches or with fire.
   c. Avoids handling electrical apparatus.
   d. Uses scissors and other sharp instruments correctly.
   e. Refrains from tasting contents of strange bottles or cartons.
   f. Refrains from pushing, striking, or tripping others.
   g. Keeps foreign articles out of mouth, nose, and ears.
   h. Helps others to avoid injury—especially the younger persons in the home.
   i. Refrains from leaning out of high windows and from climbing to high places about the home.

3. Attitudes
   a. An attitude of carefulness and an interest in preventing home accidents.

C. Methods and Materials

1. Demonstrations and Pupil Activities
   a. Construct a play home and dramatize how accidents occur there and how they may be prevented.
   b. Teach each child how to use scissors and other sharp and pointed instruments properly.
   c. Make individual and group scrapbooks of safety pictures, drawings, and stories told.
d. Demonstrate how one should go up and down steps.

e. Let the children tell of home or farm accidents which they have experienced or about which they have known.

f. Let the children tell what they can do to prevent such accidents. Examples may be:
   - We can straighten rugs on the floor.
   - We can pick up pieces of glass and tin cans and put them in a box.
   - We can put needles and pins in the right place after using them.

g. Make a baby book to show how he is kept safe in the home.

h. Let the children plan and execute a culminating activity such as a safety program for assembly.

2. Class Discussions

a. Discuss use and dangers of cutting and sharp-pointed articles.

b. Discuss what should be done for cuts, scratches, and abrasions of the skin.

c. Discuss how poisons should be labeled and kept.

d. Discuss needle accidents that are caused by falling over things left on the floor or steps.

e. Discuss the danger involved in the use of kerosene, gasoline, natural gas, etc.

f. Discuss the danger of playing with matches and fires.

g. Discuss precautions against burns and scalds.

h. Discuss the common causes of accidents from the use of electric current in the home.

i. Discuss what may be done to protect the babies in the home. Many young children die from burns and mechanical suffocation.

3. Illustrative Materials

a. Safety posters.

b. Pictures of home accidents.

c. Lantern slides.

d. Motion pictures.

e. Models and exhibits.

D. Evidences of Mastery

1. Reasonable achievement of the above understandings, habits, and skills.

   a. Objective measurements
      1) Satisfactory ratings on standardized achievement tests or other objective tests for this unit.

   b. Subjective measurements
      1) Favorable appraisal by the teacher.
      2) Favorable reports from parents.
3) Near the end of the term of school a set of questions such as those which follow may be sent to the parents to answer and then to return to the teacher:

a) Does he exercise care in handling sharp or pointed instruments?

b) Is he careful to avoid falls?

c) Is he careful to avoid scalds and burns?

d) Does he show consideration for other members of the family by trying to protect them from injury?

e) Is he orderly about the house?

f) Does he use caution around mechanical appliances in the home?

g) Is he careful not to taste medicines, etc., except when instructed to do so by specific instruction from parent?

E. Bibliography

1. References for Pupils


1) Away We Go, a pre-primer.

2) Happy Times, a primer.

3) In Storm and Sunshine, first grade.

4) In Town and Country, second grade.

5) Here and There, third grade.

2. References for Teachers


d. **Safety Activities for All Grades.**

e. **National Society for the Study of Education.**
   The Present Status of Safety Education, Twenty-fifth Yearbook

f. **American National Red Cross.**
   Group Discussion Material on Accident Prevention
   in the Home and on the Farm.
   Washington, D.C., 1936.

g. **National Safety Council.**
   Accident Facts, 1939 Edition
   The National Safety Council, 20 N. Wacker Drive,
   Chicago, Ill.

h. Hayne, Ralph A.
   Stop Carelessness! Prevent Accidents!
   International Harvester Co., Chicago, Ill.

i. Moore, A. Harry, Chairman, Accident Prevention
   Conference, U. S. Department of Commerce
   How to Stop Home Accidents

j. Ibid.
   How to Stop Farm Accidents

k. Metropolitan Life Insurance Company, New York,
   N. Y.
   How Safe is Home?

l. Good Housekeeping Institute
   Safety in the Home.
   Good Housekeeping Institute, 57th St. at 8th Ave.
   New York, N. Y., 1937.

m. Department of Public Instruction, State of Iowa
   Safety Education, Courses of Study for Grades and
   High School.
   The Department, Des Moines, Iowa, 1932.

n. Cleveland Safety Council.
   Safety Education, A Course of Study for Elementary
   and Junior High Schools.
   The Council, Cleveland, Ohio, 1937.

o. Humphrey, Joe R., Superintendent of Schools, Olney
   A Tentative Teachers Manual in Safety Education
   for Elementary and Junior High Schools.
   Board of Education, Olney, Texas, 1938.

p. State Department of Education.
   Course of Study for Elementary Schools of Arizona.
   Bulletin No. 9, Health and Physical Education.
   The Department, Phoenix, Arizona, 1935.
II. Safety Education in the Primary Grades - Unit II.

A. Unit Objective: To teach safety at school.

B. Specific Objectives:

1. Understandings
   a. Knows what is safe and unsafe about his school.
   b. Knows that sharp-edged and pointed instruments should be handled carefully.
   c. Refrains from playing hazardous practical jokes.
   d. Understands the need for obeying orders.
   e. Knows what to do in case of fire.
   f. Knows how to use testers, slides, swings, etc., in a safe manner.

2. Habits and Skills
   a. Enters and leaves buses carefully.
   b. Shows good conduct on the school bus.
   c. Is orderly about the school.
   d. Is courteous in school buildings and on the grounds.
   e. Handles materials and equipment carefully.
   f. Follows directions cheerfully and carefully.

3. Attitudes
   a. Shows an attitude of responsibility for the safety and welfare of everyone in the school.
   b. Tries both individually and in cooperation with others to prevent accidents.

C. Methods and Materials

1. Demonstrations and Pupil Activities
   a. Tell stories of a home, highway, or a school accident.
   b. Dramatize an accident that happened while at play.
   c. Read stories of accidents and accident prevention.
   d. Learn and sing safety songs.
   e. Make a rack for holding school scissors.
   f. Demonstrate how to use scissors, hammer, etc.
   g. Construct a model school playground.
   h. Play games which develop coordination.
   i. Form a 'Teacher's Helpers Club' which will provide activities which promote orderliness and safety in the room and on the school grounds.
   j. Demonstrate the correct way to use athletic equipment such as swings, teeters, skipping ropes, etc.
   k. Let children tell what first aid measures to employ in case of minor injuries, such as washing wound and using a disinfectant.

2. Pupil Projects
   a. Make booklets on safety.
   b. Make safety posters carrying out a safety idea that has been discussed previously.
n. Report on what has been done at home to prevent accidents.

o. Make signs for buildings and grounds such as "Slow", "Keep to the Right", "Play Safe", "Danger", "Exit".

2. Class Discussions:
   a. Discuss safe ways of playing various games and contests.
   b. Discuss with class how time is often saved by not hurrying.
   c. Discuss the common hazards to children such as throwing hard objects, playing with bows and arrows, playing in the street, etc.
   d. Discuss necessity for practicing fire drills.
   e. Discuss simple first-aid measures.

3. Illustrative Materials:
   a. First-aid kit.
   b. Safety posters.
   c. Lantern slides on safety.
   d. Pictures on safety.
   e. Models and exhibits.
   f. Motion pictures on safety.

D. Evidences of Mastery:
   1. Reasonable achievement of the above understandings, habits, and skills.
   2. Objective measurements
      a. Satisfactory ratings on standardized achievement tests or other objective tests for this unit.
   3. Subjective measurements
      a. Favorable appraisal by the teacher.
      b. An improving school accident record.

E. Bibliography:
   1. References for Pupils
      a. Same as for Unit I.
   2. References for Teachers
      a. References for Unit I.
      b. National Safety Council: Safety Education. (A valuable monthly magazine on safety. It contains much useful teaching material on safety.)

III. Safety Education in the Primary Grades - Unit III
   A. Unit Objective: To teach safety on the streets and highways.
   B. Specific Objectives
      1. Understandings
         a. Knows parent's name and address.
b. Knows the meaning of red, yellow, and green traffic lights.
c. Knows the safest route to and from school.
d. Knows that he should stay on the sidewalk when a siren is heard.
e. Knows that he should stand still if caught in traffic.
f. Knows that he should keep away from poles carrying power lines and from fallen wires.
g. Knows the danger in riding a bicycle, a tricycle, or in roller skating in the street.
h. Knows that he should not accept rides with strangers.

2. Habits and Skills
a. Looks both ways before crossing a street.
b. Walks on sidewalks or on left side of road if there are no sidewalks.
c. Avoids hitching to other vehicles.
d. Crosses streets at intersections.
e. Obeys traffic officers and signals.
f. Avoids running into the street after playthings.
g. Takes the safest route. Makes use of traffic officer, patrols, and safety signals.
h. Gets on and off vehicles carefully.
i. Keeps off the railroad.

3. Attitudes
a. Shows respect for his own safety and that of others.

C. Methods and Materials
1. Demonstrations and Pupil Activities
a. Teach the proper way to cross streets.
b. Lay out a street intersection on the classroom floor for purposes of demonstrating how to cross streets, etc.
c. Make traffic lights and "stop and go" signs.
d. Have children suggest a set of "Safety Rules" covering their journey to and from school.
e. Learn some safety jingles as:
   Safely, safely all the way
   To and from our school each day;
   All of us know what to do
   In the traffic we go through.
f. Have some elderly person tell of travel hazards when he was a child. Contrast them with the hazards of the present day.
g. Invite a traffic official to the school to talk to the children on street safety.
h. Show motion pictures on traffic safety suitable for the primary grades.
1. Read safety stories.
2. Class Discussions
   a. Discuss the need for traffic regulations.
   b. Discuss how accidents on streets and highways may be prevented.
   c. Discuss safe places to use roller skates, scooters, etc.
   d. Discuss the dangers of flying kites or playing near electric power transmission poles and wires.
3. Illustrative Materials
   a. Model of a street intersection.
   b. Replicas of traffic signs.
   c. Lantern slides.
   d. Motion pictures on street safety.
   e. Pictures concerning street safety.
4. Evidences of Mastery
   1. Reasonable achievement of the above understandings, habits, and skills.
      a. Objective measurements.
         1) Satisfactory ratings on standardized achievement tests or other objective tests for this unit.
      b. Subjective measurements.
         1) Favorable appraisal by the teacher.
         2) Favorable reports from parents and others.
5. Bibliography
   1. References for Pupils
      a. References for Unit I
      b. Dean, Léona and Emig, W. J.
         *With Mother Goose in Safety Land.*
      c. Fowlkes, J.C., Jackson, L.Z., and Jackson, A.S.
         *Healthy Bodies.*
      d. Charters, W.W., Smiley, D.F., Strang, R.M.
         *Good Habits.*
         The Macmillan Co., New York. 1935
   2. References for Teachers
      a. See references for Units I and II
      b. Highway Education Board.
         *A Safety Lesson for Each Grade.*
         *Loose-Leaf Lessons in Safety Education.*
**IV. Safety Education in the Primary Grades - Unit IV**

**A. Unit Objective:** To teach safety in play and recreation.

**B. Specific Objectives:**

### 1. Understandings

- a. Knows safe places in which to play.
- b. Knows the danger of falls due to lack of caution.
- c. Knows that teasing animals is a dangerous practice.
- d. Knows the danger in playing in irrigation ditches and in ponds and lakes.
- e. Knows the danger in playing near hot stoves, hot liquids, etc.
- f. Knows why he should not play around machinery.
- g. Knows that touching fallen wires or many kinds of electrical equipment is unsafe.
- h. Knows the danger of playing around buildings in the process of construction.
- i. Knows the dangers of fire.
- j. Knows the meaning of the term, "exit."
- k. Knows the danger in throwing hard objects.
- l. Knows how to treat minor cuts, bruises, and scratches.
- m. Knows the dangers of explosives, fireworks, and inflammables.
- n. Knows the appearance of poisonous plants like poison oak, ivy, and sumac, and how to avoid them.

### 2. Habits and Skills

- b. Avoids playing on street, highway, or railroad tracks.
- c. Is courteous to his playmates.
- d. Avoids playing with matches or with fire.
- e. Avoids teasing animals.
f. Avoids running with sharp or pointed instruments in his hand.
g. Seeks safe places to play.
h. Uses playground equipment with care.

3. Attitudes
   a. A desire to follow the rules of the game.
   b. A sense of responsibility for preventing accidents to others as well as to self.

C. Methods and Materials
   1. Demonstrations and Pupil Activities
      a. Habit-forming instruction through safety games.
      b. Demonstrations of how to catch a ball, jump the rope, etc.
      c. Motion pictures of right versus wrong play activities.
      d. Keeping an accident record of accidents on playground.
      e. Make kites of proper materials. Discuss danger of using metallic cord.
      f. Write a set of "Safety First" rules for playing a game or for engaging in some form of athletic activity.
      g. Make a safety poster on the subject of athletics.
      h. Take snapshots or motion pictures of pupils using playground apparatus correctly.
      i. Make a list of animals which are or may be dangerous.
      j. Read stories about animals.
      k. Take children on an excursion. Demonstrate safe activities on the trip.

2. Class Discussions
   a. Discuss safe habits of play.
   b. Discuss dangers in playground equipment.
   c. Discuss how an accident which happened to someone while at play could have been avoided.
   d. Discuss the mistreatment of animals from the standpoint of safety.
   e. Discuss things to beware of on hikes and outings.

3. Illustrative Material
   a. Posters on safety in play.
   b. Motion pictures
   c. Lantern slides

D. Evidences of Mastery
   1. Reasonable achievement of the above understandings, habits, and skills.
      a. Objective measurements
         1) Satisfactory ratings on standardized achievement tests or other objective tests for this unit.
b. Subjective measurements
   1) Favorable appraisal by the teacher.
   2) Favorable reports from parents and others.

E. Bibliography
1. References for Pupils
   a. See references for Unit I and III.

2. References for Teachers
   a. See references for Units I, II, and III which deal with safety in play.

b. State Department of Education.
   A Teachers Manual in Safety Education. Elementary Schools of West Virginia.
   State Department of Education, Charleston, West Virginia, 1936.

c. State Department of Education.
   A Course of Instruction in Safety Education for the Schools of Rhode Island.
   State Department of Education, Providence, Rhode Island, 1938.

d. Board of Education, Kansas City Public Schools.
   Safety in the Curriculum, Elementary Schools, Kindergarten, Grades I-VI.
   Board of Education, Kansas City Public Schools, Kansas City, Kansas, 1937.

e. Department of Public Instruction.
   Safety Education in the Elementary Schools of Utah.
   Department of Public Instruction, Salt Lake City, Utah, 1935.

   Lantern Slides, "Primary Play Safety"
   National Conservation Bureau, 60 John St. New York.

V. Safety Education in the Primary Grades - Unit V
A. Unit Objective: To teach safety against fire.
B. Specific Objectives:
   1. Understandings
      a. Knows that children should not use matches.
      b. Knows that children should stay away from open fires.
      c. Knows how to report a fire to the fire department.
      d. Knows where the nearest fire alarm box is and how to use it.
      e. Knows the meaning of the term "exit".
      f. Knows what to do for clothing on fire.
      g. Knows dangers of explosives, fireworks, and inflammables.
      h. Knows causes of and dangers from forest fires.
      i. Knows the danger caused by leaking gas.
j. Knows what to do when the school fire alarm sounds.

2. Habits and Skills
   a. Avoids the careless use of matches.
   b. Avoids open fires.
   c. Uses electric lights instead of candles on Christmas trees.
   d. Protects open flames from drafts which might set fire to curtains or draperies.
   e. Puts waste paper and other refuse in metal containers.
   f. Avoids the use of kerosene, gasoline, and other inflammable liquids.
   g. Does not play with fireworks.
   h. Keeps matches in metal container out of reach of younger members of the family.
   i. Passes out of building in an orderly manner when school fire alarm sounds.

3. Attitudes
   a. Shows an appreciation of the dangers from fire.

C. Methods and Materials
   1. Demonstrations and Pupil Activities
      a. List good uses of matches; dangerous uses.
      b. Let children tell stories to class of fires which they have seen.
      c. Let children demonstrate how to extinguish a simulated clothing fire by the use of a rug or a blanket.
      d. Take a trip to a fire station.
      e. Construct a fire station, fire trucks, and ladders.
      f. Read stories about fires and fire protection.
      g. Dramatize a play on fire prevention and fire protection. A fire protection sketch for young children, "If a Match Could Speak," may be had by writing to the National Board of Fire Underwriters, Public Relations Department, 85 John St., New York City.
      h. Make posters about fire prevention and fire protection.
      i. Play the game of "Fire Tag." This game and another called "Fire Rug" are explained on page 193 in the book, Healthy Bodies, by John G. Fowlkes and others. The John C. Winston Co., Philadelphia, Pa., 1936.
      j. Let a pupil explain and demonstrate how to escape by crawling from a smoke-filled room.
k. Witness motion pictures on fire prevention
and fire drill protection.
l. Engage in fire drills.

2. Class Discussions
   a. Discuss how many disastrous fires are started.
   b. Discuss ways and means of preventing fires.
   c. Discuss how to extinguish fires.
   d. Discuss the firemen and his duties.
   e. Discuss accidents caused by firecrackers and
      fireworks.
   f. Discuss why lighted candles should not be used
      on Christmas trees or in jack-o-lanterns.

3. Illustrative Materials
   a. Pictures and posters on fire prevention and
      fire protection.
   b. Motion pictures.
   c. Lantern slides

D. Evidences of Mastery
   1. Reasonable achievement of the above understand-
      ings, habits, and skills.
      a. Objective measurements
         1) Satisfactory ratings on standardized
            achievement tests or other objective tests for this unit.
      b. Subjective measurements
         1) Favorable appraisal by the teacher.
         2) Favorable reports from parents and others.

E. Bibliography
   1. References for Pupils
      a. See references for Unit I.
   2. References for Teachers
         5:45-47.
         What Fire Is and How It Serves Man.
      b. Compton's Pictured Encyclopedia,
         The Fire Department.
         What Is Fire?
         When the Fire Alarm Rings.
         The Grolier Society, New York.
      e. United States Department of Agriculture,
         Forest Service.
         Taming Our Forests.
         United States Department of Agriculture,
         Washington, D. C.
f. Heyne, R. A. "Stop Carelessness! Prevent Accidents!"
   International Harvester Co., 180 Michigan Ave.,
   Chicago, Illinois

g. National Safety Council.
   The National Safety Council, 20 N. Wacker Drive,
   Chicago, Illinois.

h. Cleveland Safety Council.
   Safety Education, A Course of Study for Elementary
   and Junior High Schools.

i. Eastman Kodak Company
   Film, Fire Protection, 1 reel, 16mm. silent.
   Available on rental basis from various local de-
  positories.

j. Eastman Kodak Company, Rochester, N. Y.
   Film, Fire Safety, 1 reel, 16 and 35mm. silent.
   Available on rental basis.

k. National Conservation Bureau
   Lantern slides, Fire Prevention.

l. National Conservation Bureau, 60 John St., New
   York, N. Y.

VI. Safety Education in the Intermediate Grades — Unit I
A. Unit Objective: To teach safety at home and on the farm.
B. Specific Objectives:
   1. Understandings
      a. Knows the dangers of poisons.
      b. Knows the hazards of spontaneous combustion.
      c. Knows the importance of maintaining a source of
         pure drinking water.
      d. Knows the importance of properly covering all
         cesspits, wells, and cisterns.
      e. Knows the proper way to care for and operate the
         heating system in one's home or on the farm.
      f. Knows how to extinguish an oil or a grease fire.
      g. Knows the hazards of highly polished floors.
      h. Knows the need for adequate ventilation.
      i. Knows the need for caution in the use of farm
         machinery and household appliances.

   2. Habits and Skills
      a. Can use the telephone in emergencies.
      b. Avoids touching fallen wires.
      c. Can disconnect electrical apparatus not in use.
      d. Practices safe conduct on the stairs.
      e. Opens doors and windows carefully.
      f. Enters and leaves bathtub carefully.
g. Uses insecticides and disinfectants carefully.
h. Keeps objects in safe positions on the shelves.
i. Is careful around horses and other farm animals.

3. Attitudes
a. Shows an increasing appreciation of the need for carefulness to avoid accidents in and around the home or on the farm.

C. Methods and Materials

1. Demonstrations and Pupil Activities
   a. Review Unit I - Primary Grades.
   b. Prepare for an accident survey of the home and farm by studying details of an accident survey form. The American National Red Cross, Washington, D.C., and the National Safety Council, 1 Park Avenue, New York City, have home inspection blank forms for distribution.
   c. Prepare a form for making an accident survey of homes and farms.
   d. Help gather data for the accident survey.
   e. Give an account of an accident which occurred in your home or on your parent's farm.
   f. Write a letter to your parents telling them about the hazards and why they are dangerous.
   g. Learn how to pronounce, how to spell, and the meaning of new words as inflammable, spontaneous, combustion, extinguish, survey, inspection, electrocute, strangulation, label, contact, carbon monoxide, resuscitation, asphyxiation, suffocation, iodine, sterilize, precaution, etc.
   h. Classify and compare data on types of accidents in the home and on the farm.
   i. Demonstrate and discuss pasteurization of milk.
   j. Demonstrate a way of sterilizing materials used in first aid.
   k. Demonstrate the correct use of common household tools as the hammer, saw, paring knife, scissors, can opener, etc.

2. Class Discussions
   a. Discuss the uses and dangers of gasoline.
   b. Discuss the reasons why farm animals and farm machinery are the two chief causes of accidents on the farm.
   c. Discuss the uses and dangers of farm tractors.
   d. Discuss the danger in standing under a tree or near a grounded wire or pole in an electrical storm.
e. Discuss the causes of carbon monoxide poisoning and how to avoid it.

f. Observe a motion picture or lantern slides on home or farm safety and discuss what is seen in them.

3. Illustrative Materials
   a. Forms for accident survey of home and farm.
   c. Materials for demonstrating pasteurization of milk.
   d. Motion pictures and lantern slides.
   e. Hammer, saw, paring knife, scissors, can opener, etc.

D. Evidences of Mastery
   1. Reasonable achievement of the above understandings, habits, and skills.
      a. Objective measurements
      1) Satisfactory ratings on standardized achievement tests or other objective tests for this unit.
   b. Subjective measurements
      1) Favorable appraisal by the teacher.
      2) Favorable reports from parents and others.

E. Bibliography
   1. References for Pupils
      a. Buckley, H.M., White, M.L., Adams, A.B. and Silvernale, L.R.
         1) Around the Year, for 4th grade.
         2) On Land and Water, for 5th grade.
         3) Who Travels There, for 6th grade.
      b. Wilson, Jimmie, Risinger, M.M., and Johns, G.O.
         Around the Year With Safety.
         Banks Upshaw and Co., Dallas, Texas, 1939.
      c. Gentles, H.W. and Betts, G.H.
         Habits for Safety.
         The Bobbs-Merrill Co., Indianapolis, Ind., 1937.
      d. Kreml, F.M., Stiver, D.F., and Rice, T.B.
         Public Safety.
         The Bobbs-Merrill Co., Indianapolis, Ind., 1937.
      e. Matthews, J.C., Risinger, J.L., and Wilson, Jimmie
         Safety On We Go.
         Banks Upshaw and Co., Dallas, Texas, 1938.
      f. Society for Curriculum Study.
VII. Safety Education in the Intermediate Grades - Unit II

A. Unit Objective: To teach safety at school.

B. Specific Objectives:

1. Understandings
   a. Knows the common causes of school accidents and how these accidents may be avoided.
   b. Knows by appearance a first, a second, and a third degree burn and the first-aid treatment for each.
   c. Knows the common methods of first aid including how to give artificial respiration.

2. Habits and Skills
   a. Avoids loitering en route to or from school.
   b. Is courteous to teachers and fellow students.
   c. Puts waste materials in proper receptacles.
   d. Executes directions by teachers promptly, carefully, and cheerfully.
   e. Executes the procedures in artificial respiration proficiently.
   f. Avoids rubbing the eye when a foreign substance gets in it. Pulls upper lid down and away from the eyeball. Then rotates the eye letting the tears wash away the foreign substance.

3. Ethics
   a. Respects fair play and plays fair.
   b. Cooperates well in fire drills, school boy patrols, etc.

3. Attitudes
   a. Shows by his demeanor that he is developing the proper attitude toward safety and safety measures.
C. Methods and Materials

1. Demonstrations and Pupil Activities
   a. Review Unit II - Primary Grades.
   b. Make a blackboard chart showing the number of accidents the group had last year, where they occurred, what caused them, what the results were, and how to avoid such accidents in the future.
   c. Make a list of potential hazards in and around the school. Make suggestions for elimination of these hazards.
   d. Make a set of safety rules for the school which may reasonably be adopted. Post them on the school bulletin board.
   e. Tell a safety story such as those found in Safety Education Magazine.
   f. Prepare a brief talk on a phase of safety such as "What Poison Ivy Looks Like."
   g. Write letters to agencies which supply free material on safety asking for information on a subject in which the class is interested. Choose the best letters and send them for the material.
   h. Organize a Junior Safety Council if your school has none. The National Safety Council will supply information on the way to organize them.
   i. Write a composition for English on some matter pertaining to safety.
   j. Make a scrapbook on safety.
   k. Examine a first aid kit and select the necessary articles to use in treating each of the following: cuts including a severed artery, bruises, sprains, toothache, fainting, etc.
   l. Engage in a culminating activity covering the important phases of your work in safety education. Some suggestions are: a safety exhibit, a safety conference, a safety edition of the school newspaper, etc.

2. Class Discussions
   a. Discuss ways and means of preventing accidents at school. Keep charts on school incidents.
   b. Discuss proper ventilation. Discuss the dangers of the accidental absorption of poisonous gases.

3. Illustrative Materials
   a. First-aid kit
   b. Literature on safety
D. Evidences of Mastery.

1. Reasonable achievement of the above understandings, habits, and skills.
   a. Objective measurements.
      1) Satisfactory ratings on standardized achievement tests or other objective tests for this unit.
   b. Subjective measurements.
      1) Favorable appraisal by the teacher.
      2) Favorable reports from parents and others.

E. Bibliography.

1. References for Pupils.
   a. See references to Unit I - Intermediate Grades.

2. References for Teachers.
   a. See references for Unit I - Primary Grades.
   c. Eastman Kodak Company. Film, First Aid: Care of Minor Wounds. 1/4 reel, 16 and 35 mm., silent. Eastman Kodak Co., Rochester, N. Y.

VIII. Safety Education in the Intermediate Grades - Unit III

A. Unit Objective: To teach safety on the streets and highways.

B. Specific Objectives:

1. Understandings.
   a. Knows the meanings of all traffic signals.
   b. Knows how to ride a bicycle properly and carefully.
   c. Knows that he must always be careful when entering or crossing a street.
   d. Knows that stealing rides on motor vehicles and riding on the running boards are dangerous practices.
   e. Knows that he should help others to avoid traffic accidents, especially younger children and elderly persons.
   f. Knows the dangers of playing in the street.
   g. Knows the correct way to enter and leave a motor vehicle.
2. Habits and Skills
   a. Shows alertness on entering or crossing a street.
   b. Obey all traffic signals.
   c. Avoids playing in the street.
   d. Rides a bicycle properly and carefully.
   e. Avoids dangerous practices when riding in motor vehicles.
   f. Helps others less able than himself to cross a street without unduly endangering his own life.
3. Attitudes
   a. Shows an increasing interest in safety on the streets and highways.
C. Methods and Materials
1. Demonstrations and Pupil Activities
   a. Review Unit III - Primary Grades.
   b. Study the organization and work of a Junior Safety Council.
   c. Help organize one for your school if it is needed.
   d. Study the activities of the police department, the county sheriff, the highway patrol, and the state safety council in regard to the promotion of safety on the streets and highways.
   e. Make a street or road map of your community and mark with an (X) the places which you consider the most hazardous.
   f. Make a set of simple safety rules for the bicyclist.
   g. Listen to a talk on street and highway safety by a traffic official or an insurance agent.
   h. What is the arm signal which the driver of a motor vehicle should give when he is going to stop? when he wishes to make a right turn? when he wishes to make a left turn?
2. Class Discussions
   a. Obtain copies of traffic regulations from local and state authorities. Read and discuss them.
   b. Discuss the licensing of bicycles. Some communities require licenses for bicycles. Why do they require them?
   c. Discuss the motion picture, "Speaking of Safety", or others dealing with street and highway safety. What impressed you the most?
   d. Discuss the use of parking meters for congested areas in our larger communities. What are the reasons generally given for their installation?
3. Illustrative Material
   a. Literature telling how to organize a Junior Safety Council.
   b. Motion pictures on street and highway safety.
   c. Copies of traffic regulations.

D. Evidences of Mastery
   1. Reasonable achievement of the above understandings, habits, and skills.
   a. Objective measurements
      1) Satisfactory ratings on standardized achievement tests or other objective tests for this unit.
   b. Subjective measurements
      1) Favorable appraisal by the teacher.
      2) Favorable reports from parents and others.

E. Bibliography

1. References for Pupils
   a. See references for Unit I - Intermediate Grades.
   d. Fowlkes, J.G.; Jackson, L.Z.; and Jackson, A.S. Healthy Growing.
   e. Fowlkes, J.G.; et al. Success Through Health.
   g. Harrison, Russell E. "Defensive Cycling."
      Safety Education; 19:2-3, (September, 1939).

2. References for Teachers
   a. See references for Unit III - Primary Grades.
   d. Cycle Trades of America. Film, Bicycling With Complete Safety. 16mm., sound, 1 reel; free.
      Cycle Trades of America, Chanin Building, New York.
   e. Metropolitan Life Insurance Co. Film, Once Upon a Time. 16mm, sound, 1 reel.
      Metropolitan Life Insurance Co.

f. Metropolitan Life Insurance Co. Film, Once Upon a Time, 16mm, sound, 1 reel; free.
f. American Automobile Association
   Film, Heedless Hurry - Endless Worry. 16mm.
   sound, 1 reel; Free.
   American Automobile Association, Washington, D.C.
g. National Education Association and Highway Education Board.
   Speaking of Safety. 16 and 35 mm. silent, 1 reel.
   Distributed free by Films of Commerce, 21 West
   6th St., New York, N. Y.

IX. Safety Education in the Intermediate Grades - Unit IV
A. Unit Objective: To teach safety in play and recreation.
B. Specific Objectives:
   1. Understandings
      a. Knows how to recognize and avoid poisonous plants,
         insects, and animals. Knows how to treat
         injuries by them.
      b. Knows how air guns and firearms should be
         handled in order to avoid accidents.
      c. Knows the regulations for and the safe practices
         in the use of scooters, tricycles, bicycles, and roller skates.
      d. Knows how to swim and to conduct himself properly
         in the water.
      e. Knows the first-aid treatment for cuts, scratches,
         and abrasions of the skin, burns and
         scalds, fainting, foreign bodies in the
         eye, fractures, frostbite, nosebleed,
         poisons, shock, sprains, sunstroke, and
         heat exhaustion.
      f. Knows how to give artificial respiration.
      g. Knows when and how to move injured persons.
      h. Knows that practical jokes which are potentially
         dangerous should not be engaged in.
      i. Knows the importance of thinking and acting
         calmly and rationally when facing an
         emergency.
      j. Knows the dangers from tasting substances whose
         nature is not known such as powders,
         medicines, fungi, berries, etc.
      k. Knows how to build a fire properly, especially
         a campfire, and how to extinguish it to
         prevent damage.
      l. Knows how to keep from getting lost on the des-
         ert or in the mountains and how to sum-
         mon or find help if lost.
      m. Knows how to prolong life in emergent exposures
         excessive heat or cold.
      n. Knows something of the topography of his locality
         including certain landmarks for
         orientation.
2. Mounts and rides horse capably.

2. Habits and Skills

a. Recognizes and avoids poisonous plants such as poison oak, ivy, and sumac, poisonous animals such as rattlesnakes and Gila monsters, and poisonous spiders and insects such as the Black Widow spider.

b. Can render first-aid treatment to injuries caused by poisonous plants, animals, or insects.

c. Can apply first-aid treatment to cuts, scratches, and abrasions of the skin, to burns and scalds, for fainting, foreign bodies in the eye, fractures, frostbite, nosebleed, poisons, shock, sprains, sunstroke, and heat exhaustion.

d. Can give artificial respiration.

e. Avoids practical jokes of a dangerous nature.

f. Thinks and acts calmly and rationally during an emergency.

g. Uses air guns and firearms judiciously.

h. Uses such things as scooters, tricycles, bicycles, and roller skates according to regulations for their use and with due regard to safety.

i. Is able to swim and practices caution in water sports.

j. Avoids tasting medicines except on the advice of competent persons.

k. Enjoys outings but refrains from eating fungi, such as mushrooms, and wild berries except on the advice of competent persons.

l. Uses care in building campfires and always puts them out before leaving them.

m. Can tell directions by means of heavenly bodies and landmarks.

n. Does not take unnecessary risks which may cause dangerous falls.

o. Handles fireworks, explosives, and inflammables only when necessary and only in a careful manner.

p. Mounts and rides horse capably.
3. Attitudes

a. Enjoys play and recreation, but shows regard for the dangers inherent in them.

b. Thinks and acts calmly and intelligently in emergencies.

c. Shows an interest in the safety of others as well as his own.

c. Methods and Materials

1. Demonstrations and Pupil Activities

a. Review Unit IV - Primary Grades.

b. Make a map of the neighborhood marking the places which are dangerous. Show by means of a different marking system those places where play may be carried on safely.

c. Find out what Flint, Michigan, and other cities have done to provide safe play areas for children.

d. Write a composition about some game or sport and emphasize the safety angle.

e. Let pupils demonstrate the proper way to ride a bicycle.

f. Let an experienced skater show how to roller skate properly and especially how to stop.

g. Demonstrate artificial respiration.

h. Tell how to remove a fishhook which is caught in a person's flesh.

i. Demonstrate how to remove a foreign body from the eye.

j. Demonstrate how to make and use a tourniquet.

k. Demonstrate how to use a bandage, splints, etc.

l. Write and produce a play which emphasizes the safety factor in recreation.

m. Study the characteristics of snakes, especially rattlesnakes. Describe the markings of the rattlesnake. Procure a tanned rattle-snake skin, if possible, for examination.

n. Study the characteristics of fungi such as toadstools and mushrooms. Procure actual specimens if possible.

o. Demonstrate by means of a stick the proper way to handle and carry a gun.

p. Make a list of the Do's and Don'ts for bicycle riding, roller skating, etc., such as "A careful bicycle rider always does these things":

1) Keeps to the right near the curb or near the side of the road.

2) Uses the proper hand signals when about to make a turn.

3) Keeps his bicycle in good repair.
p. Determine the cost of equipping a first-aid kit for the home or for a camping trip. What are the minimum essentials for such a kit?

2. Class Discussions
   a. Discuss the dangers of wading or swimming in irrigation canals and ditches. Mention the dangers from broken glass, rubbish, contaminated water, etc.
   b. Discuss precautions to take on hikes or camping trips.
   c. Discuss ways to orient oneself on the desert or in the mountains.
   d. Procure X-rays of different kinds of fractures and discuss them.
   e. Discuss the prevention of and the treatment for poisonous insect bites.
   f. Discuss why domestic animals sometimes are dangerous.

3. Illustrative Materials
   a. Maps of locality
   b. Drawing materials
   c. Bicycle and roller skates
   d. Complete first-aid kit
   e. Tanned rattlesnake skin
   f. Specimens of toadstools and mushrooms or illustrations of same.
   g. Wooden gun or stick
   h. X-rays of fractures
   i. Motion pictures, film strips, and slides on safety in play and recreation
   j. Handkerchief for making a tourniquet
   k. Reference books on nature and wild life

D. Evidences of Mastery
   1. Reasonable achievement of the above understandings, habits, and skills.
      a. Objective measurements
         1) Satisfactory ratings on standardized achievement tests or other objective tests for this unit.
      b. Subjective measurements
         1) Favorable appraisal by the teacher.
         2) Favorable reports from parents and others.

E. Bibliography
   1. References for Pupils
      a. See references for Unit I - Intermediate Grades.
      b. Boy Scouts of America.
         Handbook for Boys.
         Boy Scouts of America, New York, 1935.
c. Girl Scouts, Inc.
  Girl Scout Handbook.

d. Williams, Jesse F. and Dansdill, Theresa.
  Health and Control.
  1) "Rules for Swimming" p. 132.
  2) "Being Careful" p. 150.
  3) "Poison Ivy" p. 161.
  4) "Cuts and Wounds" p. 164.
  5) "Nosebleed" p. 164.
  6) "Alcohol and Drugs" p. 183.

e. Williams, J. F. and Dansdill, Theresa.
  Health and Service.
  1) "Points That All Swimmers Should Know" p. 114
  2) "First-Aid Service" p. 162.
  3) "Poison Ivy" p. 169.

  5:62 First Aid.
  F. E. Compton & Co., Chicago, Ill.

  First Aid to the Injured.
  W. F. Quarrle & Co., Chicago, Ill.

2. References for Teachers

a. See references for Unit IV - Primary Grades.

b. White House Conference on Child Health and Protection.
  Safety Education in Schools. Report of the Subcommittee on Safety Education.

  The Present Status of Safety Education.
  Twenty-fifth Yearbook, Part I.

  National Safety Council, 20 N. Wacker Drive,
  Chicago, Ill.

  Safety Education Methods, Elementary School.
  National Safety Council, 20 N. Wacker Drive,
  Chicago, Ill.

f. Croxton, W.C.
  Science in the Elementary School.
  1) "Learning to Tell Direction." p. 242.
  2) "Listing Our Friends and Foes." p. 322.
X. Safety Education in the Intermediate Grades—Unit V.

A. Unit Objective: To teach safety against fire.

B. Specific Objectives:

1. Understandings:
   a. Knows how to turn in a fire alarm
   b. Knows ways and means of extinguishing fires.
   c. Knows the dangers from fire in the use of lighted candles, grease, combustibles such as gasoline and kerosene, fireworks, etc.
   d. Knows that open fires should not be built near buildings, trees, dry grass or shrubs, nor in a high wind.
   e. Knows that campfires should be put out entirely before leaving camp.
   f. Knows that fires are often caused by careless smokers.
   g. Knows the principles of spontaneous combustion.
   h. Knows the principle by which a fire extinguisher works and how to use a fire extinguisher.
   i. Knows how to act when the school fire alarm sounds.
j. Knows that faulty electric wiring often causes fires.
k. Knows how to treat burns.
l. Knows methods for escaping from burning buildings if ordinary exits are blocked.

2. Habits and Skills
a. Can summon help quickly and effectively in case of fire.
b. Can smother a clothing fire by means of a blanket and by rolling on the ground or floor.
c. Can use a fire extinguisher.
d. Disconnects potentially dangerous electric household appliances such as electric irons when not in use.
e. Keeps oily rags, waste paper, rubbish, etc., in metal containers.
f. Handles inflammables carefully.
g. Extinguishes campfires carefully before leaving them.
h. Can render first aid for burns.
i. Can describe measures which are often effective in escaping from burning buildings when the ordinary exits are blocked.
j. Uses electric lights on Christmas trees and a flashlight in jack-o-lanterns in place of candles.
k. Connects up the garden hose or has a pail of water at hand when starting a bonfire which might spread.
l. Does not play with matches. Keeps them in suitable containers and away from young children.
m. Never looks for a gas leak with a flame.
n. Uses only non-inflammables for cleaning purposes.

3. Attitudes
a. Appreciates the dangers from fire and acts accordingly.

C. Methods and Materials
1. Demonstrations and Pupil Activities:
a. Review Unit V - Primary Grades.
b. Plan and take a trip to a fire station and have the various fire-fighting apparatus explained by a fireman.
c. Demonstrate by using a blanket and by rolling on the floor or ground how a fire in one's clothing may be put out.
d. Point out the materials in a first-aid kit which one would use to treat the different kinds of burns.
e. Prepare and give a short talk on a phase of fire protection and fire prevention as, "How Carelessness in Cooking on a Gas Stove May Cause a Fire."

f. Find out the approximate annual loss of property by fire. What are the chief causes of these fires? See "Accident Facts" published annually by the National Safety Council.

g. Find out what our Federal Government does to protect our national forests against fire.

h. Read the story of the invention of the lightning rod by Benjamin Franklin.

i. Read stories of great fires like the Chicago fire.

j. Ask a fire warden to talk to the school on fire prevention and fire protection.

k. Write to fire insurance companies for literature about fires.

l. Have a miner speak to the class on safe mining practices.

m. Make a list of commonly used fluids which are highly inflammable. How should they be used with reasonable safety?

n. Plan and carry out a survey of your home to determine possible fire hazards. Enlist your parents' cooperation in eliminating these hazards. Report to the class on the success of your efforts.

2. Class Discussions

a. Discuss the dangers in the use of lighted candles on Christmas trees, at Halloween, at birthday parties, etc.

b. Discuss safe and unsafe practices in heating buildings.

c. Discuss special precautions which farm residents or suburban dwellers should take against fire.

d. Discuss ways in which buildings may be constructed to make them fire-resisting.

e. Discuss why false fire alarms are costly.

f. Observe some motion pictures on fire prevention and fire protection and discuss the principles of safety involved in them.

3. Illustrative Materials

a. Motion pictures and slides on fire prevention and fire protection.

b. Blanket or coat for demonstrating how to put out a clothing fire.
D. Evidences of Mastery

1. Reasonable achievement of the above understandings, habits, and skills.
   a. Objective measurements
   b. Satisfactory ratings on standardized achievement tests or other objective tests for this unit.
   c. Favorable appraisal by the teacher.
2. Favorable reports from parents and others.

E. Bibliography

1. References for Pupils of the Elementary Grades
   e. See also the references for Unit I - Intermediate Grades.

2. References for Teachers
   a. See references for Unit V - Primary Grades
   d. University of Arizona, Extension Division. Film, 16mm. silent. Enemy of the Forest, 1 reel.
   e. University of Arizona, Extension Division. Film, 16mm. silent. Fire Safety, 1 reel.
   f. Standard Fire Insurance Company. The Bad Master, 16 and 35 mm. silent or sound film, 1 reel. Free.
XI. Safety Education in the Upper Grades - Unit I

A. Unit Objective: To teach safety at home and on the farm.

B. Specific Objectives:

1. Understandings:
   a. Knows the importance of taking precautions for safety in and around the home and on the farm.
   b. Knows the more common causes of home and farm accidents.
   c. Knows the importance of group action as well as individual action in preventing accidents.
   d. Knows what the Federal, state, and local agencies are doing to promote safety and to prevent accidents.
   e. Knows the purpose and the operation of such private agencies as the American National Red Cross, National Safety Council, American Automobile Association, etc.
   f. Knows how food and drink become contaminated, how to prevent such contamination, and how to avoid using contaminated food or drink.
   g. Knows that the infirmities of old age and the lack of understanding on the part of the young make these two groups particularly susceptible to accidents.
   h. Knows the importance of repairing or replacing defective equipment and defective buildings about the home or farm in order to avoid accidents.
   i. Knows how to make minor repairs about the home or farm.
   j. Knows how to render first-aid treatment for common injuries which occur on the farm or in the home.
   k. Knows what to do until a physician arrives when a person has swallowed poison.
   l. Knows the dangers inherent in various occupations, particularly those occupations in which members of his own family are engaged.

2. Habits and Skills:
   a. Makes the necessary repairs to equipment, buildings, and grounds promptly according to his ability and encourages others to do the same.
   b. Tries to avoid the use of food or drink which is contaminated.
   c. Learns the proper way to use machinery or equipment.
d. Can render first-aid treatment for the more common emergencies.
e. Tries to prevent accidents around the home and the farm by using good judgment and good understanding of what constitutes safety.

3. Attitudes
   a. Shows an intelligent regard for his own safety and the safety of others.

C. Methods and Materials
   a. Demonstrations and Pupil Activities
      i. Review Unit I - Intermediate Grades
      b. Inspect, if possible, a new home which has many safety features in its heating, cooling, and lighting systems as well as in its general construction and arrangement.
      c. Prepare and give a radio talk on some phase of home or farm safety.
      d. Write a composition about the work of the American National Red Cross or other organizations in preventing home and farm accidents.
      e. Observe motion pictures or lantern slides showing the contrast between safe and unsafe practices about the home and farm.
      f. Make a survey of your home or farm to determine the hazards which might cause accidents. A survey form may be worked out in class or obtained from the American National Red Cross or the National Safety Council. Make an effort to eliminate the hazards which are found. Report on the success of the undertaking.
      g. Write a letter to your parents recommending that certain hazards about the home or farm which might cause an accident be eliminated.

2. Class Discussions
   a. Discuss possible hazards in the use of electricity in the home and about the farm.
   b. Discuss precautions to observe in the use of electricity.
   c. Discuss how certain agencies as the American National Red Cross promote safety in the home and on the farm.
   d. Discuss the dangers in the more hazardous kinds of work which must be done on the farm. Discuss the precautions which should be taken in this work.
e. Discuss sanitation in the home and on the farm in its relation to health.

f. Discuss the treatment for various kinds of accidental poisoning.

3. Illustrative Materials
   a. Pictures of safe and unsafe conditions and practices about the home and the farm.
   b. Motion pictures and lantern slides dealing with safety in the home and on the farm.

D. Evidences of Mastery
   1. Reasonable achievement of the above understandings, habits, and skills.
      a. Objective measurements
         1) Satisfactory ratings on standardized achievement tests or other objective tests for this unit.
      b. Subjective measurements
         1) Favorable appraisal by the teacher.
         2) Favorable reports from parents and others.

E. Bibliography
   1. References for Pupils
      a. Matthews, J.C., Risinger, J.L., and Wilson, Jimmie.
         Safely On We Go.
         Banks Upshaw and Co., Dallas, Texas, 1938.
      b. Kreaml, F.M., Stiver, D.F., Rice, T.B.
         Public Safety.
         The Bobbs-Merrill Co., Indianapolis, Ind., 1937.
      c. Gentles, H.W., and Betts, G.H.
         Habits for Safety.
         The Bobbs-Merrill Co., Indianapolis, Ind., 1937.
         National Safety Council, 20 N. Wacker Drive, Chicago, Ill.
      e. Society for Curriculum Study.
         Building America, Vol., 2, Number 2.
      f. Nelson, Florence, Jamison, O.G., and Sparks, R.E.
         Safety through the Year. An activity-text-workbook for the junior high school.
      g. Fowlkes, J.G., Jackson, L.Z., and Jackson, A.S.
         Success Through Health.
         The John C. Winston Co., Philadelphia, Pa., 1938
         1) "Taking Care." pp. 61-89.
         2) "First Aid." pp. 90-105.
      h. Hayne, R.A.
         Stop Carelessness! Prevent Accidents.
         International Harvester Co., Chicago, Ill.


k. American Red Cross. Injuries in the Home and on the Farm; How They are Caused and How They Can Be Prevented. American Red Cross, Washington, D.C., 1936.


m. Good Housekeeping Institute. Safety in the Home. Good Housekeeping Institute, 57th St. at 8th Ave., New York, N. Y., 1937.


2. References for Teachers:
a. See references for Unit I - Primary Grades and for Unit I - Intermediate Grades.

XII. Safety Education in the Upper Grades - Unit II
A. Unit Objective: To teach safety at school.
B. Specific Objectives:
   1. Understandings
      a. Knows how to conduct himself properly on the school bus.
      b. Knows the rules and regulations pertaining to safety in the corridors, school shops, gymnasium, on the school grounds, buses, etc.
      c. Knows how to follow directions given by the teachers.
      d. Knows how to play games and use athletic equipment properly.
      e. Knows that all accidents should be reported immediately.
      f. Knows how to render first-aid treatment for the common accidents.
      g. Knows how to use a fire extinguisher properly.
2. Habits and Skills
   a. Acts courteously on the school bus, in the school buildings, and elsewhere about the school.
   b. Obey rules and regulations pertaining to the school.
   c. Follows the directions of the teachers promptly and willingly.
   d. Plays games and uses athletic equipment according to the rules with due regard to the safety of others as well as his own safety.
   e. Reports all accidents promptly and renders assistance to the injured when necessary.
   f. Can render intelligent first-aid treatment for the common injuries.
   g. Can render first-aid treatment for poisons, using the proper antidotes.
   h. Takes an active part in the promotion of safety at school. Cooperates with such safety organizations as the School Safety Patrol.
   i. Can use a fire extinguisher properly.
   j. Strives continuously to prevent accidents at school.

3. Attitudes
   a. A greater appreciation of the meaning of safety and a practical application of the principles of safety in school as well as elsewhere.

C. Methods and Materials
   1. Demonstrations and Pupil Activities
      a. Review Unit II - Intermediate Grades
      b. Organize a School Safety Patrol if there is need for one.
      c. Participate in a campaign to prevent accidents at school.
      d. Write safety plays, stories, verses, or other forms of composition.
      e. Issue safety bulletins. Make contributions to the school newspaper on the subject of safety.
      f. Demonstrate such first-aid methods as artificial respiration, bandaging of wounds, control of excessive bleeding, carrying injured persons, etc.
      g. Demonstrate the proper way to use athletic equipment, the proper way to play games, etc.
      h. Demonstrate the use of a fire extinguisher.
i. Conduct a general accident survey of your community. When hazards are found, try to have them eliminated by means of a cooperative campaign for safety in the community.

j. Plan and take an excursion to a manufacturing plant where safety methods are employed.

k. Arrange for a series of talks on the various phases of safety by persons who are qualified to speak on the subject.

l. Develop a set of self-measurement scales. Then have each member of the class rate himself by means of these scales.

2. Class Discussions.
   a. Discuss how courtesy may prevent accidents.
   b. Discuss the need for and the observance of safety regulations pertaining to the school.
   c. Discuss insurance against sickness and accident.
   d. Discuss how School Safety Patrols, Boy Scouts, Girl Scouts, Camp Fire Girls, and other similar organizations promote safety.
   e. Discuss the pictorial presentations of the teaching of safety such as those which are found in motion pictures, lantern slides, film strips, charts, etc.

3. Illustrative Materials.
   a. First-aid kit containing bandages, splints, tourniquet, etc.
   b. Fire extinguisher
   c. Safety posters, pictures, charts, etc.
   d. Motion pictures and lantern slides in safety.

D. Evidences of Mastery
   1. Reasonable achievement of the above understandings, habits, and skills.
      a. Objective measurements
         1) Satisfactory ratings on standardized achievement tests or other objective tests for this unit.
      b. Subjective measurements
         1) Favorable appraisal by the teachers.
         2) Favorable reports from parents and others.

E. Bibliography
   1. References for Pupils
      a. See references (a to h) Unit I - Upper Grades.
   2. References for Teachers
XIII. Safety Education in the Upper Grades — Unit III.

A. Unit Objective: To teach safety on the streets and highways.

B. Specific Objectives:

1. Understandings:
   a. Knows what traffic signals and signs mean.
   b. Knows the more common traffic regulations regarding motor vehicles such as right of way, licensing, etc.
   c. Knows the regulations regarding the use of bicycles.
   d. Knows how to ride a bicycle properly.
   e. Knows the proper places to cross a street.
   f. Knows that safety in the street or on the highway demands caution and alertness.
   g. Knows that fatigue and a lack of alertness often cause accidents.

2. Habits and Skills:
   a. Obey traffic signals, signs, and regulations.
   b. Rides a bicycle in a careful and proper manner.
   c. Cooperates with others in the promotion of safety.
   d. Walks on the left side of the highway facing oncoming traffic when there is no sidewalk or path to use.
   e. Rides public and private conveyances in as safe a manner as possible.
   f. Crosses streets at intersections making use of whatever safety measures are provided there.
   g. Is always alert in order to avoid injury to himself or to others.
   h. Avoids the use of congested and hazardous thoroughfares whenever possible.

3. Attitudes:
   a. Appreciates the necessity for traffic regulations.
   b. Shows a sincere desire to help to prevent accidents on the streets and on the highways as well as elsewhere.
C. Methods and Materials

1. Demonstrations and Pupil Activities
   a. Review Unit III - Intermediate Grades.
   b. Have competent speakers from various organizations talk to the class or to the student body on the subject of safety and particularly on the subject of safety on the streets and highways.
   c. Have a student demonstrate the proper equipment for a bicycle. Let him demonstrate how to ride a bicycle properly.
   d. Construct a street or highway map of your community indicating the names or numbers of the streets or highways, the congested traffic areas, the dangerous intersections, the railroad crossings, and other potentially dangerous spots.
   e. Construct a sand table exhibit of a road system employing the various warning signs in their proper places.
   g. Write an editorial on a phase of street and highway safety such as "Rights and Responsibilities of Pedestrians."

2. Class Discussions
   a. List the common causes for traffic accidents and discuss ways of preventing such accidents or of reducing the number of them.
   b. Discuss intoxicants as a cause of street and highway accidents.
   c. Discuss speed as a prime cause of motor vehicle accidents.
   d. Discuss the dangers of hitch-hiking.
   e. Discuss how the weather and conditions of the road may cause accidents.
   f. Discuss fatigue and preoccupation as factors causing street and highway accidents.
   g. Discuss the reasons why motorists should have the brakes, lights, and horn on their motor vehicles in good working condition at all times.
   h. Discuss why a person should be compelled to pass a comprehensive test on the mechanics and the operation of a motor vehicle, on motor vehicle laws, and a test of physical fitness to drive a car before being granted a driver's license.
   i. Discuss the safety teachings in certain films and lantern slides which you have seen.
3. Illustrative Materials
   a. Bicycle equipped with standard equipment.
   b. Sand table
   c. Materials for making models of streets and highways.
   d. Motion pictures and lantern slides on the subject of street and highway safety.

D. Evidences of Mastery
   1. Reasonable achievement of the above understandings, habits, and skills.
      a. Objective measurements
         1) Satisfactory ratings on standardized achievement tests or other objective tests for this unit.
      b. Subjective measurements
         1) Favorable appraisal by the teacher.
         2) Favorable reports from parents and others.

E. Bibliography
   1. References for Pupils
      a. See references for Unit III - Intermediate Grades.
      b. Kraml, F. M., Stiver, D. F., and Rice, T. B.
         Public Safety.
         The Bobbs-Merrill Co., Indianapolis, Ind., 1937
      c. Gentles, H. W., and Betts, G. H.
         Habits for Safety.
         The Bobbs-Merrill Co., Indianapolis, Ind., 1937
      d. Matthews, J. C., Ringer, J. L., and Wilson, Jimmie.
         Safety On We Go.
         Banks Upshaw and Co., Dallas, Texas, 1938
      e. Society for Curriculum Study.
         Building America, Volume 2, Number 2.
      f. Nelson, Florence, Jamison, C. G., and Sparks, R. E.
         Safety through the Year. An activity-text-workbook for the junior high school.
      g. National Safety Council.
         National Safety Council, 20 N. Wacker Drive, Chicago, Ill.
      h. Fowlkes, J. G., Jackson, L. Z., and Jackson, A. S.
         Making Life Healthful.
         1) "Some Rules for Pedestrians." p. 351.
4) "Rules on Rural Highways." pp. 355-356.

2. References for Teachers.
   a. Highway Education Board.
      A Safety Lesson for Each Grade.
      Highway Education Board, Washington, D.C., 1937
   b. Bennett, Richard O.
      The Bicycle and Traffic Safety.
      Northwestern University Traffic Safety Institute, Evanston, Ill., 1937.
   c. United States Department of Agriculture, Bureau of Public Roads,
      Highway Accidents, Their Causes and Recommendations for Their Prevention.
   f. United States Department of Agriculture, Bureau of Public Roads,
      Highway Accidents, Their Causes and Recommendations for Their Prevention.
   g. Cleveland Safety Council.
      Safety Education, A Course of Study for Elementary and Junior High Schools.
      Cleveland Safety Council, Cleveland, Ohio, 1937.
   h. Eastman Kodak Co.
      Film, Street Safety for Advanced Grades. 16mm.
      silent, 1 reel.
      Eastman Kodak Company, Rochester, N. Y.
   i. National Conservation Bureau.
      Lantern Slides, Learning Skills of Road.
      National Conservation Bureau, 60 John St., New York.

XIV. Safety Education in the Upper Grades - Unit IV
   A. Unit Objective: To teach safety in play and recreation.
   B. Specific Objectives:
      1. Understandings
         a. Knows the importance of physical examinations to determine one's fitness to engage in strenuous athletic activities.
b. Knows that fatigue often causes accidents.
c. Knows the importance of using safe equipment in athletics and of adhering to principles of safety.
d. Knows that injuries should be reported immediately and given proper attention.
e. Knows the necessity for proper training for most athletic activities.
f. Knows the importance of courtesy and fair play in athletics.
g. Knows that a proper diet and proper rest are necessary for physical fitness.
h. Knows the benefits derived from a wise program of play and recreation.
i. Knows the precautions to take against all kinds of burns, physical exhaustion, poisonous plants, poisonous animals and insects, drowning, falls, suffocation, etc.
j. Knows how to handle and use firearms if permitted to use them.
k. Knows the first-aid treatment for common injuries.
l. Knows the relative value and the proper use of the more common preparations used as antiseptics, emetics, counteractives, etc.

2. Habits and Skills
a. Keeps physically fit by acquiring proper habits in regard to diet, rest, physical activity, personal hygiene, etc.
b. Avoids worry and tries to acquire a stable and serene mental attitude.
c. Uses only safe athletic equipment and follows the rules of the game.
d. Reports injuries promptly and gives them the proper attention.
e. Refrains from participating in athletic activities which are likely to cause serious bodily injury because of lack of training or because of inadequate physical ability.
f. Is courteous and fair in play and recreation.
g. Enjoys sports and recreation.
h. Takes the proper precautions against injury from over-exertion, undue exposure to heat or cold, bites of poisonous insects or animals, poisonous plants, falls, suffocation, the hazards of water sports, burns, etc.
1. Handles firearms in a careful manner if permitted to use them at all.

j. Can give first-aid treatment for the common injuries including resuscitation for drowning.

k. Makes wise use of antiseptics, emetics, counteractives, etc., by knowing their general qualities and specific uses.

3. Attitudes

a. Shows a keen appreciation of the hazards in play and recreation and a strong desire to help prevent injury to himself and to others.

C. Methods and Materials

1. Demonstrations and Pupil Activities

   a. Review Unit IV — Intermediate Grades.

   b. Develop scales in self-measurement for play and recreation or for individual sports. Let each pupil test himself with them. Examples of questions are: (1) Do I try to be courteous to those with whom I play? (2) Do I play according to the rules of the game?

   c. Make sets of safety rules for the gymnasium, swimming pool, playground, etc.

   d. Have members of such organizations as the Boy Scouts, the Girl Scouts, the Camp Fire Girls, the Junior Red Cross, etc., address the class on safety in play and recreation and on clean sportsmanship.

   e. Procure the services of a lifeguard from a swimming pool or beach to talk to the class or the school about safety in or on the water.

   f. Have a physician or a nurse give a talk on the subject of safety in play and recreation.

   g. Demonstrate the proper way to carry and to handle a gun. Caution! Positively no ammunition should be used in demonstrations at school.

   h. Demonstrate the proper way to play the games which this age-group plays or is likely to play, and the proper use of athletic equipment.

   i. Demonstrate first-aid treatment for a variety of common injuries such as a broken bone, a severed artery, and fainting.

   j. Demonstrate the prone-pressure method of resuscitation.
2. Class Discussions

A. Unit D.

a. Discuss the properties and uses of the more common antiseptics, emetics, counteractives, etc., which are commonly used to treat injuries.

b. Discuss clean sportsmanship, bringing into the discussion examples of clean sportsmanship such as that of Walter Johnson, the famous baseball pitcher.

c. Observe motion pictures, lantern slides, and other pictorial material which teach safety in play and recreation. Discuss the lessons in safety which this material suggests.

d. Discuss talks on safety in play and recreation which have been given recently by authorities on the subject.

e. Read and discuss stories and articles which deal with safety in play and recreation. See the magazine, "Safety Education," for stories on these subjects.

3. Illustrative Materials

a. A rifle without ammunition.

b. Complete first-aid kit.

c. Motion pictures, lantern slides, etc., on the subject of safety in play and recreation.

D. Evidences of Mastery

1. Reasonable achievement of the above understandings, habits, and skills.

a. Objective measurements

1) Satisfactory ratings on standardized achievement tests or other objective tests for this unit.

b. Subjective measurements

1) Favorable appraisal by the teacher.

2) Favorable reports from parents and others.

E. Bibliography

1. References for Pupils

a. See references for Unit IV - Intermediate Grades; see references (a. to g.) for Unit III - Upper Grades.

b. Society for Curriculum Study.

Building America, Volume 1, Number 7.

2. References for Teachers

a. See references for Unit IV - Intermediate Grades.
XV. Safety Education in the Upper Grades - Unit V.

A. Unit Objective: To teach safety against fire.

B. Specific Objectives:

1. Understandings
   a. Knows the factors which cause spontaneous combustion.
   b. Knows the value of fire to civilization and its great destructive force as well.
   c. Knows how to build a fire in a stove, on a camping trip, or elsewhere in a relatively safe manner.
   d. Knows about and appreciates the work of the fire department, the Federal Forest Service, and other leading organizations for fire protection and fire prevention.
   e. Knows what to do in case of fire.
   f. Knows the principle of a fire extinguisher and how to operate one.
   g. Knows the emergency treatment for first, second, and third degree burns.
   h. Knows that combustibles like gasoline, kerosene, etc., must be handled and used with extreme caution.
   i. Knows that defective electric wiring is a principal cause of fires.
   j. Knows the principal fire resistive materials used in construction and how they are used to prevent fires.
   k. Knows that careless smokers cause many fires.

2. Habits and Skills
   a. Can build a fire in a stove, on a camping trip, etc., in a relatively safe manner.
   b. Can give the location of the nearest fire alarm or the nearest fire fighting apparatus and can summon aid quickly and effectively in case of fire.
   c. Provides means for extinguishing fires which may get beyond control such as having the water hose attached and ready to use when building a bonfire.
   d. Can extinguish a small fire by means of throwing it with a blanket or similar means.
   e. Handles and uses inflammables carefully.
   f. Avoids the careless use of fireworks.
   g. Disconnects electrical equipment such as electric irons when not in use.
   h. Reports defective electric wiring and equipment promptly and tries to have it made safe.
i. Can give the emergency treatment for first, second, and third degree burns.
j. Uses caution to prevent the heating equipment from causing destructive fires.

3. Attitudes:
a. Respects fire for its destructive force as well as for its usefulness.

C. Methods and Materials
1. Demonstrations and Pupil Activities
a. Review Unit V - Intermediate Grades.
b. Plan and take a trip to a fire station. Investigate the duties and responsibilities of firemen.
c. Study the work of the Forest Rangers in preventing forest fires.
d. Make a collection of newspaper clippings about destructive fires occurring during the year. How might these fires have been prevented?
e. Make a survey of your home or of your community to determine fire hazards. Try to eliminate these hazards. Report to the class on your success in this.
f. Explain the reason for "No Parking" signs near fire hydrants.
g. Explain why people are fined for following too closely a fire department on the way to a fire.
h. Make a map of the fire alarm boxes, fire hydrants, and fire stations in the immediate vicinity of your home.
i. Write to fire insurance companies for material on fire prevention, statistics on fires, etc.
j. Prepare a culminating activity on your study of fire protection and fire prevention such as writing and dramatizing a play or by making a booklet which includes all you have learned about fire prevention and fire protection.

2. Class Discussions.
a. Discuss the advantages of fire insurance, what determines the insurance rates, etc. This may well be developed in arithmetic classes.
b. Discuss spontaneous combustion, conductors and non-conductors of electricity, insulation of wires, the dangers of overloading electrical conductors, etc. These discussions may take place in classes in elementary science and in general shop
c. Discuss ways to protect life and property from damage by lightning. What are relatively safe and unsafe places of shelter during an electrical storm?

d. Discuss and formulate rules regarding what a person should do in case of fire at home, at school, in a public building like a theatre, or in case a person's clothes are on fire.

e. Discuss lessons in fire prevention and fire protection as shown in motion pictures, lantern slides, etc., on the subject.

f. Discuss the dangers from fire due to faulty heating and lighting equipment.

g. Discuss what smokers may do to prevent fires; what campers may do to prevent forest fires; what may be done in a general way to prevent destructive fires.

3. Illustrative Materials
   a. Literature on fire prevention and fire protection.
   b. Specimens of insulating and fire-resistant materials.
   c. Motion pictures, lantern slides, etc., on fire prevention and fire protection.

D. Evidences of Mastery
   1. Reasonable achievement of the above understandings, habits, and skills.
      a. Objective measurements
         1) Satisfactory ratings on standardized achievement tests or other objective tests for this unit.
      b. Subjective measurements
         1) Favorable appraisal by the teacher.
         2) Favorable reports from parents and others.

E. Bibliography
   1. References for Pupils
      a. See references for Unit V - Intermediate Grades.
      b. Kreml, F.M., Stiver, D.F., Rice, T.B.
         Public Safety.
         The Bobbs-Merrill Co., Indianapolis, Ind., 1937.
      c. Gentles, H.W., and Betts, G.H.
         Habits for Safety.
         The Bobbs-Merrill Co., Indianapolis, Ind., 1937.
      d. Matthews, J.C., Risinger, J.L., and Wilson, Jimmie.
         Safety On We Go.
         Banks Upshaw & Co., Dallas, Texas, 1938.
e. Nelson, Florence, Jamison, O.G., and Sparks, R.E.
Safety through the Year.
f. United State Department of Agriculture, Forest Service.
Taming Our Forests.

2. References for Teachers

while in Unit V. See references for Unit V - Primary Grades and for Unit V - Intermediate Grades.

3. References for Teachers

Appendix A and for Unit V - Intermediate Grades.

Major Conclusions

As the main aim of the Project is to provide for boys and girls aged 10 to 15 years, the conclusions for this chapter

...and for Unit V - Intermediate Grades.

...and for Unit V - Intermediate Grades.
CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

At the inception of this study a survey was made of the accident situation in the United States as a whole and in Arizona in particular. The history of the safety movement was also studied. This was preliminary to the real purpose of this study, namely, to build a program of safety education for the elementary schools of Arizona.

From the data presented the following conclusions have been drawn.

Major Conclusions

1. In the early history of the United States the factor of safety was largely neglected and safety education, as we know it today, was conspicuous by its absence.

2. An aroused public opinion finally forced legislation to protect the worker in industry.

3. New inventions and discoveries, while adding materially to man's comfort and enjoyment, have also added new hazards to his life.

4. Nearly one hundred thousand lives are lost each year in accidents and nearly nine million non-fatal injuries sustained, many of which cause permanent disability.

5. Occupational accidents took 16,500 lives in 1938 and injured 1,350,000 persons.

6. Motor vehicles head the list of principal causes for accidental deaths. In 1938 motor vehicles killed 32,400 persons and injured 1,150,000.

7. The death rate in Arizona in motor vehicle accidents is one of the worst in the nation.
8. Each year since 1933 some 200 persons have been killed in motor vehicle accidents in Arizona.

9. Maricopa and Pima County together had about sixty percent of the total motor vehicle accidents in Arizona in 1938 with about fifty-two percent of the total motor vehicle traffic.

10. Some sparsely populated counties in Arizona had a high fatality rate in motor vehicle accidents in 1938.

11. Some of the smaller cities in Arizona had a higher death rate in motor vehicle accidents than some of the larger cities had.

12. Collisions between motor vehicles caused about half of the total motor vehicle accidents in Arizona in 1938.

13. About one person in five of those killed and about one person out of ten of those injured in motor vehicle accidents in Arizona in 1938 was a pedestrian.

14. About one person out of six of those killed and about one out of two of those injured in motor vehicle accidents in Arizona in 1938 was riding in another motor vehicle at the time of the accident.

15. About one out of every four motor vehicle accidents in Arizona in 1938 was a non-collision accident where the car left the highway due largely to excessive speed. This type of accident caused half of the deaths that year in motor vehicle accidents.

16. Motor vehicles are the prime cause of serious bicycle accidents. Ninety-nine bicycle versus motor vehicle accidents were reported in Arizona in 1938 of which four were fatal to the bicyclist.

17. About one half of our total motor vehicle accidents occur on state highways, one fourth on county roads, and one fourth within incorporated cities.

18. One of the most dangerous practices of pedestrians seems to be crossing streets between intersections. Two-fifths of the pedestrians injured in motor vehicle accidents in 1938 were hit while crossing streets between intersections. About one fourth were hit while crossing streets at intersections where there was no signal. About one eighth were hit while walking in the roadway.
19. In the nation at large, agricultural pursuits claim more lives through accidents than any other one industry. Farm machinery and farm animals cause one half of these deaths.

20. Drowning is the most important single cause of death in public accidents aside from motor vehicles for the country as a whole. About thirty persons per year meet death by drowning in Arizona.

21. The decline in the accidental death rate for the age group between the ages of five to fourteen years is encouraging. The accidental death rate for this group declined thirty-two per cent from 1922 to 1938, which is a far better record than that for any other age group. Such a decline might reasonably be attributed to safety education in the elementary school since safety education in organized courses was taught for the first time in 1922.

22. The two chief causes of home accidents are falls and burns. The accidents in Arizona are the identical causes of accidents in industries. This is an indication that the average home is just as dangerous as the average industry.

23. The conception that education for safety can reduce the number of accidents is gradually being developed throughout the nation. Almost every school in the state makes an effort to teach students how to protect themselves from accidents. The Program of Safety Education

The present study was undertaken in an attempt to build a program of safety education for the elementary schools of Arizona. In the statement of the problem, this question was asked: What are the objectives of safety education as found in studies made by investigators of the subject?

Two excellent sets of statements of the general objectives of safety education appear elsewhere in this study. Briefly the general objectives of safety education, as they appear in these and other such sources, are: to educate students to recognize and accept responsibility for safety; to encourage students to use foresight in selecting appropriate safety measures; to build a cooperative program of safety education between school and home; to develop desirable character traits through the teaching of safety; and to help students to develop a realistic concept of accident prevention.
statements are:

1. To develop habits of thought and action so that accidents may be avoided.

2. To create desirable attitudes toward:
   a. Law and law enforcement.
   b. Personal safety and the safety of others.
   c. Cooperation with organized efforts for the promotion of safety.

3. To develop skills and habits of conduct which will function quickly and intelligently in the presence of actual hazard.

By analyzing the accident situation in Arizona and by comparing this situation with the accident situation for the country as a whole, the following conclusions were drawn:

1. Motor vehicle accidents in Arizona are the principal cause of accidental deaths and injuries. This is true for the nation as a whole.

2. Arizona has a much higher accidental death rate from most kinds of accidents than the average for the nation as a whole.

3. These facts indicate the need for safety education against virtually all classes of accidents in Arizona.

The second question to be answered is: Which of the objectives of general safety education apply particularly to Arizona? On the basis of the three conclusions just stated, the writer believes that the general objectives of safety education are entirely applicable to Arizona. No particular general objective can be said to apply to Arizona more than another.

What apparently is the best way to attain these objectives in the elementary schools of Arizona? Opinions vary. In some elementary schools, safety education is organized as a separate subject. In other
In schools it is correlated with other subjects in the curriculum. If the school curriculum is organized so that subject matter is integrated, then safety education would need to be integrated. If separate subjects are taught, then safety education might have a distinct place in the curriculum, but correlated with the other subjects of the curriculum wherever possible.

Responsibility for the safety program in the school may be placed on one or more of the following persons:

- Superintendent
- Principal
- Assistant principal
- Director of physical education
- Classroom teacher
- School nurse
- Safety supervisor
- Others

The data given show that the major responsibility for the safety program in the elementary school is most likely to be placed on the classroom teachers and on the principal.

Methods used in teaching safety in the elementary schools vary considerably. Some of the techniques commonly used are the following:

1. Dramatizations of safety lessons and safety plays.
2. Safety discussions.
3. Motion pictures on safety.
4. Pupil monitors and patrols.
5. Lectures by firemen, traffic officers, etc.
7. Library and leisure-time reading of pamphlets and booklets on safety.

Most of the courses of study in safety education which the writer examined make use of these methods. These methods are also recommended by competent specialists in the field of safety education for use in the elementary school. Other suggested technics for teaching safety are the school assembly, the school newspaper, the radio, and participation in community safety programs.

Assistance in making the safety program effective may be had from agencies like the following.

- National Safety Organizations
- Automobile associations and clubs
- Officers and staff of local school systems
- Insurance companies
- State departments of education
- Chamber of Commerce
- Manufacturers of automotive and safety equipment

What tentative standards of attainment should be set up in a program of safety education for the elementary schools of Arizona? The specific objectives sought in the teaching of safety should be stated in the form of understandings, attitudes, habits, and skills, or a similar arrangement. The pupils should attain a reasonable standard in these. The specific objectives should be based primarily on local needs.

What methods of measurement should be outlined? Standardized tests in safety education are now obtainable. Objective tests on safety appear frequently in some of the educational magazines. The teacher may prepare objective tests of her own. Subjective measurements may supplement these objective measurements. Such subjective measurements may include the teacher's appraisal of the pupil's accomplishment in
Major Recommendations

The recommendations which the writer makes here deal with safety education at the elementary school level. He has not attempted to make recommendations for the pre-school, high school, or adult age groups. The recommendations are set forth in the following statements.

1. More importance should be placed on the teaching of safety throughout the elementary school.

2. Each school should adopt a program of safety education which takes into account the needs of the community. No one course of study in safety education is adaptable in its entirety for all the elementary schools of Arizona. Local conditions, such as the size of the community, the location, the climate, the terrain, as well as differences in the type and the size of the school and the way the school is organized, must be taken into account in order to have an effective and well-organized program of safety education.

3. Some one person should be responsible for the organization, coordination, and operation of the safety program in each school or school system.

4. This person should have special training in safety education so that he can make the safety program effective.

5. He should know what specific objectives in safety education are to be taught, how these objectives are to be taught, and who is to teach them.
6. He should know the most effective teaching aids to employ and the sources from which materials on safety may be obtained.

7. Definite standards of achievement in these objectives should be set up and provision made for measuring this achievement objectively as well as subjectively. This is true and equally vital.

8. The classroom teacher should be held responsible for a large share of the actual instruction in safety, but she should be guided and helped by the director of the school safety program.

9. Provision should be made for special training in the teaching of safety for those responsible for the safety program. A part of this training may well come during the regular school year by means of faculty meetings, attendance at lectures, personal study, etc.

10. The departments of education in the two teachers colleges and in the University of Arizona should offer courses in safety education during the summer session as well as during the regular academic year. The Arizona State Teachers Colleges at Flagstaff and at Tempe are already offering some courses in safety education.

11. School Safety Patrols, Junior Safety Councils, bicycle clubs, and the like should be organized in the schools whenever possible.

12. An accident reporting system should be employed in each school and school system in order that the information needed to counteract these accidents may be available.

13. A continuous program of accident prevention should be in operation in each school. This program should enlist the cooperation of
everyone connected with the school.

14. All school buildings, playgrounds, and equipment should be made reasonably safe and maintained that way.

15. The school should cooperate in every way toward making the community a safer place in which to live and enjoy life.
BIBLIOGRAPHY

A. Books


10. National Safety Council

11. Owen, Helen M.
   Safety Activities for All Grades.

12. Payne, E. George
   Education in Accident Prevention.
   Lyons and Carnahan, Chicago, 1919.

13. Telford, Marian
   Safety Education Methods, Elementary School.
   National Safety Council, Chicago, 1940.

14. Telford, Marian

Books for Pupils

15. Boy Scouts of America
    Official Handbook for Boys.
    Boy Scouts of America, New York, 1935.

    The Road to Safety Series.
    Away We Go, a pre-primer.
    Happy Times, a primer.
    In Storm and Sunshine, first grade.
    In Town and Country, second grade.
    Here and There, third grade.
    Around the Year, fourth grade.
    On Land and Water, fifth grade.
    Who Travels There, sixth grade.

    The Health and Growth Series.
    Good Habits, third grade.
    Living Healthfully, fourth grade.
    Wise Health Choices, fifth grade.
    Health Problems, sixth grade.
    Adventures in Health, seventh grade.
    Health Knowledge, eighth grade.
18. Dean, Leora and Emig, W. J.
With Mother Goose in Safety Land.

19. Fowlkes, J. G., Jackson, L. Z., and Jackson, A. S.
The Healthy Life Series.
Healthy Bodies, third grade.
Healthy Growing, fourth grade.
Keeping Well, fifth grade.
Healthy Living, sixth grade.
Success Through Health, seventh grade.
Making Life Healthful, eighth grade.

20. Gentles, H. W., and Betts, G. H.
Habits for Safety.

Girl Scout Handbook.
The Girl Scouts, Incorporated, New York, 1933.

22. Hayne, Ralph A.
Stop Carelessness! Prevent Accidents!
International Harvester Company, Chicago, "n.d."

23. Kreml, F. M., Stiver, D. F., and Rice, T. B.
Public Safety.

24. Matthews, J. C., Risinger, J. L., and Wilson, Jimmie
Safely On We Go.
Banks Upshaw and Company, Dallas, 1938.

25. Nelson, Florence and Cottrell, H. L.
Safety through the Year, Intermediate Grades.

Safety through the Year, Junior High School Grades.

27. Towse, A. B., and Gray, W. S.
Health Stories, Book I.
Scott, Foresman and Company, Chicago, 1939.

28. Towse, A. B., Matthews, F. E., and Gray, W. S.
Health Stories, Book II.
Scott, Foresman and Company, Chicago, 1934.
29. Towse, A. B., Matthews, F. E., and Gray, W. S.
   Health Stories, Book III.

30. Waldo, Lillian
   Safety First for Little Folks.

31. Williams, Jesse F., and Dansdill, Theresa

32. Williams, Jesse F., and Dansdill, Theresa
   Health and Service.

33. Wilson, Jimmie, Risinger, M. M., and Johns, G. O.
   Around the Year with Safety.
   Banks Upshaw and Company, Dallas, 1939.

B. Courses of Study

34. Board of Education, Kansas City Public Schools
   Safety in the Curriculum, Elementary Schools.
   Kindergarten, Grades I-VI.
   Board of Education, Kansas City, Missouri, 1937.

35. Board of Education, Olney, Texas
   A Tentative Teachers Manual in Safety Education for
   Elementary and Junior High Schools.
   Board of Education, Olney, Texas, 1938.

36. Board of Education, Portland Public Schools
   Safety Education
   Board of Education, Portland Public Schools, Portland, Me., 1930.

37. Cleveland Safety Council
   Safety Education, A Course of Study for Elementary
   and Junior High Schools.
   Cleveland Safety Council, Cleveland, Ohio, 1937.

38. State of Arizona, Department of Education
   Course of Study for Elementary Schools of Arizona,
   Bulletin No. 9, Health and Physical Education.
   The Department, Phoenix, Arizona, 1935.
39. State of Iowa, Department of Public Instruction
   Safety Education, Courses of Study for Grades and High School.
   The Department, Des Moines, Iowa, 1932.

40. State of Michigan, Department of Public Instruction
   Education for Safety.
   The Department, Lansing, Michigan, 1936.

41. State of Oklahoma, Department of Education
   Tentative Instructional Units in Street and Traffic Safety
   Education for Junior High Schools.
   The Department, Oklahoma City, Oklahoma, 1936.

42. State of Rhode Island, Department of Education
   A Course of Instruction in Safety Education for the Schools
   of Rhode Island.
   The Department, Providence, Rhode Island, 1936.

43. State of Utah, Department of Public Instruction
   Safety Education in the Elementary Schools of Utah.
   The Department, Salt Lake City, Utah, 1935.

44. University of the State of New York
   A Tentative Guide in Safety Instruction for the Elementary
   and Secondary Schools in New York State.

45. West Virginia State Department of Education
   The Department, Charleston, West Virginia, 1936.

46. Wyoming State Department of Education
   Health Education Including Safety, Grades I to VIII,
   Course of Study for Elementary Schools.
   The Department, Cheyenne, Wyoming, 1937.

C. Publications of Learned Organizations

47. Arrowsmith, Mary N.
   "The Subject Matter of Safety Education."
   Twenty-fifth Yearbook of the National Society for the Study
   of Education, Part I.

48. Bennett, Richard O.
   "The Bicycle and Traffic Safety."
   A Thesis Prepared to Fulfill the Requirements of the Kemper
49. Carr, William G., Director
"Safety Education thru Schools."

50. Hanna, Paul R., Chairman
"Safety."

51. Hill, Henry H., Chairman
"Safety Education."
Eighteenth Yearbook, American Association of School Administra-
tors, 1940.

52. Ireland, Allen
"The School's Contribution to Traffic Safety."
Proceedings of the National Education Association, 1937.

53. Porter, Harry H., Chairman
"Chemical Tests for Intoxication."
Report of the Committee on Tests for Intoxication;
Street and Highway Traffic Section, National Safety Council,
Chicago, 1938.

54. Price, William N., Statistician
"Analysis of Motor Vehicle Accidents for the Year 1938."
Traffic Engineering Division; Arizona State Highway Department,
1939.

55. Tucker, Harry, Chairman
"Prevention of Night Accidents."
Report of the Committee on Night Accident Hazards, Street and

56. Whipple, Guy M., Chairman
"The Present Status of Safety Education."
Twenty-fifth Yearbook, Part I, National Society for the Study
of Education, 1926.

57. Wilbur, Ray Lyman, Chairman
"Safety Education in Schools."
Report of the Subcommittee on Safety Education in Schools, White
House Conference on Child Health and Protection.
58. Austin, William Lane, Director
"Mortality Statistics."
United States Department of Commerce, Bureau of the Census,
31st. - 37th. Annual Reports.

59. Bruere, Martha Bensley
"Taming Our Forests."
United States Department of Agriculture, Forest Service.

60. Lynch, A. R., Special Counsel
"Laws of the State of Arizona Relating to the Arizona State Highway Department Including Motor Vehicles and Their Use and Operation upon Public Highways."
Arizona State Highway Department, Phoenix, Arizona, 1938.

61. MacDonald, Thomas H., Chief
"Highway Accidents, Their Causes and Recommendations for Their Prevention."
United States Department of Agriculture, Bureau of Public Roads.

62. Moore, A. Harry, Chairman
"How to Stop Home Accidents."
United States Department of Commerce, Accident Prevention Conference.

63. Moore, A. Harry, Chairman
"How to Stop Farm Accidents."
United States Department of Commerce, Accident Prevention Conference.

64. Steuart, W. M., Director
"Mortality Statistics."
United States Department of Commerce, Bureau of the Census,
28th. - 30th. Annual Reports.

E. Bulletins

65. Arizona State Board of Education
School Transportation Regulations
66. State of Arizona, Department of Education
Recommendations for School Shop Safety.

67. American National Red Cross
Group Discussion Material on Accident Prevention in the Home
and on the Farm.

F. Periodical Articles

68. Bruner, H. B.
"Criteria for Evaluating Course-of-Study Materials."
Teachers College Record; 39:109-120, (Nov., 1937.)

69. Cottrell, H. Louise
"Learn to Swim."
Safety Education; 19:406-407, (May, 1940.)

70. Cottrell, H. Louise
"Vacation Safety."
Safety Education; 18:312-313, (May, 1939.)

71. Fishbein, Morris
"Poisons at Home."
Hygeia; 11:970, (Nov., 1933.)

72. Graves, G. W.
"The Hazards of Camp Life."
Hygeia; 17:614-617, (July, 1939.)

73. Harrison, Russell F.
"Defensive Cycling."
Safety Education; 19:2-3, (Sept., 1939.)

74. Telford, Marian
"Holiday Hazards."
Safety Education; 18:306-307, (May, 1939.)

75. Telford, Marian
"It Happened at Home."
Safety Education; 19:246-248, (February, 1940.)

G. Encyclopedia Articles

76. Farquhar, S. Edgar, Managing Editor
"What is Fire?"
77. Farquhar, S. Edgar
"First Aid to the Injured."

78. Ford, Guy Stanton, Editor-in-Chief
"What Fire Is and How It Serves Man."

79. Ford, Guy Stanton
"The Fire Department."

80. Ford, Guy Stanton
"First Aid."

81. Ford, Guy Stanton
"How We Can Aid in Fire Prevention."

82. Thompson, Holland and Mee, Arthur
"When the Fire Alarm Rings."

83. Thompson, Holland and Mee, Arthur
"Can A Fire Light Itself?"

H. Monographs

84. Telford, Marian
"A Safety Program for the Elementary and Junior High Schools."
Education Memo No. 1, March, 1939.
National Safety Council, Education Division, Chicago.

I. Miscellaneous

85. American Automobile Association
Loose-Leaf Lessons in Safety Education.
American Automobile Association, Washington, D.C., 1940.

86. Good Housekeeping Institute
Safety in the Home.
Good Housekeeping Institute, 57th St. at 8th Ave.,
New York, N. Y., 1937.

87. Grayson, Cary T., Chairman
Injuries in the Home and on the Farm; How They Are CAUSED AND
and How They Can Be Prevented.

88. Metropolitan Life Insurance Company
   How Safe Is Home?
   Metropolitan Life Insurance Company, New York, "n.d."

89. Metropolitan Life Insurance Company
   First Aid.
   Metropolitan Life Insurance Company, New York, "n.d."

J. Films

90. American Automobile Association
   "Heedless Hurry - Endless Worry."
   16 mm., sound (1 reel)
   Distributor: American Automobile Association, Washington, D. C.

91. Automobile Club of Southern California
   "Why Be a Goose?"
   16 and 35 mm., silent (1 reel)
   Distributor: National Safety Council, Chicago.

92. Canadian National Government
   "Enemy of the Forest."
   16 mm., silent (1 reel)
   Distributor: University of Arizona, Extension Division, Tucson, Arizona.

93. Cycle Trades of America
   "Bicycling with Complete Safety."
   16 mm., sound (1 reel)
   Distributor: University of Arizona, Extension Division, Tucson, Arizona.

94. Eastman Kodak Company
   "Street Safety for Primary Grades."
   16 mm., silent (1 reel)
   "Street Safety for Advanced Grades."
   16 mm., silent (1 reel)
   Distributor: Iowa State College, Ames, Iowa.

95. Eastman Kodak Company
   "Fire Prevention."
   16 mm., silent (1 reel)
   "Fire Protection."
   16 mm., silent (1 reel)
   "Fire Safety."
   16 mm., silent (1 reel)
"First Aid; I - Care of Minor Wounds."
16 mm., silent (1/4 reel)
"First Aid; II - Carrying the Injured."
16 mm., silent (1/4 reel)
"First Aid; III - Life Saving and Resuscitation."
16 mm., silent (1 reel)
Distributor: University of Arizona, Extension Division,
Tucson, Arizona.

96. Metropolitan Life Insurance Company
"Once Upon a Time."
16 and 35 mm., silent or sound (1 reel)

97. National Education Association
"Speaking of Safety."
16 mm., silent (1 reel).
Distributor: University of Arizona, Extension Division,
Tucson, Arizona.

98. Standard Fire Insurance Company
"The Bad Master."
16 and 35 mm., silent or sound (1 reel).
Distributor: Standard Fire Insurance Company,
(Affiliate of the Aetna Life Insurance Company), Hartford,
Connecticut.

K. Lantern Slides

99. National Conservation Bureau
"Primary Play Safety."
"Fire Prevention."
"Home Safety."
"Safety in Play and Recreation."
"Safety in Baseball."
"Learning Skills of Road."
National Conservation Bureau, 60 John St., New York.
Some Organizations Distributing Safety Films and Slides

The films from each source are classified as to type, size, and the charge for use. The general subject of the films is also indicated. For more complete information on available films, lantern slides, etc., teachers should write to the various sources for catalogues and lists.

Key to Abbreviations

16 - 16 mm.  so - sound  f - loaned free
35 - 35 mm.  l - lantern slides  c - service charge
si - silent  sos - sound slides  r - rental
Street and highway safety, driver training.

Sources

   16, 35, so, si, l, f
   Street and highway safety, fire prevention, driver training.

   16, so, si, sos, f
   Street and highway safety, driver training.

3. Bell and Howell, Film Library Division, 1801-15 Larchmont Avenue, Chicago, Illinois.
   16, si, r
   Bicycle safety.

4. Chrysler Corporation, Plymouth Division, Detroit, Michigan.
   16, so, f
   Street and highway safety.

5. William M. Dennis Film Libraries, 2506 1/2 W. 7th Street, Los Angeles, California.
   16, so, r
   Bicycle safety (one picture)
   16, 35, si, f
   Distributes "Speaking of Safety," film sponsored by Department of Visual Instruction of the National Education Association.

   16, 35, si, so, f
   Street and highway safety.

8. General Motors Corporation, Detroit, Michigan.
   16, 35, so, si, f
   Street and highway safety, driver training.

   16, 35, so, si, l
   Street and highway safety, driver training.
   Distributes to out-of-state schools.

    16, 35, so, si, sos, f
    Street and highway safety.

    1, sos, f
    Street and highway safety, fire prevention, miscellaneous safety lantern slides.

    16, 35, si, so, f
    Fire prevention.

    16, 35, si, film strips, r
    Street and highway safety, first aid.

    16, si, film strips, r
    First aid, miscellaneous subjects in film strips.
   sos, f
   Street and highway safety, vocational safety.

   16, si, r
   Street and highway safety, fire prevention, first aid.

17. **University of California**, Extension Division, Berkeley, California.
   16, so, si
   Fire prevention, first aid, driver training
   Distributes to California, Oregon, Washington, Utah, Nevada, New Mexico, and Arizona.

   16, si
   Street and highway safety, fire prevention, first aid, driver training.
   Distributes to out-of-state schools.

   16, 35, si, f
   Street and highway safety, first aid, driver training.

20. **United States Department of Agriculture**, Division of Motion Pictures, Washington, D.C.
   16, 35, so, si, l, f
   Fire prevention (films prepared primarily for extension service, loaned to schools when copies are available.)