

AN ABSTRACT OF THE THESIS OF

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Title A PROPOSED DRIVER EDUCATION PROGRAM FOR THE KERN
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America's progress in the field of technology has been a symbol of "social growth". In the case of the automobile the loss of human life and property has placed a stigma on this growth. The causes of automobile accidents have long been diagnosed as human failures rather than mechanical or road failures.

Since education deals with human behavior, it seems natural that education for safe driving should develop as a function of the public schools. Because driver education and driver training are relatively new, there is still a question concerning the most satisfactory place for them in the curricular programs. Programs have been in operation throughout the nation, with different degrees of emphasis and with adaptations to the local situations.

The Kern County High School District is in need of a satisfactory driver education and driver training program. "Driver education" is in the curricular programs on a hit-or-miss basis, to fulfill requirements of the state law, but "driver training" is offered only in the Bakersfield High School.

An investigation of nationally approved programs in driver education and driver training, and different plans of operation tried out by the Bakersfield High School, resulted in recommendations for a proposed program of driver education and driver training for the Kern County Union High School District. Recommendations and proposals growing out of the investigation are:

Adequate classroom facilities should be provided to create a pleasant learning atmosphere.

One person should be responsible for coordinating all the driver education activity throughout the district, and one person within each school should be responsible for all driver education activity in that school.

Each school in the district should include driver training in its overall driver education program.

All driver education and driver training instructors should have a desire to instruct driver education and should be qualified by having received special instruction in it.

Students should be rewarded for having taken driver education by receiving graduation credit.

Driver education should be given in the sophomore year.

The most desirable arrangement for offering driver education is to assign the student for a full semester to driver education; if this is not possible, the next best is to assign students from study hall.

There should be a minimum of thirty hours devoted to driver education, followed by thirty hours of driver training, of which $7\frac{1}{2}$ hours are behind the wheel in a dual-control car.

The most effective placement of driver training in the curricular program is by assigning eligible students from study hall periods.

Driver education and driver training for adults should be offered under the adult education program.

A PROPOSED DRIVER EDUCATION PROGRAM
FOR THE KERN COUNTY, CALIFORNIA,
UNION HIGH SCHOOL DISTRICT

by

WILBUR LELAND TURNEY

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TABLE OF CONTENTS

Chapter		Page
I	INTRODUCTION	1
	The Need for Driver Education	4
	The Kern County High School District	5
	Purpose of the Study	5
	Statement of the Problem	6
	Terminology	7
II	HISTORICAL BACKGROUND OF THE DRIVER EDUCATION MOVEMENT	8
	Chronicle of the Automobile	8
	Social Implications of the Automobile	9
	Industrial Safety	10
	Traffic Safety	12
	Driver Education	15
	California	19
	Kern County	21
III	A NATIONWIDE STUDY OF ACCEPTED DRIVER EDUCATION PRACTICES	23
	Approved Scheduling of Driver Education	27
IV	A STUDY OF NATIONALLY ACCEPTED DRIVER TRAINING PRACTICES	31
	Adult Programs	35
	Newark, Delaware	35
	Detroit, Michigan	35
	Minneapolis, Minnesota	36
	North Carolina	36
	Equipment and Facilities	38

TABLE OF CONTENTS (CONTINUED)

Chapter		Page
V	A STUDY OF ADMINISTRATIVE PRACTICES IN DRIVER TRAINING	40
	Port Neches High School Plan	41
	The Sommers Method	42
	The Home Cooperation Plan	43
	Crozier High School Plan	43
	Salinas Union High School Plan	44
	Sears Plan	45
	A Developed Plan	47
	Huntington Beach Union High School Plan	48
	McKinley High School Plan	48
	Pennsylvania State College Plan	49
	Bakersfield High School Driver Training Programs	49
VI	RECOMMENDATIONS AND PROPOSED COURSES	59
	Recommendation I	59
	Recommendation II	60
	Recommendation III	60
	Recommendation IV	60
	Recommendation V	60
	Recommendation VI	61
	Recommendation VII	61
	Recommendation VIII	61
	Recommendation IX	61

TABLE OF CONTENTS (CONTINUED)

Chapter	Page
Recommendation X	62
Recommendation XI	62
Proposed Driver Education Course .	63
Proposed Driver Training Course .	74
BIBLIOGRAPHY	95
APPENDIX	103

LIST OF TABLES

Table	Page
I Order of Frequency of Units in Driver Education	26
II Driver Education is Offered as a Unit in the Following Courses	30
III A Comparative Study of Neyhart's Sixteen Units with Those of Other Authorities and Agencies	33
IV Driver Training is Offered as a Unit in the Following Courses	34

A PROPOSED DRIVER EDUCATION PROGRAM
FOR THE KERN COUNTY, CALIFORNIA,
UNION HIGH SCHOOL DISTRICT

CHAPTER I

INTRODUCTION

In the last fifty years a fundamental and far-reaching change has taken place in our means of transportation. It is now possible in the United States for the entire population to be transported at one time by automobile without the assistance of railroads, airplanes, streetcars, and inter-urban lines. In California it is possible to transport the entire population of that state in the front seats of their automobiles.

The automobile supplies the need of transportation which has been felt since man developed the desire to move from one location to another. Because of the automobile, greater changes have occurred in transportation in the last three decades than occurred in the entire history of the world prior to that time. There is little in our present-day social order that has done more to our mores and folkways than the automobile. It plays an important role in our national economy as well as the national survival in time of war.

One can readily grasp its broad general significance as a major instrument in molding civilization within the

WILL BROWN 8202

past four decades. This result of man's creative ingenuity makes one wonder why man still strives to create more power until he becomes master of the present product. He must come to realize that there is a moral responsibility in controlling this power, a machine that is just as capable of devastating life and property as well as of adding to our convenience and comfort. He has accepted it as a mechanical slave, but instead of becoming the master is often, himself, relegated to the position of slave. The automobile comes to man as a fine, smooth-running piece of machinery capable of performing with the utmost efficiency. There is one thing missing, however, and that is the human operator. Far too often this human element consists of an inferior being with physical or emotional instability, not capable of safe operation of the machine.

Science has developed infallible means by which the automobile can serve its function to man, but it will never completely develop an infallible means to eliminate the intangible known as accident. To eliminate the human element would be impossible, but the human element and its operation of the automobile can be improved upon through the process of education.

Youth is endowed with a certain amount of impetuosity. It would be absurd to stifle this dynamic force. Restraint should be by use of this vigorous energy through constructive channels. Thrill stimulation is no stronger in youth

today than it was during the horse and buggy era. Those who are quick to criticize and condemn youth for foolhardy actions have forgotten their own youth. Those intangibles called thrill and daredevilness are ever present in the teenager, but today's instruments for creating thrills are capable of more destruction.

More than thirty-four thousand killed and one million injured in a year does not reveal the true picture of economic loss, social distress, and human suffering which the highway accident toll exacts. In terms of economic loss alone, more money is dissipated in this one destructive channel than is spent for the support of the entire public school system. Young people are the greatest contributors to this waste. Records show that drivers from sixteen to nineteen years old are involved about nine times more often than drivers of the age group from forty-five to fifty. Theoretically, the drivers of high school age should be among the best and safest drivers. Psychophysical tests show that their reflex action, muscle coordination, and eyesight are better than those of other age groups.

The insurance companies, governed by facts and figures, almost refuse to insure the young driver. Father's car insurance premium goes up about 25 per cent when his teen-age son or daughter is permitted to drive the car.

Education is the most powerful force in the shaping

of tomorrow's citizens. Is the educational program serving its purpose of educating for the future and preparing for living unless it helps youth to attain the competency required for the operation of automobiles without accident?

The Need for Driver Education. The need to meet the pressing problem of safe driving challenges the high schools. High schools are the best equipped educational agencies to deal with youth. These schools can provide the sequence of learning experiences for car drivers at an age where the need exists.

Recent legislative enactment in California makes it mandatory that a course in driver education be offered in all secondary schools. In order to be qualified for graduation, a student must have completed a course in driver education. The law has merit, but falls short in that it fails to provide a place in the curriculum or funds by which to administer the driver education course. This has worked an undue hardship on most administrators and in many cases has completely defeated the purpose of the legislation. Often the course is given daily during part of the lunch hour which naturally causes antagonism on the student's part and develops a negative attitude which is sometimes worse than no instruction at all. Consequently, the instructor is presented with a challenging problem in trying to inculcate a good attitude and a sincere desire for safe driving practices.

The Kern County High School District. The Kern County Union High School District is situated in the southern end of California's San Joaquin Valley. The general organization is effected through a union high school with a district superintendent as the chief executive officer. All activity is considered a means to an end, that of assisting the educational staff to educate children--the real purpose for which the schools exist. The physical make-up of the district consists of seven high schools, one junior college, and an evening high school. The high schools range in size from an enrollment of about sixty students to that of about four thousand. The main source of income for the district is from agriculture and petroleum. Kern County produces more cotton than any other county in the United States.

The Bakersfield High School, with its enrollment of about four thousand students, is the hub of all district activity. The other schools in the district often find themselves looking to the Bakersfield High School for guidance and direction. Anything new to the educational system of the county is usually tried out there first, then recommended to the smaller schools.

Purpose of the Study. Driver education has been offered for quite some time in the schools of the district, to comply with the law requirements. Driver training was

offered in the fall of 1949 in the Bakersfield High School, in addition to the classroom instruction. The courses were completely new, and since there was no place for them in an already overloaded curriculum, there were many problems to be solved. These problems are not new to the driver education area but must be solved locally. Each administrative area presents its own problems.

Statement of the Problem. The real problem is to develop a satisfactory operative program for driver education and training, with a minimum expenditure, particularly to develop forms and procedures for:

1. Maximum use of dual-control training cars on a district basis.
2. Individual school scheduling for:
 - a. Driver Education
 - b. Driver Training
3. Adaptable daily lessons for supervised road instruction.
4. Adaptable forms for driver training program:
 - a. Individual car records
 - b. Individual student records
 - c. Behind-the-wheel policies
 - d. Psycho-physical test records
 - e. Psycho-physical test interpretation
5. Permanent records and filing system.

6. Teacher selection and education for supervised road instruction.
7. Classroom program without the supervised road instruction, to comply with state law.

Terminology. The term "driver education" is used as a general term pertaining to all of the educational ramifications of the automobile. This includes the classroom and laboratory instruction as well as the behind-the-wheel road instruction. In this study the term "driver education" will be used to denote the classroom instruction without behind-the-wheel road instruction. The term "driver training" will refer to the separate behind-the-wheel road instruction in dual-control automobiles.

CHAPTER II

HISTORICAL BACKGROUND OF THE
DRIVER EDUCATION MOVEMENT

For history can be written in many ways-- in the chronicles of kings, in the prayers of priests, in the blood of battles, in the ledgers of merchants.

But, best of all, it can be written in terms of travel and transport. Always and everywhere, from the earliest human annals until today, men have tended to wander. Curiosity has led them to travel. Profit has prompted them to find means for carrying their goods from place to place. Eager thirst for knowledge has found means for conveying ideas swiftly to all men everywhere. (15, p.1)

Our present education for safe operation of the automobile is preceded by a series of activities covering an era which began when the first power-operated vehicle was conceived.

Chronicle of the Automobile. Steamed propelled vehicles were the forerunners of the motor car and enjoyed a lengthy history before the advent of the internal combustion engine. During the early nineteenth century, in England, steam railways exercised strong influences on highway transportation; in fact there was a short time in which it was doubtful which type of driving force would take the lead in automotive development--steam, electric, or gasoline (internal combustion) power. It was not long before the gasoline engine demonstrated its superiority and engineers concentrated on its development (15, p.35).

America has no claim on the invention of the gasoline engine and the first automobile. In 1862, Lanoir mounted a gasoline engine (which he had been using to drive lathes and printing presses) in a carriage and, using street gas for fuel, drove about the streets of Paris.

A German, Gottlieb Daimler, developed a comparatively lightweight gasoline engine with a high rate of speed and burned gas from oil. In 1887, he used it successfully in a motor car.

Charles and Frank Duryea lay claim to the first successful American motor car, built in 1892 in Springfield, Massachusetts (15, p.36).

Although certain men are identified as being the first in some phases in the progressive development of the automobile, the car is actually a composite of many ideas and inventions.

In 1895, there were four automobiles in the United States. These were capable of doing eleven miles per hour. An indication of the phenomenal development in automotive engineering within the last fifty years lies in the recorded speed of 394.2 miles per hour obtained by John Cobb in 1947 (5, p.398).

Social Implications of the Automobile. As the automobile continued to make rapid mechanical changes in America, it also caused a rapid social and economic change.

Society has come to depend so largely on the automobile that it is sometimes thought of as the fourth necessity headed only by food, shelter, and clothing. No other single element in American life provides employment for more people than does the automobile. One out of every seven salary checks comes either directly or indirectly from the automobile. Every walk of life is in some way touched or influenced by the automobile, whether it be a trip to the grocery store or a trip across the continent. Business activity as well as leisure time activity is in most cases centered around the automobile. The one-room "little red school house" has all but disappeared because of the vast pupil movement on school buses. The farmer ceases to be a walking farmer but goes from A to B sitting down, as does his city brother. America is now a nation on wheels.

Industrial Safety. A look into the industrial accident prevention crusade will give a better understanding of the traffic safety campaign.

No specific time or act can be given when the industrial safety movement began, but the year 1912 is pretty well established as the foundation. It was during this time that labor made a strong appeal for workman's compensation laws, and the highway safety crusade soon began to appear in many of the states. There are four recognized stages of industrial safety progress. The "Bird cage

stage" involved the theory that if every piece of machinery with exposed hazards could be caged, accidents would be reduced. Next came the "Horror stage." It was believed that the solution to accident reduction was to use posters and photographs showing mangled hands, stub arms and legs, and in general play upon the psychological emotions. This stage was highly significant to the traffic safety campaign and is still being used today. The "Safety talk stage" represented a time when management designated people to "preach" to the workers. There is some doubt about its results, but it is identified with the beginning of safety education (44, p.10).

These stages of safety activity reduced the accident rate about 10 per cent, which at that time was a notable achievement in terms of lives saved and injuries prevented.

The big progress in industrial safety did not materialize until management and labor got together with the realization that the "individual" was the most important one to safeguard. These other approaches gave the worker the feeling that it was for "the other fellow, not me." Unfortunately, that attitude has not been completely erased and still prevails, not only in industry but with automobile drivers (44, p.10).

Judge Gary, head of the country's largest steel corporation, United States Steel, startled the industrial

world by issuing 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 (37, p.99).

Soon afterward the "First Cooperative Safety Congress" was held at Milwaukee, Wisconsin, in the fall of 1912. Committees from the electrical engineers and other groups formed the National Council for Industrial Safety in 1913. A year later it took the name of National Safety Council, and through the years it has been a strong force in safety promotion (37, p.101).

The improvement of the industrial accident problem served to give great impetus to the traffic accident problem.

Traffic Safety. Certain limitations were imposed upon the movement of traffic, but the restrictions were not highly organized or widely practiced. In areas of large traffic concentration the need for restrictions was great. Key gives an account of the first traffic regulations:

Although there were a number of regulations with regard to road and street use included as city and state laws prior to the time when automobiles came into general use, it was not until 1903 that the first Police Traffic Code was prepared by William Phelps Eno under the title 'Rules for Driving' and adopted by the City of New York (44, p.12).

Hughes relates an approach to the growth of public awareness of traffic accidents:

This was done largely through magazine articles of the day. Such an examination reveals the number and nature of these articles for the period from 1900 up to the present time.

Prior to 1925, we find relatively few articles dealing with automobile accidents. For the period 1904 to 1919, there were no articles dealing with the subject recorded in the Reader's Guide. For the period 1904 to 1919, there were just nineteen articles appearing for the benefit of the general public (39, p.427).

From 1920, the newspaper and magazine articles continued to increase. In tone, the articles continued to change from mild suggestions of the problems, the cultural aspects, and psychology of the operator, to violent consequences and vivid descriptions of accidents. Other media took up the crusade and spared no recourse to expound the bloody gospel, as this emotional epic was unfolding itself in America. This has been called the "Scare method" and dates from the early thirties to about 1936. By that time statistical agencies had been able to survey the results of the "Scare campaign" and took a dim view of what they saw. It had served a purpose in bringing the traffic problem to the attention of the public, but it could not be given credit for cutting down the accident rate. During that same period of time organized agencies were formed, such as the National Conference on

Street and Highway Safety, automobile insurance companies, state motor-vehicle departments, and police organizations.

Those who were responsible for creation and promotion of the automobile came to the realization that they had a responsibility to society, to stem the tide of human suffering. The leading manufacturers of automobiles got together in what is now called the Automotive Safety Foundation.

These manufacturers advocated a new technique of safety education, based on the theory that before there can be a cure of an evil, there must be an understanding of the causes and circumstances (39, p.434).

The National Conservation Bureau, supported by sixty insurance companies and other safety promotion agencies both on the national and local levels, came to the realization for the first time that accidents could and must be reduced. From their combined studies they divided the causes of accidents into three main factors which have served largely as a basis of attack on the problem. Their studies reveal:

1. The car itself is seldom responsible for accidents and has a history of continued safety improvements. The automobile manufacturers have pledged themselves not to mention speed in their advertising of new models.
2. The roads, although primarily built for horse and buggy, or for slower moving motor vehicles, were being used by faster traffic which contributed to accidents.

Road engineering although making progress was lagging behind current needs.

3. . . . most accidents today can be traced to poor driving techniques. It is here, then, that most attention so far as the general public is concerned must be and is being centered. Many agencies are cooperating in the drive to better educate the American public in the techniques and methods of safe driving habits. The public school has come to be considered as one of the best and logical places in which to conduct this education (39, p.428).

Driver Education. The public was made aware of the evil, and experts had diagnosed the major causes. The question remained: What is the solution? As automobile production mounted, the need for operators mounted. Where was this operator to gain the knowledge to properly handle the car? Did he just get in and drive off with the complete assurance and knowledge deemed necessary? Chances are that the dealer took him around the block and pointed out some of the bare essentials to get the car in motion and to come to a stop. From then on it was trial and error. The trial and error method eventually produced enough competence, whether good or bad, to get by. When the occasion arose to pass on the acquired knowledge, both the good habits and poor habits were passed on.

Josephine Nelson sums it up in the following statement:

Haphazard methods of driver instruction did well enough in the days when the real danger was from runaway horses that had become frightened by the unfamiliar sight and sound of an automobile. Now, however, with 41,000,000 cars forming what is often a bumper-to-bumper parade across the nation, the story is different (62, p.201).

No specific date is recorded as to when driver education was first organized. The idea formed in the minds of many throughout the nation. Some realized the need and touched upon it in social science classes; for others, it was an outgrowth of the automotive shop program or an organized safety program. It remained a local item and went no further. Raymond Green shows us how he observed the beginning of one program:

In 1923, in my civics class, we studied the state regulations and rules of the road, purely as a problem of good citizenship development and as a matter of looking after one's self, a sort of self-conservation idea. By 1925, the course developed into a program including an anti-thumbing-of-ride campaign. Enthusiasm mounted in the youngsters; they were eager to emphasize better living through ways more practical than mere textbook routine. With this development of civic interest came bicycle licensing and greater emphasis on driver education, to the point that during the depression an experiment in practice driving was conducted in conjunction with the Harvard University Bureau of Traffic Research (34, p.166).

Konold reveals an account of how driver education grew out of a school safety program:

. . . driver education has grown out of the program of Safety Education within our schools. A perusal of state requirements in Safety Education would show us that as

early as 1929 instruction in Safety Education became a state requirement, but the general inclusion of Safety Education first became common practice about 1935. Just as some states included the requirement of safety instruction in their schools, so many states now are beginning to require instruction in Driver Education. The majority of states now have permissive legislation or instructional units included in state courses of instruction recommended to school districts (45, p.198).

Engstrom indicates in his study that some schools conceived the idea of driver training rather early:

Driver training is not a new field in the high schools of the nation. The city of Gilbert, Minnesota, offered this type of course as early as 1921. It was not until the early and middle thirties, however, that the movement actually began to receive an encouraging national response. . . . 1936, far-seeing educators in New Hampshire made such a course obligatory (24, p.46).

Driver education has spread fast throughout educational endeavors since its first conception. One of the most prominent figures in the early pioneering of driver education is Amos E. Neyhart, who is credited with developing a workable driver training program. Hughes gives the following account of Neyhart's first work:

He conceived the idea that since sound training was successful in producing more skillful workmen and reducing accidents in factories, a training plan for automobile drivers should produce the same results. Investigating the methods then in use preparing persons to drive, he discovered that little, if any, systematic instruction of drivers was available. And pedagogically important, he found that the beginner acquired not only the good habits but the bad habits of his instructor (39, pp.428-434).

Neyhart's work did not stop with just the idea. He has worked consistently for the past twenty years in order that all secondary schools will some day include driver education in their curricular programs. He has championed the cause more than any one individual. He established the first teacher training program at Pennsylvania State College, during the 1933-34 term. One of the things that held up the progress of driver education in the early beginning was the fact that there were no qualified instructors. Neyhart has been giving teacher-education seminars throughout the country in the past several years.

It is gratifying to know that traffic safety is making progress as shown by the Collier Encyclopedia which states:

. . . It must be remembered that the death figure of 30,000 per year, represented, in 1928, 16.2 deaths per 100,000,000 vehicle miles, but only 7.4 deaths per 100,000,000 vehicle miles in 1949 (17, p.251).

Further proof of the widespread acceptance of driver education and driver training is shown by Bish in his statement:

Driver education is currently winning the approval of secondary-school administrators throughout the country. During the past fifteen years, driver education has grown from a suggested supplement to the high-school curriculum, considered then by many as an extraneous frill, to a place today of recognized status. In 1951, driver training is a valid part of the total training for citizenship in some forty of the forty-eight states and in nearly all of the larger city public school systems. Moreover, there is considerable evidence to indicate that a driver education program can turn out

better and safer drivers. A few insurance companies are of the opinion and are giving reduced rates to teen-age drivers who have completed an accredited course in driver education (14, p.200).

California. California educators in keeping with the national thinking recognized the educational implication of motoring safety. In the mid-thirties, some secondary schools were becoming safety conscious and included in their social science or industrial arts courses a unit on safety. The emphasis was primarily on traffic safety. This movement began to generate about the same time throughout the state, without any recognized leader or uniformity of content. No textbooks were available; only bulletins, statistical reports by insurance companies, emotional magazine articles, automobile users' handbooks, and state vehicle codes. California school administrators became aware of the movement and recognized the outstanding work of the school systems at Los Angeles, San Francisco, and San Diego.

In 1936, the California State Department of Education published a manual of "Traffic Safety for California Secondary Schools." In 1939 and 1940, Dr. Frank K. Foster headed a large committee to make an extensive survey of driver education in California.

With the help of the Southern California Automobile Club, a few schools introduced driver training in their programs. The schools either bought their own cars or, in

some cases, worked in conjunction with the California Highway Patrol.

The war curtailed the driving activity, but the class-room work continued to grow. After the war, when automobiles again became available, the American Automobile Association made it possible for secondary schools to obtain automobiles from dealers on a loan basis. By 1948, the trend toward driver training in secondary schools had been established.

Herbert Morey gives an account of the compulsory driver education law in California:

In June, 1947, the California State Legislature passed a law making it legal for Driver Education and Training to be taught in California schools, but the effectiveness of the law was nullified by a clause making it mandatory to teach Driver Education to all students if it were taught to any. As a result of the impracticability of the law, most larger school districts terminated all classes of Driver Education or Driver Training.

A State Committee for Driver Safety Education was appointed by the California Association of Secondary School Administrators to study the situation and see what could be done to remedy an unsatisfactory stalemate. . . .The State Committee soon came to the conclusion that a substitute bill amending the new law would be necessary if Driver Instruction were to be conducted in the schools of California. The author of the bill, the State Committee, and representatives of the California State Department of Education met at intervals for more than a year to prepare a new bill that would be acceptable to all parties and to write a Guide for Driver Education and Driver Training. The new guide was published

in November, 1948, and the new bill amending the Education Code was passed by the Legislature in January, 1949.

Under the amended law, all school districts in the state of California are required to teach Driver Education to all pupils enrolled in regular day high schools prior to their graduation. Relief was provided for districts unable to train teachers in time to meet the new requirement which became effective immediately. Special power was granted to the State Department of Education enabling it to grant an exemption to one or more of the schools within a district provided that said district presents 'a good and sufficient reason' (54, pp.i,ii).

Mushlitz gives the following figures for the school year 1951-1952:

. . . note that 113,686 high school youths will have received instruction in the classroom phase of this program, and 28,634 will have received some 'behind-the-wheel' training (55, p.1).

Kern County. Kern County Union High School was early to foresee the need of education and understanding of the problems being brought on by the automobile.

During the mid-thirties, Harry Drennan and Harold Pauley, autoshop instructors, the latter also in charge of the school transportation system, introduced a course in driver education at the Kern County Union High School. They gave to those students who were desirous of learning, not only the mechanical aspects of the automobile but also the rules, regulations, and social implications of the overall problem. At that time education concerning the automobile beyond the technical, mechanical knowledge was

not widely practiced and authoritative literature was not available.

These two instructors, through their own foresight, were able to develop a program which included such things as: road safety and good attitude, California laws of the road, and the make-up of the automobile. This program was primarily for students in the autoshop, but, eventually, it was expanded to include girls and others.

The instruction gradually narrowed to the point where only instruction in the California laws, road safety, and proper attitudes were given by Irving Lane, an industrial arts instructor. When Mr. Lane left the Kern County Union High School,¹ the driver education program was again taken over by Mr. Pauley. He continued with it until June, 1949. In September, 1949, Mr. Bonar headed the driver education program and included driver training within it.

All the schools in the district are now (1952) giving the classroom instruction. The Bakersfield High School is also experimenting in driver training, including behind-the-wheel experience in dual-control cars.

¹ The name, Kern County Union High School, has since been changed to Bakersfield High School.

CHAPTER III

A NATIONWIDE STUDY OF ACCEPTED
DRIVER EDUCATION PRACTICES

During the 1949-50 school year, 551,280 high school students received instruction in driver education in the United States. Of these, 250,000 were given behind-the-wheel training (68, p.24). The courses ranged from a one- or two-hour lecture period per week to five periods per week, for a full semester of eighteen weeks.

During the 1951-52 school year, California gave classroom instruction to 113,686 high school students, and 28,634 received behind-the-wheel training during the school year. In the same year, Kern County Union High School District gave classroom instruction to approximately 2,100 students and behind-the-wheel training to 427 students. The compulsory driver education law in California does not require behind-the-wheel training, nor does it specify a required number of hours for driver education.

It is noted that the number of students receiving instruction in driver education far exceeds the number receiving behind-the-wheel training. The National Conference on High School Driver Education, held at Jackson's Mill, West Virginia, in October 1949, recommends:

A complete driver education program includes both classroom instruction and practice driving. While the classroom phase by itself is of definite value, it

is recognized that if all the objectives of driver education are to be achieved, practice driving must be an integral part of the program (58, p.31).

The greater number of students receiving driver education than driver training can be explained by the fact that driver education is easier to administer, the cost per pupil is much less, and the course or unit outline has been standardized to the point that almost any teacher, if necessary, can present the information without special training.

A thorough examination of recommended courses in driver education, by recognized authorities, will portray the items generally considered in developing a typical driver education course content.

To determine the units most frequently recommended for incorporation into a driver education course, an investigation was made by the author of courses of study by the following authorities and agencies:

1. National Conference on High-School Driver Education, Jackson's Mill, West Virginia, October 1949 (58).
2. American Automobile Association, "Sportsman-like Driving" (5).
3. State of Delaware, Department of Public Instruction (75).
4. New York (State) University, "Driver Education and Training" (63).

5. National Commission on Safety Education of the National Education Association, "Let's Teach Driving" (57).
6. Stack, Herbert J., Elmer S. Siebrecht, and J. Duke Elkow, "Education for Safe Living" (72).
7. State of Oregon, "A Teacher's Manual" (26).
8. State of Texas, "Traffic Safety" (86).
9. Whitney, Albert W., "Man and the Motor Car" (85).
10. State of California, "Guide for Driver Education and Driver Training" (22).
11. State of Minnesota, "Lessons in Traffic Safety" (20).

Table I, immediately following, shows the results of this investigation, listing the frequency with which phase or "unit" of study appeared in the recommendations of the agencies or publications cited above.

TABLE I
ORDER OF FREQUENCY OF UNITS IN DRIVER EDUCATION

Number	Name of Unit	Frequency of Unit
1.	Physical qualifications of the driver	11
2.	Mental qualifications of the driver	11
3.	Traffic rules	11
4.	The construction and maintenance of the automobile	11
5.	Sound driving practices and driving skills	11
6.	Pedestrian responsibilities	10
7.	Law enforcement	10
8.	Traffic accidents	10
9.	Streets and highways, including history and engineering	9
10.	History and development of the automobile	9
11.	Social, economic, and political effects of the motor vehicle	8
12.	Bicycle safety	8
13.	Natural laws	6
14.	Map reading and interpretation of street and highway information	6
15.	The consumer and the automobile	6

Approved Scheduling of Driver Education. The course should be given at the grade level when most students will reach the legal driving age. The value of driver education is greatly diminished if it is given after the student has received his operator's license.

Preferred manner of scheduling, suggested by the National Conservation Bureau for placement of driver education in the school curriculum:

- a. As a complete separate course--classes meeting daily for six weeks, nine weeks, or a full semester.
- b. As a distinct unit in connection with Civics, Social Science, or Health Education.
- c. Scheduled to alternate with Physical Education classes.
- d. Classes substituted for study periods (59, p.8).

Time allotment for a driver education course, suggested by the National Conservation Bureau:

- a. For a complete course--daily classes for a full semester.
- b. An intensive arrangement of daily classes for four, five, or six weeks.
- c. One class period per week for a school year, as a unit in connection with other subjects.
- d. The same arrangement for one semester, for a shorter course (59, p.9).

The American Automobile Association recommends the following in order of effectiveness:

1. A separate course involving class instruction in driver education, followed by road instruction and practice, (*italics not in original quotation*) usually requiring five periods per week for a semester in the classroom and eight hours of behind-the-wheel instruction.
2. A separate course involving class instruction in traffic efficiency and safety, usually offered for one, two, or five periods per week for a semester, or for one period per week for a school year.
3. A general safety course in which part of the time, usually about 50 per cent, is devoted to traffic efficiency and safety, the remainder to home, school, recreation, farm, and vocational safety.
4. Correlation of traffic efficiency and safety content with other courses already established in the high school program of studies. This correlation is usually accomplished in one of two different ways:
 - (a) A unit or units on traffic efficiency and safety, usually requiring five periods per week for three, six, or eight weeks, are bodily inserted in the established course.
 - (b) Items of traffic efficiency and safety, in the home-room assembly, and co-curricular activities (6, pp.6-7).

The Eighteenth Year Book of the American Association of School Administration has the following to say about the inclusion of driver education in the curriculum:

Many teachers have developed units of study on the automobile which have been incorporated in an already existing course. While often such units must of necessity be brief because of the other demands upon the

course and while frequently the teacher of the course has had no special preparation in the field of driver education, many such units have proved to be successful. On the other hand, if the teaching of such a unit is imposed from without upon a teacher who feels that his course is already overcrowded and who in addition has no particular interest or aptitude for driver education, naturally only very mediocre results may be expected.

In selecting the course in which to include a driver education unit there are a number of points to be kept in mind: (a) Is the subject of such a nature that the unit will contribute in a general way to the primary objectives which the course is intended to achieve? Courses in science, health, social studies, and English have been the ones most frequently chosen. (b) Is the course one which all the pupils will take? Nearly all pupils will sooner or later become drivers and hence the unit should be incorporated in a required course. (c) Is the course located in the grade in which pupils are approaching or have reached driving age? This is the time when the pupil is most interested in the subject and when he will soon be able to practice what he has learned. (d) Is the teacher of the course interested in the subject of traffic safety and competent to teach it? (2, p.136)

From a survey made by the State of California Department of Education, under the direction of M. E. Mushnitz, a complete picture of the trends in driver education in California is shown by Table II (55, p.2).

TABLE II

DRIVER EDUCATION IS OFFERED AS A UNIT
IN THE FOLLOWING COURSES

<u>Subject</u>	<u>No. of Schools</u>	<u>Subject</u>	<u>No. of Schools</u>
<u>Social Studies:</u>	<u>265</u>	<u>English:</u>	<u>45</u>
Social Studies	90	English	41
Orientation	38	Language Arts	3
Senior Problems	22	American Literature	1
Social Living	21		
World History	19	<u>Miscellaneous:</u>	<u>22</u>
Social Science	14	Guidance	4
U. S. History	8	Physical Education	4
Civics	7	Homemaking	2
Senior Goals	6	Advisory	1
U. S. Government	5	Afterschool	1
American Problems	3	Applied Mathematics	1
Basic Course	3	Boys' Agriculture	1
Citizenship	3	First Aid and Life	
Freshman Problems	3	Saving	1
Social Goals	3	Individual	1
Social Problems	3	Personal Development	1
Basic Class	2	Personal Management	1
Problems of Democracy	2	Personal Safety	1
Sophomore Goals	2	Safety	1
World Geography	2	Special	1
American History	1	Study Hall	1
Civil Government	1		
Consumer Living	1		
Core	1		
Current Problems	1		
Living in Society	1		
Modern Living	1		
Tenth Core	1		
World Heritage	1		
<u>Science:</u>	<u>60</u>	<u>Note:</u>	The total of these figures will not equal the total number of schools, since some schools offer the in- struction in more than one subject.
Science	20		
General Science	11		
Biology	10		
Life Science	7		
Healthful Living	4		
Health	3		
Health and Safety	2		
Hygiene	2		
Physical Science	1		

CHAPTER IV

A STUDY OF NATIONALLY ACCEPTED
DRIVER TRAINING PRACTICES

Any person who has operated an automobile for a long period of time experiences little difficulty in going through the operation required to satisfactorily manipulate a motor vehicle. Seldom does one find a person who can chronologically relate the steps involved in driving an automobile. In teaching a skill, the instructor must be able to tell a person "what to do," and show him "how to do it." Since the advent of the driver-training movement, much consideration has been given to the processes involved in the correct operation of the motor vehicle. Neyhart is recognized as being the first to make an analysis of the processes. Since then, others have modified Neyhart's units by going into more detail or less detail, according to their own purposes.

In order to determine typical units, the author made a comparison of nationally accepted authorities and agencies, with Neyhart's sixteen units on driver training (2, pp.157-160). The frequency with which the units were mentioned served as a basis for comparison. It was noted in viewing the courses of studies that few went into as much detail as did Neyhart.

Table III shows Neyhart's sixteen units and the frequency of mention of each, as a basis for comparison

with the instructional units from the ten courses of study listed immediately following:

1. State of Minnesota, "Lessons in Traffic Safety" (20).
2. State of California, "Guide for Driver Education and Driver Training" (22).
3. State of Texas, "Traffic Safety" (86).
4. State of Oregon, "Teacher's Manual" (26).
5. Stack, Herbert J., Elmer B. Siebrecht, and J. Duke Elkow, "Education for Safe Living" (72).
6. National Commission on Safety Education of the National Education Association, "Let's Teach Driving" (57).
7. New York (State) University, "Driver Education and Training (63).
8. National Conference on High School Driver Education Jackson's Mill, West Virginia, October, 1949 (58).
9. Whitney, Albert W., "Man and the Motor Car" (85).
10. Lauer, A. R., "Learning to Drive Safely" (48).

TABLE III

A COMPARATIVE STUDY OF NEYHART'S SIXTEEN UNITS
WITH THOSE OF OTHER AUTHORITIES AND AGENCIES

Number	Name of Unit	Frequency of Unit
1.	The driver's compartment	8
2.	How the automobile runs	8
3.	Check up on the car and the driver and starting the engine	10
4.	Starting, steering, and stopping the car from low gear	10
5.	Shifting from low to second gear and stopping from second gear	7
6.	Shifting from second to high gear and stopping from high gear	7
7.	Starting the car in low gear, then shifting to second and on to high gear within the prescribed time and distance; and stopping the car from high gear. Steering in a straight line with the left or right wheels on the line. Stopping the car in the "nose." Using the proper hand signal for stopping on the street or high- way. Weaving between stanchions.	4
8.	Shifting from high to second gear and shifting from second to low gear. Mak- ing emergency stops.	6
9.	Backing, steering, and stopping in reverse gear. Placing the car in the "nose" backward. Weaving between stanchions backward.	10
10.	Making a right-hand turn and a left- hand turn and using the correct hand signal before the turn is made.	8
11.	Turning the car around.	6
12.	Parking in a short space between other cars and angle parking.	10
13.	Stopping and starting on an upgrade, backing on an upgrade, parking on an upgrade and downgrade.	8
14.	Open highway driving	9
15.	City driving	10
16.	Driving skill tests	1

A look at Table IV (55, p.4), compiled for the California State Department of Education by M. E. Mushlitz, shows the trends in California for the placement of driver training in the curriculum of California secondary schools.

TABLE IV
DRIVER TRAINING IS OFFERED AS A UNIT
IN THE FOLLOWING COURSES

<u>Subject</u>	<u>No. of Schools</u>	<u>Subject</u>	<u>No. of Schools</u>
<u>Study Hall</u>	<u>64</u>	<u>Physical Education</u>	<u>39</u>
<u>Miscellaneous:</u>	<u>50</u>	<u>Driver Education</u>	<u>26</u>
Afterschool	18	<u>Social Studies:</u>	<u>26</u>
Shop	6	Orientation	6
Any	5	Social Studies	6
Non-college prep	3	Senior Problems	5
Home Economics	2	World History	3
Varies	2	Basic	2
Activity Period	2	Social Living	2
Assigned	1	Citizenship Problems	1
Any by arrangement	1	Social Science	1
Library	1		
Summer	1	<u>Music:</u>	<u>4</u>
All 10th grade		Band	3
subjects	1	Chorus	1
First two periods	1		
Non-academic	1	<u>Science:</u>	<u>4</u>
No particular	1	Health and safety	3
Various subjects	1	Biology	1
Lunch period	1		
Crafts	1	<u>English</u>	<u>3</u>
Typing	1		

Note: The total of these figures will not equal the total number of schools, since some of the schools offer the instruction in more than one subject.

Adult Programs. People are too often unjustly condemned for their driving. Many persons, even though they have the desire, cannot learn the proper aspects of driving because there are no available sources of instruction. The only alternative for these people is to turn to unreliable methods and eventually reap the condemnations.

The philosophy of adult education is growing in popularity. Adult driver training is finding its place in the adult education programs throughout the nation.

. . . fifteen high schools in Indiana and Illinois have already begun driver training in adult evening classes (78, p.89).

An idea as to what can be done in adult training is shown by examining the following programs:

Newark, Delaware

. . . the course, similar in content to that conducted by the State Department of Public Instruction, consisted of both classroom work and practice driving. Ten two-hour classes, or twenty hours of classroom instruction were offered. Two instructors were used in giving the course. Mr. Andrew P. Marcantonio taught both the class and road work, with assistance from Mr. Edward I. LeKites in the road training phase of the course. Thirty-four adults were enrolled in the course with twenty-four completing the course and receiving their licenses (2, p.117).

Detroit, Michigan

Traffic safety classes for adults were started in Cass Technical Evening School, Detroit, Michigan, in February 1936. They operated four nights a week from 7:30 to 9:00 with two to five teachers. The course comprised two sessions of one night each. Upon completion of each session a stamped certificate was

given the student. Two of these certificates are accepted in lieu of an examination when the student applies for a driver's license. The first session in 1936 had an attendance of 10,596 adults, and the second had an attendance of 8,698. The outline of the course was as follows:

Session I

1. Introduction
2. Accidents--Causes and Results
3. Driving Rules and Skills
4. Required Equipment on Automobiles

Session II

1. Detroit Traffic Ordinance
2. State Automobile Laws
3. Psychology and Personality of the Drivers
4. Responsibilities of Drivers and Pedestrians
5. A Summary of Driving Rules (2, pp.200-201).

Minneapolis, Minnesota

A course in safe driving is offered as a part of the adult education program of the Minneapolis public schools. The eight-week course, conducted in four centers, covers correct attitude, courtesy, and sportsmanship in driving. Practical instruction is given in maintenance and mechanics of the auto, signs, signals, right of way, and the relationship of the pedestrian to the driver. The course is supplemented by guest speakers, group discussion, visual presentation, and sound films. Actual demonstration in safe driving is given in a dual-control car.

As a part of its program of work with parents, the Minneapolis public schools encourage parents to teach their children in driving and have published and use a course for parents on "How to Teach Your Child to Drive" (2, p.201).

North Carolina

These schools are open to any adults over sixteen who wish to learn how to drive or how to become better drivers.

Each unit of the safe driving schools lasts three weeks. Students must enroll during the

first two days or wait until the opening of the succeeding unit. The classes are two hours in length and are held during the afternoon and evening from Monday through Friday. The same students do not attend both classes although they meet together on Saturday morning for a two-hour period. The enrollment is limited to twenty-five for the afternoon and twenty-five for the evening group.

Students receive thirty-four hours of instruction during the three weeks. Twenty hours are given to the study of motor vehicle laws and the mechanics of automobiles, and fourteen to the actual operation of automobiles. Literacy classes for those who cannot read the highway signs are planned in centers where this type of instruction is needed. Twenty lessons on highway signs have been developed, for use in such literacy groups. The schedule of the three-week course in the safe driving schools is as follows:

First week:

Enrollment--Saturday, following the close of each class
 Monday, Tuesday, Wednesday, and Thursday of the first week--classroom instruction in motor vehicle laws and the mechanics of an automobile
 Friday--demonstration of mechanics of automobile, actual observation of the working parts of a car
 Saturday--review

Second week:

Monday and Tuesday--driving practice
 Wednesday--classroom instruction
 Thursday and Friday--driving practice
 Saturday--classroom instruction

Third week:

Monday and Tuesday--driving practice
 Wednesday--review
 Thursday--examination
 Friday--culminating activity and presentation of certificates (2, p.206-207).

Equipment and Facilities. The important item in conducting a course in driver training is the dual-control automobile. There are several ways to secure automobiles for driver training. One method is to purchase the automobile to be used for this purpose. When this is done, it is wise for a school or a district to standardize its painting scheme, as the State of Delaware recommends:

All cars were painted white, with the hoods painted a dark green, and lettered in green, signifying them as instruction cars. Each car was equipped with dual footbrakes and clutch (73, p.120).

Renting a car from a dealer or an agency is a possibility but not too practical. There have been cases where the highway patrols or the city police have furnished squad cars to give behind-the-wheel instruction. This is a very economical method, but the lack of dual controls diminishes its effectiveness. The most satisfactory method is the American Automobile Association's dealer-loan arrangement. The American Automobile Association, the dealer, and the school enter upon an agreement. The dealer agrees to furnish the school with a late model car, equipped with dual controls, for a period of one school year. The school agrees to maintain the car for one school year and return it to the dealer at the end of that time, in the same condition as when received, except for normal wear. The agreement usually requires regular servicing of the car, at school expense.

A driving range close to school is conducive to a good program. The driving range is used for the student to practice the first manipulative exercises, before he ventures onto the streets and traffic. If a driving range is not feasible, then it should be arranged with the local police department to have a street blocked off for training exercises.

A classroom devoted entirely to driver education and driver training should be situated so that it is accessible to the dual-control cars. The classroom should be equipped with filing cabinets for student records, psycho-physical testing equipment, posters, and a felt traffic board or in some cases a magnetic traffic board.

Stanchions are needed for training exercises on the driving range or practice street.

A brake-reaction detonator is necessary for testing the reaction time and braking distance of a student.

ADVANCE BOND

WILLIAM BROWN

CHAPTER V

A STUDY OF ADMINISTRATIVE PRACTICES
IN DRIVER TRAINING

Even though the value of driver training is recognized by an administrator and he has a desire to incorporate it in the curricular program, it is often difficult to accomplish.

Urlaub makes the following observation:

Any program that has grown as rapidly as driver education during the past few years is certain to be in the stage of experimentation. Time will tell what are the desirable and practical methods and procedures to use, and they will become standardized and established programs. In the meantime, we must make progress, continue to experiment and look for the best in contemporary programs and incorporate with necessary adaptation into our own program (82, p.245).

Table III shows most of the authorities are in agreement as to the units to be covered in driver training programs. However, the methods to achieve these units vary a great deal.

Many ambitious driver training instructors, with a firm conviction in driver training and a desire to do a better job with limited facilities, have produced some unique results. In some cases an entirely different program was the outgrowth of one individual's idea. The idea, plus experimentation and modification, has sometimes produced outstanding programs. Other satisfactory programs have resulted from the combined thinking of many.

Most of the following programs have gained national prominence and are representative of programs in driver training administration.

Port Neches High School Plan

The plan of teaching driver education in the Port Neches (Texas) schools is in most respects no different than the plan used by other Texas schools. But, by the use of advanced pupils as behind-the-wheel teachers, we have found a way to:

1. Reduce the cost of driver education to a point where the course is comparable in cost with other school courses;
2. Arrange the available car time so that every pupil enrolled has adequate behind-the-wheel training under proper supervision;
3. Cut, drastically, the natural tendency of young adolescents to show off.

The course lasts one-half year and is offered to students in the tenth, eleventh, and twelfth grades. There is a course of study furnished by the Texas Education Agency for our guidance.

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The use of student assistants was begun in 1948. Junior and senior students were selected. Up until the present time, only boys have been selected.

The following factors were considered in their selection.

1. Prior performance as a member of a driver education program.
2. General sense of responsibility to the whole school program.
3. General intelligence and understanding.
4. History as a good citizen and prestige in the school and community.
5. Ability to command respect of other students.

6. Ability to get along with other students.
7. Interest and desire to be of service with no reimbursement.

These students are chosen at the beginning of each semester. A maximum of four per semester has been our needs. After the students have been selected, these steps are usually followed:

They are given special training by the driver training instructor who works very closely with them discussing the fine points of road training and outlining their general responsibility (31, pp.24,25,and40).

The Sommers Method

The Sommers method was developed at Sommers Trade School, Pittsburgh, Pennsylvania. By this method the training preliminary to driving is also given in the classroom. In the front of this classroom are six demonstration cars, complete with engines, jacked up on blocks. These cars can be started and the wheels turned in gear. An exhaust system is installed to provide for the removal of all dangerous exhaust fumes. Students receive preliminary instruction on these demonstration cars, on procedure in starting a car, shifting gears, clutch action, etc. Thus when they have mastered these techniques, they are ready for road training.

Road training is given in a dual-controlled training car with an instructor supervising at all times. This portion of the training is similar to that recommended by Professor Neyhart and the American Automobile Association.

One definite advantage of the Sommers method is the fact that the preliminary training in the classroom shortens considerably the time of orientation in the dual-control car since the demonstration cars are similar to the driving cars. By this method the number of students practicing at any one time is limited to six, although any number can observe while the six are practicing (84, p.24).

The Home Cooperation Plan

The American Automobile Association also has developed a plan . . . In addition, the Association provides coordination charts, to coordinate the classroom units with the home driving lessons. The classroom instruction and the home driving progress together. A letter is provided to be sent to the home as an introduction and in explanation of the program, requesting the attendance of all home supervisors at a meeting at the school. At this meeting, of the classroom teacher with the home driving supervisors, the program is explained thoroughly and questions of the home supervisors are answered by the classroom teacher. A guide entitled "Hints to the Home Instructor" (7) is given out to each prospective instructor. A standards and check list is provided for each lesson for the home instructor to check. A certificate of completion is furnished for each pupil, to be signed and sent back to the classroom instructor, when the course is completed.

At the end of the tenth home lesson, it is urged that a driving skill test be provided and preferably administered by the classroom teacher of driver education. The car for this purpose would have to be borrowed from a dealer, an automobile club, or some other interested agency, if each pupil did not furnish his own car. The American Automobile Association stresses the fact that this plan of home and school cooperation is not intended to replace their program where the school does the entire job of teaching both the classroom and the driving lessons, which in their estimation is far the best method.

Today, many schools in various states have followed one of these plans of home cooperation. Some of the high schools in New Orleans are now following such a plan. The Department of Education of the State of Minnesota suggests to their high schools that the road driving instruction be given by the home (84, pp.29-30).

Crozier High School Plan

The aim of the course is to develop judgment and driving skill, courtesy, and a correct driving

attitude. It is divided into three parts: classroom instruction, practice--car driving, and driving range instruction. In the classrooms, equipment with all kinds of road signs, posters, and driving--testing devices, the students bone up on work--book problems designed to teach the what's and why's of safety and acquaint them with all traffic regulations.

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Testing devices are invaluable aids in determining mental and emotional characteristics, as well as certain deficiencies. Students are tested for quickness of reaction, depth perception, and other aptitudes.

After considerable study in the classroom, students are ready for the practice-car driving room, which is specially fitted with practice-car desks operating through an electric panel board. Here, students shift gears, brake, step on the gas, and the manner in which they perform these operations is shown on the electric panel board at the back of the room. To make driving more realistic, pictures are flashed on a screen. The practice-car driving room is also equipped with full-scale cutaway sections of automobiles.

Now students are ready to practice operating a motor vehicle on the paved driving range where cars with dual controls are used. Twenty tests, stressing fundamental techniques and operator's license requirements, must be mastered here. When the course has been completed successfully, the student is ready to apply for the Department of Public Safety driving test for an operator's license (53, pp.26-28).

Salinas Union High School Plan

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At first, there was one instructor who had received special training at a driver-education workshop at the University of California. The program of which he had charge included two hundred students scheduled in six classes. The school provided various psycho-physical devices.

During the first year of the courses the five new automobiles, which made the driver training possible, were donated by local Oldsmobile,

Pontiac, Chevrolet, Dodge, and Mercury dealers. The teacher was assisted by Sergeant Charles E. Garcia, Monterey County Office of the California Highway Patrol, and ten Salinas Junior College students who also served as bus drivers for the high school. The college men were granted special secondary credentials in public safety and accident prevention by the State Department of Education and were driver trainers to provide behind-the-wheel training with four students in each car at a time. Chief George Weight, Salinas Police Department, established restricted areas in which driver training cars operated.

During 1947-48, there were two regular high school instructors, twenty specially certificated driver trainers, eight automobiles for offering driver instruction. Two hundred students were trained each semester. This year we have four specially trained instructors. Two instructors give full-time service to the training program. One instructor gives the autoshop courses and the other the scientific and social instruction. Instead of the college student trainers, regular certificated substitute instructors are employed by the district to supervise classroom activities while the regular instructors give the behind-the-wheel training. This plan makes possible direct application of classroom instruction to the problem of driving an automobile (66, pp. 174-175).

Sears Plan

Another interesting development in driver training is the work begun in 1936 by William Sears in the Lane Technical High School in Chicago. Third-year students, usually 16 to 18 years of age, are required to spend an hour and a half a week for eighteen weeks in the driving course, which is a regular part of the school curriculum. The course is divided into three parts:

1. Six hours are spent studying safe-driving rules and motor vehicle regulations.
2. Seven and a half hours are spent training the students in the proper manipulation of the car controls, using dummy cars in the classroom.

The clutch, brake, and accelerator pedals and different gear positions are wired to a panel of electric lights in the front of the class. When a beginner fails to do the right thing at the right time, his mistake is indicated on the panel.

3. Thirteen and a half hours are devoted to actual driving practice on a specially built course which simulates city traffic condition. The average student learns to drive after covering 22 miles on this course.

The use of dummy cars in this course helps to reduce the time required for the actual driving instruction. In these dummy cars the student learns not only to operate the controls but to react correctly to traffic situations as depicted by moving pictures on a screen (21, p.288).

Having satisfied the instructor in this room that he understands his car and his duties, the student is given the third part of the driving course. He actually drives--alone on our specially designed track surrounded by a six-foot wire fence. This is to keep prowling youngsters, dogs, stray footballs, and experienced motorists out of his path so that he may be able to give his undivided attention to learning to drive.

Five boys are admitted to the track at a time. Each has a car to drive alone. It is probably the first time that some of them have been allowed to assume full responsibility in making and executing decisions without the interference of parent or teacher. Of course there is always an instructor on the grounds to check and advise the boy if necessary.

This track has standard city traffic lights at intersections, an incline, and other hazards and problems which may be met anywhere. The track is about 200 feet square, and a trip over the course is a little more than one-tenth of a mile.

The cars are inspected by the driver each time he drives. He notes the weather and the temperature.

He reports on the condition of the tires, fenders, bumpers, wheels, lights, oil and gas gauges, and ammeter. In almost two years of use we have had no accident on the track.

The average time spent by 400 students on the driving track was twelve clock hours, and the average mileage was 22.5 miles. The lowest time was three hours and the highest 19.5 hours. The shortest distance was 2.6 miles and the longest 51.9 (2, pp.165-166).

A Developed Plan

There are some specific administrative limitations which require perhaps some unorthodox procedures. For instance, during a forty-five minute period an instructor can give fifteen minutes of behind-the-wheel instruction to only three pupils. Two problems arise-- (1) how can a substantial number of pupils be given the minimum of six hours of driving experience and (2) what is done for those pupils during the periods when the instructor is giving behind-the-wheel training. Perhaps no completely satisfactory procedure has yet been found for all schools. But a number of rather promising procedures have been developed. The first problem is not difficult for a high school of 600 pupils or fewer, for one institution with five classes of twenty each totaling 100 pupils, will provide instruction for substantially all pupils as they reach the proper age. In large high schools with one instructor, a substantial number of pupils cannot be regularly enrolled. The second problem is not insoluble. Since classroom work usually precedes behind-the-wheel training, those pupils not with the instructor in the car can test and lead discussions of traffic procedures, using the magnetic board, to groups from study halls or even to pupils from certain classes who cannot be regularly enrolled. In most communities, dual-control cars are not difficult to obtain. Thus, during the early off-the-street stage, one instructor, using two cars, can supervise behind-the-wheel instruction given by carefully selected students. This procedure has been tried with encouraging results (14, pp.201-202).

Huntington Beach Union High School Plan

. . . the instruction was advanced to the sophomore level because of the age and experience of boys and girls; two instructors were engaged in the work concurrently, one with the classroom group, the other using the car, and both working the six periods of the school day. Actually, three instructors participate in the instruction working in pairs, each getting relief by teaching one or more other classes.

Enrollment in each class is limited to twenty students. Thus, with four students getting actual driving experience each day, each student has an opportunity to drive once a week for the eighteen weeks of the semester. The course offers 18 hours in the car and 72 hours of classroom instruction. The $4\frac{1}{2}$ hours behind the wheel cannot, of course, produce expert drivers. However, good supervised driving seems to be the best method of instruction. The average trainee, upon leaving our program, is capable of handling a vehicle and knows something of his own limitations (13, p.99).

McKinley High School Plan

McKinley High School, Washington, D. C., provided preliminary training in miniature instructo-cars built by the school. These cars were driven by individual electric motors controlled from the accelerator pedal which was coupled to a rheostat.

Then actual road work was conducted in a dual-controlled car in actual traffic, with an instructor supervising.

Thus by this method, classes in both preliminary work and driving instruction could be conducted simultaneously. However, the preliminary instruction was very artificial and provided very little carry-over as far as skill and "car feel" were involved in the manipulation of the controls (84, pp.25-26).

Pennsylvania State College Plan

The driver-training plan most widely used in secondary schools was developed by Amos E. Neyhart at Pennsylvania State College and has been further developed by the American Automobile Association in its national driver-training program. According to this plan, pupils practice in a car in groups of four with an instructor. The schedule calls for a series of teacher demonstrations and pupil practice lessons. The amount of practice required to make proficient drivers varies. One of the outstanding characteristics of this system is thoroughness, the theory being that if pupils are to be good drivers their driving habits and skills should be firmly fixed before their instruction is completed.

When this plan of training is followed, dual-control cars are used.

.....
After pupils reach a certain proficiency on the practice street, they drive on other streets in traffic, always in the presence of the instructor. The final step is a battery of driving tests which the pupil must pass successfully if he is to be given credit for completing the course (2, p.157).

Bakersfield High School Driver Training Programs.

In the fall of 1949, Bakersfield High School began its driver-training program. In want of a more satisfactory arrangement for offering driver training, the programs were varied each semester and their successes noted. The following represents an outline of the various programs used in the Bakersfield High School:

Fall Semester 1949

Students enrolled from: study hall

Periods offered: seventh period

Number of students enrolled: 36

Number of dual-control automobiles: 3

Number of regular-credential instructors: 1

Number of junior college student-instructors with an emergency credential, receiving \$2.00 per hour salary: 2

Amount of credit toward graduation: $\frac{1}{4}$

Number of hours in classroom: 25

Number of hours in car: 20

Number of hours behind the wheel: 5

Instruction breakdown: The regular instructor gives all classroom instruction and the behind-the-wheel instruction. The junior college student-instructors give only behind-the-wheel instruction.

Semester breakdown:

<u>Weeks</u>	<u>Groups</u>
6	classroom
4	one group of 12 students in cars two groups of 12 students in study hall
4	one group of 12 students in cars two groups of 12 students in study hall
4	one group of 12 students in cars two groups of 12 students in study hall

Desirable aspects:

1. All students are equally exposed to the same classroom material.
2. One-quarter credit given toward graduation.

Undesirable aspects:

1. The cars are idle for the first six weeks.
2. It does not make a desirable job for the non-regular instructors when they have to wait six weeks to begin working.
3. It is difficult to keep account of the students when transferring from driver training to study hall.
4. The time is too great for the last group of students, between the classroom work and behind-the-wheel experience.
5. There is not enough time behind-the-wheel.
6. Only those students with seventh period study hall are eligible to take driver training.
7. The three cars are idle six periods a day.

Fall Semester 1949

Students enrolled from: study hall

Periods offered: first period

Number of students enrolled: 36

Number of dual-control automobiles: 3

Number of regular-credential instructors: 1

Number of junior college student-instructors with an emergency credential, receiving \$2.00 per hour salary: 2

Amount of credit toward graduation: $\frac{1}{4}$

Number of hours in classroom: 25

Number of hours in car: 20

Number of hours behind the wheel: 5

Instruction breakdown: The regular instructor gives all

classroom instruction and the behind-the-wheel instruction. The junior college student-instructors give only behind-the-wheel instruction.

Semester breakdown:

<u>Weeks</u>	<u>Groups</u>
6	classroom
12	Out of every four days, each student has one day in training car, one day in classroom, and two days in study hall.

Desirable aspects:

1. The classroom instruction runs concurrently with behind-the-wheel instruction.
2. One instructor gives all the classroom instruction.
3. One-quarter credit given toward graduation.

Undesirable aspects:

1. The cars are idle for the first six weeks.
2. It does not make a desirable job for the non-regular instructors when they have to wait six weeks to begin working.
3. It is difficult to keep account of the students when transferring from driver training to study hall.
4. There is not enough time behind the wheel.
5. Only those students with study hall first period are eligible to take driver training.
6. The three cars are idle six periods a day.

Spring Semester 1950

Students enrolled from: study hall

Periods offered: sixth and seventh periods

Number of students enrolled: 36 each period

Number of dual-control automobiles: 3

Number of regular-credential instructors: 1

Number of junior college student-instructors with an emergency credential, receiving \$2.00 per hour salary: 2

Amount of credit toward graduation: $\frac{1}{4}$

Number of hours in classroom: 20

Number of hours in car: 20

Number of hours behind the wheel: 5

Instruction breakdown: The regular instructor gives all classroom instruction and the behind-the-wheel instruction. The junior college student-instructors give only behind-the-wheel instruction.

Semester breakdown:

<u>Weeks</u>	<u>Groups</u>
5	classroom
4	one group of 12 students in cars two groups of 12 students in study hall
4	one group of 12 students in cars two groups of 12 students in study hall
4	one group of 12 students in cars two groups of 12 students in study hall
1	catch-up

Desirable aspects:

1. All students are equally exposed to the same classroom material.
2. One-quarter credit given toward graduation.

3. The last week serves to equalize the time interrupted by assemblies.

Undesirable aspects:

1. The cars are idle for the first six weeks.
2. It does not make a desirable job for the non-regular instructors when they have to wait six weeks to begin working.
3. It is difficult to keep account of the students when transferring from driver training to study hall.
4. The time is too great for the last group of students, between the classroom work and behind-the-wheel experience.
5. There is not enough time behind the wheel.
6. Only those students with study hall sixth and seventh periods are eligible to take driver training.
7. The three cars are idle six periods a day.

Spring Semester 1951

Students enrolled from: study hall

Periods offered: sixth and seventh periods

Number of students enrolled: 36 each period

Number of dual-control automobiles: 3

Number of regular-credential instructors: 1

Number of junior college student-instructors with an emergency credential, receiving \$2.00 per hour salary: 3

Amount of credit toward graduation: $\frac{1}{4}$

Number of hours in classroom: 55

Number of hours in car: 30

Number of hours behind the wheel: $7\frac{1}{2}$

Instruction breakdown: The regular instructor gives all classroom instruction. The junior college student-instructors give all the behind-the-wheel instruction.

Semester breakdown:

<u>Weeks</u>	<u>Groups</u>
1	organization
5	one group of 12 students in cars two groups of 12 students in classroom
6	one group of 12 students in cars two groups of 12 students in classroom
6	one group of 12 students in cars two groups of 12 students in classroom

Desirable aspects:

1. One instructor gives all the classroom instruction.
2. Ample classroom time is allotted.
3. Ample behind-the-wheel instruction is allotted.
4. One-quarter credit given toward graduation.
5. The non-regular instructors wait only one week before going to work.
6. It is easier to keep account of students.

Undesirable aspects:

1. The first group of students receives less behind-the-wheel instruction than the other two groups.
2. It is difficult to coordinate the classroom material.

3. With some groups the classroom instruction is given after the behind-the-wheel instruction.

Fall Semester 1951

Students enrolled from: study hall and free periods

Periods offered: all eight periods

Number of students enrolled: maximum of 12 each period

Number of dual-control automobiles: 3

Number of regular-credential instructors: 5

Number of junior college student-instructors with an emergency credential, receiving \$2.00 per hour salary: 8

Amount of credit toward graduation: none

Number of hours in classroom: 5

Number of hours in car: 25

Number of hours behind the wheel: 6

Instruction breakdown: Each instructor gives classroom and behind-the-wheel instruction.

Semester breakdown: 12 new students each six-week period

<u>Weeks</u>	<u>Groups</u>
1	classroom
5	in cars
1	classroom
5	in cars
1	classroom
5	in cars

Desirable aspects:

1. Behind-the-wheel instruction is available to more students.
2. The cars are in use all eight periods.
3. It is easier to keep account of students.
4. The non-regular instructors go to work at the beginning.

Undesirable aspects:

1. There is insufficient classroom time.
2. There is no credit toward graduation.
3. The use of regular teachers as behind-the-wheel instructors in order to fulfill their teaching loads.

Spring Semester 1952

Students enrolled from: study hall and free periods

Periods offered: all eight periods

Number of students enrolled: maximum of 12 each period

Number of dual-control automobiles: 3

Number of regular-credential instructors: 5

Number of junior college student-instructors with an emergency credential, receiving \$2.00 per hour salary: 8

Amount of credit toward graduation: none

Number of hours in classroom: 5

Number of hours in car: 25

Number of hours behind the wheel: 6

Instruction breakdown: Each instructor gives classroom and behind-the-wheel instruction.

Semester breakdown: 12 new students each six-week period

<u>Weeks</u>	<u>Groups</u>
6	one day each week in the classroom four days each week in the cars
6	one day each week in the classroom four days each week in the cars
6	one day each week in the classroom four days each week in the cars

Desirable aspects:

1. Behind-the-wheel instruction is available to more students.
2. The cars are in use all eight periods.
3. It is easier to keep account of students.
4. The non-regular instructors go to work at the beginning.

Undesirable aspects:

1. There is insufficient classroom time.
2. There is no credit toward graduation.
3. The use of regular teachers as behind-the-wheel instructors in order to fulfill their teaching loads.

CHAPTER VI

RECOMMENDATIONS AND PROPOSED COURSES

Because of the difference in sizes of the schools in the district and in some cases because of their limited facilities, some of the recommendations are listed in accordance to predicted effectiveness under the local circumstances.

Recommendation I. Adequate classroom facilities for driver education should include:

1. One classroom devoted entirely to driver education and driver training, free from outside interferences, so that materials appropriate to driver education can be undisturbed. The room should be accessible to the training cars.
2. The room should be provided with the following equipment:
 - a. Tables and chairs for group discussions
 - b. Psycho-physical testing equipment
 - c. Tables for psycho-physical testing equipment
 - d. Projector table
 - e. Windows that can be blacked out and yet provide for adequate ventilation
 - f. Motion-picture screen
 - g. Bulletin board
 - h. Traffic signs and posters
 - i. Cut-aways of different parts of an automobile

- j. Felt or magnetic traffic board
- k. Sand box
- l. General Motor's charts
- m. Blackboard
- n. Bookcase
- o. Filing cabinet
- p. Teacher's desk

Recommendation II. One person should be in charge to coordinate all the driver education and driver-training activities in the school.

Recommendation III. There should be district coordination of driver education. The district should maintain a central agency for the distribution of supplies, materials, and teaching aids.

Recommendation IV. A driver-training program should function in every school in the district.

Recommendation V. An advanced driver training course should be provided for those not allowed in the basic training program, because they already possess operator's licenses.

Units to be included are:

1. Mountain driving
2. Getting car out of skid on wet or slippery surfaces
3. Night driving

4. Towing a trailer
5. Backing a trailer
6. Introduction to truck driving

Recommendation VI. Each instructor in the program should have a sincere interest in and desire to teach driver education and driver training. The instructors should be qualified with a background of special instruction in driver education and driver training equivalent to that required for AAA sponsorship.

Recommendation VII. Grades should be recorded, and credit given toward high school graduation.

Recommendation VIII. Driver education should be given during the sophomore year. Placement in the curricular program should be in order of effectiveness, as follows:

1. Students assigned through counselors' office for a complete semester course.
2. Students assigned from study hall for a nine-week course.
3. Part of a social science unit, taught by a special driver education teacher in the driver education room.
4. Part of a social science unit taught by the social science teacher.
5. Students assigned from studyhall for a six-week course.

Recommendation IX. Driver training should be available only to students having satisfactorily completed

driver education.

Students should be selected for driver training in the following order:

1. Seniors
2. Juniors
3. Sixteen years of age or older
4. Fifteen years of age and will be sixteen at the completion of the course

Recommendation X. Driver training placement in the curriculum, in the order of effectiveness, should follow the preferential order listed below:

1. Students assigned from study hall for a nine-week course.
2. Students assigned from study hall for a six-week course.
3. Students enrolled from free periods, for a six-week course.
4. Assigned from study hall for a length of time determined by the instructor, according to the progress of the student.
5. Assigned through counselors' office for a complete semester of driver education, and running concurrently with driver training.

Recommendation XI. Under the adult education program driver training should be given two nights a week, two hours a night. The course should be limited to twelve students for six weeks. Because of the adult maturity,

behind-the-wheel instruction can be given concurrently with the classroom instruction, under the supervision of one instructor. The regular day school program should be used as a basis for instruction.

Proposed Driver Education Course.

- A. Textbook: "Sportsmanlike Driving" (5)
- B. Required notebook--content outline
 - 1. Articles pertaining to driver education
 - 2. Cartoons
 - 3. Class-discussion notes
 - 4. Material handed out in class
 - 5. Psycho-physical test results
- C. Possible outside speakers:
 - 1. Officer from highway patrol
 - 2. Officer from city police
 - 3. Traffic judge
 - 4. Insurance man
 - 5. Lawyer
 - 6. Driver-license examiner
 - 7. Truck driver
 - 8. Car salesman
- D. Instructional units
 - 1. Unit I (2 periods) -- History and development of the automobile
 - a. History of transportation
 - b. History and evolution of the motor vehicle

Visual aids

Other aids

2. Unit II (3 periods) -- Social, economic, and political effects of the motor vehicle

- a. The automobile makes society increasingly interrelated and complex
 - (1) urban and rural areas brought closer together
 - (2) automobile accidents
 - (a) economical waste
 - (b) human waste
- b. Influence on family, community, and national way of living
 - (1) education
 - (2) recreational advantages
 - (3) business
 - (4) moral implications
- c. National industrial wealth
 - (1) assembly line and mass production
 - (2) One out of every seven pay checks come directly or indirectly from automobiles
 - (3) development of oil

Visual aids:

Films -- "Teenicide" and
"Traffic with the Devil"

Other aids

3. Unit III (1 period) -- Streets and highways, including history and engineering

- a. Ancient history of roads
- b. Modern history of roads
- c. Street and highway engineering
- d. Influence of the automobile upon road development

Visual aids

Other aids

- 4. Unit IV (1 period) -- Traffic accidents
 - a. Accident statistics
 - b. Age groups of drivers and accidents
 - c. Traffic accident causes
 - d. Correlation of traffic violation to traffic accidents
 - e. What to do at the scene of an accident
 - (1) reporting an accident
 - (2) first aid
 - (3) emergency equipment to keep in car

Visual aids:

Films -- "That They May Live" and
"Accident Behavior"

Other aids

- 5. Unit V (3 periods) -- Physical qualifications of the driver
 - a. Desirable characteristics
 - (1) good sight
 - (2) good reaction time
 - (3) good field of vision

- (4) good glare recovery
- (5) good color vision
- (6) good hearing
- b. Undesirable characteristics
 - (1) physically handicapped
 - (2) old age
 - (3) alcoholic or drug addict
 - (4) fatigue
 - (5) chronic disease and temporary illness
- c. Psycho-physical test
 - (1) visual acuity
 - (2) field of vision
 - (3) distance judgment
 - (4) color blindness
 - (5) glare resistance
 - (6) reaction time

Visual aids:

Films -- "Drinking and Driving" and "Speed"

Other aids:

Psycho-physical testing equipment

- 6. Unit VI (2 periods) -- Mental qualifications of the driver
 - a. Desirable characteristics
 - (1) good attention and concentration
 - (2) reasoning power

- (3) attitude
- (4) habits
- (5) good judgment
- (6) emotional stability

b. Undesirable characteristics

- (1) illiterate
- (2) discourtesy
- (3) show-off
- (4) temperamentalist
- (5) speed maniac
- (6) egotism
- (7) personality changes when
behind the wheel of an
automobile

Visual aids:

Films -- "Courtesy"
"Driven to Kill"
"Driver Irritations"

Other aids:

7. Unit VII (1 period) -- Natural laws

- a. Friction
- b. Momentum
- c. Centrifugal force
- d. Gravity
- e. Force of impact
- f. Inertia

Visual aids:

Film-strip -- "Inertia"

Other aids

8. Unit VIII (6 periods) -- Traffic rules

a. California vehicle code

- (1) driver license requirements
- (2) motor vehicle registration
- (3) traffic-control devices
 - (a) traffic signs
 - (b) traffic signals
 - (c) curb markings
- (4) signaling
- (5) speed limits
- (6) vehicle right-of-way
- (7) pedestrian right-of-way
- (8) parking, standing, and stopping;
parking on hills
- (9) passing: rules, speeds, and
distances
- (10) equipment
- (11) liability responsibility
- (12) emergency equipment
- (13) streetcars and safety zone
- (14) miscellaneous rules
- (15) accidents and crimes

b. National uniform traffic laws

c. Vehicle code test

Visual aids:

Films -- "Problems of City Driving"

"When You Are a Pedestrian"
 "Left Turn"
 "You Bet Your Life"

Felt traffic board

Other aids:

Highway patrol officer
 Department of Motor Vehicle Driver's
 License Examiner

9. Unit IX (1 period) -- Law enforcement
 - a. A form of compulsory education
 - b. Features of a good enforcement program
 - c. Obstacles to effective enforcement
 - (1) traffic citation "fixed"
 - d. Enforcement program dependent on interest of citizens
 - e. Proper and impartial enforcement
 - (1) the traffic officer
 - (2) the traffic judge
 - f. Officer training and equipment

Visual aids:

Film -- "The Driver and the Law"

Other aids:

City police officer
 Traffic judge

10. Unit X (1 period) -- Pedestrian responsibilities
 - a. Accident statistics
 - (1) age records and accidents

- b. Education from pre-kindergarten on
- c. Laws
- d. Limitations of the pedestrian
- e. No qualifications to be a pedestrian
- f. Hitch-hiking
- g. Cooperative attitude
- h. Knowledge of sound traffic practices

Visual aids:

Film -- "Driver or Pedestrian"
Felt traffic board

Other aids

- 11. Unit XI (3 periods) -- The construction and maintenance of the automobile
 - a. The component parts of the automobile
 - (1) wheels
 - (2) frame
 - (3) body
 - (4) braking system
 - (5) engine
 - (6) steering system
 - (7) transmission, clutch, and differential
 - (8) electrical system
 - (9) fuel system
 - (10) lubrication system
 - (11) driver's compartment

- (a) gauges
- b. The component parts of the power unit
 - (1) carburetor
 - (2) crankcase
 - (3) ignition system
 - (4) cylinder block, pistons, connecting rods, and crankshaft
 - (5) exhaust system
 - (6) cooling system
- c. Basic theory of the internal combustion engine
 - (1) the four-stroke cycle
- d. Factors in maintenance
 - (1) preventive maintenance
 - (a) economy
 - (b) safety
 - (2) items periodically checked
 - (a) brakes
 - (b) tires
 - (c) windshield
 - (d) steering mechanism
 - (e) lights
 - (f) horn
 - (g) lubrication
 - (h) rear-vision accessories
 - (i) battery
 - (j) fan belt

(k) spark plugs

Visual aids:

Films -- "ABC of Internal Combustion Engine"
"Trouble Shooting Your Car"

Cut-away models

Other aids:

Field trip to autoshop

12. Unit XII (2 periods) -- The consumer and the automobile

a. Buying a new automobile

(1) breaking in new car

b. Buying a used automobile

c. Insurance

d. The automobile's liquid diet

e. Tires

f. Periodic inspections

g. Good driving practices reduce maintenance

Visual aids:

Film -- "Where Mileage Begins"

Other aids:

Insurance salesman
Car salesman

13. Unit XIII (1 period) -- Map reading and interpretation of street and highway information

a. Need for maps

b. Securing of maps

c. Interpretation of road maps

- (1) legend
- (2) index
- (3) mileage

Visual Aids:

Other Aids:

Road map for each student

- 14. Unit XIV (3 periods) -- Sound driving practices and driving skills
 - a. Driving ahead
 - b. Observance of traffic regulations
 - c. Signaling
 - d. Proper speed
 - e. Correct following distance
 - f. Dimming headlights
 - g. Observance of pedestrian rights
 - h. Do not let the other fellow involve you in an accident
 - i. Parking
 - j. Proper turns
 - k. Mountain driving
 - l. Starting, stopping, and parking on hills
 - m. Starting and stopping smoothly
 - n. Using horn only as a signal of danger
 - o. Following
 - p. Overtaking and passing
 - q. Night driving

Visual aids:

Films -- "Defensive Driving"
"Night and Bad-weather Driving"
"Following Too Close"
"Highway Driving"

Other aids

Proposed Driver Training Course.

A. Training equipment

1. Training car
 - a. Dual controls
 - b. Two side-view mirrors
 - c. Small cushion
 - d. Gas and oil record
2. Brake reaction detonator
 - a. Cartridges
3. Steel tape
4. Stanchions
 - a. Six to a car
5. Training lot

B. Instructor's equipment

1. Binder
2. Student records
3. Lessons
4. Student licenses

C. Training Lessons

1. Lesson I -- Introduction to the car
 - a. Points to be covered

(1) checking the car before entering

(a) under the hood

- 1'. engine block
- 2'. fuel pump
- 3'. carburetor
- 4'. air cleaner
- 5'. generator
- 6'. starter
- 7'. distributor
- 8'. spark plugs
- 9'. fan
- 10'. water pump
- 11'. steering column and gears
- 12'. coil
- 13'. oil filter
- 14'. manifold

(b) lights

- 1'. high beam
- 2'. meeting beam
- 3'. tail light
- 4'. stop light
- 5'. rear license plate light

(c) tires

(2) proper adjustment of seat and mirrors

(3) safety devices

- (a) light switches
- (b) sun visor
- (c) horn
- (d) windshield wiper and switch
- (e) meeting beam switch
- (4) starting devices
 - (a) ignition switch
 - (b) starter switch
 - (c) choke
 - (d) hand throttle
- (5) control devices
 - (a) steering wheel
 - (b) clutch pedal
 - (c) gear shift lever
 - (d) accelerator
 - (e) footbrake
 - (f) handbrake (emergency brake)
- (6) gauge
 - (a) gasoline gauge
 - (b) amp meter
 - (c) oil pressure gauge
 - (d) odometer
 - (e) speedometer
 - (f) water temperature gauge
- (7) starting and stopping the engine

- (a) sequence of steps in getting the car in motion
 - 1'. seat adjustment
 - 2'. mirror adjustment
 - 3'. clutch in
 - 4'. gear in neutral
 - 5'. ignition on
 - 6'. starter button engaged
 - 7'. gear in low
 - 8'. engine accelerated
 - 9'. disengage clutch to the pressure point
- (8) position of the gears
- b. Equipment
 - (1) training car
 - (2) old cloth
- c. Location
 - (1) training lot
- d. Instructional procedure
 - (1) the instructor explains the parts under the hood
 - (2) the instructor explains the checking of the lights and tires
 - (3) the instructor demonstrates the correct adjustments of the seat and mirrors
 - (4) the instructor points out the safety devices, starting devices, and control devices

- (5) the instructor explains the purpose of each gauge
- (6) the instructor demonstrates the procedure for starting the engine and stopping the engine
- (7) the instructor demonstrates the position of the gears
- (8) the student practices the steps in starting and stopping the engine
- (9) the student practices the position of the gears, without engine running
- (10) the student practices the feel of the clutch and accelerator, with the engine running and the gears in neutral

2. Lesson II -- Starting and stopping in low gear

a. Points to be covered

- (1) right foot used to operate the accelerator and the foot brake; in some cars the starter
- (2) left foot used to operate the clutch and dimmer switch
- (3) getting the car in low gear from neutral
- (4) having the engine running at the proper speed
- (5) releasing the handbrake
- (6) getting the feel of the pressure point
- (7) after the clutch is entirely released the left foot rests on the floor under the clutch

- (8) smooth acceleration to gain speed
- (9) bringing the car to a smooth stop
 - (a) disengage clutch
 - (b) remove right foot from accelerator and place on brake
 - (c) depress brake pedal evenly but firmly
- (10) getting the car in neutral from low gear
- b. Equipment
 - (1) training car
- c. Location
 - (1) training lot
- d. Instructional procedure
 - (1) the instructor demonstrates the pressure point
 - (2) the instructor demonstrates the operation of getting the car in motion
 - (3) the instructor demonstrates the operation of bringing the car to a smooth stop, with the engine off
 - (4) the student practices putting car in gear and working the clutch up and down
 - (5) with the engine running the student practices smooth stops and starts
 - (6) the student allows the car to move only a few feet after

releasing the clutch,
before bringing it to a
smooth stop

- (7) when the car reaches the end of the lot, the instructor will back the car to the starting point
- (8) the student practices until a degree of proficiency is obtained

3. Lesson III -- Steering

a. Points to be covered

- (1) position of hands on steering wheel
- (2) direction steering wheel is turned in relation to direction of car movement
- (3) hand-over-hand method of turning steering wheel
- (4) steering wheel returns to straight forward position after being turned
- (5) controls operated without looking
- (6) steering the car to a required position
- (7) value of the pressure point

b. Equipment

- (1) training car
- (2) four stanchions

c. Location

- (1) training lot

d. Instructional procedure

- (1) two stanchions are set up about twenty paces apart

- (2) the instructor demonstrates the position of hands on steering wheel
- (3) the instructor demonstrates the steering operation and the figure eight exercise
- (4) the student practices steering by driving in a figure eight pattern around the stanchions
- (5) when the two stanchions are mastered, move them closer together and add two more
- (6) place a stanchion outside of the pattern of stanchions and student will practice creeping the car up to the stanchion and centering the nose of the car on it

4. Lesson IV -- Shifting from low to second to high; from high to second

a. Points to be covered

- (1) shifting from low to second at about 10 miles per hour
- (2) stopping in second
- (3) shifting from second to high at about 20 miles per hour
- (4) stopping in high
- (5) shifting from high to second
- (6) steering on an open road
- (7) completing the entire shifting operation in a prescribed time
- (8) eyes watch road considerable distance ahead of car

b. Equipment

- (1) training car

c. Location

- (1) any straight road with very little traffic

d. Instructional procedure

- (1) the instructor demonstrates the operation of shifting from low to second and stopping
- (2) the instructor demonstrates the operation of shifting from second to high and stopping
- (3) the instructor demonstrates the operation of shifting from high to second
- (4) the instructor demonstrates the complete operation including the prescribed time and distance.
- (5) the instructor demonstrates steering on the open road
- (6) the student practices shifting from low to second and stopping
- (7) the student practices shifting from second to high and stopping
- (8) the student practices shifting from high to second
- (9) the student practices steering on the open road

5. Lesson V -- Left and right turns (on lot)

a. Points to be covered

- (1) proper signal when pulling away from a curb
- (2) proper left hand signal
- (3) proper right hand signal

- (4) proper stop signal
- (5) making a left turn
- (6) making a right turn
- (7) stopping behind a line
- (8) starting in low without hesitation, after coming to a stop
- (9) decreasing speed before starting the turn
- (10) accelerating before the turn is completed

b. Equipment

- (1) training car
- (2) four stanchions

c. Location

- (1) training lot

d. Instructional procedure

- (1) the four stanchions are located about a street width from the corners of the lot
- (2) the instructor demonstrates the proper signals, and the proper way to make turns.
- (3) the instructor demonstrates getting car in low gear and in motion without hesitation, after coming to a stop
- (4) the student practices the left signal and left turn
- (5) the student practices the right signal and right turn
- (6) the student practices stop signal and stopping behind a line

- (7) the student practices getting car in low gear and proceeding without hesitation after coming to a stop
- 6. Lesson VI -- Left and right turns and signaling on the street
 - a. Points to be covered
 - (1) correct position of car to make a left turn
 - (2) correct speed when starting the turn
 - (3) correct position of car to make a right turn
 - (4) correct distance to start signal
 - (5) when to complete the signal
 - (6) use of rear-view mirror
 - (7) observing side streets
 - b. Equipment
 - (1) training car
 - c. Location
 - (1) any city block free from traffic, blind corners, and stop signs
 - d. Instruction procedure
 - (1) the instructor demonstrates the correct position of car before starting to turn
 - (2) the instructor demonstrates the signaling procedure, the turning procedure, and use of the rear-view mirror
 - (3) the student practices left hand turns first, and then right turns

7. Lesson VII -- Left and right turns and stop signs

a. Points to be covered

- (1) position of car at stop sign
- (2) when to leave the stop sign
- (3) getting into the flow of traffic

b. Equipment

- (1) training car

c. Location

- (1) any city street that has stop streets coming into it and fairly free from traffic

d. Instructional procedure

- (1) the instructor demonstrates the correct position for the car when stopped at a stop sign
- (2) the instructor demonstrates the procedure of getting away from the stop sign
- (3) the student practices left and right turns and stop signs

8. Lesson VIII -- "U" turns

a. Points to be covered

- (1) signal for a "U" turn
- (2) where to make a "U" turn
- (3) making a "U" turn in a residential district
- (4) making a "U" turn in a business district

b. Equipment

- (1) training car

c. Location

- (1) residential area free from hills and traffic

d. Instructional procedure

- (1) the instructor demonstrates the proper way to make a "U" turn in a residential area
- (2) the instructor demonstrates the proper way to make a "U" turn in a business district
- (3) the student practices making "U" turns in a residential area
- (4) the student practices making "U" turns in a business district

9. Lesson IX -- Emergency stopping

a. Points to be covered

- (1) spontaneous steps in making an emergency stop
 - (a) brake
 - (b) signal
 - (c) glance in rear-view mirror
 - (d) clutch in
 - (e) steer with one hand

- (2) limitations of automobile
- (3) reaction time-distance
- (4) braking time-distance

b. Equipment

- (1) training car
- (2) brake reaction detonator

(3) cartridges

(4) tape measure

c. Location

(1) isolated country road

d. Instructional procedure

(1) the instructor demonstrates all that has to be done in making a sudden stop

(2) the student practices the procedure of making an emergency stop a couple of times

(3) the instructor explains the use of the brake reaction detonator

(4) the student's reaction distance and braking distance are tested

10. Lesson X -- Country driving

a. Points to be covered

(1) feel of increased speed

(2) speed limits

(3) keeping car in straight line

(4) overtaking cars

(5) cutting back to the right lane after passing

(6) looking and driving far enough ahead to anticipate possible trouble

(7) road signs

(8) have the car under control at all times

(9) following too close

- b. Equipment
 - (1) training car
- c. Location
 - (1) rural roads
- d. Instructional procedure
 - (1) the student starts driving on roads fairly free from traffic and gradually drives to heavier traffic
 - (2) the instructor explains all the factors of country driving as the student is driving
 - (3) in the more advanced stages, the student drives on the highway

11. Lesson XI -- City driving

- a. Points to be covered
 - (1) city speed limits
 - (2) stopping and starting at electric signals
 - (3) making right turns with red signal, after stopping, and provided traffic permits
 - (4) watching for cars backing out of angle parking spaces
 - (5) passing on the right
 - (6) observing traffic at blind intersections
- b. Equipment
 - (1) training car
- c. Location
 - (1) main part of city

d. Instructional procedure

- (1) the student starts driving in light traffic and gradually works to heavier traffic in the main part of the city
- (2) instructor explains the factors of city driving as the student is driving

12. Lesson XII -- Starting and stopping on hills

a. Points to be covered

- (1) starting on a hill without rolling back
 - (a) use of handbrake
 - (b) use of footbrake
 - (c) use of hand throttle and footbrake
- (2) how to turn wheels when parked headed up hill, when there is a curb
- (3) how to turn wheels when parked headed down hill, when there is a curb
- (4) how to turn wheels when parked headed up hill, when there is no curb
- (5) how to turn wheels when parked headed down hill, when there is no curb

b. Equipment

- (1) training car

c. Location

- (1) a street located on a hill

d. Instructional procedure

- (1) the instructor demonstrates how to get the car in motion when stopped on a hill by use of the handbrake; use of the footbrake; or use of the hand throttle and footbrake
- (2) the instructor demonstrates the direction to turn front wheels when parked on a hill
- (3) the student practices the different methods of getting the car in motion when stopped on a hill

13. Lesson XIII -- Backing and clutch control

a. Points to be covered

- (1) using reverse gear
- (2) moving the car an inch at a time by use of the clutch
- (3) maneuvering the car in close areas
- (4) turning the steering wheel in the right direction when backing, to place the car in the desired position
- (5) turning around and looking when the car is going backward

b. Equipment

- (1) training car
- (2) seven stanchions

c. Location

- (1) training lot

d. Instructional procedure

- (1) six stanchions placed ten paces

apart and one end stanchion placed six paces to the left of the line of stanchions, so when coming around the last stanchion in the row the nose of the car can be lined up with the one stanchion

- (2) the instructor demonstrates the exercise of weaving through the stanchions and straight backing
- (3) the instructor demonstrates the exercise of weaving through the stanchions forward and backward
- (4) the student practices going forward through stanchions and straight back
- (5) when the student reaches a degree of proficiency going forward through the stanchions and straight back, then back through the stanchions

14. Lesson XIV -- Angle parking

a. Points to be covered

- (1) proper distance from parked cars before starting to turn
- (2) giving the proper signals
- (3) easing the car into the space by use of the brake
- (4) safety precautions when backing out
- (5) slipping the clutch in order to hold the car on an incline
- (6) proper distance to back out before moving forward to get into the flow of traffic

b. Equipment

- (1) training car
- (2) five stanchions

c. Location

- (1) any city street with a curb and free from heavy traffic

d. Instructional procedure

- (1) arrange four stanchions to simulate an angle parking space and the fifth to represent a line of cars prior to the parking space
- (2) the instructor demonstrates the proper procedure involved in driving into an angle parking space
- (3) the instructor demonstrates the proper procedure involved in backing out of an angle parking space and getting into the flow of traffic
- (4) the student practices the procedures of parking and backing out of an angle parking space

15. Lesson XV -- Parallel parking

a. Points to be covered

- (1) the correct position for the car before starting to back into the parking space
- (2) proper direction to turn the steering wheel in order to maneuver the car into the desired position
- (3) proper position of car before starting out of parking space
- (4) correct method in maneuvering the car out of the parking space

- (5) correct signal to give before getting into the flow of traffic
- (6) precautionary measures to take before getting into the flow of traffic

b. Equipment

- (1) training car
- (2) six stanchions

c. Location

- (1) any city street with a curb, and free from heavy traffic

d. Instructional procedure

- (1) arrange stanchions to simulate a parallel parking space
- (2) the instructor demonstrates the proper procedure involved in backing the car into a parallel parking space
- (3) the instructor demonstrates the proper procedure involved in driving out of a parallel parking space
- (4) the student practices the procedure of backing into and driving out of a parallel parking space

16. Lesson XVI -- Changing a tire

a. Points to be covered

- (1) drive off the roadway as far as possible
- (2) set brakes and put in gear to prevent rolling
- (3) how to use jack

- (4) how to take hub-cap off
- (5) how to remove wheel lugs
- (6) how to replace tire
- (7) how to replace wheel lugs
- (8) how to lower jack

b. Equipment

- (1) training car
- (2) bumper-jack
- (3) shop coat to protect the clothes
- (4) cloth to clean soiled hands

c. Location

- (1) training lot

d. Instructional procedure

- (1) the instructor demonstrates the procedure for completely changing a tire
- (2) the student practices changing a tire

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APPENDIX

ADVANCE BOND

WILLIAM BROWN, JR.

STUDENT RECORD

Last Name First Name

Age _____

Year in school _____

Amount of driver education _____

Vehicle Code score _____

Period _____

Date started _____

Car _____

Instructor _____

Date completed _____

Course grade _____

Remarks:

Date	Lesson	Minutes Behind Wheel	Total Min. Behind Wheel	Instructor's Comment
M				
T				
W				
T				
F				
M				
T				
W				
T				
F				
M				
T				
W				
T				
F				
M				
T				
W				
T				
F				
M				
T				
W				
T				
F				
M				
T				
W				
T				
F				

PSYCHO-PHYSICAL TEST RECORD

Name _____

Period _____

1. VISUAL ACUITY

	Raw Score	Grade
Right eye	20/_____	_____
Left eye	20/_____	_____
Both eyes	20/_____	_____

2. FIELD OF VISION

1st try R _____
 L _____
 2nd try R _____
 L _____

Total	Average Range		
_____	_____	_____	_____
2			

3. GLARE RECOVERY

	sec.	Average Number Seconds	
1st try _____	_____		
2nd try _____	_____		
3rd try _____	_____		
Total _____	_____		
3			

4. DISTANCE JUDGMENT

	Aline car	stop sign		
1st try _____ in.	_____ in.			
2nd try _____ in.	_____ in.	Car	_____	_____
3rd try _____ in.	_____ in.			
Totals _____ in.	_____ in.	Stop Sign	_____	_____

5. REACTION TIME

	sec.	Average Reaction Time	
1st try _____	_____		
2nd try _____	_____		
3rd try _____	_____		
Total _____	_____		
3			

6. COLOR VISION

PSYCHO-PHYSICAL TEST INTERPRETATION

(Will appear on back of previous page)

1. VISUAL ACUITY	Raw Score	Grade
	20/20 or better	A
	20/25	B
	20/30	C
	20/35	D
	20/40	E
2. FIELD OF VISION	180-177	A
	176-172	B
	171-167	C
	166-162	D
	161 or below	E
3. GLARE RECOVERY	1 to 3 sec.	A
	4 to 6 sec.	B
	7 to 9 sec.	C
	10 to 12 sec.	D
	13 or below	E
4. DISTANCE JUDGMENT	0 to $3/4$ in.	A
	1 to $1-3/4$ in.	B
	2 to $2-3/4$ in.	C
	3 to $3-3/4$ in.	D
	4 or more in.	E
5. REACTION TIME	0 to .40 sec.	A
	.41 to .50 sec.	B
	.51 to .60 sec.	C
	.61 to .70 sec.	D
	.71 or more sec.	E
6. COLOR VISION	Perfect	A
	Good	B
	Fair	C
	Poor	D
	Bad	E

SUPERVISED ROAD INSTRUCTION POLICIES

1. Try to have students in car and going on the day's lesson as early as possible.
 - a. Have car warmed up.
 - b. Leave as soon as all the students are in your car. It is not necessary to wait for the last bell.
 - c. Try to time road work so that you can be back on the school ground to dismiss students at five minutes after the hour.
2. Review students on previous day's work.
3. Keep students' talk down to a minimum.
4. Do not allow students that are not driving to hang out the window or shout to outsiders.
5. Always have students get in and out of cars on the right side when out on the street.
6. Make it a practice to always be in the car when it is operated by a student.
7. Clean inside of car occasionally and wash windows.
8. Keep plenty of gas in tank and keep record of amount and cost of gas and oil on form provided.
9. Be patient and calm. There probably are very few things that are more trying on a person's patience than teaching someone to drive.
10. Record students' progress.
11. Turn in absence slips.
12. Roll up the windows and lock the doors of the car when lesson is completed.
13. Upon completion of course, turn in completed records.