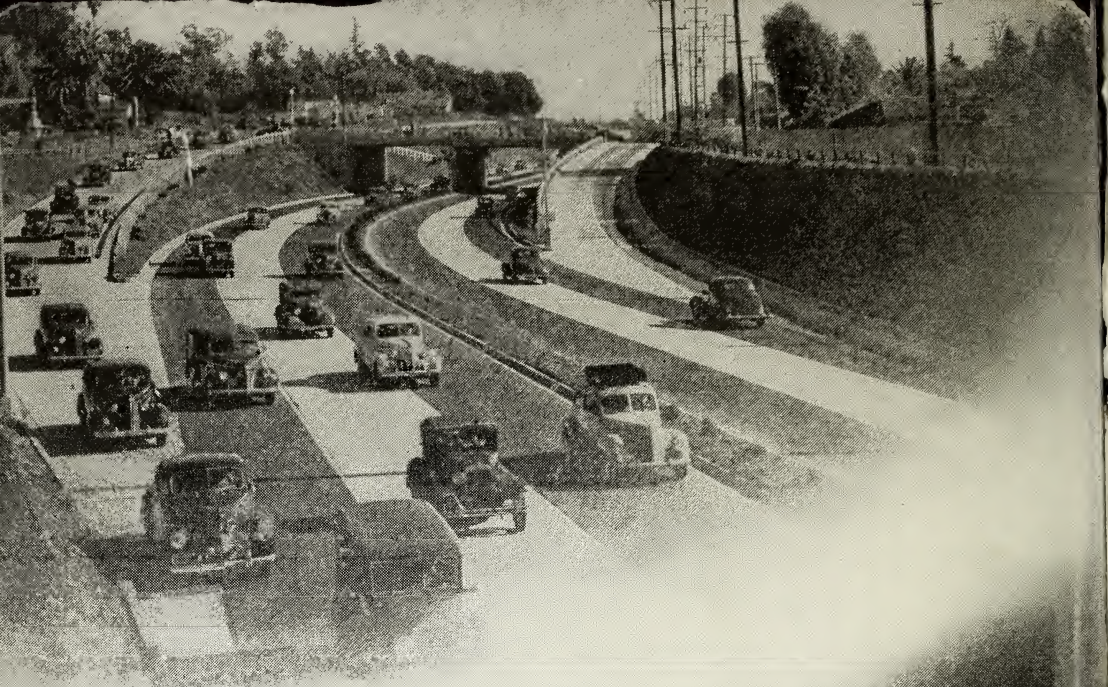


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Let's Teach Driving

An ADMINISTRATIVE GUIDEBOOK

NATIONAL COMMISSION ON SAFETY EDUCATION

of the

NATIONAL EDUCATION ASSOCIATION

1201 Sixteenth Street, N.W.

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Foreword

WHEN asked how long a man's legs should be, Abraham Lincoln replied: "long enough to reach the ground." Thomas Briggs, well-known secondary educator, used to say that "high schools should teach youth to do better the desirable things they will do anyway." Both men wisely suggest that we meet the world as it is—plain, unvarnished reality.

It will be difficult for school superintendents and high-school principals to avoid the common sense of the present publication. It advocates that high-school students should be taught how to operate the motor car with safety to themselves and to others. They will operate cars anyway and there is now experience enough to provide training "with its feet on the ground."

One of the good qualities of this bulletin is that it offers no single pattern, course, or nostrum. It outlines a number of possible procedures and emphasizes the need for adaptation of the program to local needs and conditions. It emphasizes the cooperative community approach to what, in many respects, has become *the* community safety problem. Secondary school administrators and classroom teachers will find within the framework of suggestions plenty of room for growth and original thinking.

Now with "our feet on the ground" it should be obvious that the next step is to go somewhere. The time has come for courageous stepping out along unfamiliar but not uncharted paths. The spirit of daring, characteristic of American history, points the way. It warns us, in the words of Charles Beard, "it might be better to be wrecked on an express train bound to a destination than to moulder in a freight car sidetracked in a well-fenced lumber yard."

A publication of this type could not possibly be the product of one mind. Individual students of the problem from education, public and private agencies, and industry have given generously of their time and ideas. First drafts of chapters were prepared by the Subcommittee under the direction of Chairman Hanson H. Anderson and the Commission's secretary, Robert W. Eaves. These manuscripts were circulated among the Subcommittee members for criticism. They were submitted to the consultants and to representatives of various groups interested in the field. The multitude of criticisms and suggestions have been patiently woven into form by Stanley A. Abercrombie of the Commission's staff. Editorial assistance was provided by Elizabeth W. Robinson of the Commission's staff.

The Subcommittee is indebted to the following persons for their help in reviewing the manuscript and offering invaluable suggestions for its improvement: Earl Allgaier, Research Engineer, Traffic Engineering and Safety Department, American Automobile Association, Washington, D. C.; Donald S. Berry, Director, Traffic and Transportation Division, National Safety Council, Chicago, Illinois; A. W. Bohlen, Executive Director, American Association of Motor Vehicle Administrators, Washington, D. C.; Major Harvey G. Callahan, Superintendent, Metropolitan Police Department, Washington, D. C.; Harold O. Carlton, Educational Consultant, Traffic Engineering and Safety Department, American Automobile Association, Washington, D. C.; Norman Damon, Vicepresident, Automotive Safety Foundation, Washington, D. C.; Harold R. Danford, Educational Consultant, National Conservation Bureau, New York City; M. R. Darlington, Jr., Assistant Director, Safety and Grant Division, Automotive Safety Foundation, Washington, D. C.; Julien H. Harvey, Managing Director, National Conservation Bureau, New York City; Wayne P. Hughes, Director, School and College Division, National Safety Council, Chicago, Illinois; Stephen James, Director, Education Divi-

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FRANK W. HUBBARD,
*Director of Research of the
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In *Safety Education*, the Eighteenth Yearbook of the American Association of School Administrators, the term "driver education" was defined as *the classroom work which precedes or accompanies actual road instruction*. The term "driver training" was defined as *road instruction behind the wheel of a motor car*.

In this publication, the terms "driving instruction," "course in driving," and "driving course" signify *any and all learning experiences provided by a high school and intended to teach students how to drive automobiles*. In some schools, driving instruction is given entirely in the classroom; in others, driving instruction is given partly in the classroom and partly in training cars. Instruction given in the classroom is herein designated by such terms as "classroom instruction" and "class work," while that given in training cars is herein designated by such terms as "road training," "behind-the-wheel instruction," and "practice driving."

Introduction

THE PURPOSES of this publication are to give school administrators, teachers, and others a broad understanding of the need for teaching people how to drive automobiles, and to help them provide this instruction for the million high-school students under their guidance who begin driving each year. This booklet is not a course of study or a syllabus. It is a guidebook which tells why, what, and how our high schools can contribute to the solution of our traffic accident problem.

More than a decade ago a few high schools undertook to train beginning drivers. Since that time much experimental work has been done by these and other high schools. Much more remains to be done. High schools the country over have the major responsibility for developing instruction in driving and for offering this instruction to greater numbers of our young people.

There are two schools of thought regarding the extent to which high schools ought to go in providing driving instruction for their students. One holds that a course of instruction in driving should include behind-the-wheel training, accompanied or preceded by class work. Adherents to this view believe that classroom instruction in and of itself is not sufficient to enable would-be drivers to attain the competency needed in modern traffic. They feel that there is no reasonable procedure by which high-school students can achieve the necessary proficiency in driving other than for high schools to provide instruction and guided practice in training cars in addition to class work. It is significant, however, that holders of this view believe it desirable for high schools to offer classroom instruction by itself where the use of training cars is impractical at present.

The other school of thought believes that high schools need offer only classroom instruction for prospective drivers. Those who hold this view believe that thru good classroom instruction alone, students acquire knowledge, understandings, and attitudes which are necessary for successful driving, and that these are more important than developing manipulative skills in handling a car. They also point out certain practical considerations which make it difficult for many high schools to secure cars for behind-the-wheel training. Here also it is significant that supporters of this view suggest the desirability of high schools providing behind-the-wheel instruction wherever possible.

These two viewpoints are neither far apart nor fundamentally opposed to each other. Certainly in both cases the ultimate goal is the same—to equip high-school students with ability to drive safely and efficiently. The principal difference in the two viewpoints concerns the means used to accomplish a common end.

It is sometimes assumed that only the large high schools are able to offer road training in addition to classroom instruction, and that small high schools must necessarily limit their driving instruction to class work. That this assumption is erroneous is shown by past and present experience of schools offering courses in driving. A number of small schools with enrolments of less than 100 students offer a complete course of classroom instruction and road training. On the other hand, many larger high schools, including some with enrolments of over 1000, offer only classroom instruction in driving. The type of course offered by a high school is usually determined by the school administration and based on community interests and demands.

Some high schools have offered both classroom instruction and road training to their students over a period of several years. Limited figures available from Cleveland, Ohio, and State College, Pennsylvania, show that students having had both class work and road training in high schools are in-

volved in only half as many accidents as comparable groups of students who had no high school driving instruction.¹ In Delaware, where several high schools have offered both class work and road training, the Delaware State Police compared the records of trained and non-trained drivers over a recent four-year period, and found that non-trained drivers had 46 percent more violations (arrests, warnings, and accidents) than trained drivers.

Other high schools have offered only classroom instruction in driving over a period of years. Limited figures available from Wisconsin indicate that students having had only classroom instruction in driving have 40 percent fewer accidents, and fewer arrests and convictions for traffic violations, than comparable groups who had no high-school driving instruction.²

In California during 1945-1946 two hundred high schools gave classroom courses in driving, and thirty-five of these schools offered road training in addition to the class work. Of the school people in this state who responded in a recent survey, 90 percent indicated that classroom instruction by itself has a positive value, but that the instruction has greater value if road training can be offered also.³

Even tho statistical data are meager concerning the comparative records of trained and non-trained groups of drivers, certain generalizations can be drawn from these data. First, persons having received driving instruction in high school have fewer accidents than comparable groups of non-trained drivers. Second, the data suggest the possibility that, as driving instruction is improved and made available to more students, young drivers may avoid substantially more than half the normally expected number of accidents. Third, from

¹American Automobile Association. *Driver Training Reduces Traffic Accidents One Half*. Washington, D. C.: the Association, 1945. 18 p.

²Wisconsin Department of Public Instruction, and Motor Vehicle Department. *1946 Driver Education Procedure*. Madison, Wis.: Department of Public Instruction, 1946. 24 p.

³O'Rourke, Everett V., and Strasser, Marland K. "Driver Education in High Schools". *California Journal of Secondary Education* 21: 54-57; January 1946.

the data so far available, no conclusion can be drawn as to which type of instruction (class work alone, or class work plus road training) produces the better results.

It is reasonable to assume, however, that behind-the-wheel training is as necessary a part of driving instruction as laboratory work has proven to be a necessary part of instruction in vocational and practical art subjects. Believing this assumption to be correct, those who prepared this guidebook have pointed out the advantages of a complete course in driving, consisting of classroom instruction and road training.

In the following pages, the administrator will find many suggestions for organizing and scheduling a complete course in driving. Schools at present unable to employ road training cars of their own are advised of ways in which they may utilize public and private resources in the community to provide behind-the-wheel instruction until cars are available. A final possibility is suggested whereby the school, at no added expense, may enlist the aid of parents and supervise the instruction they give their own sons and daughters at the wheel of the family car.

In practical recognition of the fact that many high schools will offer only classroom instruction in driving, this guidebook also includes plans for organizing a classroom course. The administrator will find a discussion of the advantages and weaknesses of giving classroom instruction in driving (a) as a separate course, (b) as a unit in another course, (c) as units in several other courses, (d) as work integrated with one or more other courses, (e) as a school-community cooperative program, (f) thru such extra-curricular activities as "driving clubs", or (g) as a homeroom program.

The question "Can we afford to teach high-school students how to drive?" is no longer relevant. With high-school-age drivers continuing to pile up the worst accident record of any age group, the truth is that we can no longer afford to withhold driving instruction. *The money lost thru motor vehicle accidents in one year would pay for teaching over*

forty million persons how to drive safely and efficiently!

A complete one-semester course of instruction in driving, consisting of both classroom work and behind-the-wheel training, costs not more than \$30 per student, and often much less. A good classroom course in driving can be provided by any high school at little added expense.

There are approximately 25,000 public high schools in the United States with a combined enrolment of nearly eight million students. While 65 percent of these high schools have enrolments of less than 200 students each, the combined enrolment of these small high schools is only 20 percent of all students enrolled in public high schools. Each year over one million students graduate from high schools. Most of them begin driving while in high school or within a few years after graduating.

Is it unreasonable to hope that thousands more high schools will soon join the hundreds of small and large high schools now teaching our young people how to drive safely and efficiently?

from lack of training. Consequently many accidents are directly traceable to bad driving habits even tho the drivers involved have had several years of experience. And no one is as self-satisfied as the driver who has happened to get by for fifteen or twenty years without serious trouble. It is obvious that people need training when they first begin to drive.

Except in communities where high schools have undertaken to teach students to drive, our young people have shown and are continuing to show their incompetency in driving cars. Their accident record is not the only evidence. They express their lack of preparation by excessive speed, disregard for sound driving practices, and abuse of the car itself. The exuberance of youth needs only to be channeled toward usefulness and proficiency, which is what the high-school curriculum in general is designed to do, instead of being left unrestrained.

In the immediate future, more drivers in more cars will be traveling farther each year, with everyone becoming increasingly dependent on motor vehicles. All this adds up to greater exposure to accident, and the need for training now.

Appropriate Age for Driving Instruction

The minimum legal driving ages range from 14 years in some of our agricultural states to 18 years in some of our industrial states.⁶ The great majority of our youth is under the influence of the high school during this four-year span, and is enthusiastic about learning to drive. The high schools have a challenge and a duty to help our young people develop a sense of civic responsibility with regard to driving cars. How can the high schools do this better than by providing driving instruction at the time it is wanted and when it will do the most good?

⁶Both South Dakota and Wyoming have a minimum legal driving age of 15 years, but at the time of this publication neither of these two states required a driver to be licensed.

Existing Support for Driving Instruction in Schools

For more than a decade, interest in driving instruction in high schools has been growing. Prewar high-school driving courses numbered several hundred. Many programs, discontinued because of wartime shortages, are being reinstated. New courses are developing. Several states and some cities have produced their own courses of study or syllabi. In some states the legislatures have made the teaching of traffic safety mandatory in all grades, apparently in the belief that the schools were neglecting this area of education.

Public agencies whose work concerns highways and motor vehicles have long supported the high-school driving instruction movement. Many private organizations have interested themselves in promoting driving instruction in high schools. Their efforts have resulted in the improvement of teaching methods and the development of valuable teaching and testing aids. Making driving instruction available to high-school students, however, is a function that properly belongs within the realm of public school education.

In a recent nationwide poll of public thinking on traffic safety,⁷ a representative cross section of adults was asked if they thought high schools should give courses in the principles of good driving. Seventy-eight percent said the high schools ought to give such courses. Sixty percent said students in high schools should be given lessons in actually driving a car. Twenty-six percent said such instruction should be financed with school funds, while an additional 32 percent said it should be paid for thru other forms of taxation. Adults, according to 70 percent of the entire sample, should be required to attend special instruction classes if they want to learn to drive. These attitudes of typical adults express growing public concern over the traffic accident problem,

⁷ Opinion Research Corporation. *The Public's Attitudes on Traffic Safety*. Princeton, N. J.: the Corporation, 1946. p. A-36 to A-39.

and indicate relative community support for inaugurating high-school driving instruction.

Adopted by the President's Highway Safety Conference in May 1946 was a recommendation that secondary schools "provide driver education and training as an integral part of the curriculum for students approaching legal driving age, and other traffic safety activities for all age levels in the secondary school." It was further recommended that "standards for driver education should enable students to exceed the State driver license requirements", and that "whenever possible the secondary school should provide driver education and training as a summer service, at night sessions, and for adults in the community."⁸

Vocational Training Aspects of Driving Instruction

As vocational training, instruction in operating motor vehicles is assuming more importance each year. In several states, high-school students regularly operate school buses, for which they need special training. A great many high-school students work during summer and Christmas vacations at jobs which involve driving delivery trucks. After they leave or graduate from high school, many young persons take up work requiring ability to drive cars, trucks, or buses.

The practice of providing specific vocational preparation is not new in public school education. Today our high schools assume a responsibility to prepare students for many different occupations by offering courses for future machinists, typists, stenographers, and a host of other workers. Some schools have even undertaken to provide ground training for would-be pilots.

Nearly two million persons are now occupied as chauffeurs and deliverymen whose work consists mainly of driving

⁸The President's Highway Safety Conference. *Action Program*. Washington, D. C.: Government Printing Office, 1946. p. 6.

buses, trucks, taxis, and tractors.⁹ Of more than 30 million motor vehicles registered in 1945 for use in this country, over 16 percent were trucks and buses.¹⁰ The almost certain increase in commercial motor vehicle use forecasts the need to prepare high-school students for the occupation of driving these vehicles, if we are to avoid costly trial-and-error learning.

⁹Source: U. S. Department of Labor, Bureau of Labor Statistics, and Federal Security Agency, U. S. Office of Education. *Occupational Data for Counselors*. Department of Labor Bulletin No. 817. Washington, D. C.: Government Printing Office, 1945. p. 28.

¹⁰Source: Federal Works Agency, Public Roads Administration. Figures cited exclude publicly owned vehicles.

Scope of the Job To Be Done

WHILE high-school courses in driving are not as fully developed as long-established courses, sufficient work has been done to show what is involved in the program. Objectives, content, teaching methods, and testing technics are well developed in high-school driving instruction. Organization and administration of such courses have been handled in a variety of ways. This section will deal with objectives of driving instruction, course content, standards to assure fulfilment of the objectives, and evaluation of the program.

Objectives of Driving Instruction

General objectives of the high-school course in automobile driving are:

To reduce motor vehicle accidents to the minimum

To instil in as many young drivers as possible a sense of civic responsibility with regard to driving motor vehicles

To promote, thru increased uniformity of instruction, a high standard of performance in motor vehicle driving

To enable every trainee to use motor vehicles with greater safety, efficiency, and pleasure.

Specific objectives are:

To enable each student, while at the height of his desire to learn how to drive, to build attitudes leading to cooperative and responsible behavior on streets and highways

To enable each student to know, understand the reasons for, and apply in his own driving, the traffic laws of his community and state, and those common among many states

To provide a base of knowledge substantial enough to enable each student to develop sound driving and walking practices applicable under a variety of changing conditions in any location and any season

To give students an understanding of their own and others' capabilities and limitations as drivers and pedestrians

To make each student aware of his own limitations and enable him to make suitable corrections and compensations for them

To enable each student to form those habits and skills leading to efficient personal performance in driving and walking

To induce in students, thru proper learning experiences, the conviction that efficient driving and walking lead to more numerous and more satisfying experiences

To create in each student a special awareness of the mistakes made by untrained drivers and pedestrians, and enable him to apply defensive technics to counteract the consequent dangers

To lead and enable each student to take an active interest in, and lend support to, community efforts to increase traffic efficiency thru channels of motor vehicle administration, education, law enforcement, engineering, and legislation

To enable any student to meet the basic driving requirements of a vocation involving the use of a motor vehicle.

Content of a Course in Driving

In order that these objectives may be attained, the high-school course of instruction in driving, like many other courses, consists of two well-defined parts. The first concerns itself with the mastery of specialized information related to the driving of a motor vehicle. The student here assimilates knowledge, develops understandings leading to new thought relationships, molds an attitude of civic and social responsi-

bility, and acquires ability to think independently and critically about the activity which he is learning to perform. The student makes these gains largely in a classroom situation augmented by outside study and supervised field trips.

The second part, the practical application of information being mastered, consists of learning to operate an automobile safely and skilfully. This the student accomplishes thru a series of planned learning experiences at the controls of a real automobile, preferably under the supervision of a trained teacher. Beginning with manipulation of the car controls, the student acquires the necessary habits and skills for driving a car, and develops confidence and poise in his own performance at the wheel. Here the student learns to give personal expression to the knowledge, understandings, appreciations, and attitudes already acquired in the course, and begins forming habit patterns which will govern all his future driving.

Much importance is assigned to the development of "attitudes" in student drivers. However, a teacher cannot "teach" attitudes in a vacuum; neither can students "learn" attitudes separate and apart from some tangible experience. If we think of attitudes as emotionalized ideas which, when accepted by the individual, motivate his behavior in driving, it would appear that attitudes are a natural by-product of all the learning experiences the teacher provides for students of driving.

Every class discussion, every project, every field trip, every period spent in the training car presents the teacher with countless opportunities to help students form desirable attitudes toward their use of automobiles in relation to the whole highway traffic situation.

Considering further the development of attitudes in students of driving, it is important that a distinction be made between attitudes of thought and attitudes of action. When questioned about specific factors relating to driving, a student can often respond orally or in writing so intelligently

as to convince the teacher he has not only the knowledge but the "right attitude" as well. Behind the wheel of a car in a traffic situation, however, the same student may express a much different and less desirable "attitude". The teacher's task is to make the instruction thoro and effective to the point where the student learns so well how to "think right" that his thinking carries over and leads him to "act right".

The subject matter and learning situations shown in the following outline indicate the suggested content of a driving instruction course:

Class work (for the acquisition of desirable attitudes and mastery of specialized information)—

1. Motor vehicle transportation in American life
 - a. Growth of motor vehicle use in terms of number and types of vehicles, highway development, and mileage traveled
 - b. Family use of automobiles for business, pleasure, and recreation
 - c. Community use of motor vehicles for school transportation, police and fire protection, transportation of the sick and injured, and functions of government
 - d. Commercial use of trucks, buses, and taxicabs
 - e. Inefficiencies in motor vehicle use as reflected by number and severity of accidents (and resulting economic loss and human suffering) and by traffic delays and congestion
 - f. Buying, selling, fueling, servicing, and repairing motor vehicles
 - g. Control of motor vehicle use thru education, enforcement, engineering, legislation, licensing, and registration
2. Human capabilities and limitations for driving and walking
 - a. Importance of cooperative attitudes
 - b. Knowledge necessary for efficient driving
 - c. Emotions and the part they play in driving
 - d. Formation of good driving habits
 - e. Physical fitness as related to efficient driving
 - (1) Developing the kinesthetic sense

- (2) Driver and pedestrian reaction times related to vehicle speeds
- (3) Vision in relation to traffic movements
- (4) Eye-hand and eye-foot coordination in driving
- (5) Hearing, strength, and steadiness in relation to driving
- (6) Relationship of permanent and temporary physical deficiencies to driving
- f. Developing skill in driving
- g. Use of tests to measure human abilities related to driving
- 3. Characteristics of streets and highways
 - a. Road surface as it affects starting, turning, stopping, and night visibility
 - b. Road widths, shoulders, lanes, channelizing islands, medial strips, and reflecting delineators
 - c. Curves, turns, hills, and intersections as they affect speed and sight distance
 - d. Types and functions of signs, signals, and road markings
 - e. Recent examples of highway design
- 4. Laws governing the use of motor vehicles, and penalties for non-observance
 - a. Motor vehicle registration and certificate of title
 - b. Motor vehicle operators' and chauffeurs' licenses
 - c. Financial responsibility for operation of motor vehicles
 - d. Regulation of traffic on streets and highways, including both state laws and city ordinances
 - e. Vehicle inspections
- 5. The motor vehicle as a mechanical device
 - a. Construction and principles of operation
 - b. Driving practices as they affect the life of vehicles
 - c. Preventive maintenance
- 6. Consumer values in automobile ownership and operation
 - a. Selecting and buying a motor vehicle, especially a used car
 - b. Relationship of driving practices to conservation of gas, oil, tires, and engine
 - c. Functions of accessories

d. Relationships with city and state governments (titles, registrations, licenses, and inspections)

e. Avoiding personal liability thru sound driving, purchase of insurance, care in loaning car to others, refraining from transporting hitchhikers, and locking car when leaving it unattended

f. Buying fuel, oil, lubricants, anti-freeze, service, and repairs

g. Tools and equipment for owner maintenance

h. Reading road maps and planning trips

7. How to operate a motor vehicle

a. Fundamentals of driving

(1) Understanding the driving controls, safety devices, and gauges

(2) Differences in the driving controls among vehicles

(3) Starting the engine

(4) Starting the car, steering, shifting gears, and stopping

(5) Executing maneuvers of backing, turning around, starting on grades, and parking

b. Practices that mark the efficient driver

(1) Understanding the physical laws of motion as they affect vehicle operation

(2) Driving in accordance with changing road and traffic conditions

(3) Speed control

(4) Poise and smoothness at the wheel

(5) Showing consideration for other traffic

(6) Avoiding dangers from mistakes of others

(7) Parallel parking

c. Skills in handling difficult driving problems and in meeting emergencies

(1) Night driving

(2) Emergency parking on the highway

(3) Avoiding trouble in wet weather and winter driving

(4) Driving thru fog and smoke

(5) Avoiding skids in starting, turning, and stopping on wet, icy, or sandy pavements

(6) Getting out of a skid

- (7) Driving thru soft sand, mud, and snow
 - (8) Driving back onto pavement from shoulder
 - (9) Avoiding streetcar tracks and ruts
 - (10) Driving on rough roads
8. Relationship of drivers to non-motor vehicle traffic
 - a. Pedestrian rights-of-way
 - b. Reasons for pedestrian accidents
 - c. Driver's responsibility for pedestrians
 - d. Bicycle riding regulations
 - e. Causes of bicycle accidents
 - f. Driver's responsibility for bicyclists
 - g. Driver's responsibility for livestock on highways
 9. Driver examining and licensing
 - a. Minimum legal driving ages
 - b. Types of examinations given by various states
 - c. The driver's license as a privilege granted by the state
 - d. Suspension and revocation of drivers' licenses
 10. Traffic accidents—national, state, and local
 - a. Types of traffic accidents
 - b. Extent and costs
 - c. The accident pattern
 - (1) Hour, season, and other time factors
 - (2) Locations
 - (3) Weather and visibility conditions
 - d. Causative factors
 - (1) Driver errors
 - (2) Mechanical defects in vehicles
 - (3) Defects in streets and highways
 11. Controls over vehicles, streets, highways, and their users
 - a. Highway and traffic engineering
 - b. Education
 - c. Enforcement by the police and the courts
 - d. Motor vehicle administration, including accident records
 - e. Legislation
 12. Outlook for the future
 - a. Hazards in our present older cars
 - b. Improvements in streets and highways
 - c. Improvements in design of motor vehicles

- d. Increase in numbers of vehicles and drivers
- e. Possible legislative restrictions
- f. Responsibility of the individual driver

Road training (for developing desirable attitudes, habits, and skills in driving)—

- 13. Learning to drive a motor vehicle
 - a. Understanding the driver's compartment
 - (1) Safety equipment used by the driver
 - (2) Controls used in driving
 - (3) Learning to use the instrument panel
 - (4) Checking vehicle and driver before starting
 - b. Starting and stopping the engine
 - c. Starting, steering, and stopping the car
 - d. Shifting gears
 - e. Using the brakes in stopping from different speeds
 - f. Using engine compression as a brake
 - g. Giving signals and turning corners
 - h. Executing maneuvers
 - (1) Backing
 - (2) Turning around
 - (3) Starting on grades
 - (4) Parking
 - i. Driving in urban traffic
 - j. Driving in rural areas
 - k. Driving on the open highway
 - l. Executing driving skill exercises
 - m. Tests in driving.

Standards to Assure Meeting the Objectives

Standards to assure anticipated outcomes are essential to any worthwhile undertaking. For the high-school course in driving, a number of standards have been developed on the basis of practical experience. It is suggested that these standards be applied by schools inaugurating a driving course, and by those schools whose driving course may not now meet them. It is to be understood that the standards given here generally represent minimum conditions, and that to

exceed them or improve upon them is wholly desirable.

1. The school administrator should take the lead in organizing a practical plan to include driving instruction in the school program. In addition, he must delegate both authority and responsibility to a qualified teacher for development and conduct of the course.

2. The teacher selected to conduct the course should be an interested person with proven ability in driving, who is trained in content and method for teaching the course. Proven driving ability cannot be defined in hard and fast terms. To qualify, however, it seems reasonable that a prospective teacher have several years of experience in driving different kinds of automobiles in both urban and rural areas, during all four seasons, and without serious accident experience.

3. The organization of the course should provide for class work consisting of such activities as guided discussions based on systematically assigned reading, project work, and supervised field trips. Class work should be scheduled over a period of time sufficient for student growth toward the desired goals. One semester is considered a reasonable time, altho intensive work over a shorter period might suffice. If the time is too short, however, the maturative process in learning will be incomplete.

4. The course should be organized so that each student receives instruction at the controls of a training car. The only way a student can learn how to handle an automobile competently is to sit behind the wheel of a real car and practice driving it under the supervision of a trained teacher. There is no safe substitute.

5. Periods of practice driving should be scheduled not less than once a week for each student. Most feasible schedules will call for practice driving from two to five times a week. In accordance with the principles of learning, students should not be scheduled for practice driving oftener

than once a day, and preferably for no more than one class period at a time.

6. The beginning stages of road instruction should be conducted in an enclosed area, on a private course, on barricaded streets, or on little-used streets such as in city parks. The school may have the police barricade the necessary streets during the school day. When first learning to drive, students may become confused by the presence of street traffic, and it is therefore important to have controlled conditions.

7. If practice driving is done on public streets, the car or cars used should have dual control and be adequately insured.

8. If possible, the later stages of practice should include driving in moderate traffic or on a highway or both. There is no substitute for supervised practice in the actual situations students will later experience when alone.

9. The school should provide for student use of text and reference materials, as in other subjects. Several student textbooks have already been developed in driving, and many other available materials not in book form contain valuable information for students. Where state adoption of textbooks is not mandatory, each school should decide upon its own text and reference materials after a careful review of the literature in the field. (See list of references, p. 120.)

10. The size of the class should be such as will promote teaching efficiency. In driving courses, class size depends largely on the number of students the teacher can instruct with the training car or cars and the number of assistants available. For purposes of determining class size and schedules, instruction in training cars may be compared with laboratory work in chemistry, physics, or practical arts subjects.

11. Tests to measure student achievement in both class work and road training should be used during and at the

end of the driving course. Some standardized tests are available for use in driving courses. (See list of references, p. 120.) Other tests may be devised by the teacher. Each test used should be a learning experience for the student as well as a device to measure his progress toward specific goals. Testing should not be considered an end in itself, but rather a variation in teaching method with the incidental results of reflecting student achievement *and* teaching efficiency.

12. The school should allow credit toward graduation for successful completion of the course in driving. In the absence of credit, both teacher and students may consider the driving course less important than it really is. Schools undertaking to provide this instruction should endeavor to set it up on the same plane as other high-school credit courses. While this point must be settled by each school for itself, it is suggested that allowing credit, even tho only as part of the credit for another course, is the wise procedure.

Evaluating the Driving Instruction Course

Stating the objectives of a course of study helps to delineate the nature and scope of the subject. Setting standards to assure achievement of the objectives helps to indicate what is involved in making the course successful. Something more is required. The course must be evaluated continuously in order to determine if the work is being done adequately.

The school should evaluate the course in driving both on a day-to-day basis and on a long-range basis. Day-to-day evaluation of driving instruction reflects the growth of individual students toward the goals of the course, and also reflects the efficiency of the teaching. The teacher may employ oral, written, and performance tests for day-to-day evaluation. He may also observe students critically in each learning situation to determine how well they grasp what is being taught. The reactions of students as shown by their off-the-record, informal remarks about the course will

often reveal more than conventional tests. Whatever means are used, the teacher must evaluate with care, being as alert to improving teaching methods as to finding out how much the students know or can do.

Long-range evaluation reflects the over-all accomplishments of the teacher, the students, and the total course of study as organized and administered in a given location. Technics available to the teacher for long-range evaluation of driving instruction are naturally limited. After sufficient time has elapsed for such evaluation to be undertaken, the students have left school and the teacher has little or no contact with them. Technics for evaluating driving instruction on a long-range basis, however, will have to be developed if the schools hope to determine the efficiency of their instruction. Three approaches to this evaluating problem suggest themselves.

Thru advance planning with state departments of motor vehicles, the schools may obtain accident and violation records of groups of drivers comparable in all respects except that one group would be composed of students who completed the driving course. A second technic might make use of a questionnaire sent to former students of driving, in which they would be asked to describe their experiences in driving after becoming licensed. A third technic might make use of personal interviews arranged by the teacher with students formerly in the driving course. However it may be done, long-range evaluation is necessary to reveal the values and weaknesses of driving instruction as given by high schools.

Solving Administrative Problems

IN THE decade since driving instruction was first offered by high schools, the problems of greatest concern to the school administrator introducing driving have been (a) fitting driving instruction into the curriculum, (b) providing road training, (c) selecting and training teachers, and (d) school liability. During the same decade a number of high schools in widely scattered sections of the country have instituted and carried on successful courses in driving. Their experience stands as a guide to schools that have not yet undertaken this work. That no single blueprint for the job will fit every school situation is admitted. This fact, however, is no deterrent to the school that wants to teach driving. This section will present a discussion of various practical approaches to the traditional problems.

Fitting Driving Instruction into the Curriculum

In introducing new matter into the curriculum, most school administrators prefer to do it in a way that causes the least possible change in the school program. While driving instruction can be fitted into the curriculum quite easily in some schools, introducing it in others may require a major change in organization of the school program. In the latter case, the problem confronting the administrator is one of choosing among relative values. When an administrator is convinced that new material will benefit the students, he

will want to alter the plan of operation to meet the new conditions.

Several approaches to the problem of fitting driving instruction into the curriculum are suggested. Other approaches, or a combination of two or more of those here presented, may be devised to fit the needs of a particular school.

1. By re-evaluating the present curriculum in the light of changing needs, the administrator may be able to arrange schedules to provide for driving instruction during the regular school day. In some schools this may entail deleting or adjusting present curriculum content. Preparation for driving an automobile is only one of the vital needs of today which may ultimately force a re-evaluation of the present curriculum in many high schools.

2. Driving instruction may be made a regular part of the curriculum in schools where classes in such subjects as physical education meet only two or three days each week. The days on which these classes do not meet may be utilized for the course in driving. Schools using this procedure will give the subject of driving a status equal to that of other courses.

3. Driving instruction may be placed in the curriculum as a subject available to students during their present study periods. Whenever this can be done, introducing the new subject causes little or no disruption of the existing curriculum.

Schools differ as to the number of study periods allowed each week to each student. In some schools, furthermore, seniors especially are allowed to arrange their schedules so as to be free to leave school during the last one or two periods of the day. When students have two or more free periods a day, driving instruction may well be carried on during these periods.

4. Schools desiring to offer a broad program of safety education may give driving instruction as the major unit of a

one-year or half-year course in safe living. Students taking such a course would study problems and safe practices relating not only to highway traffic and the use of automobiles, but also to such areas of safety education as fire prevention and protection, home and farm safety, situations in public places other than highways, and safety in swimming and other recreational activities.

Such a plan might well be used by schools where it is felt that sufficient preparation for all-round safe living cannot be satisfactorily provided thru integrating safety education with existing subjects. Because of the substantial amount of preparation needed for efficient automobile driving (see suggested content for a driving course, p. 27 to 31), the unit of driving instruction would form the greater portion of content in an over-all safety education course.

5. Driving instruction may be introduced in some schools by adding another period to the school day. This plan obviates a major upset in the existing curriculum. The length of the school day is by no means uniform. Furthermore, neither the number of periods per school day, nor the length of each period, is the same from school to school. Where school is in session five hours or less, it would seem reasonable to extend the school day, thus allowing time for worthwhile instruction in a new subject.

6. Non-school time may be utilized for giving driving instruction. While some schools begin the day's work at nine-thirty o'clock in the morning, other schools end their daily sessions as early as one o'clock in the afternoon. Depending on the circumstances in a given location, there is much time before or after school for conducting a course in driving.

Evenings, Saturdays, and school vacations are other times which almost any school can utilize for driving instruction until the course is made a part of the regular program. While some schools may have a very full program with little free time during the school day for the majority of students, the argument of "no time" cannot well be used when evenings,

Saturdays, and school vacations see the doors of these schools shut and locked.

Providing Equipment for Road Training and Other Activities

Well-rounded instruction in driving suggests its own goals, some of which pertain to acquiring knowledge, appreciations, and attitudes, and others of which are concerned with developing habits and manipulative skills for the actual driving of a vehicle.

Drivers coached only in the starting, steering, and stopping of a car have already demonstrated their inability to drive successfully in today's traffic. We find that such drivers have not learned enough about traffic laws; or their own limitations for driving; or highway characteristics that affect their driving; or how to drive in accordance with changing road and traffic conditions. We find that such drivers have little or no understanding of the reasons for traffic laws; or of the work the traffic engineer is doing with signs, signals, and road markings; or of the dangers arising from the fact that motor vehicles have been improved more rapidly than roadways.

We also find that such drivers do not appreciate the need for self-observance of traffic laws and sound driving practices; or for showing consideration to other drivers; or for allowing an extra margin of clearance for children and elderly pedestrians. These shortcomings of drivers who "picked up" just enough ability to start, steer, and stop a car clearly indicate a serious educational shortage.

One way of reducing this educational deficit is for schools, through classroom instruction, to provide would-be drivers with knowledge, understandings, appreciations, and attitudes which the majority of drivers apparently do not now possess to a sufficient degree. While this approach is logical, there is some doubt as to its adequacy. Can we expect to produce competent drivers thru classroom instruction alone, when

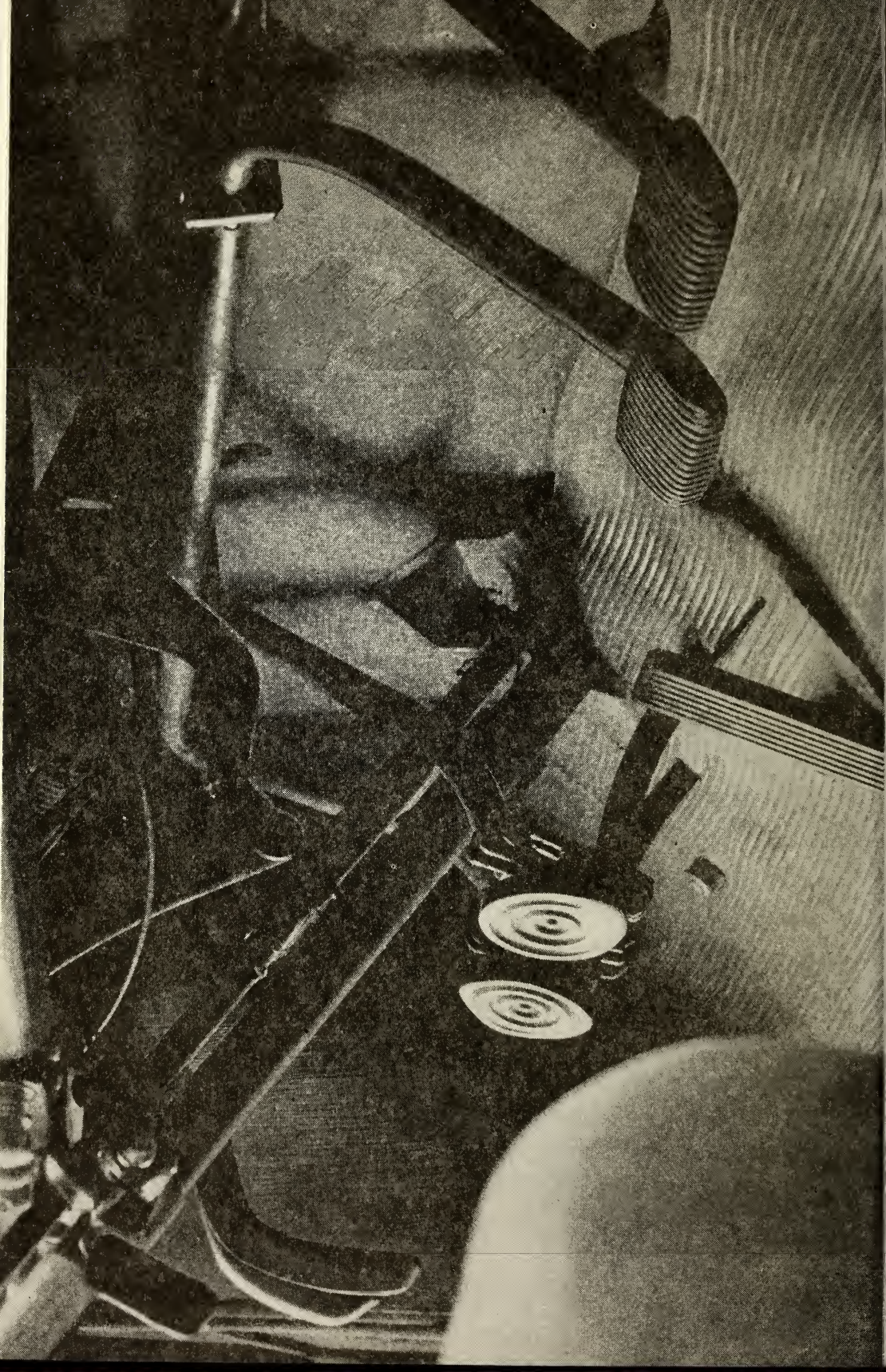
students then go outside the school to "pick up" a minimum of manipulative skill from any available source, usually under the coaching of parents, other relatives or friends whose shortcomings as drivers are so evident?

It will hardly be necessary to urge educators to use actual cars in instructing beginning drivers. The principle of using cars for teaching driving is equally as valid as the principle of using stoves for teaching cooking, typewriters for typing, or tools for woodworking. Schools undertaking to teach driving should make the instruction complete by providing a realistic learning situation for the students. Obviously the student should receive instruction and guided practice in applying, at the controls of a real automobile, the knowledge, understandings, appreciations, and attitudes gained in the classroom.

The type of vehicle best suited to high-school driving instruction varies with the way in which the course is organized. A high school with its own off-street practice driving area may employ standard cars, either alike or different in manufacture and body style. A school using public streets for practice driving usually instructs three or four students at a time in the training car. The students take turns at the controls, and observe from the back seat when not driving. For this plan of instruction, the most desirable car is a five-passenger, four-door sedan.

If road training is given on public streets, the vehicles used should be equipped with dual control. Three types of dual control training cars have been used. One type, preferred by some instructors, consists of two complete sets of controls (excepting the gear shift lever) so that the car may be driven from either side. Another type, which is widely used, has dual clutch and brake pedals on the right-hand side so that the instructor can (a) stop the car if the student fails to do so, (b) prevent the engine from being stalled when the student stops the car without disengaging the clutch, (c) prevent the student from starting the car when it is unsafe to do so,

STOCK CAR *showing simple mounting of dual control
brake and clutch pedals for driving instruction purposes.*



(d) reduce to a minimum the "jack-rabbit" effect so common among new drivers because of faulty manipulation of the clutch pedal, and (e) remove the student's fear that his own acts may lead to a collision during practice. In addition, dual control simplifies the teaching of proper technics for operating the car controls. Dual clutch and brake pedals (see illustration) can be installed in a car at nominal expense, the cost depending on where and how the controls are made and installed. A third type of dual control, consisting only of a brake pedal for the instructor's use, has had limited application.

It is desirable that the training car have an extra rear view mirror so that the instructor can avoid trouble from the rear without frequently craning his neck. Since the conventional driver's seat is not adjustable up and down, two cushions or pillows are needed to provide easier and better control of the car by promoting correct posture on the part of short-legged and short-waisted students.

Experience to date shows that a school may provide a training vehicle or vehicles in several different ways, no one of which will be equally practical for all school situations. A given school, however, should be able to adapt one of the ways discussed here in its approach to this problem.

1. The best method is for the school to purchase its own car or cars with school funds, just as the school buys shop machines, stoves, typewriters, and other educational equipment. This shows that the school is serious in its undertaking, and gives the program a firmer basis than it otherwise would have.

Another advantage in school ownership of the training car or cars is that of avoiding undesirable restrictions on their use. A school with its own car can schedule road training to any extent or at any time—before, during, or after school, in the evening and on Saturday, or during vacations. The car is available the day school opens, and may be used continuously until the school decides otherwise. There need be no waiting period while preliminary arrangements are made,

and no expense involved in having a school representative secure the car and drive it back to the school. Lettering may be used to identify the car as a training vehicle belonging to the school, or the car may be left unmarked.

A school may employ either new or used cars for training drivers. The main consideration is that the cars be in mechanically safe condition. Interested national organizations have undertaken a joint study with the automobile industry to explore various methods by which schools may acquire training cars. Out of this study also should come suggestions on the most economical plans for periodic replacement of training cars.

2. If a school wants its own car but cannot buy it with school funds, money raised by the students, or donated by students and others, may be the means to securing the first car. Irrespective of where the school gets the funds to buy a car, the advantages of school ownership of the car show clearly that the school will do well to acquire its own vehicle, unencumbered by restrictions from outside sources.

Before certain schools buy their own cars, they may provide road training in a number of other ways.

3. A school may secure the loan of a training car from an automobile club, a safety council, or an insurance company. While some schools may fear criticism for entering into an arrangement with a private organization, many schools have successfully used this plan to provide road training. Altho a school could not reasonably expect such a loan to be continued year after year, securing a car from one of these sources has helped many schools make a beginning and show their communities the value of training young drivers.

4. To get under way with a program, a school may secure the use of one or more training cars on a loan or rental basis from automobile dealers in the community. In either case the school should work out a careful plan with the dealer so as to avoid undue criticism from any source and to assure unrestricted use of the car for training purposes.

5. In some communities, the school may rent a training car from the teacher selected to give the course in driving. Here again, the school should have a clear agreement with the teacher on all conditions affecting the school use of the car.

6. In some cases schools have been able to provide road training thru the cooperation of the state highway patrol or the motor vehicle department. Schools cooperating with other public agencies in connection with driving instruction should set up and administer their own courses of study, and maintain supervision over all instruction.

7. Some schools may undertake a "home supervision" plan for providing road training. Under this program the school gives classroom instruction, and the students enrolled receive road training in the family car under supervision of a "home instructor." Parents or other home instructors agree to meet at the school so that the principal or teacher of driving may inform them of the objectives of the course, and the important part home instructors have in the program. To assure good road training, the teacher will find it desirable to meet several times with the parents for the purpose of giving them specific and detailed suggestions on road instruction procedure and on relating it to the school program.

In addition to meetings of the teacher with home instructors, the school provides home instruction materials for the parents' use in giving behind-the-wheel training to their sons and daughters. Under such a school-home cooperative program, the school can sponsor road training at no additional expense. With reasonable participation on the part of home instructors, the school also has a direct opportunity to help adults in the community improve their driving practices.

8. Several schools in North Carolina and Alabama have used school buses as training vehicles, principally to provide trained student drivers of school buses. This use of school buses is another example of how road training may be arranged.

In addition to providing cars for road training, schools

giving a course in driving should endeavor to make available certain equipment that will motivate the students and aid materially in making the instruction effective. Cut-away models of motors, transmissions, and differentials, for example, may sometimes be obtained from automobile manufacturers or dealers. Descriptive charts and sectional drawings of automobile parts suitable for classroom use are available from various automotive equipment manufacturers.

Driver testing and road training equipment may be made by schools having woodworking or machine shops. Plans for building these devices may be obtained from national agencies at nominal cost. (See reference Nos. 11, 14, 59.) By planning their use well ahead of time, a school may borrow certain equipment from automobile clubs, insurance companies, motor vehicle departments, or police departments.

Equipment used for class work—

Reaction time test. Reaction time, being closely related to driving, should be known and understood by each student. Several devices for measuring reaction time in hundredths or thousandths of a second have been developed. Depending on what device is used, the time for reacting to a given stimulus may be measured for movements of the hand, as in steering, or of the foot, as in braking. While the most elementary devices measure simple reaction to a known stimulus, other more complicated devices measure the choice or complex reactions more often used in driving.

Steadiness test. This device is designed to measure the accuracy and steadiness of hand movements. Muscular control and steadiness, being characteristics applied in driving, should be understood by students. Using this test promotes student realization of (a) differences in steadiness between oneself and others, (b) variations in one's own degree of steadiness at different times, and (c) the relationship between physical fitness and muscular control.

Activity test. This test is designed to measure the student's muscular activity. It measures this characteristic in terms of the number of movements the student can make with a small lever during a given period of time. Students using an activity test learn that (a) some persons are capable of more muscular activity than others, and (b) muscular activity varies according to physical well-being.

Eye tests. A great number of devices have been developed for testing the visual capacity of drivers. Many of these are adaptable for use in the classroom. It is estimated that at least 90 percent of a driver's responses reflect the direct influence of what his eyes see. Eyesight, therefore, is considered the most important physical characteristic involved in driving. The value of each student's understanding the functions of the eyes in general, and his own visual capacity in particular, is evident.

Tests easily administered in the classroom are available to determine visual acuity, astigmatism, depth perception or distance judgment, eye dominance, color perception, and other visual functions. Special devices are available to measure seeing ability under night conditions, resistance to oncoming headlight glare, and time for recovery from glare.

From discussion and use of these tests, students learn (a) the importance of eyesight in driving, (b) in what respects, if any, their own eyesight is below average, (c) that many persons have defective vision, (d) that most visual defects permit of correction or compensation, and (e) that a well-balanced diet helps to maintain good vision.

The teacher of driving who employs eye tests should not attempt to prescribe treatment for students with defective vision. Instead, the teacher should advise such students to consult with their parents about the desirability of having a professional eye examination.

Hearing test. Studies have shown that defective hearing is not a serious liability in driving. Some teachers, however, may want to introduce a discussion of the hearing sense by

testing the students' auditory capacity. An expensive "audiometer" is not necessary. By using a loud ticking watch, or by whispering to students thru cupped hands over a distance of twenty feet, the teacher can obtain the desired result.

Equipment for road training—

Barricades and stanchions. The school using a special area for practice driving, either on public ways or on school property, will find barricades very helpful in restricting other traffic from the area, as well as in forming practice parking spaces and turn-around stalls. Stanchions may be used to mark center lines, and limit lines for practice stopping. Students can construct the necessary barricades and stanchions for use in their own road training.

Stopping distance test. Few persons who have not studied the matter realize how far a car travels, at different initial speeds, before the driver can apply the brakes in an emergency. Few also know what distances the car will travel, at different initial speeds, from the point where the brakes are applied to the point where the car comes to rest. With special equipment it is possible to measure these distances quite accurately. The value of using such equipment is patent, for it provides student drivers an opportunity to measure the distances involved in bringing the training car to a stop. By participating in such tests, students voluntarily reach indisputable conclusions regarding their own ability to bring a car to a stop.

Device for measuring smoothness in driving. Commonly known as the "driving jerk recorder",¹ this device records the jerks imparted to a car by improper use of the accelerator, clutch, and brake pedals. Placed on the floor of the car, it operates while the car is moving forward or backward.

The chief value of the driving jerk recorder is that of en-

¹Designed by the American Automobile Association.

abling each student to compare his smoothness of operation with that of other students in the class, either for a given maneuver, or over a common route.

Tumbling blocks or cylinders. A series of blocks or cylinders of equal thickness or diameter, but differing in height, may be used to show the driving student the rate at which the training car may be decelerated. Placed on the floor of the car, the shortest block or cylinder that falls over when the brakes are applied hard indicates the efficiency of the brakes. The use of this device helps the students to appreciate the relationship between braking efficiency and stopping distance. It is also helpful in working with students inclined to apply the brakes too quickly or with too much pressure.

Up to the present time no one has devised a means of determining who is likely to be involved in an accident. Besides the measurable characteristics employed in driving, a great many intangible aspects of human behavior are parts of any driving situation. Thus, a driver with better than average ability, as determined by a battery of tests, may have an accident because of momentary inattention to road and traffic conditions. Conversely, a driver with less than average ability in measurable characteristics may drive for years without accident, by correcting or compensating for his known limitations. No one should assume that the use of driver testing equipment *per se* will prognosticate accident-proneness.

The significant educational values in using these devices are (a) that they provide comparative measurements of certain physical and visual abilities known to be used in driving motor vehicles, (b) that these measurements help students understand some of their own limitations for driving, (c) that they remove guesswork from discussions about certain performance aspects of both drivers and vehicles, and (d) that they have a unique value in stimulating thoughtful student consideration of many important elements of driving. Schools teaching driving, therefore, should make use of driver testing equipment.

Selection and Training of Teachers

Whenever new subject matter is introduced into the school program, the administrator is faced with the need of providing personnel qualified to teach the new material. There are several thousand persons in the United States who have had specific training to teach driving. While not all these persons are instructing, many are teachers in high schools that do not now offer driving instruction. Each year sees additional courses being offered by colleges and universities for preparing teachers of driving. During the summer of 1946, thirty-four institutions in twenty states offered safety courses, of which twelve were to prepare teachers of driving.² It is reasonable to assume that any school genuinely desiring to offer driving instruction can arrange to have a teacher qualified for this work.

Teacher selection and preparation is commonly an important part of any new subject brought into the curriculum. Driving instruction is no exception. But no one expects a full complement of trained teachers to be ready immediately when a program is inaugurated on a wide scale. Formal teacher preparation, never adequate during the early development of a program, tends to lag somewhat behind other elements even after the program is widely established.

At this point, a consideration of teacher qualifications is pertinent. Certain attributes which all teachers should have are especially necessary for teachers of driving. Of utmost importance are an enthusiastic interest in the work, an honest conviction that young drivers should be well trained, and a personal desire to create safer highway travel thru such training. Inferior teaching of driving can easily lead to errors that may cost lives.

General educational background is another qualifying fac-

²Weedon, Vivian. "Summer Courses in Safety." *Safety Education* 25: 10-12, 35. May 1946.

tor. No hard and fast statements can be made regarding background. Many successful teachers of driving have specialized academically in science, social studies, industrial arts, or physical education. The administrator close to the local situation, who knows the teaching personnel available, is in the best position to evaluate a prospective driving teacher's background as related to the work of teaching driving.

The ability of a teacher to command the respect of his students depends partly on his past driving record. It seems reasonable (as was stated earlier) to expect a driving teacher to have several years' experience in driving more than one kind of automobile, in cities and on highways, during all seasons, and without serious accident experience. Furthermore, teachers of driving should be persons who desire to set a good example in their own driving.

Other things being equal, the sex of a driving teacher is unimportant. Although men usually have the advantage of knowing more about the mechanical operation of automobiles, women are more likely to follow an established instructional plan. Most administrators consider the latter a desirable asset in teaching. Since no age limits can be reasonably prescribed, it is assumed that with persons qualifying in all other respects, age alone is unimportant.

Ideally, a person should have some formal preparation for teaching driving. With the increasing number of teacher training programs being offered by colleges and universities, especially during summer sessions, it should be relatively easy for any teacher to obtain formal training for giving driving instruction. A number of short intensive courses are offered in colleges and universities each school year. Teachers can take advantage of such courses as part of their in-service training for this work.

State departments of education can do much to promote teacher-preparing courses and institutes. They can assist in planning such courses in state teacher training schools, and can conduct their own statewide institutes.

In some rural and small urban districts, the problem of selecting and training teachers may be solved somewhat differently. Where teaching certificates dependent on college training are not required for high-school teaching, candidates for teaching driving can be solicited and interviewed. Special consideration should be given to applicants who themselves have learned to drive in a high-school driving course. Those having the proper qualifications (including at least a high-school education) can be selected for special training in an institute set up by the state department of education. Persons thus trained may then be assigned as assistant instructors to teach driving, working under the guidance and direction of a supervising teacher of driving in rural schools.

As more high schools offer driving, greater reliance will be placed on teacher-preparing institutions to provide three types of in-service training for high-school driving teachers: semester courses in evenings or on Saturdays, short intensive courses during the school year, and summer courses. The extension of driving instruction in high schools will also increase the need for teacher-training institutions to offer pre-service courses in driving. Soon we may look to the teachers colleges and state departments of education to set up teacher crediting for the subject of driving, as in other subject fields. It would seem reasonable that the minimum requirements for teaching driving be commensurate with standards set in other fields of instruction.

Local boards of education, state departments of education, teacher training institutions, and communities have a joint responsibility to provide needed training for teachers of driving.

School Liability and Insurance

An intelligent appraisal of the risk involved in using automobiles to teach high-school students how to drive, and

a review of the experience of several hundred high schools that have offered driving instruction, lead to two conclusions. (a) The risk to the school undertaking this work is no more than one would normally expect in such an activity—perhaps no greater than in certain other present activities, such as physical education. (b) The risk can be minimized so effectively that it ceases to be a reason for withholding driving instruction.

As in other activities, a school using cars in its driving instruction program assumes a definite responsibility for creating an instructional environment from which all possible risk is removed. Ordinary prudence indicates several controls that will help create a safe instructional environment. (a) A competent person trained for the specific activity should be appointed to conduct the course, especially the phase concerned with road training. (b) Training cars should be kept in safe mechanical condition at all times. (c) The school should formulate rules governing the use of the training cars, instruct all users about these rules, and require strict adherence to them on the part of both teacher and students. (d) Vehicles used for road training on public streets should have dual control, an extra rear view mirror, and cushions for short students.

Since risk can only be minimized and not eliminated completely from an activity such as driving instruction, schools should consider insuring training cars used on public streets. Where states do not allow schools to use public funds to purchase insurance, it may be possible for local civic groups to give financial assistance for this purpose.

In most states, training cars with dual control equipment can now be insured at the same rates as apply to ordinary passenger cars. This fact reflects the favorable experience of the companies insuring vehicles used in high-school driving instruction. Schools insuring their training cars should exercise extreme care to see that policies are written to provide the desired protection. It is recommended that the

amount of insurance coverage be governed by current practice in a given area, with due regard for the fact that many students will be using the cars.

Since it is not within the scope of this publication to deal extensively with the voluminous subject of school liability, only a few general statements will be made here. The common law rule in most states prevents a school board or school district from being held liable for student injuries arising out of school activities. Even where there have been statutory and judicial deviations from the common law rule, there is a strong tendency, in the absence of definite statutes to the contrary, for courts to construe the law in favor of the immunity principle.

Concerning liability of teachers, principals, and superintendents, the law holds any adult legally responsible for his own negligence. Negligence means failing to act as a reasonable and prudent person would do in the same or similar circumstances.

Schools offering road training in connection with their driving courses should obtain competent legal advice regarding the state statutes on school liability, as well as the appropriate means of insuring training cars and protecting instructors from damage suits.

Getting Under Way

Selecting Students for the Driving Course

WHERE the driving course consists only of classroom work, there is little or no problem in selecting students. In a separate classroom course, classes may include all students who want the instruction as preparation for the time when their parents or friends will coach them in operating a car.

Units in driving, or integrated material in driving, may be used in courses (preferably required courses) taken by all students in a particular year or grade. Here the driving instruction will benefit both those who will soon begin operating cars and those who may not drive until several years later. The latter group should become better pedestrians as a result of the instruction, and should have a more complete appreciation of sound driving practices when they eventually begin operating cars.

Where the driving course includes both class work and road training, demand for the instruction is usually so great that the school cannot at first enroll all who apply. This condition necessitates admitting selected groups of students to the course.

A first consideration would be to enrol only those students who are, or soon will be, of minimum legal driving age. Since this age varies from 14 to 18, each school will govern itself accordingly in selecting students on this basis. The school should consult motor vehicle administration authorities and the local police on the matter of learners' permits,

the giving of road training on public streets and in off-street areas, and on other questions of law relating to ages and conditions under which students may enrol in high-school driving courses.

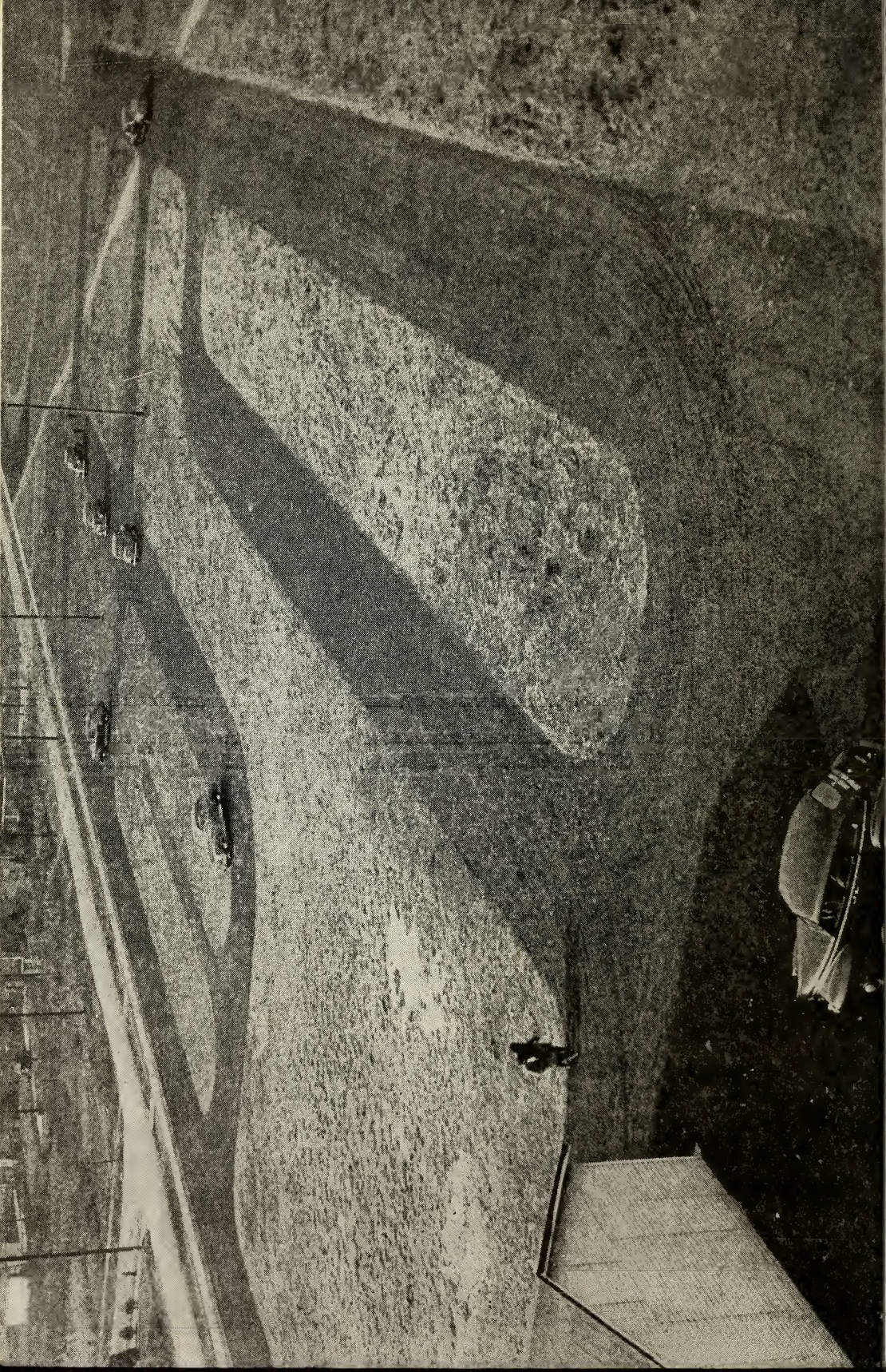
In some large cities most parents do not permit their children to learn to drive until they reach 16, even tho state law may allow 14-year-olds to become licensed drivers. Schools in such urban locations should consider local practice in setting age limits for students enrolling in the driving course.

The school must decide whether to admit students already licensed to drive. The fact that such students want to enrol in the course may be considered as reflecting credit on the school for offering driving instruction. It also indicates that some young drivers think their training was not all it should have been. Since the facilities of most high schools offering driving instruction will be somewhat limited at first, only those students without licenses should be admitted. While there might be advantages in having a heterogeneous group, these would be outweighed by the disadvantages. After the course has been given for several years, this point will be insignificant because most students will prefer not to begin driving until they can enrol in the course at school.

Schools sometimes admit to the course only those students whose families have cars or who are certain they will drive upon completing the course. Since instruction has the most value when given just before it will be used, this approach appears sound. But many students who do not expect to drive until long after leaving high school actually find opportunities for driving sooner than they themselves anticipate. Therefore it is undesirable to select students on this basis.

Schools might well give some preference to enrolling students who want driving instruction for vocational reasons. As time passes, the vocational training aspects of this course will become even more important than they are now.

SEVEN STUDENTS of Pershing High School, Detroit,
Michigan, practice driving in a special off-street area.



Further recommendations for selecting students for the driving course are: (a) accommodate both boys and girls; (b) train older students first, on the assumption that they will leave school sooner and have more immediate need for such training; and (c) consider carefully those students who want the training but who have physical defects. Many physically defective persons are able to drive safely and efficiently, if they are properly taught and have developed attitudes of compensation for their handicaps.

Scheduling the Instruction

Many different plans have been employed for scheduling driving instruction in high schools. The scheduling possibilities are quite unlimited. Our purpose here will be to indicate several types of schedules. These examples, in turn, will suggest other plans. Each school must determine which type of schedule may be best adapted to its own needs. The principal elements in scheduling are: (a) size of school and number of students to be accommodated; (b) type of course and number of weeks required for it; and (c) extent of teacher time to be spent in the driving course.

Separate Courses with Road Training

Plan A. In a large high school with its own off-street practice driving area (see illustration) and twelve training cars, one teacher may accommodate 180 students a semester in both class work and road training, as shown in the schedule for Plan A.

The schedule for Plan A shows the first two weeks of a six-week course in driving. The teacher has five daily classes of twelve students each, or a total of sixty students for each six-week period. In one semester, then, the teacher can instruct a total of 180 students. The number of cars available determines the number of students that can be handled in each school period. With ten cars, the number of stu-

dents per semester would be 150; with seven cars, it would be 105 students.

By a system of rotation, however, from fifteen to eighteen students may be accommodated with twelve cars. During each period, the extra students temporarily without cars may be assigned (a) to observe the practices and errors of students who are driving, (b) to assist them in practicing maneuvers, and (c) to assist in keeping records on car use and maintenance. Under this plan, it is not advisable for the extra students to ride in cars with those who are practicing.

SCHEDULE FOR PLAN A

*Schedule for First Two Weeks of a Six-Week
Course for Sixty Students and One Teacher,
Using Twelve Cars in an Off-Street Area*

Period	FIRST WEEK					SECOND WEEK				
	MON	TUE	WED	THU	FRI	MON	TUE	WED	THU	FRI
	Class Work	Class Work	Road Training	Road Training	Road Training	Road Training	Class Work	Road Training	Class Work	Road Training
1st	12*	12	12**	12	12	12	12	12	12	12
2nd	12	12	12	12	12	12	12	12	12	12
3rd	12	12	12	12	12	12	12	12	12	12
4th				F	R	E	E	P	E	R
5th	12	12	12	12	12	12	12	12	12	12
6th	12	12	12	12	12	12	12	12	12	12

* Twelve students in classroom.

** Twelve students using twelve cars in off-street area.

With forty-five-minute periods, equalized use of twelve cars by fifteen students would mean nearly eleven hours at the wheel for each student during a six-week course. Similarly, twelve cars used for eighteen students would mean nine hours at the wheel per student.

As shown in the schedule for Plan A, class work is required twice a week and road training three times a week for each class of twelve students. If the school periods are forty-five minutes, each student receives nine hours of classroom in-

struction, and over thirteen hours of road instruction and supervised practice driving. The schedule may be changed to allow different proportions of time for class work and road training, in order to meet the needs of individual students or groups who may need more training in the manipulative phases of driving a car.

The schedule for Plan A is easily adapted to a four-week course, or to a nine-week course, depending on the needs and desires of a given school. Table I shows the number of students that can be taught by one teacher in courses of nine, six, and four weeks' duration.

Also shown in Table I is the variation in number of students taught per semester and per year, depending on how many training cars are used. In each case shown, road training is given three times a week, and classroom instruction is given twice a week.

TABLE I

*Number of Students per Teacher, and Periods of Instruction per Student, for Courses of Varying Length, Using Different Numbers of Cars in an Off-Street Area **

No. of Cars	Length of Course in Weeks	Periods of Instruction per Student			No. of Students per Teacher	
		Class Work	Road Training	Total	Semester	Year
15	9	18	27	45	150	300
	6	12	18	30	225	450
	4	8	12	20	375	750
12	9	18	27	45	120	240
	6	12	18	30	180	360
	4	8	12	20	300	600
10	9	18	27	45	100	200
	6	12	18	30	150	300
	4	8	12	20	250	500
7	9	18	27	45	70	140
	6	12	18	30	105	210
	4	8	12	20	175	350

* Based on five teaching periods per school day.

Using several training cars in an off-street practice driving

area instead of on public streets has the following advantages:

1. The pupils-per-teacher ratio and the per-pupil cost are comparable to those of other high-school courses.
2. The school reduces public liability to the minimum.
3. Training cars need not be registered.
4. There is less need for insuring the cars and equipping them with dual control.
5. Both teacher and students can save time if the area is adjacent to the school.
6. The area may be built to include more typical road situations than would ordinarily be found on public streets near the school. Road signs and signals may be obtained from the police or highway department at little or no expense to the school.
7. One teacher may supervise more student-hours of practice driving than under any other plan of instruction.
8. The students, each in a car, create a somewhat realistic learning situation by providing their own vehicular traffic.
9. If several makes of cars are used, each student has an opportunity to become familiar with differences in the operating controls and handling qualities among vehicles.
10. The instructor may use teaching methods that would otherwise not be feasible. For example, each student may observe for one period the driving practices of other students and make notes for class discussion the next day.
11. Each student may progress at his own rate in practice driving without retarding other students.
12. Special equipment may be used more easily and more frequently. Barricades and stanchions for forming center lines and parking spaces, for example, may be left in position for several days, and when removed need only be placed alongside the practice area roadway.

The main disadvantages of having a special off-street practice driving area and using several training cars are:

1. Building such an area costs money. Too few such areas have been constructed so far for a meaningful cost figure to be cited. In addition, the cost would vary between cities and would depend substantially on the extent of roadway and type of surfacing used.

2. In an off-street practice area the students lack the actual experience of driving on public streets under normal traffic conditions. This drawback need not be serious if the instruction is given in a thoro manner.

Plan B. Under a frequently used schedule, one full-time teacher using a single car can accommodate forty-eight students in a semester course, taking care of both class work and road training, as shown in the schedule for Plan B.

SCHEDULE FOR PLAN B

Schedule for First Three Weeks of a Semester Course for Forty-Eight Students and One Teacher, Using One Car

School Period	Type of Instruction	FIRST WEEK					SECOND WEEK					THIRD WEEK				
		M	T	W	T	F	M	T	W	T	F	M	T	W	T	F
1st	Class Work	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
2nd	Road Training*	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
3rd	Road Training	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6
4th		F R E E P					E R I O D									
5th	Road Training	7	8	9	7	8	9	7	8	9	7	8	9	7	8	9
6th	Road Training	10	11	12	10	11	12	10	11	12	10	11	12	10	11	12

* Road training is scheduled for the twelve numbered groups shown, each group consisting of four students.

The entire class meets daily in a given period (in the schedule for Plan B, the first period) for class work. For road training, groups of four students each are formed. Groups 1, 2, and 3 receive road training during a given period every third day for eighteen weeks. Groups 4, 5, and 6 re-

ceive road training on the same basis but during a different period. Two additional periods are used to provide road training for the remaining six groups.

The three-week cycle shown in the schedule for Plan B is continued thruout the semester, allowing each student ninety periods of class work and thirty periods of road training. With periods of forty-five minutes, each student in a group of four receives nearly six hours of road training. If the class is smaller and the students are grouped in three's for road training, each one would spend seven and one-half hours behind the wheel.

Those schools finding it more feasible may schedule the class work during non-school time, and the road training during regular school periods.

Plan C. The schedule for Plan C is an alteration of the schedule for Plan B, showing a half-semester or nine-week course for twenty-four students and one teacher, using one car.

This may permit easier scheduling for some schools. The two-week cycle shown in the schedule for Plan C is continued for half a semester. Three students per period use the training car, each student spending five and one-half hours behind the wheel over the nine weeks. Forty-eight students may be accommodated during one semester, the same as in Plan B.

Some schools prefer schedules in which students attend the same class the same days each week. Both schedules for Plan B and Plan C may be set up to make this possible. In Plan B, each of four groups (total of sixteen students) would use the training car the same period every day for six weeks. The remaining twelve weeks of the semester would be divided to care for the road training of the remaining thirty-two students. In Plan C, the same procedure would apply. Four groups (total of twelve students) would drive every day for four and one-half weeks. The rest of the students (four

groups) would drive every day during the other four and one-half weeks of the nine-week course. In both cases, class work would be handled as suggested earlier.

SCHEDULE FOR PLAN C

Schedule for First Two Weeks of a Half-Semester Course for Twenty-Four Students and One Teacher Using One Car

School Period	Type of Instruction	FIRST WEEK					SECOND WEEK				
		M	T	W	T	F	M	T	W	T	F
1st	Class Work	24	24	24	24	24	24	24	24	24	24
2nd	Road Training*	1	2	1	2	1	2	1	2	1	2
3rd	Road Training	3	4	3	4	3	4	3	4	3	4
4th		F	R	E	E	P	E	R	O	D	
5th	Road Training	5	6	5	6	5	6	5	6	5	6
6th	Road Training	7	8	7	8	7	8	7	8	7	8

* Road training is scheduled for the eight numbered groups shown, each group consisting of three students.

Plan D. One teacher can instruct up to forty-eight students a semester by conducting class work during school time, and giving road training after school hours and on Saturdays. Schedules for Plan B or Plan C could be adapted for use in this way. Under this arrangement the teacher would be free to carry a light work load in another subject during part of the school day.

Plan E. In rural areas, one full-time teacher can instruct forty-eight students per semester in three high schools by rotating among the schools every three days. The program in a given school would accommodate sixteen students, all of whom would meet during one period for class work. The teacher would then give road training to these students, in groups of four, during other periods of the same day. Every third day the teacher would return to the same school. The schedule for Plan E shows how this would operate.

Each student would receive thirty periods of classroom instruction, and nearly six hours at the training car controls, if the periods are forty-five minutes. Like the schedules for

Plans B and C, this may be altered so that either the class work or road training may be scheduled during non-school time.

SCHEDULE FOR PLAN E

*Schedule for First Three Weeks of a Semester Course, with One Teacher and One Car Serving Forty-Eight Students in Three Rural Schools **

		Monday	Tuesday	Wednesday	Thursday	Friday		
	Period	FIRST School	SECOND School	THIRD School	FIRST School	SECOND School		
F I R S T W E E K	1st	Class of 16 students			Class of 16 students		F I R S T W E E K	
	2nd	Road training, Group 1**			Road training, Group 1			
	3rd	Road training, Group 2			Road training, Group 2			
	4th	F R E E P E R I O D						
	5th	Road training, Group 3			Road training, Group 3			
	6th	Road training, Group 4			Road training, Group 4			
		THIRD School	FIRST School	SECOND School	THIRD School	FIRST School		
S E C O N D W E E K	1st		Class of 16 students			Class of 16 students	S E C O N D W E E K	
	2nd		Road training, Group 1			Road training, Group 1		
	3rd		Road training, Group 2			Road training, Group 2		
	4th	F R E E P E R I O D						
	5th		Road training, Group 3			Road training, Group 3		
	6th		Road training, Group 4			Road training, Group 4		
		SECOND School	THIRD School	FIRST School	SECOND School	THIRD School		
T H I R D W E E K	1st			Class of 16 students			T H I R D W E E K	
	2nd			Road training, Group 1				
	3rd			Road training, Group 2				
	4th	F R E E P E R I O D						
	5th			Road training, Group 3				
	6th			Road training, Group 4				

* This plan shows the schedule for the sixteen students in one of the three schools.

** Road training is scheduled for the four numbered groups shown, each group consisting of four students.

If desired, the teacher may conduct a six-week course for sixteen students at one rural high school, and repeat the course at each of two other high schools during the same semester. This procedure might simplify the scheduling problem in each of the three schools, and would be easier for the teacher.

Plan F. A rural high school that does not require a full-time teacher of driving may instruct twelve students each semester by having one teacher devote only one school period per day to this work. The students would meet for class work on an average of once a week during a given period of the day. In groups of four, they would receive instruction in the training car on successive days when no class work was scheduled. The schedule for Plan F suggests a way in which such a plan might be organized.

SCHEDULE FOR PLAN F

Suggested Schedule for a Semester Course for Twelve Students and One Teacher, Requiring Only One Period a Day and One Car

Semester Week	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
1st	Class*	Class	Class	Class	Class
2nd	1**	2	3	1	2
3rd	3	Class	1	2	3
4th	1	2	3	Class	1
5th	2	3	1	2	3
6th	Class	1	2	3	1
7th	2	3	Class	1	2
8th	3	1	2	3	Class
9th	1	2	3	1	2
10th	3	Class	1	2	3
11th	1	2	3	Class	1
12th	2	3	1	2	3
13th	Class	1	2	3	1
14th	2	3	Class	1	2
15th	3	1	2	3	Class
16th	1	2	3	1	2
17th	3	Class	1	2	3
18th	1	2	3	Class	Class

* Each classroom period is scheduled for twelve students.

** Road training is scheduled for the three numbered groups shown, each group consisting of four students.

An additional number of students could be instructed if the teacher were to devote two periods a day to driving. In either case, the teacher would be free to carry a partial work load in his regular subject during the remainder of the day.

Plan G. Schools desiring to get under way with driving instruction and unable to set up a schedule during school time may organize classes in the afternoon, in evening school, or during summer vacation. For evening schedules, practice driving may be carried on after dark in a flood-lighted area near the school.

Plan H. Schools desiring still another scheduling plan may develop a cooperative school-community program wherein the school provides classroom instruction for a sizable group of students. Working closely with the school, parents or friends of students, or the state highway patrol, provide training in a car, following an established pattern for each lesson. While this plan has been used successfully, it presents the school with an unusual problem of supervision over road instruction.

Separate Classroom Courses

The foregoing plans show many different possibilities for scheduling driving instruction. Excepting the last, all these examples suggest scheduling arrangements for a complete and separate course including both class work and road training. The complete course is highly recommended as being the best preparation for future drivers.

Schools which cannot immediately arrange for a complete course including road training can and should undertake a classroom program. The following plans, therefore, are given to show how a school may schedule class work instruction in driving. The content is the same as that outlined on pages 27 to 31. It is urged that schools schedule

such instruction with a view to including road training in the program at the earliest possible time.

Plan I. One full-time teacher can provide class work instruction for over 300 students per semester, depending on class size and the number of periods spent in this work. Three hundred and sixty students may receive one semester of instruction as shown in the schedule for Plan I.

SCHEDULE FOR PLAN I

Schedule for First Three Weeks of a Semester Classroom Course for 360 Students and One Teacher

Period	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F
1st	1*	2	3	1	2	3	1	2	3	1	2	3	1	2	3
2nd	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6
3rd	7	8	9	7	8	9	7	8	9	7	8	9	7	8	9
4th	10	11	12	10	11	12	10	11	12	10	11	12	10	11	12

* Each of the twelve numbered classes consists of thirty students.

The three-week cycle shown in the schedule for Plan I is repeated thruout the semester. In this case, each of the twelve classes consists of thirty students. If the periods are forty-five minutes, each student completes over twenty-two hours of class work.

Plan J. The full-time teacher may accommodate 320 students in eight classes of forty students each, as shown in the schedule for Plan J.

The schedule for Plan J shows the first two weeks of a semester schedule. If the school periods are forty-five minutes, each student completes over thirty-three hours of class work.

Either of the two class work schedules given here may be varied to fit a particular school situation. A high school having a regular teacher who is also qualified to teach driv-

ing may devise a schedule of classes to accommodate a smaller number of students by devoting fewer periods per day to this work. Such a teacher should then be given a proportionately lighter work load in his regular subject.

SCHEDULE FOR PLAN J

Schedule for First Two Weeks of a Semester Classroom Course for 320 Students and One Teacher

Period	M	T	W	T	F	M	T	W	T	F
1st	1*	2	1	2	1	2	1	2	1	2
2nd	3	4	3	4	3	4	3	4	3	4
3rd	5	6	5	6	5	6	5	6	5	6
4th	7	8	7	8	7	8	7	8	7	8

* Each of eight numbered classes consists of forty students.

Other Plans

The remaining schedules suggested here are in the nature of temporary expedients which some schools may find useful if they have not yet offered driving instruction. Aside from affording a means to make a beginning, the value of these approaches is generally quite limited. Schools using these schedules, therefore, should plan to set up a separate course in driving at the earliest possible time, including road training if at all possible.

Plan K. Schools wishing to schedule class work may set up one or more distinct units in driving within one or more existing courses. This approach might be appropriately used in connection with a course in physics, social studies, or health and physical education. Its principal advantage would be the ease of scheduling. Its great disadvantage would be the probability of too little time being spent on the unit or units of work in driving.

If the material were presented as a unit in one course, by a teacher trained to teach driving, the results might be worthwhile. If the material were given as units in several courses,

there would be inevitable lack of continuity, possible overlapping, varying emphasis by different teachers, and a general lack of coordination. For these reasons, offering driving instruction as units in one or more other courses is recommended only where the administrator has reasonable assurance that the outcomes of such instruction will be of real worth to the students.

Plan L. It is possible for practically all of the class work subject matter in driving to be integrated or correlated with the content of other courses in the high school. Scheduling driving instruction in this manner would be easy, but the calibre of such training would be questionable for several reasons. First, there would be little continuity or uniformity in the treatment of the driving material. Second, few teachers in whose courses the material was integrated or correlated would be trained specifically to teach driving. Their main interests would tend to be in their respective courses rather than in the driving material. Their methods of teaching would differ, and in many cases would not result in effective driving instruction. Third, it would be difficult, if not impossible, to supervise the driving instruction given in these several subjects. Most students would gain only a smattering of knowledge, and would not feel that they had received the well-coordinated instruction needed for driving.

In spite of all the disadvantages inherent in offering driving instruction through integration and correlation, there are schools in which a creditable job can be done by this procedure. It is not recommended as a desirable approach except in cases where the administrator is quite certain that teacher interest and teacher qualifications are such as would assure worthwhile results. And then only as a temporary expedient until a separate course in driving can be established.

Plan M. A school need not wait until driving instruction

can be scheduled as a regular part of the curriculum. Effective groundwork may be carried on by setting up an extra-curricular "driving club" under a qualified teacher. A driving club could complete the equivalent of twenty hours of class work by meeting weekly for a semester. Instructive field trips could be conducted as a part of the club's activities. Sufficient teacher ingenuity could make the driving club an interesting and practical undertaking for its members.

If a school already has a student government or student safety organization, the activities of the driving club might be made a part of the program of that organization. The faculty adviser or sponsor should be a person interested in driving instruction.

Plan N. A limited amount of driving instruction may be scheduled as part of the homeroom program for the year, or in the form of several assembly programs. Disadvantages in either of these plans are that any attempted instruction would necessarily be of a broadside nature, that only a few hours of instruction could be given, and that the whole subject could not be treated adequately. These plans are more appropriate if used to supplement a separate course in driving.

Plan O. A school wanting to get under way with a program of driving instruction, and being unable to schedule it during school hours, should consider the possibilities of utilizing time in the evening, on Saturdays, and in the summer. Scheduling a course for evening or summer school would be a relatively simple matter. Restrictions against regular day students attending evening school might well be lifted for this course in view of the special need. A semester course, with one-hour meetings two evenings a week, would provide an adequate class work foundation in driving. In summer school, one teacher could give driving instruction for several classes each meeting three times a week or oftener.

In considering ways of scheduling courses in driving, the

school administrator should bear in mind that many schools already have developed practical scheduling plans, some for the complete course and others for the class work course. It is reasonable to assume, therefore, that every school deciding to offer driving instruction should be able to work out a feasible schedule to meet its own needs.

The separate course including road training is recommended above all others. Next in value is the separate course in class work only. Any other approach runs the risk of losing its identity as training for driving, and may come to mean nothing more than the payment of lip service to a pressing social need. The practical value of these lesser approaches is that they enable the school to start the ball rolling, and provide an opportunity to build community support for this relatively new subject of driving.

Keeping Records

The keeping of meaningful records is just as important in connection with a high-school course in driving as it is with any other school subject. No record need be kept that is not put to good use in one or more of the following ways: to improve instruction; to measure results; to appraise and control costs; to protect school personnel. After a year or two, a given record which has served its purpose, may be destroyed. Similarly, records kept to provide specific needed information may be discontinued after that information has been obtained. Experience often shows that a given record form may be revised and simplified, and yet remain useful. The records discussed here are believed to be important to the over-all success of a high-school driving instruction program.

1. *Parent approval form.* Wherever a school offers road training as a part of its course in driving, the administrator should secure parental approval for every student enrolling

Sample Covering Statement Requesting Parent's Approval

Name of School _____

(date)

Dear Parents:

Your (son) (daughter), _____ (student's name), has asked to be enrolled in our course in automobile driving. Students taking this course will receive classroom instruction, and also training at the controls of an automobile. The car used for training has dual control consisting of brake and clutch pedals on the right-hand side for the instructor's use. Adequate insurance coverage is carried for this car and all who use it or ride in it. The teacher of this course, _____ (teacher's name), has had special training for this work.

Our goal in giving this training is to prepare competent, skilful, and responsible young drivers who will be a credit to their families and community.

If you wish your (son) (daughter) to take this course, please read and sign the enclosed card, and have it returned to this school.

Very truly yours,

(principal's signature)

Parent's Approval for Driving Course

(date)

I hereby give my approval for my (son) (daughter), _____ (student's name), to enrol in the course in automobile driving, with the understanding that (he) (she) will be under school supervision during the entire course.

Signed: _____
(parent or guardian)

(Sample)

in the course. This procedure will not relieve school personnel from negligence. But the fact that the school obtained such approval may help to show, if the necessity ever arises, that the school personnel are ordinarily reasonable and prudent in their undertakings.

The form used should not ask the parent to waive any right to claim for injury to the child, because a parent has no right to waive claim on behalf of a minor. Instead, the form should seek the parent's approval on the basis that the child will be under school supervision during the entire course.

An incidental value in using such a form is that the school may send a covering statement with the approval form explaining briefly to the parents what the driving course involves and the benefits it carries for the student, his family, and the community. This is an opportunity the school should employ to promote and maintain public support for the program from the time of its inception. Samples for the letter and an approval form are given on the preceding page.

2. *Pupil progress record.* Good instruction requires the teacher to keep a record of progress for each student in the class. This record must show more than the student's grades in tests. It should indicate to the teacher the degree of development of the student in terms of each learning situation comprising the course. It should show at any given time how completely the student has assimilated what has been taught—work in which he needs special help or more study as well as work he has mastered.

There is no good reason why the student should not at times see this record of his own progress as appraised from day to day by his teacher. It will serve to keep him informed about his growth in the course, and especially about his weaknesses.

The form for recording pupil progress can best be worked out by the teacher who will use it. It is suggested that the

form show the specific learning activities in their order of occurrence during the course, with space for checking several levels of accomplishment and for noting briefly the student's special difficulties.

The form should also provide a check on the student's attendance at each session of the course. A convenient method is to use a mimeographed form for each student, keeping the records for each class in a separate loose-leaf notebook. Whatever form is used, it should be simply designed and easy to use. A too-complicated form is unwieldy and soon loses its value because the teacher must spend too much time keeping it current. The beginning of a form follows:

Suggested Form for Pupil Progress Record

Student's name: _____					(date) _____				
Dates of attendance: 1-2-3-4-5--8-9-10-11-12--15-16-17-18-19--									
22-23-24-25-26--29-30-1-2-3--6-7-8-9-10--13-14-15-16-17--									
<u>LEARNING SITUATION</u>	<u>PERFORMANCE</u>					<u>REMARKS</u>			
	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>				
1. Driver's compartment									
2. Start-stop engine									
3. Test on controls									
4. Start-stop-1st gear									
5. Backing									
6. Start-2nd gear-stop									
7. Start-3rd gear-stop									
8. Test on shifting									
9. Turning right									
10. Turning left									
11. Parallel parking									
12.									
13.									
14.									
15.									

3. *Training car records.* Schools using one or more training cars in the driving course should keep records showing the extent of time the cars are used, the mileage each is driven, the number of students trained, and the schedule of preventive maintenance. Such records are a definite aid in determining the cost of driving instruction as well as in keeping the training cars in the safest possible condition. Here again, the forms used need not be complicated.

When a training car or cars are first used, the teacher may want to keep an accurate account, in tenths of miles, of the distance each student drives daily. This furnishes useful information on the total average distance required for the whole course or any part of it. The teacher may wish also to keep account of the time in minutes that each trainee spends at the controls, to assure each student's receiving a fair share of the available time for practice driving. After one or two classes have been checked for these items, the teacher will find decreasing value in continuing this type of record if successive courses are operated on the same plan.

Record keeping is the basis of car maintenance and operation costs. The teacher, therefore, should keep an accurate record of the amount and cost of all gasoline, oil, and anti-freeze used as well as the cost of all repair and replacement service. He should also use standard preventive maintenance charts for the particular car or cars being used, attending to all items on the charts from checking tire pressures weekly to having the 5000-mile inspection made when due. The three major reasons for records on training cars are (a) to keep the cars in safe condition at all times; (b) to promote economical use of the cars consistent with good instruction; and (c) to prevent their deterioration.

The forms used and the reasons for recording information on the training cars, if explained to the students, will help them learn about the efficient upkeep of a motor vehicle. Having students keep training car records will give them firsthand knowledge of car operating and maintenance costs.

4. *Accident records.* Cars used in high-school driver training are rarely involved in accidents. It is nevertheless the teacher's responsibility to make a prompt report on every training car accident. This report should be made to the school authorities and, if required by law, to the proper state or local police authorities.

The teacher should be prepared ahead of time to fulfil this responsibility by having on hand copies of the accident report form and by knowing how to prepare the report in an intelligent manner. An accident report is often the only means of later reconstructing the details of what happened. A carefully made accident report may prove of value long after an accident has occurred. The instructor, therefore, should not fail to make out and submit a report promptly to the proper authorities.

A teacher of driving has not completed his course until he has instructed the students about the conduct and procedure they should follow in case of accident, including how to fill out the accident report. Using sample state or local accident report blanks will help make this instruction effective.

Gaining Community Support for Driving Instruction

THE ABILITY of a school to do its educational job is affected by the amount and degree of support given to the school by the community. Wherever public support is full and sincere, the school is able to serve the community with a well-rounded and meaningful educational program.

Public support for a school program, in turn, is almost directly proportional to public understanding of that program. Parents and other adult citizens cannot be expected to give complete support to their schools unless they understand the objectives of the school program, the methods by which the school is attempting to achieve those objectives, and the results so far attained. These statements apply to the entire curriculum and all the activities of a school. They apply especially to the course in driving because of its relative newness as a school subject.

Experience shows that the effectiveness of a driving course depends partly on the degree of cooperation between the school and those public and private agencies interested in highway safety. While non-school agencies have been largely responsible for the inauguration of driving instruction in some high schools, any school planning to introduce a driving course should seek the advice and counsel of one or more outside agencies in the community for two reasons. First, these agencies can be of definite help to the high school at several stages of the course. Second, by soliciting the cooperation of outside agencies, the school is opening fertile channels of additional support for the program.

This section presents some considerations that are useful in gaining the kind of community support for driving instruction that will assure continuous and worthwhile results from this important school undertaking.

Publicizing the Program

Informing the public about the course in driving is a first responsibility of the school. Whether the process is called publicizing the program, community relations, publicity, reporting to the public, or some other term, this is the first step toward securing community understanding of what the school is doing. The citizens whose taxes make possible the work of the school have a right to know how their money is being spent. Citizens who receive little or no information about the work going on in their schools are rarely articulate in demanding such information. But they also rarely stand behind attempts of the school to obtain increased funds for new or extended school programs. The responsibility of the school in initiating public information, therefore, is self-evident. Some general principles that should govern a school public relations program follow.

1. The teaching staff and other school personnel (including members of the school board) should be first to receive information publicizing school programs and activities. Every person concerned with running the school is a connecting link between the school and community. Obviously these persons should be informed, preferably ahead of the general public, about the various phases of school work. The citizen who hears a teacher or board member disclaim knowledge of a new course of study, for example, will react unfavorably toward the school administration.

2. Students who are or will be affected by activities the school is publicizing should be among the first to receive information about these activities. Every student in a school is a representative of the school. With little effort, the school

can create a host of student representatives whose knowledge of the school program will be a potent source of information for their parents and other citizens. Most parents judge a school on the basis of what their sons and daughters tell them about it.

3. The public relations program should be well organized. Unless a school system is large enough for an assistant superintendent to direct public relations, the superintendent himself should assume this responsibility. He should set the policies that govern the disseminating of information about all phases of the school program. Only in this way can a school system be sure of the unity of purpose so desirable in the public relations of the organization. Other members of the school staff may originate the publicity material itself, but whatever is released must be in agreement with the over-all policies as stated by the superintendent.

4. A basic policy for good community relations calls for truthfulness and honesty in presenting information about the schools. This does not mean necessarily that the school need explain publicly everything that occurs within the system. It does mean that whatever is released must be based on facts.

5. The school should give liberal credit for assistance to any school program from a source outside the school. Many agencies in the community, both public and private, can render services which materially improve the instructional environment in diverse ways.

6. A public relations program should be continuous, not sporadic. One way to assure the desired continuity is to keep a plan book for educational publicity which will anticipate the important events and activities, such as beginnings of new programs, progress of students, results of road tests, demonstrations, use of visual aids, and graduations. While there are times when an intensified publicity campaign is necessary for a particular purpose, the school will gain and

keep public support thru the years only if it conducts a balanced and continuous public relations program.

7. Most school publicity should deal with matters that are timely, interesting, and instructive. For a continuous and meaningful publicity program, more material may be drawn from the everyday experiences in the classroom and other regular activities than from sensational or unusual happenings. The function of publicity should be to keep the community regularly informed. Explaining educational goals, describing new teaching procedures, telling about the completion of important elements in an outlined program, and showing the practical values of learning are examples of publicity material that will serve worthwhile purposes for the school. Driving instruction is a subject which by its nature abounds in good material for continuous public relations.

8. Publicity material should be prepared in a clear manner that will appeal to and be understood by all segments of the public. This means taking into account the several groups of citizens who differ from each other in educational background and other ways. No single type of publicity material will have the same appeal to all citizens. But nearly all citizens can be induced to take a genuine interest in the schools of their community. If there are sizable numbers of foreign-born citizens in the community, some publicity material can profitably be prepared in the appropriate foreign languages.

9. School public relations should employ all available media. This will help create interest and draw wider attention to school affairs.

The printed word is probably the easiest and most commonly used medium for publicizing the work of the schools. The range of use for this medium is almost unlimited. Many schools publish a newspaper, a magazine, a bulletin, special brochures, a yearbook, or an annual report. Under direct

control of the school, any of these several publications offers an excellent opportunity to spread information about driving instruction.

Newspapers in the community are another channel thru which the school may inform the public of its activities. The superintendent should arrange with the local press to have representatives obtain stories, articles, and other material on the work of the school from the principals or other designated persons. Usually the press likes to write its own articles or re-write material prepared in advance by the school. Newspapers are so universally read in all communities that every effort to achieve a friendly and cooperative working arrangement with their representatives will be advantageous for the school.

Some schools may desire to publicize their work, especially a new course in driving, outside the community. For this purpose the school may prepare articles for publication in a magazine, educational journal, or other periodical.

Schools having one or more cars for road training may have lettering on the cars, or on waterproof cloth signs attached to the doors, indicating that they are driver training cars used by the school. Small signs attached above or below the license plate may also be used to carry a message which will be read by the public. Lettering on the side of the car might be as follows:

DUAL CONTROL
DRIVER TRAINING CAR
WESTWAY HIGH SCHOOL

Signs attached to the car might read:

Student Driver
at the
Controls

Caution
Driver
Training Car

New Driver
Please
Be Careful

The spoken word is widely used in school public relations work. Tho difficult to control, the oral accounts of school activities, both formal and informal, are powerful in shaping public attitudes toward the schools. Student reports of the school and its work will generally reflect credit on the school if the students have been properly guided to appreciate the whole school program and the benefits it affords them. Prepared addresses given by adult school personnel or by students to civic, business, church, and professional groups in the community can do much to arouse public interest in the work of the school.

Schools located in or near communities having broadcasting facilities can impart information to the public by many types of radio programs. A school public relations broadcast may be in the form of a short address by a staff member. Several students may carry on a round-table discussion about their driving instruction, under the leadership of a staff member. Debates, town meeting programs, question-and-answer programs, interviews with parents or traffic police officers, and other presentations may be arranged for broadcasting.

Another public relations technic is to have staff members belong to various civic organizations in the community, some of these school representatives serving on the educational committees of such organizations. This procedure will promote cooperative assistance and a helpful interchange of ideas between the schools and such civic groups within the community.

Having students demonstrate their proficiency in a series of driving skill exercises is a practical way of showing the public the values of driving instruction. Parents will be favorably impressed with this portion of the school program if from time to time they can see their sons and daughters driving in a skilful manner at the controls of a real automobile.

The basic objective of publicizing a high-school driving

instruction program is to arouse and sustain community support at a level which will assure the necessary funds for carrying on the program. This requires that the school maintain a continuous public relations program. Other values accrue incidentally to the school that succeeds in its public relations work.

A community which has been led to give complete financial support to its schools has a natural pride in the activities and accomplishments of the schools. Under these conditions, the school administration is likely to experience most harmonious relationships between itself and other phases of community life. The school can fulfil its educational commitments more easily and with greater effectiveness.

Little need be said about the educational worth of student participation in the school public relations procedures. Inviting students to assist in this work provides them an opportunity to learn the technics used in creating understanding and appreciation for common values among diverse segments of the community population. Almost every public relations method used affords rich educational experience for participating students.

An entirely coincidental but important value of the public relations work concerning high-school driving instruction is found in its wholesome effect on adult driving practices. Parents who learn how the school teaches young people to drive are quick to see that their own practices fall short of what is now considered desirable. Realizing that the students are receiving training never given to them, many adults will improve their own driving in a serious attempt to close the gap in over-all driving efficiency which they see being formed between themselves and their sons and daughters.

Working with Public and Private Agencies

Present day public school education is no longer an isolated process concerned wholly with book learning inside the school

plant. Our young people derive their educational experiences in and from a total environment comprising the schools *and* all other elements of community life—local, state, national, and international. Our problem here is to find and use educationally sound relationships between the school and other elements of community living and activity, both public and private.

Schools teaching students how to drive are undertaking a job which is of concrete and vital interest to many specific groups in the community. The state driver licensing authorities will examine the students the school trains to see if they are qualified to be granted the privilege of driving. The traffic police and state highway patrol, always interested in keeping the streets and highways safe, will scrutinize the driving practices of high-school-trained drivers. Automobile clubs, insurance companies, and safety councils desire to help prevent motor vehicle accidents. Many civic organizations are definitely interested in high school driving instruction because they know it will benefit the whole community.

It is evident that the number of possible school-community relationships pertaining to driving instruction could reach impractical proportions. The administrator, therefore, must decide which relationships to cultivate. The following principles suggest themselves.

Relationships with public agencies—

1. The relationship should be based on an area of work in which both school and public agency have an interest.

2. In determining practical working arrangements between the school and any tax-supported agency, the keynote will be that of coordination. While the school should not duplicate or usurp the function of another public agency, there are areas where coordination of the work of the two agencies is both necessary and desirable. Similarly, coordi-

nation between the school and certain public agencies will assure that no important problem is being overlooked.

3. The relationship must afford an educationally sound return for the students.

4. The school principal and the head of the agency should confer at the outset and decide the pattern of the relationship.

5. The relationship should provide or stimulate additional community support for the school program.

Because of the differences in functions of public agencies, the school will find large areas for coordinated work with some agencies, and small areas with others. The pattern of relationship will vary from state to state and city to city. The public agencies with which schools teaching driving may establish the most profitable relationships are:

Department of highways

Driver license authority (in motor vehicle or other state department)

Local police

Motor vehicle department

Public safety department

State department of education or public instruction

State police or highway patrol.

A mutually beneficial relationship, for example, should (and in some cases does) exist between the school and the state department of motor vehicles. The motor vehicle department may aid a school by supplying copies of the traffic regulations to students enrolling for driving instruction; by examining classes of students for their learners' permits when their driving course begins or for operators' licenses after they complete the course; by sending able speakers to address driving classes on traffic laws and driver licensing; or by giving certificates to students who complete the school course in driving. The school, in turn, aids the motor vehicle department by enabling the examiners to work with organized groups of beginning drivers, or by including

in the driving course pertinent material prepared by the motor vehicle department.

In some states, students who successfully complete a high-school course in driving are automatically excused from the oral or written part of the driver license examination. This arrangement, growing out of cooperation with the licensing authority, provides the students with a tangible gain which they can expect as a direct result of taking the course. In other states, students successfully completing the high-school driving course are required, as are other applicants, to take the state driver license examination in its entirety. In these states, it is felt that the licensing function properly belongs with the state, and that students should have the personal experience of taking all parts of the license examination even tho most students will find the state examination comparatively easy. Whatever plan may result from joint school-motor vehicle department consideration of this question, schools are advised not to usurp the licensing function of the state.

Relationships with private agencies—

1. The basis of any relationship between the school and a private agency must be an interest, or area of work, common to both agencies.
2. The relationship must provide educational values otherwise unobtainable.
3. Where relationships with private commercial agencies are concerned, the school must weigh carefully the types and amounts of advertising which may be brought into the school.
4. The relationship with a private agency must not invite charges of favoritism against the school.
5. The relationship should lead to additional community support for the school program.

Because relationships with private agencies can be of much educational value, and because many of them desire to render

assistance, it is to the advantage of the school to make known the types of needed service that private agencies can supply. To assure services of high educational value, the school, in addition, can offer professional guidance to the private agencies in developing and adapting their services for school use.

No two communities will be identical regarding the local private agencies with which schools may cooperate. However, any school may establish helpful relationships with national private agencies, either thru their local offices or their national headquarters. Schools having courses in driving may cooperate profitably with one or more of the following private organizations:

- Automobile associations and clubs
- Automobile dealers associations
- Automobile manufacturers
- Bus and truck associations
- Business and professional groups
- Citizens' associations
- Colleges and universities
- Farm groups
- Insurance companies
- Newspapers
- Parent-teacher associations
- Police associations
- Radio stations
- Red Cross chapters
- Safety councils
- Service and luncheon clubs
- Women's clubs.

The school, for example, may establish a worthwhile relationship with a service club in the community. The service club may offer to provide one or more training cars for use in the driving course. Or it may pay for the insurance on cars otherwise procured for the school. Its individual members may be asked to explain the new course in driving to friends in the community, thus publicizing the work of the school on a wide scale. The club may elect to send a local

teacher to summer school for a teacher training course in driving. These are but a few of the ways in which a service club might help the school.

It is desirable for the school to seek assistance from a citizens' council or other group in the community whose main purpose is to undertake the promotion of civic improvement projects. Whatever its name, the membership of such a group usually includes representatives of all active public and private agencies interested in the community welfare. The administrator who confers with a citizens' council at the outset will almost certainly receive advice and help that will assure a good beginning for a new course in driving. Proper use of help offered will gain wide public support for the school in its undertaking.

Well-established relationships between the school and community serve to enrich the educational environment for the students. No school can hope to provide within its walls all desirable educational facilities and opportunities found in the community. But thru cooperative arrangements extending outside the school, it can bring certain opportunities to the students in the school, and can be the guiding force in shaping other opportunities outside the school so the students will be exposed to them in the most profitable way. Thus, a school that functions together with the community, and not apart from it, serves its own ends more effectively, and accordingly receives greater community support in all its undertakings.

Developing a Course of Study in Driving

UNTIL the work becomes "second nature", the teacher can give effective driving instruction by following a planned course of study, outline, or syllabus. Such a device affords the teacher a blueprint of operations so that he may know the purpose and scope of the course, the nature of its content, the sequence of learning experiences and time allotted for each, the instructional methods he will use, the inter-relationships of parts of the course, and the outcomes he may expect the students to achieve. In short, a course of study shows the teacher how to guide his class efficiently from a starting point over a pre-determined route to a particular destination.

While a course of study is requisite to good teaching of driving, a single course of study will not meet equally well the needs of widely scattered schools. The chief reason for this is that schools naturally reflect in diverse ways the character of their locations. Not only do large urban schools differ from small rural schools, but schools in communities of the same size vary within a given system, as well as from locality to locality. Facilities differ among schools. Even universally accepted needs in education are defined differently from school to school. For these reasons, a single course of study is no more desirable in driving than in any other subject.

The sources of vitality for a course of study are to be found in the community where the course is used. Stimulation and guidance from outside, while often helpful, can-

not take the place of work put into a program by persons in the community. Those closest to the situation can interpret needs in terms of facilities available and differences among students, and therefore can construct a course of study having special significance for the locality in which it is to be used.

This does not mean that those responsible for a local course of study in driving should blind themselves to what other schools are doing in the same field. Valuable ideas developed in other communities can be of great advantage to a school. The few surveys made to date of schools training students for driving show conclusively that there is no one best way of doing the job. On the contrary, these surveys indicate numerous approaches to the problem are being used currently, and that further experimentation is both desirable and necessary.

A particularly valuable by-product of a locally developed course of study, and one otherwise unobtainable, is the increased interest found among those persons who take part in developing it. Having constructed the course of study, they consider it their own work, and invariably spare no effort to make its use successful.

A word of caution is in order here against accepting as final a completed course of study in driving, whether developed locally or not. A course of study should be thought of as a community process undergoing continuous change and improvement, not as something static. A locally developed course of study, in all likelihood, will run less risk of becoming stereotyped than one brought into the community from an outside source. Obviously, the implication here is not that a course of study should be in a perpetual state of flux, but rather that those who are giving the course should be alert to improving it from year to year. Each time the course is repeated, the interested teacher can adapt it more closely to community needs, thru using better technics as they become known, or thru careful experimentation.

Responsibility of the State Department of Education

As a leading educational force within each state, the state department of education has a responsibility to give schools concrete assistance of many kinds. In the field of driving instruction the state department can assign competent personnel to help develop basic courses of study in driving. Following this, the state department can support communities in securing local adoption of a basic course in driving.

With additional high schools inaugurating courses in driving each year, one of the most urgent needs is training for those who will teach driving. The state department of education is in a position to see that this problem is met. It can arrange its own institutes or short courses on a statewide basis, or take the lead in organizing and sponsoring teacher-training courses in colleges and universities within the state. This service is most obviously needed in those states where the department of education has published or is planning to publish a course outline or syllabus for driving instruction.

Regarding the almost indispensable relationships schools should establish with public and private agencies interested in highway safety, discussed earlier in this report, the state department of education can lay the groundwork for such relationships with public and private agencies on the state level. Contrast, for example, the difference in effectiveness between half a hundred school superintendents calling one by one for assistance from the department of motor vehicles, and the state superintendent of public instruction sitting down with the motor vehicle administrator and working out a plan for coordinating the school program in driving with the requirements of the motor vehicle department. The latter procedure is undeniably better for all concerned, and should be initiated by the state department of education with the heads of various public and private agencies in each state. The agencies concerned will thus be able to render far more useful

service to the schools on a statewide basis than by having individual superintendents conferring with them singly.

The state department of education can develop examinations and certification procedures that will be useful in qualifying high-school teachers of driving, as well as students who successfully complete the course in driving in their respective schools. In some states the highway patrol, motor vehicle department, or highway department collaborates with the department of education in providing a certificate of proficiency for each boy and girl who successfully completes the high-school driving course. The certificate carries the signatures of the heads of the department of education and the cooperating state department.

Depending on the scope of work undertaken in different state departments of education, the state department can assist the schools in one or more of the following ways: (a) where state adoption of textbooks is not mandatory, recommend text and reference materials in driving; (b) provide the schools with current pertinent information on traffic accidents and safety activities within the state; (c) assist schools in keeping records of students trained and formulate a statewide plan for analyzing the accident experience of trained and non-trained groups of drivers; (d) help schools publicize driving instruction programs in their own communities; (e) provide audio-visual aids and training devices for school use; and (f) set up teacher-training courses within the state.

In terms of helping communities with programs of driving instruction, the state department of education can thus provide much constructive assistance to the schools, both when a course of study is being started and while it is in operation.

Responsibility of the School Administrator

Within each community, the superintendent of schools is largely responsible for guiding the schools in developing a

course in driving, and for helping them make it successful. Being liaison officer between the state department of education and the schools, the superintendent must exert his leadership in translating assistance offered by the state department into a functioning program in his own community.

Where the state department of education is not active in this field, it will be up to the local superintendent to appoint qualified personnel to develop a course of study in driving, to establish relationships with non-school agencies, and to provide active guidance thruout the operation of the program. His responsibility also includes enlightening the board of education, city officials, and citizens of his own community with respect to the program of driving instruction.

Procedure for Developing a Course of Study in Driving

Developing a course of study or syllabus in driving is done on much the same basis as in any other subject. It is a joint project handled by a group of persons with varied qualifications. The group should include one or more high school principals and supervisors, several teachers, a few students, and several laymen in the community who by virtue of their occupations and experience can make significant contributions. Leadership for the group should be provided by someone who has had previous experience in constructing courses of study. The leader may be the superintendent, or a curriculum specialist from the state department of education.

Each member of the group should be familiar with the field of study in which the course is being built, doing outside reading independently, if necessary, before the group begins its work.

At the start, the group should set forth the broad aims of the course of study in driving. These should include a brief statement of philosophy or a point of view, and a statement of the limits within which the course of study is designed

to function. The group should then prepare a list of specific objectives of the course, which may be thought of as anticipated outcomes.

The next step is to select subject matter content. The material adopted should be closely related to the specific objectives as stated, capable of being used within a time allotment set up for the course, and of a level that will be understood by the students. The material selected then needs to be organized into a logical sequence of educative units.

The course of study group should suggest teaching methods for use in presenting various elements of the course. It should also recommend text and reference materials for student use, and suggest methods of testing the students and of evaluating the results of the course.

As outlined up to this point, a course of study in driving would appear to be a fixed body of knowledge which the teacher will hand out to the students in prescribed doses, following a set pattern. In practice, however, a course of study in driving is, first, a device to provide the teacher with a well-rounded perspective for the task being undertaken, and second, a vehicle to aid the teacher in giving instruction.

Its application should be flexible, allowing the first-rate teacher amplitude in his instructional approach, and yet serving the less able teacher in a way that will assure desirable outcomes from the instruction. The necessity for saving lives on the highway is a cogent reason for using a pre-conceived plan of action in teaching would-be drivers.

After the administrative arrangements have been made, the course of study is ready to be put into operation. Its first use, however, should be on a trial basis. The group responsible for constructing it should scrutinize the working of the course, and revise it from time to time in the light of experience.

Driving Instruction Then and Now

Development of Driving Instruction

INSTRUCTION in driving was important even in the horse and buggy age. Ability to handle horse-drawn vehicles was necessary before the youth of that day could be entrusted with the family carriage, particularly in the larger cities. Altho today the character of the vehicle is changed, streets and highways are improved and greatly extended, and the number of vehicles is many times larger, there still remains the problem of teaching people—especially our young people—how to operate motor vehicles efficiently and safely.

The invention of the first motor cars necessarily involved learning to operate them. Tho each inventor knew the mechanism of his own car thoroly, operating it on the streets was not as simple as might be supposed. Roadways were rough, vehicles were undependable, and their noise frightened both horses and people. Existing traffic laws were based on the needs of horse-drawn vehicles, and many of the laws were impractical for motorists.

As motor car companies were formed and people began to buy their vehicles, the manufacturer had to advise prospective customers that he would send a representative to teach them how to operate the new horseless carriage. After the purchaser received his car by freight, a company representative would arrive, put the car in working order, and spend about a day teaching the buyer how to operate it. The

expense of this instruction was included in the purchase price of the car, and the manufacturer assumed the instructional responsibility.

Early in the present century, cars were expensive, and were generally bought by those who could afford to employ mechanic-chauffeurs to drive and maintain them. This practice led to the establishment, either privately or by car manufacturers, of schools for training mechanic-chauffeurs. Since motorized traffic was limited and the early cars were not too dependable, the larger part of training for mechanic-chauffeurs was undoubtedly concerned with vehicle maintenance and repair.

As the automobile industry grew, and dealers became numerous, the dealer assumed the obligation of teaching the customer how to operate the automobile. The dealer's salesman agreed to instruct the prospective buyer how to operate the vehicle, if the buyer had not already operated one. Such instruction often was "hit-or-miss", depending on the salesman's ability to teach, and the pressure of his other business.

As the number of drivers increased, the practice of beginners receiving instruction from parents, relatives, and friends became very common. In fact, many persons now driving claim they taught themselves how to drive.

All the foregoing types of instruction suffered from lack of standardization because of wide variations in the mechanical design of motor cars, the traffic laws, and driving practices. Few who undertook to teach others how to drive possessed adequate teaching ability, and in many cases simply passed on to the learner their own poor driving habits. As automobile travel increased and the traffic accident problem became more acute, it was obvious that improved instruction of a more standardized nature was needed by the thousands of new drivers each year.

Public high schools first found themselves in a position to give instruction in automobile driving as a part of their vocational training courses in auto mechanics. Students in

such courses quite naturally raised many questions relating to the driving of a vehicle. For the most part, however, driving instruction in shop courses was confined to theory, perhaps over-emphasizing the mechanical aspects of the car, with little or no actual practice in driving a car.

Soon after 1930, driving instruction had its more definite beginnings in schools thruout the country. Early efforts were confined to a few "lectures" given to high school assemblies by motor club or safety council representatives, police or highway officials.

About this time national organizations interested in highway safety promoted the high school "traffic club" or "motor club". These clubs were extra-curricular activities, similar to stamp clubs and photographic clubs. Students met after school under the sponsorship of a faculty member, and discussed the mechanical operation of a motor car, safe driving practices, and allied subjects.

Behind-the-wheel instruction in driving had its beginnings thru these clubs where the faculty sponsor arranged to teach students in their own or other cars. Instruction was given after school on segregated areas of the school grounds or on streets adjacent to the school which were barricaded by the local police. Thru these early efforts came some attempts to standardize the driving practices of learners. Also during this period, individual persons and organizations interested in this field published several manuals on learning how to drive.

About 1935, several national organizations began a concerted effort to stimulate the teaching of driving in high schools. A number of text materials were published to be used in conjunction with such instruction. Most courses that found their way into the schools were for classroom work only, the feeling being that the greatest need was to develop a proper attitude on the part of drivers and that this could best be done by a classroom course.

These courses were incorporated in the curriculum in

various ways. While in some places they were set up as separate courses, elsewhere the material was integrated with civics, social studies, health education, science, or other subjects. A particular advantage of a classroom course in driving was the ease and economy with which it could be given in schools.

Many schools, unfortunately, made the course available at the level allowing the most convenient scheduling. Thus, in some places, the instruction was given before students had developed maximum interest in driving, and in other places, after most students had already obtained their driver licenses. Another difficulty was finding materials suitable in language level for the grade in which the course was given.

Teachers in many schools felt that classroom instruction by itself was insufficient, and that the use of training cars would provide more and better motivation on the part of students. Accordingly, an increasing number of high schools began to include road training in their driving instruction courses.

In the summer of 1936, Pennsylvania State College offered the first course ever given to prepare teachers of driving. For the succeeding five years, an increasing number of colleges and universities offered courses to train teachers of driving. Teacher preparation for this work helped to increase the number of high schools offering courses in driving during this period.

A concurrent development was the use of dual control cars for instructing new drivers. One manufacturer during the late 1930's built cars with full dual control so they could be driven from either the left or right side. Other cars were equipped with extra brake and clutch pedals on the right side. These pedals, attached to the regular controls by means of bars mounted on a simple framework bolted to the dash sheet, operate together with the regular pedals. While experience has since shown the latter type of dual control to

be adequate for most training purposes, some authorities prefer training cars using two complete sets of controls.

During World War II, some high schools and teacher-preparing institutions discontinued their driving courses because of wartime shortages and the difficulty of obtaining maintenance services for training cars, or because the teachers joined the armed services or transferred to war work.

In 1943, however, the War Department published a syllabus for a pre-induction classroom course in driving, and urged high schools to offer the training to boys, many of whom were later to be drafted into the Army and assigned to driving motorized equipment.

While wartime restrictions caused a partial retrenchment in the road training phase of high-school driving instruction, classroom courses in driving were continued in many schools and other schools that had never previously taught driving introduced the pre-induction classroom course. The war period created a backlog of young people who had no opportunity to learn how to drive and many of whom consequently lack that experience today.

It may be mentioned in passing, however, that many adult drivers improved their driving ability during the war period. Special courses were offered the country over for prospective members of the Red Cross Motor Corps and Civilian Defense Drivers' Corps. In addition, school bus drivers and the operators of vehicles in many large commercial fleets were given instruction in driving, including much specialized road training.

A survey¹ conducted by the National Education Association in 1945, near the end of the war period, showed that 441 out of 2196 school systems were offering some type of driving instruction to their students. A detailed questionnaire sent to the 441 school systems brought 216 usable re-

¹National Education Association, Research Division. *Driver Instruction in Public High Schools*. Washington, D. C.: the Association, November 1945. 25 p. (Mimeo.) Condensed. Hubbard, Frank W. "Driver Education and Driver Training". *Bulletin of National Association of Secondary-School Principals* 30:140-42; April 1946.

turns from systems of various sizes in twenty-nine states. Some pertinent findings from this survey characterize the 1945 status of driving instruction in high schools as follows:

1. Fifteen of the 216 school systems replying discontinued driving instruction during the war period.

2. Both classroom instruction and road training were being offered by eleven of forty-nine schools with enrolments over 1000 students; by eight of eighty schools with enrolments of 400 or more, but less than 1000 students; and by twelve of eighty-seven schools with enrolments under 400 students.

3. Of the schools surveyed, the number offering classroom instruction in driving increased from twenty-six in 1934-1935 to 197 in 1944-1945; the number offering road training along with classroom instruction increased from one in 1934-1935 to thirty-four in 1944-1945.

4. Of fifteen schools stating a cost figure for the course, in driving, the median total cost was \$27 per pupil per semester.

Because of wide variations in organization and administration of driving instruction, it is possible to cite only approximate cost figures. Data available from several sources indicate that a complete semester course, with classroom work and the use of a single car for road training, usually costs not more than \$30 per pupil, and frequently much less. Schools using several training cars in a special practice area are able to give the complete course at a cost of less than \$10 per pupil.

Brief Descriptions of Driving Instruction Programs

In this section are brief descriptions of representative driving instruction programs in high schools of different sizes located in various parts of the country. The programs described here were selected to show several plans of operation in communities of different sizes.

Programs in large cities—

1. Lane Technical High School in Chicago, Illinois, began a unique driving instruction program in 1936 and has continued it each year since. The course consists of classroom instruction and road training, and is handled by two instructors.

The classroom instructor accommodates four classes a day, each numbering thirty students. Each class meets in a special classroom for one double period (eighty minutes) a week during an entire semester. Lectures, discussions, and similar learning activities are conducted in a conventionally arranged part of the classroom where many street and highway traffic control signs are displayed. In another part of the classroom are thirty "dummy" cars placed in five rows. (See illustration.) Each dummy car consists of a seat, steering wheel, gear shift lever, and clutch, brake, and accelerator pedals.

With each student seated in a dummy car, the instructor teaches the class how to operate the controls of a car, and supervises their practice in developing neuro-muscular coordination. Each control of each car is wired to operate an electric light when the control is used. The lights are mounted in rows on a master panel board, one row for each car. By watching the panel board, the instructor can tell at a glance whether the students are handling the clutch, brake, accelerator, or gear shifting lever correctly.

Moving pictures taken from a car traveling thru city streets and along highways are sometimes shown to the class. Students are taught to watch the screen and to control their dummy cars according to changing road and traffic conditions revealed in the film. The pictures may be repeated to give the students additional practice in using the car controls correctly.

Class practice in dummy cars enables each student to form definite habits in using the controls, and to develop a sense

of timing in their manipulation. Students appear to progress more rapidly during the early stages of practice driving in actual cars if they have previously had instruction in dummy cars.

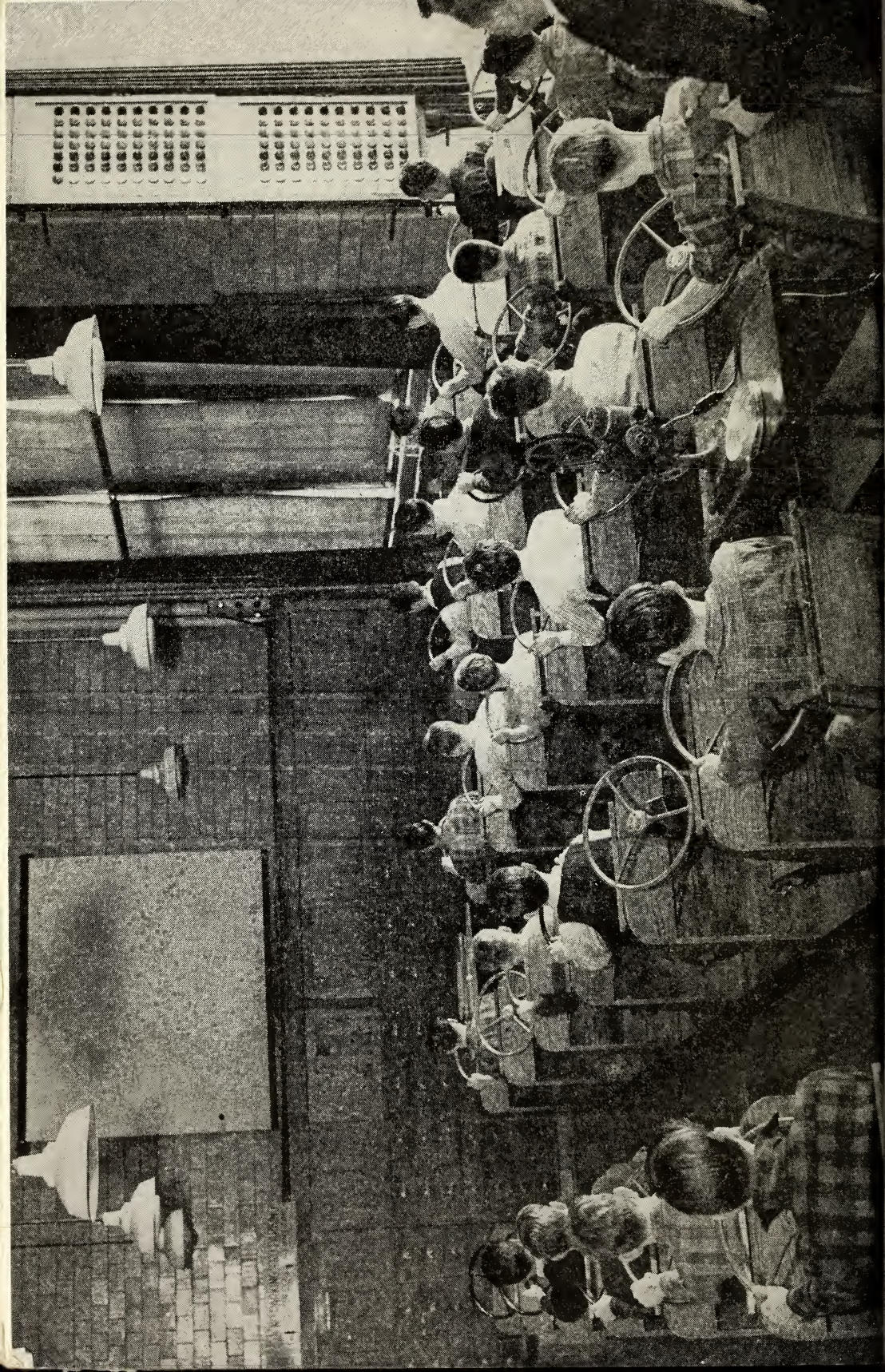
After a semester of classroom instruction, students receive training and practice driving in real automobiles. The road training instructor accommodates four classes a day, each numbering fifteen students. Each class is scheduled for road training one double period (eighty minutes) a week during half a semester. Under this arrangement, the 600 students who receive classroom instruction during one semester are given road training the following semester. The total capacity of the course, therefore, is 1200 students a year.

Road training is given in an enclosed practice driving area adjacent to the school. The school owns nineteen training cars, fifteen of which are kept available for practice driving while the others are being serviced or repaired in the school automotive mechanics shop. Each of fifteen students per double period drives a separate car.

During the first period the instructor directs the students to drive around the course in low gear. Riding with each student in turn, the instructor evaluates the student's ability to follow directions, the manner in which he handles the car, and the amount of nervousness shown. Each student is then scheduled for additional instruction or is permitted to begin solo practice.

The remaining periods of driving are devoted to practice in starting, stopping, steering, driving against opposing traffic and with parallel traffic, starting on a hill, parking and shifting gears. Because fifteen cars are being driven on the course each period, and because the length of roadway on the course is limited, the students do nearly all of their practice driving in low gear. This procedure has the further advantage of minimizing damage to cars in case one bumps another. In the final period, students usually drive in high gear.

THRU supervised class practice in dummy cars,
students of Lane Technical High School, Chicago,
Illinois, acquire neuro-muscular control for driving.



2. In Cleveland, Ohio, an extensive driving instruction program has been carried on since 1938 in eleven of the thirteen Cleveland high schools. Each of these schools gives a semester course for credit in driving, and together they are able to train about 1300 students annually. This is equivalent to one quarter of the graduates from Cleveland high schools each year.

Each school has assigned a teacher to handle the driving course. The teacher must become familiar with the locally developed course of study in driving before instructing any class. The Cleveland Automobile Club leases to the Board of Education eleven insured training cars equipped with dual control, one for each school giving the course.

Classroom work is carried on simultaneously with road training by each class of students. Using a standard textbook in driving, the students receive over twenty hours of classroom instruction. Road training is provided for four students per period on streets in the vicinity of the school. Each student receives about six hours of behind-the-wheel training, and spends approximately eighteen hours in the car observing as each of the other three students in his group drives.

Each student enrolling for driving instruction in a Cleveland high school pays a fee of \$3.50 for the course. As new cars are made available to the schools, operating and upkeep costs will be less than during the war period, and the present fee will be reduced. Money collected by a school belongs to that school and is used for gasoline, storage, maintenance, and other training car expenses. Funds left from one year to another are added to the school car fund.

The State Department of Education provides a certificate of proficiency for each student successfully completing the course. Thru a cooperative arrangement with the state Bureau of Motor Vehicles, the holder of such a certificate is excused from any type of examination when applying for his driver license.

3. Pershing High School in Detroit, Michigan, within the last few years, has initiated a driving instruction course using a practice driving area adjacent to the school. (See illustration.) Six training cars were given to the Board of Education by the local motor club and two insurance companies. No advertising appears on the vehicles. The practice driving area is designed to accommodate twelve to fifteen cars as soon as they can be procured.

A new group of students receives driving instruction every four weeks. A group consists of six to nine students each of whom spends twenty class periods in the course, nearly all of which are devoted to practice driving. In the past, classroom instruction in driving was provided at earlier grade levels as units in other courses. Thus, the practice driving periods enable the students to acquire the proper skills for driving and to employ the knowledge, understandings, and attitudes gained earlier in the classroom.

Each student drives a separate car on the special practice area. Driving in low gear for several days, the students become familiar with the car controls in a series of starts and stops. As they progress, students are instructed in shifting gears and in making various maneuvers including spot stops, parking, backing, and turning around. Students are also allowed some free time to practice driving acts of their own choice. The six cars moving simultaneously on the practice area provide a traffic pattern which helps students accustom themselves to cooperative use of the roadway. The area is large enough (approximately 250 feet, by 400 feet) to permit cars to be operated in high gear.

In periods when more than six students are scheduled for driving instruction and practice, they take turns at the wheel. Those temporarily without cars observe other students for violations of sound driving practices, or assist students who are practicing parking or other maneuvers. At no time, however, is more than one student permitted in each car.

The six cars are garaged in a building at one end of the practice area. A student from the school who is a licensed driver is employed to assist the instructor in moving the cars into and out of the garage each day, and in keeping the cars wiped clean. The student assistant also lubricates the cars, but only the instructor fills the tanks with gasoline.

Since there are six periods a day and a turnover of driving students every four weeks, the instructor teaches 180 students per semester, or 360 students a year. On this basis, the cost of driving instruction per pupil compares favorably with that of other school subjects.

Programs in small cities and towns—

4. In Buckhannon, West Virginia, a county seat of 4600 people, the Buckhannon-Upshur High School serves the entire population (18,000) of Upshur County. In 1937-1938, this school set up a six-week unit of classroom driving instruction as part of a "home and highway laboratory" course, with a physical science teacher as instructor.

In 1945-1946 the school initiated a full semester classroom course in driving given by a social science teacher. This course is open to students in the eleventh and twelfth grades, and carries one-half unit of credit. Each semester a class of thirty-five students meets five times a week, thus receiving approximately ninety periods of instruction for driving. No provision is made at present by the school for road training. Students learn to drive with their parents, or others, either while enrolled in the driving course at school or upon completion of the course.

The instruction is based on a course of study developed for the secondary schools of the state by a committee appointed by the president of the West Virginia Association of School Superintendents.²

²West Virginia Department of Education, Department of Public Safety, and State Road Commission. *A Course of Study in Driver Education for West Virginia Secondary Schools*. Charleston, W. Va.: Department of Education, 1945. 38 p.

Serving on this committee were the state supervisor of high schools, five county school superintendents, the director of special service division of West Virginia Institute of Technology, and three high-school principals. Assisting the Department of Education in developing the course of study were the secretary of the State Road Commission, the director of highway safety and the head of accident prevention of the Department of Public Safety, and another county school superintendent.

The course of study in driver education consists of eleven units, each developed in detailed outline form giving objectives, content, activities, appraisals, and references. At the end is a bibliography including student textbooks, and student and teacher references.

The West Virginia course of study is an outstanding example of a course developed at the state level with assistance from other state agencies. The course is flexible in nature so that it can be used within the limitations of any high school in the state. While those who prepared the course recognize the importance of road instruction at the wheel of a training car, they state that this part of the course is optional with the local high schools.

As given at the Buckhannon-Upshur High School, the course is presently limited to classroom work. This school, however, has made use of driver testing equipment supplied by an automobile club and insurance companies. Basing its judgment on the students who applied for their driver licenses upon completing the course, the Department of Public Safety feels that the course provides valuable and much needed preparation for high-school-age drivers.

5. In Dubuque, Iowa, a city of over 40,000 population, a unique program of driving instruction has been provided by the cooperative efforts of several community agencies. The high school, police department, safety council, and automobile club, together with active support from local news-

papers, have joined forces to conduct a course in driving which is regularly given in the adult evening school. Due to the nature of the course, students enrolled in day school are allowed to take this evening instruction in driving, with or without credit.

Class work is handled by an elementary school supervisor in a weekly class meeting lasting from one and a half to two hours. The learners are grouped in four's for road instruction. Each group of four has one two-hour period of road training a week, in which each learner spends a half hour at the controls and observes other learners for the remainder of the time. Instructors for road training were selected from bus lines, and were given a standard course for teachers of driving.

Three training cars were loaned to the school, one each by the police department, the safety council, and the automobile club. The school paid for installing dual control in all three cars, and for operating and upkeep expenses. In an aggregate of over 1600 pupil-hours of instruction, the only external damage to any of the cars was one tire cut resulting from a learner's striking the curb too hard.

A triangular arrangement of streets near the school was barricaded for road training purposes. Parking stanchions and other devices were used for training, in addition to the regular street traffic signs and markings. Large flood lights were mounted to keep the area sufficiently illuminated for night practice driving. The three cars operating simultaneously gave drivers an opportunity to become familiar with certain elements of traffic driving.

A recent class of over one hundred students graduated from the eight-week course. With ages of the group ranging from 15 to 65, about 60 percent were persons of school age, 30 percent were men and women of middle age and under, and 10 percent were persons over 40 years of age. At the end of the course, a state patrolman came in to examine the graduates for their driving permits. All were excused

from the written test on road laws. The superintendent and the supervisor in charge of the work voiced enthusiasm for the results of the course, and expect to continue it.

6. In Eldon, Iowa, a town of 1500 population, the superintendent took the initiative in introducing and teaching a course in driving. The students in the course spent most of the time in classroom work where discussions of readings assigned in standard textbooks in driving, and other class activities, were carried on.

For road training, a dual control car loaned to the school by the local motor club was used part time. Practice driving was done on a section of the athletic field set aside for this purpose. Four students at a time spent one period a week in the training car.

In this school system, traffic safety instruction was integrated with the content of regular courses on all grade levels. As students approached minimum legal driving age, part of their class work consisted of instruction with the use of an ingenious "traffic board". (See illustration.) With this device, the teacher explained and illustrated traffic laws, dangerous driving practices, and proper ways of preventing accidents. The use of such a traffic board is considered an excellent method of developing desirable attitudes toward automobile driving, as well as providing motivation for those of pre-driving age to learn the elements of safe behavior in a variety of street and highway situations.

7. In Tipton, Iowa, a village of about 300 people, the superintendent, at the suggestion of the state teachers college, sent one of his teachers to take an intensive course for teachers of driving. Upon his return, the instructor secured the loan of a dual control car from the local automobile club and carried on a very successful course for two years, after which he was promoted to a much larger school system.

The course consisted of class work twice a week and road training for four students in a group three times a week.

STUDENTS *visualize causes of traffic accidents and elements of sound driver and pedestrian practices in an Eldon, Iowa, classroom.*



Road training was conducted on streets roped off for this purpose. A class of about thirty students was maintained in the course. Credit was allowed for the course similar to that given for music and other special subjects.

8. For the past two years, the Woodland, California, high school has required all seniors to take a classroom course in driving. No road training is required or offered by the school. Each year, from 125 to 135 seniors, out of a total school enrollment of 750 students, register for the course. The instructor of this course previously attended two University of California institutes for teachers of driving, and also taught a similar class there during the past summer.

Instead of approaching the subject matter from a limited technological point of view, Woodland High School bases its instruction in driving on the sociological approach. This involves going beyond the mere consideration of how to operate an automobile as a mechanical device, and includes a study of many sociological problems created by the use of automobiles. Thru this approach, students come to appreciate the broad function of automotive transportation, and to understand the values for the individual and for society that result from skilful and efficient driving.

Thru psycho-physical tests, students learn about human qualifications and limitations for driving. In addition to class discussions based on reading assignments, and the use of visual aids, students participate in valuable learning experiences of the project type, including field trips and surveys. Among these experiences are: conducting vehicular and pedestrian surveys and reporting of findings to the student body and to service clubs in the community; investigating accident reports and examining accident scenes as a means of understanding causes and preventive measures; participating in conferences on driving with students from other high schools; conducting student assembly programs on driver problems; and preparing publicity material on the

program of driving instruction for the school and local papers.

While many of the students are already licensed drivers when they enrol for the course, those who are unlicensed may learn to drive under supervision of a parent or friend. Near the end of each semester, a member of the State Traffic Patrol examines students in their driving ability and their knowledge of California motor vehicle laws. Students satisfactorily completing the examination receive driver licenses.

The cost for the semester classroom course in driving is estimated to be from \$10 to \$15 per student. This cost includes the instructor's salary, and expenditures for books, cut-away motor, psycho-physical testing devices, and various other items of equipment.

9. Bent County High School in Las Animas, Colorado, with an enrolment of 330 students, introduced a driving course last year to train youthful drivers in handling the automobile safely and efficiently. The students taking the course adopted the name "Safe Drivers' Club", and met for class work one hour a week during the regular Friday activity period. No credit was given for the course.

The sixteen students in the class included some who were drivers and others who were soon to become drivers. A member of the faculty conducted the class meetings. The official Colorado edition of *Man and the Motor Car* (see reference No. 83) was used as a textbook. Several films were also shown to the group.

Officers of the Colorado Courtesy Patrol met with the class from time to time to give advice on driving and to answer students' questions. The Courtesy Patrol also distributed copies of *Behind the Wheel* (see reference No. 33) which were used to good advantage by students taking the course.

The school authorities felt that it was the most practical course for the time actually devoted to it. They heartily recom-

mended a more extensive course for the current year, to accommodate a larger proportion of the student body.

Programs on a statewide basis—

10. For several years, high schools in Delaware have offered driving instruction both in the classroom and in training cars. In 1944-1945, seventeen of Delaware's forty-nine high schools conducted a course in driving. In 1945-1946, twenty-three high schools offered a course sponsored jointly by the State Department of Public Instruction, the Delaware Safety Council, and the State Highway Department.³ The course consisted of classroom instruction given one period weekly for thirty weeks, and road training in which each student spent an average of four hours at the controls of a training car and an average of four hours observing from the back seat.

The materials used in class work included a standard textbook in driving, "Delaware Motor Vehicle Laws", and "Delaware Driver's Manual", and a number of visual aids. The State Highway Department furnished five dual control training cars which served the schools offering the course.

Of 878 students enrolled for driving instruction during the past year, 587 completed the course satisfactorily and were awarded state certificates. Had facilities for giving the instruction not been limited, it is estimated that over 2000 additional students would have enrolled in the course.

(See page 15 in the Introduction for an account of the results of driving instruction in Delaware high schools.)

11. In North Dakota, all high-school students are now required to pass an examination in driver education before graduation.⁴ The passing grade for this examination is 70

³ Delaware Department of Public Instruction, State Highway Department, and Delaware Safety Council. *Final Report on Student Driver Training Program*. Dover, Del.: Department of Public Instruction, 1946. 5 p. (Mimeo.)

⁴ North Dakota Department of Public Instruction. *Outline for Driver Education Course in North Dakota High Schools*. Bismarck, N. Dak.: the Department, 1946. 4 p. (Mimeo.)

percent. The Department of Public Instruction, in conjunction with the State Highway Patrol, states that only juniors and seniors are eligible to take the driving course, and that high schools must give instruction in this course for a minimum of three weeks or fifteen class periods.

The Department of Public Instruction permits individual high schools to organize driving instruction and administer the course in their own ways, either in conjunction with other courses or in specially organized classes. While no credit is given toward graduation, the Department issues a "completion certificate" to each student passing the written examination.

The Department of Public Instruction recommends a basic text,⁵ supplementary texts and reference materials, and visual aids. The topics on which examination questions are based include: the driver; the car and its maintenance; learning to drive; rules of the road; streets and highways; skills in driving; the pedestrian and the bicyclist; traffic accidents; and North Dakota motor vehicle regulations. The Department of Public Instruction provides the test questions for the examination, and requires high schools to send in names of students passing the examination.

While North Dakota high schools may meet the requirements for this course by providing classroom instruction alone, a few schools offer actual training at the controls of a car.

12. During the past five years the number of Wisconsin high schools offering classroom courses in driving has more than doubled, with over 80 percent of the schools now giving such instruction.⁶ Thirty-two percent of the schools offer classroom driving instruction as a separate and independent course, and 68 percent integrate it as a unit in biology, history, social science, or other subject. Eighty-

⁵Whitney, Albert W., editor, *Man and the Motor Car*. Revised edition. New York: National Conservation Bureau, 1941. xi + 287 p.

⁶Wisconsin Department of Public Instruction, and Motor Vehicle Department. *1946 Driver Education Procedure*. Madison, Wis.: Department of Public Instruction, 1946. 24 p.

one percent of the schools give this instruction as a required classroom course.

In order to obtain approval of the Department of Public Instruction and the Motor Vehicle Department, a school must give a minimum of fifteen hours' instruction in the classroom. The school must also register with the state departments; use specified text material including an official driver's manual; give a final examination; and send in the name, address, age, sex, and final examination mark of each student taking the course. Each student successfully completing the classroom instruction is given a certificate from the Motor Vehicle Department, countersigned by the school principal, which excuses him from certain tests when he applies for a sixty-day permit to learn how to drive.

The state departments do not require schools to offer road training. However, they urge every school to make available for students completing the classroom instruction a "home supervision" plan of road training. Schools cooperating with the state departments are furnished with manuals for the parents or other home supervisors to use in giving behind-the-wheel training to students who have completed the classroom course at school. Last year over 16 percent of the students who completed the classroom instruction in driving had their parents or other home supervisors give them road training with the aid of a manual supplied by the state departments.

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1. Abercrombie, Stanley A. *The Abercrombie Driver Test*. New York: New York University, Division of General Education, Center for Safety Education, 1941. 13 p.

A test composed of two parts, one being a knowledge test for adult automobile drivers, the other being a rating scale for automobile-driver skills.

2. Allen, Thomas. *Safe and Sane Use of Highways*. Milwaukee: E. M. Hale and Co., 1935. ix + 96 p.

An explanation of traffic regulations to aid teachers in helping students understand rules of the road.

3. American Association of Motor Vehicle Administrators. *Advisory Notes on the Standard Examination of Disabled Persons Applying for Driver Licenses*. Washington, D. C.: the Association, 1946. 15 p.

Prepared for use of official state driver license examiners, this report presents information on the examination of applicants with missing or stiff limbs, and briefly describes twenty-three vehicle controls for various types of disabled drivers.

4. American Association of Motor Vehicle Administrators. *Minimum Driver License Examination Standards*. Washington, D. C.: the Association, 1939. 25 p.

Recommended minimum standards for a driver license examination, together with a survey of the status of driver license examination requirements in the forty-eight states.

5. American Association of Motor Vehicle Administrators. *Procedure for the Minimum Standard Examination for Drivers*. Washington, D. C.: the Association, 1939. 28 p.

Recommendations for establishing a standard examination for drivers, and suggested regulations for administering it.

6. American Association of Motor Vehicle Administrators, and National Conservation Bureau. *Traffic Accident Prevention Through Motor Vehicle Inspection*. New York: National Conservation Bureau, 1945. 26 p.

A question-and-answer treatment of the importance of motor vehicle inspection, its history, types of programs, and promotion, organization, and administration of a motor vehicle inspection program.

7. American Association of Motor Vehicle Administrators, and New York University, Center for Safety Education. *State Official Guidebook for Traffic Safety Education*. New York: National Conservation Bureau, 1942. x + 138 p.

Prepared especially for use by state departments responsible for administering the state motor vehicle code, this book contains information of interest to school people on methods and procedures of conducting traffic safety education programs.

8. American Association of School Administrators. *Safety Education*. Eighteenth Yearbook. Washington, D. C.: the Association, a department of the National Education Association, 1940. 544 p.

A source book on safety education.

9. American Automobile Association. *Bibliography of Traffic Safety Films*. Revised edition. Washington, D. C.: the Association, 1945. 23 p. (Mimeo.)

A list of movie films and sound-slide films for elementary, high-school, and adult use. High-school and adult films are classified as pedestrian, driver training, and general films.

10. American Automobile Association. *Driver Education and Training Manual*. Revised edition. Washington, D. C.: the Association, 1945. viii + 176 p.

A manual for high-school teachers of driving, based on *Sportsmanlike Driving*. (See reference No. 15.) Includes material on meeting the need for effective driving instruction, units for classroom instruction and road training, tests, and miscellaneous supplementary material.

11. American Automobile Association. *Driver Testing and Training Devices*. Washington, D. C.: the Association, 1946. 11 p.

A description of fifteen driver tests, and information as to how they may be obtained thru loan or purchase.

12. American Automobile Association. *Driver Training Reduces Traffic Accidents One Half*. Washington, D. C.: the Association, 1945. 18 p.

A comparison of the driving records of 1880 high-school students who received training for driving and those of 1372 high-school students who received no such training.

13. American Automobile Association. *Fatality Hazard Greater for Young Drivers*. Washington, D. C.: the Association, 1946. 2 p. (Mimeo.)

One of twenty-six available research reports, this publication analyzes the miles of travel per fatal accident for different age groups.

14. American Automobile Association. *Plans for Building Driver Tests*. Washington, D. C.: the Association, 1945. 27 p.

Blueprints for building eight driver tests, together with information on the use of each test, materials needed, manner of construction, operation, and scoring.

15. American Automobile Association. *Sportsmanlike Driving*. Revised edition. Washington, D. C.: the Association, 1947. (In preparation.)

Single units also available in pamphlet form:

Unit I, *The Driver*, Revised edition, 1944. 88 p.

Unit II, *Driver and Pedestrian Responsibilities*. Revised edition, 1946. 80 p.

Unit III, *Sound Driving Practices*. Revised edition, 1945. 112 p.

Unit IV, *Society's Responsibilities*. Revised edition, 1946. 116 p.

Unit V, *How to Drive*. Revised edition, 1946. 116 p.

Text material for high-school students of driving.

16. American Automobile Association. *State Regulation of Safety Education in the United States*. Revised edition. Washington, D. C.: the Association, 1946. 38 p.

Summary of state laws, regulations, courses of study, and required teacher training in safety education in the forty-eight states.

17. American Automobile Association. *Training Drivers Through High School and Home Cooperation*. Washington, D. C.: the Association, 1946. v + 34 p.

An instructor's manual for organizing and conducting driving instruction, with class work being given in the high school and road training by parents or other home instructors.

18. Automobile manufacturers. *Owner's Manual or User's Guide*.

Booklets describing a car, its operation and maintenance, usually including material on safe driving.

19. Automobile Manufacturers Association. *A Factual Survey of Automobile Usage*. Detroit: the Association, 1941. 35 p.

An analysis of automobile use data gathered by the U. S. Public Roads Administration in six states from 1936 to 1938.

20. Automobile Manufacturers Association. *Automobile Facts and Figures*. Detroit: the Association. Approx. 64 p.

An annual compilation of statistical data on the manufacture and use of motor vehicles.

21. Bennett, Richard O. *The Bicycle and Traffic Safety*. Evanston, Ill.: Northwestern University Traffic Safety Institute (now The Traffic Institute), 1938. 29 p.

An analysis of the bicycle safety problem, with a recommended model municipal bicycle ordinance.

22. Bentley, Byron R. *The Autoist and the Law*. California edition. Los Angeles: The College Press, Los Angeles City College, 1940. vii + 188 p.

A series of actual court cases, each representing a different part of the California motor vehicle code, discussed so as to show the implications for safe driving.

23. Brody, Leon. *Personal Factors in Safe Operation of Motor Vehicles*. New York: New York University, Division of General Education, Center for Safety Education, 1941. xi + 96 p.

Findings of an extensive research into personal factors in accident causation, together with case studies of twenty-six accident repeaters, and recommendations for reduction of traffic accidents.

24. Delaware Department of Public Instruction, State Highway Department, and Delaware Safety Council. *Final Report on Student Driver Training Program*. Dover, Del.: Department of Public Instruction, 1946. 5 p. (Mimeo.)

A brief report of driving instruction in twenty-three Delaware high schools for the school year 1945-1946.

25. DeSilva, Harry R. *Why We Have Automobile Accidents*. New York: John Wiley and Sons, 1942. xvii + 394 p.

A unique analysis of the automobile accident problem, emphasizing exposure, driving speed, driving skill, and safety-mindedness, with a description of present accident prevention measures, and a proposed research program to prevent highway accidents.

26. Douglas, Richard A. *Common Sense in Driving Your Car*. New York: Longmans, Green and Co., 1936. 78 p.

Material for all who drive, on elements of good driving, in bad weather, in the city and country, at night, and caring for the car.

27. Ethyl Corporation. *Professional Driving*. New York: the Corporation, 1946. 72 p.

Written for the experienced driver, this manual presents driving helps compiled from personal interviews with more than 100 commercial vehicle operators with outstanding safety records.

28. Fitzgerald, James A.; Hoffman, Carl A.; and Bayston, John R. *Drive and Live*. Richmond, Va.: Johnson Publishing Co., 1937. xvi + 288 p.

Material on the driver, the car, accident causes, the public, and other subjects designed for educating young drivers.

29. Floherty, John B. *Youth at the Wheel*. Philadelphia: J. B. Lippincott Co., 1937. 168 p.

A reference book on safe driving for young drivers.

30. Hamilton, J. R., and Thurstone, Louis L. *Safe Driving*. New York: Doubleday, Doran and Co., 1937. xv + 74 p.

Written after experimental research on the subject, this book discusses human limitations—mainly visual—in automobile driving on highways, in traffic lanes, and at night.

31. Hawkins, Charles C. *Measuring the Results of Driver Instruction*. Abstraction from *A Critical Evaluation of Selected Tests Used to Determine Changes in Knowledge and Skills Relating to Automobile Driving*, by Stanley A. Abercrombie. New York: New York University, Division of General Education, Center for Safety Education, 1941. 32 p.

A brief description of The Abercrombie Driver Test, its application and results. (See reference No. 1.)

32. Indiana Department of Public Instruction. *Driver Education and Training: A Syllabus for Administrators and Teachers*. Indianapolis, Ind.: the Department, 1946. v + 12 p. (Mimeo.)

Brief outlines of twenty lessons for class work and road training in driving, together with a statement of objectives, administrative considerations, and a short list of references.

33. Kramer, Milton D. *Behind the Wheel*. New York: New York University, Center for Safety Education, 1944. 38 p.

A guide consisting of seven step-by-step lessons, and aids to the instructor, designed to assist those who will give road training to prospective drivers, especially high-school students enrolled in classroom courses in driving.

34. LaPorte, William R.; Hunt, Charles H.; and Eastwood, Floyd R. *Teaching Safety Education in Secondary Schools*. New York: Prentice-Hall, 1942. xi + 181 p.

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35. Lauer, A. R. "Checking Up on the Driver." *The American City* 53: 52-53; January 1938.

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36. Lauer, A. R. "Fact and Fancy Regarding Driver Testing Procedures." *Journal of Applied Psychology* 21:173-84; April 1937.

In this comprehensive review of scientific investigations in driving tests the author appeals for continued research in this field.

37. Lauer, A. R. "Research in Driver-Training". *School and Society* 53: 677-79; May 1941.

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38. Maine State Department of Education, and Maine Automobile Association. *The State of Maine Administrator's Manual for Driver Education and Driver Training*. Augusta, Maine, 1946. 16 p.

A guide for school administrators.

39. Marble, Priscilla R., and Wilson, I. Duane. *Automobile Safety*. New York: American Book Co., 1940. vi + 162 p.

A textbook in driving for boys and girls.

40. Massachusetts Department of Public Works, Registry of Motor Vehicles. *Instructional Material in Pre-Driver Education for High School Teachers of Massachusetts*. Boston: Registry of Motor Vehicles, 1946. 16 p.

Outlines of eleven suggested units in driving, with bibliography and selected visual aids, designed for use by high-school teachers of driving.

41. Miller, Ward I., and others. "The Public Relations Program". *The School Executive* 64: 45-56; July 1945.

A series of five short articles dealing with various phases of school public relations.

42. Municipal police departments. *Traffic Regulations*.

Local ordinances governing the driving of motor vehicles within a city.

43. National Association of Secondary-School Principals, Consumer Education Study. *Commercial Supplementary Teaching Materials*. Washington, D. C.: the Association, a department of the National Education Association, n.d. 24 p.

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44. National Conservation Bureau (also known as Accident Prevention Division of the Association of Casualty and Surety Executives). *Administrator's Manual: Driver Education and Training*. Designed for use with *Man and the Motor Car*. Revised edition. New York: the Bureau, 1945. 18 p. (See reference No. 83.)

A guide for principals and administrators on the administration, organization, and teaching of a high-school course in driving.

45. National Conservation Bureau, Education Division. *Teacher's Manual*. Designed for use with *Man and the Motor Car*. Revised edition. New York: the Bureau, 1945. 61 p. (See reference No. 83.)

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A pencil-and-paper test, with key sheet, for high-school students, based on *Man and the Motor Car*. (See reference No. 83.)

47. National Education Association, Research Division. *Driver Instruction in Public High Schools*. Washington, D. C.: the Association, 1945. 25 p. (Mimeo.) Condensed. Hubbard, Frank W. "Driver Education and Driver Training". *Bulletin of National Association of Secondary-School Principals* 30: 140-42; April 1946.

An analysis of a questionnaire survey on driver instruction in public high schools.

48. National Education Association, Research Division, Safety Education Projects. *Safety and Safety Education: An Annotated Bibliography*. Washington, D. C.: the Association, 1939. 64 p.

A comprehensive bibliography on all phases of safety.

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A treatment of legal hazards arising from the use of corporal punishment, negligence in school affairs, legal liability of boards of education, and liability insurance protection.

50. National Education Association, Research Division, Safety Education Projects. *Visual Aids in Safety Education*. Washington, D. C.: the Association, 1940. 32 p.

An annotated list of films and slides advertised as dealing with safety or driver training issued previous to December 15, 1939.

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An annotated list of films and slides advertised as dealing with safety education, driver training, and air raids, issued between January 1940 and May 1942.

52. National Safety Council. *Accident Facts*. Chicago: the Council. (An annual report.) Approx. 96 p.

A statistical summary, with charts and brief analyses, of national accident experience in motor traffic, industry, and other areas.

53. National Safety Council. *Prevention of Night Traffic Accidents*. Chicago: the Council 1940. 23 p.

A committee report on night traffic accidents analyzed in terms of the highway, the car, the driver, and the pedestrian, with recommendations for action.

54. National Safety Council. *Safety Education*. Published monthly, September thru June, by the School and College Division, National Safety Council, 20 North Wacker Drive, Chicago 6, Illinois. \$2.50 per year.

A magazine for teachers and school administrators.

55. National Safety Council. *Speed Regulation*. Chicago: the Council, 1941. 63 p.

A committee report on speed as a factor in accidents, with recommendations on controlling speed thru legislation, engineering, education, and enforcement.

56. National Safety Council. *Winter Traffic Safety*. Chicago: the Council, 1941. 22 p.

A committee report on the hazards of winter driving, giving the results of traction and speed tests, with conclusions and recommendations.

57. New York State Education Department, Division of Secondary Education, Bureau of Curriculum Development. *Driver Education and Training*. Albany: University of the State of New York Press, 1946. 36 p.

A syllabus for a secondary-school course in driving.

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59. New York University, Division of General Education, Center for Safety Education, and National Conservation Bureau. *Driver Testing Devices for Use in Driver Education and Training*. New York: the University, n.d. 11 p.

Information, including diagrams, specifications, and operating procedures, on five driver testing devices which can be constructed by students for use in driving instruction classes.

60. Neyhart, Amos E. *Road Test in Traffic*. Washington, D. C.: American Automobile Association, and State College, Pa.: Pennsylvania State College, 1945. 2 p.

A thirty-minute road test, consisting of two parts, for testing, selecting, and training motor vehicle drivers.

61. Neyhart, Amos E., and Noffsinger, F. R. *Standardized Tests*. Sportsmanlike Driving Series. Washington, D. C.: American Automobile Association, 1937-1943. 6 p. each.

A series of standardized tests for use with the units of *Sportsmanlike Driving*. (See reference No. 15.)

62. Ohio Department of Education, and Department of Highways. *Driver Education and Training in the Public Schools of Ohio*. Columbus, Ohio: The Heer Printing Co., 1944. x + 92 p.

A teacher's manual outlining minimum standards and subject matter for a course in driving.

63. Opinion Research Corporation. *The Public's Attitudes on Traffic Safety*. A Public Opinion Survey for the National Committee for Traffic Safety, Sponsored by the National Safety Council. Princeton, N. J.: the Corporation, 1946. 84 p. (Mimeo.)

Results of a public opinion poll on the traffic accident problem, police regulation of traffic, accident experience, training for driving, and related topics.

64. O'Rourke, Everett V., and Strasser, Marland K. "Driver Education in High Schools". *California Journal of Secondary Education* 21: 54-57; January 1946.

Report of a survey of the teaching of driving in California high schools.

65. President's Highway Safety Conference. *Report of Committee on Education*. Washington, D. C.: Government Printing Office, 1946. iii + 27 p.

A report for school administrators and others, defining responsibilities and suggesting principles for organizing traffic safety education programs.

66. Pure Oil Company. *So—You're Going to Drive!* Chicago, Ill.: the Company, 1946. 22 p.

A handbook on driving for young drivers and parents.

67. Rice, Arthur H., editor. *Today's Techniques: Successful School Public Relations*. First Yearbook of School Public Relations Association. Ann Arbor, Mich.: the Association, 1943. 260 p.

A series of articles by specialists describing important elements of school public relations.

68. Rosenfield, Harry N. *Liability for School Accidents*. New York: Harper and Brothers, 1940. xvii + 220 p.

A manual for educational administrators and teachers, published under the sponsorship of the New York University Center for Safety Education, and the New York University School of Law.

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Material designed to further the education of young drivers, with emphasis on development of skills.

70. Sherman, Ray W. *If You're Going to Drive Fast*. New York: Thomas Y. Crowell Co., 1937. 149 p.

Advice on driving, intended to correct bad habits rather than aid in forming new ones.

71. Shidle, Norman G., and Adriance, Robert I. *Motor Vehicle Transportation in American Life*. Problems in American Life, Unit No. 22. Washington, D. C.: National Council for the Social Studies, and National Association of Secondary-School Principals, departments of the National Education Association, 1945. 55 p.

The economic, social, and safety factors of motor vehicle transportation for American youth.

72. Siebrecht, Elmer B. *Measuring Driver Attitudes*. Research Contributions to Safety Education, Vol. 2, No. 3. New York: New York University, Division of General Education, Center for Safety Education, 1941. 29 p.

This abstract of a doctoral thesis explains the nature of the Siebrecht Attitude Scale, procedures involved in its development, and ways in which it may be used.

73. Stack, Herbert J., and Siebrecht, Elmer B., editors. *Education for Safe Living*. New York: Prentice-Hall, 1942. xvii + 388 p.

A source book on safety education, consisting of chapters on all major areas of safety written by specialists in those areas.

74. State departments of motor vehicles, highways, or police. *Driver's Manual*.

A popularized treatment of safe driving based on state motor vehicle laws,

75. State departments of motor vehicles, highways, or police. *Motor Vehicle Laws*.

A compilation of state laws on registering vehicles, licensing drivers, and rules of the road.

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An extensive treatment of problems of highway safety and suggested solutions, suitable as supplementary text material for high-school students of driving.

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Available in separate pamphlet form as follows:

Act I, *Uniform Motor-Vehicle Administration, Registration, Certificate of Title, and Antitheft Act*. v + 26 p.

Act II, *Uniform Motor-Vehicle Operators' and Chauffeurs' License Act*, iv + 13 p.

Act III, *Uniform Motor-Vehicle Civil Liability Act*. v + 6 p.

Act IV, *Uniform Motor-Vehicle Safety Responsibility Act*. iii + 16 p.

Act V, *Uniform Act Regulating Traffic on Highways*. vi + 54 p.
Legislation proposed for state enactment.

80. Weiss, Albert P., and Lauer, Alvhh R. *Psychological Principles in Automotive Driving*. Ohio State University Studies, Graduate School Series, Contributions in Psychology, No. 11. Columbus, Ohio: the University, 1931. vii + 165 p.

Report of research studies of eye, hand, and foot coordination; susceptibility to distraction; judgment of velocity; relation between vision and driving; measurement of recklessness; and other problems relating to automobile driving.

81. Welday, Roy A. *Your Automobile and You*. New York: Henry Holt and Co., 1938. xiii + 251 p.

A textbook for high-school students written by a high-school teacher of driving.

82. West Virginia Department of Education, Department of Public Safety, and State Road Commission. *A Course of Study in Driver Education for West Virginia Secondary Schools*. Charleston, W. Va.: Department of Education, 1945. 38 p.

Prepared by a committee of school superintendents and principals with the assistance of state government agencies, this course consists of eleven units of instruction in outline form, each including objectives, content, activities, appraisals, and references. A bibliography includes student textbooks, student references, teacher references, driver testing devices, and visual aids.

83. Whitney, Albert W., editor. *Man and the Motor Car*. Revised edition. New York: National Conservation Bureau, 1941. xi + 287 p.

A textbook for high-school students of driving. Available in some states in the form of a special state edition.

84. Wisconsin Department of Public Instruction, and Motor Vehicle Department. *1946 Driver Education Procedure*. Madison, Wis.: Department of Public Instruction, 1946. 24 p.

A manual for school administrators and instructors, this publication gives the history of classroom driving instruction in Wisconsin high schools; organizing courses and selecting content; selecting instructors; home supervision plan for behind-the-wheel training; standards for the course; and requirements to be met by high schools to obtain state department approval.

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