

Ways and Means to Traffic Safety

Recommendations of National Conference on
Street and Highway Safety, Including Findings
of All Conference Committees and of General
Meetings of Conference Held in 1924, 1926 and
1930, as Summarized and Approved by THIRD
NATIONAL CONFERENCE, May 27-28-29, 1930.

National Conference on Street and Highway Safety
1615 H STREET N. W., WASHINGTON, D. C.

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FOREWORD

The National Conference on Street and Highway Safety was organized in 1924 by Hon. Herbert Hoover, then Secretary of Commerce, to reduce the heavy toll of accidents in our streets and highways. Its work has developed progressively through extended Committee studies and general Conferences held in December, 1924, March, 1926, and May, 1930.

In this work the Conference and its Committees have had the constant cooperation of public officials, associations and individuals from all parts of the country concerned in the problems of motor traffic.

The following associations have cooperated with the Department of Commerce in organizing and financing the Conference: American Automobile Association, American Electric Railway Association, American Mutual Alliance, American Railway Association, Chamber of Commerce of the United States, Motor and Equipment Association, National Association of Taxicab Owners, National Automobile Chamber of Commerce, National Bureau of Casualty & Surety Underwriters, National Safety Council and Rubber Manufacturers' Association.

The Automobile Club of Southern California made substantial contributions to the staff work on the Uniform Vehicle Code and Model Municipal Traffic Ordinance (1925-30). The National Research Council contributed substantially to financing the work of the Committee on Causes of Accidents (1925-26). The American Engineering Council conducted and financed the development of the Manual of Street Traffic Signs, Signals and Markings (1927-30).

The Third National Conference, held May 27-28-29, 1930, and attended by delegates from nearly every State in the Union, including official representatives appointed by the Governors of forty-two states, reviewed the recommendations of both the previous Conferences and of the Committees which during the past three years have developed reports based upon the latest experience. As a result of its deliberations the Conference prepared and here presents its findings and recommendations for dealing with

Uniform Traffic Regulations, Enforcement of Traffic Laws and Regulations, Education of Highway Users, Traffic Accident Records, Construction and Maintenance of Motor Vehicles, and Street and Highway Traffic Facilities.

Every man, woman, and child in this country is directly concerned with the solution of the weighty problems which the Conference has studied. Progress toward solution is a duty laid upon all of us.

ROBERT P. LAMONT,
Secretary of Commerce,
Chairman.

**Address of
Hon. Herbert Hoover, President
of the United States**

The great loss of human life in street and highway accidents, and the toll of suffering among surviving victims, is a national concern of grave importance. You thus are gathered here to consider a humanitarian and economic problem which touches every man, woman and child in the land.

The last National Street and Highway Safety Conference, held in 1925, carefully worked out a program of measures for improvement of traffic conditions. It was then unanimously agreed that responsibility for carrying out these recommendations should lie with the states and local communities, that voluntary organizations also should lend their cooperation locally, and that the National Conference should reconvene only if need for it should appear.

In the years that have intervened there has been much effort to better traffic conditions, but the accident rate nevertheless continues to rise because the increasing volume of traffic outruns our efforts. Without those earlier efforts, conditions today would be much worse, but still the steadily increasing traffic has outrun all measures of safety. This Conference has, therefore, been called in response to a widespread recognition by Governors, state and municipal officials and associations devoted to the subject of need for a new appraisal of the situation in the light of experience, and for determination of further courses of action upon which all can agree.

It is encouraging to know that in some states and localities where remedies have been actively applied the accident increase has been curbed and traffic congestion has been somewhat relieved. The way has thus been pioneered. But universal improvement can come only gradually and through continuous and combined effort in many different fields and on a nation-wide scale. The members of this Conference, by working out further remedies through the best qualified judgment, are rendering an

invaluable service. It is the application of massed intelligence to the solution of a peculiarly difficult problem.

The Federal Government can properly assist in securing the spread of information and ideas and coordination of activities, but it still remains the fact, nevertheless, that the state and local authorities, with the cooperation of the public, must be responsible for the practical application of remedial measures. The remedies developed by this Conference must therefore rest for their final effectiveness upon the action of the states and the communities, supported in every possible way by the great body of citizenship.

I appreciate the response shown from all parts of the country in the assembly of this Conference, and I am confident that by consistent application of the recommendations which you will develop there may come a distinct betterment in the conditions of our street and highway traffic. On your efforts thus largely hinges the safety and well-being of a large percentage of our people. I congratulate you upon what you have already accomplished and assure you of my best wishes for the success of your further efforts. And I bespeak for you the earnest cooperation of every citizen.

**Address of
Hon. Robert P. Lamont,
Secretary of Commerce**

The duties of his great office have made it impossible for President Hoover to continue as Chairman of this Conference. I am sure I express the unanimous feeling of all who have been associated with him in this practical humanitarian movement when I say that we deeply appreciate all that he has contributed to it and that we find inspiration in the knowledge that his personal interest in the Conference is no less than before.

The reports on automobile traffic which in the regular course of business come to the headquarters of our Federal, state and municipal governments read like those of a war conducted on many fronts. Gains or losses are expressed in terms of deaths, injuries and destruction. And there is an aspect of these traffic casualties which brings to us a special challenge in that they do not fall chiefly upon able-bodied men, but, in all too great proportion, find their toll among the helpless, among the aged and among the children.

Fortunately the large majority of automobile drivers are capable, conscientious and prudent. Otherwise our population would shortly be decimated, for motor vehicles moving at high speed carry such potential menace that even slight inattention or dereliction may cause disaster.

Reports from the traffic front leave no doubt as to the seriousness of the situation. But I feel that there is one encouraging fact—that is, your attendance here today—this evidence of your determination to meet and overcome the problem before us.

It is high time that all of us—public authorities, associated groups and individuals—should bring increasing reason to bear upon the problems of motor traffic. And there is special need for development among our people of such a sense of values that the lure of speed will be properly subordinated to the right of others to reasonable and safe enjoyment of the use of our streets and highways.

Motor vehicle fatalities in the United States have increased from 12,500 in 1920 to 22,000 in 1925, 28,000 in 1928 and 31,000 in 1929. The annual losses now approach our total casualties on the fields of battle in the Great War.

Analyzing these figures by comparison with the number of automobiles registered, we find another fact that is the cause of great concern. In 1920, for every 100,000 automobiles in use, motor accidents caused 136 deaths. By 1925 this ratio had been brought down to 110 and in 1926 to 107 deaths to each 100,000 automobiles. Since 1926, however, the ratio has reversed its trend and has constantly mounted. Last year it reached 117 fatalities per 100,000 automobiles. Your Committee on Traffic Accident Statistics, commenting upon this, says: "Whether this recent tendency is due to a more intensive utilization of the average automobile, or to the greater speeds at which now driven, or to a generally more reckless disregard of traffic and safety rules, or to all three factors combined, it is difficult to say. These factors, and others, doubtless play their part, and must be taken into account as significant elements in the problem."

The new facts which I have cited show clearly that the traffic accident record as a whole is not encouraging. Yet as we proceed to further analysis of the reports we find some encouraging signs, which may offer some keys to the solution of our problem.

First, railway grade crossing accidents, while all too numerous, have not increased materially in the past few years in spite of the enormous increase of automobiles registered. Here is an indication of the value of engineering attention and organized educational effort. There are still far too many grade crossing accidents, but there is reason to expect that by more widespread application of established methods, such as are outlined in the report of your Committee on Protection of Railway Grade Crossings and Highway Intersections, a greater reduction in this type of accident may be brought about.

Second, another encouraging fact is found in the relative improvement in the traffic fatality record among children. In seven years, while adult fatalities were more than doubling, those of children increased by less than 25 per cent. In 1922 children

made up more than 29 per cent of all traffic casualties; in 1928 less than 20 per cent. Furthermore, 1928 registered an actual decrease in such child fatalities, and partial returns for 1929 indicate a still more marked decrease. This improvement is largely attributable to safety education in the schools and to the successful operation of school boy patrols in safeguarding children on their way to and from school.

Third, a more general encouraging indication is pointed out by your Statistics Committee in the comparative records of different groups of states. The states which have strong centralized state motor vehicle administration, including drivers' license systems with mandatory examination, have shown a much smaller rate of fatality increase than has occurred in the other groups of states. In this analysis due account has been taken of the rate of increase in automobile registrations. The result should be a warning signal to those of us from the Middle West, for between 1920 and 1928 in the North Atlantic states facilities increased only half as fast as registrations, while in the group of nine Middle Western states for which comparable figures are available the fatality increase actually outran the registrations by ten per cent. Nor is there much consolation to the Middle West in the fact that the record of the South is still worse—that in the group of eight Southern states fatalities mounted by 286 per cent, while registrations increased but 224 per cent. The conclusion from these appalling figures must be that the measures of automobile regulation and license control of drivers in effect in the North Atlantic states, which are practically the same as those recommended by your Conference in 1926, accomplish real results.

Fourth, a still further element of encouragement is found in the records of some of the cities which have given special attention to traffic matters. I may say with some pride for my own City of Chicago—despite its reputation in some other respects—that, both in reduction of traffic accidents and in relief of traffic congestion through sound engineering and control measures, it has recently made a fine record. For 1929 Chicago reports 11 per cent decrease in motor fatalities as compared with 1928. I am pleased to say that some fourteen other cities, including San

Francisco, St. Louis and Milwaukee, made equally good or better records for the same period.

Our purpose in calling this Conference and in organizing the studies of the Committees whose reports are before you has been to provide the means for detailed appraisal of the various measures which have been found successful in practice and which offer promise for the future. If by this Conference there can be definite agreement upon such facts and a spread of knowledge concerning them, your effort will not have been in vain.

In the interval since the last Conference, able men and women in every state and every community throughout the land have been toiling earnestly against heavy odds to cope with the problems that result from the increasing flow of traffic. State legislatures have been groping for a solution, as the flood of bills at every session of every legislature will attest. Many states have been able to determine upon courses of action and have placed new laws upon their statute books. However, in view of the emphatic and widespread demands for uniform and effective traffic laws, it must be said that progress to date appears far from adequate.

The Uniform Vehicle Code was developed by this Conference in 1925-6 as the basis of state legislation—the key to uniform traffic regulation. The records show that some twenty-three states have adopted one or more of the acts of the Code or have modified their laws to bring them into greater conformity with it. This progress toward uniformity has been chiefly in the rules of the road as represented by the fourth act of the Code. There has been less progress in the licensing and control of drivers as provided for in Act III, although several states have recently been added to the list of those safeguarding their population in this way. There has been some progress with the Registration Act (Act I) and the Anti-Theft Act (Act II).

The model Municipal Traffic Ordinance, which was drawn up in 1927-8 to supplement the Uniform Vehicle Code for urban purposes, has been adopted in scores of cities and towns. Two states, New Jersey and Wisconsin, have by state enactment put most of the Model Ordinance in effect in all of their municipalities, thus

at one stroke assuring uniformity in these important particulars. There has also been, it appears, equal or better progress in municipal adoption of standard street traffic signs, signals and markings as recommended in the report prepared for this Conference by the American Engineering Council.

All of these standards to which I have referred—Code, Ordinance and Signs, Signals and Markings—have been carefully reviewed during the past year by your Committee on Uniform Traffic Regulation. Several important changes are proposed by the Committee. These changes and other features of the printed documents, which were mailed to all delegates, will be presented for your consideration and action during this Conference.

Motor manufacturers have achieved remarkable results in the development of a safe vehicle, but private owners have not done so well in maintaining their vehicles in safe condition. I have, therefore, appointed a Committee to report on the subject of motor vehicle maintenance and its report is before this Conference. That faulty maintenance is reported as the principal or a contributing cause in at least 15 per cent of motor vehicle fatalities is sufficient warrant for the most active attention to the problem of vehicle maintenance.

I have already referred to the report covering railway grade crossings, at which occur 8 per cent of traffic fatalities. The same report deals with protection of highway intersections, including those of city streets, and shows that at least 50 per cent of all motor accidents occur at such points. There are, as the report shows, many similarities in prudent driving methods at grade crossings and highway intersections. There is also similarity in requirements for removal of hazards and in protection of crossings and intersections with signs, signals, markings or special traffic control measures. Adequate attention to these proposals should help avoid a considerable part of the 58 per cent or more of the nation's traffic fatalities occurring at such points.

Another report of great importance which is to come before you is that on measures for the relief of traffic congestion. It requires nothing further than the estimate of a loss of two billion dollars a year due to inadequate traffic facilities and control measures to

make clear the magnitude of the problem. It is conclusive evidence that in the aggregate we can with profit spend large sums to relieve congestion. Here is a subject which deserves the most active attention of responsible public authorities as well as every business and civic organization. The report before you is, in a way, an amplification and up-to-date edition of that on metropolitan traffic facilities which was rendered to the Second Conference in 1926. This program has in whole or in part been put into effect with marked success in a number of our American cities and towns.

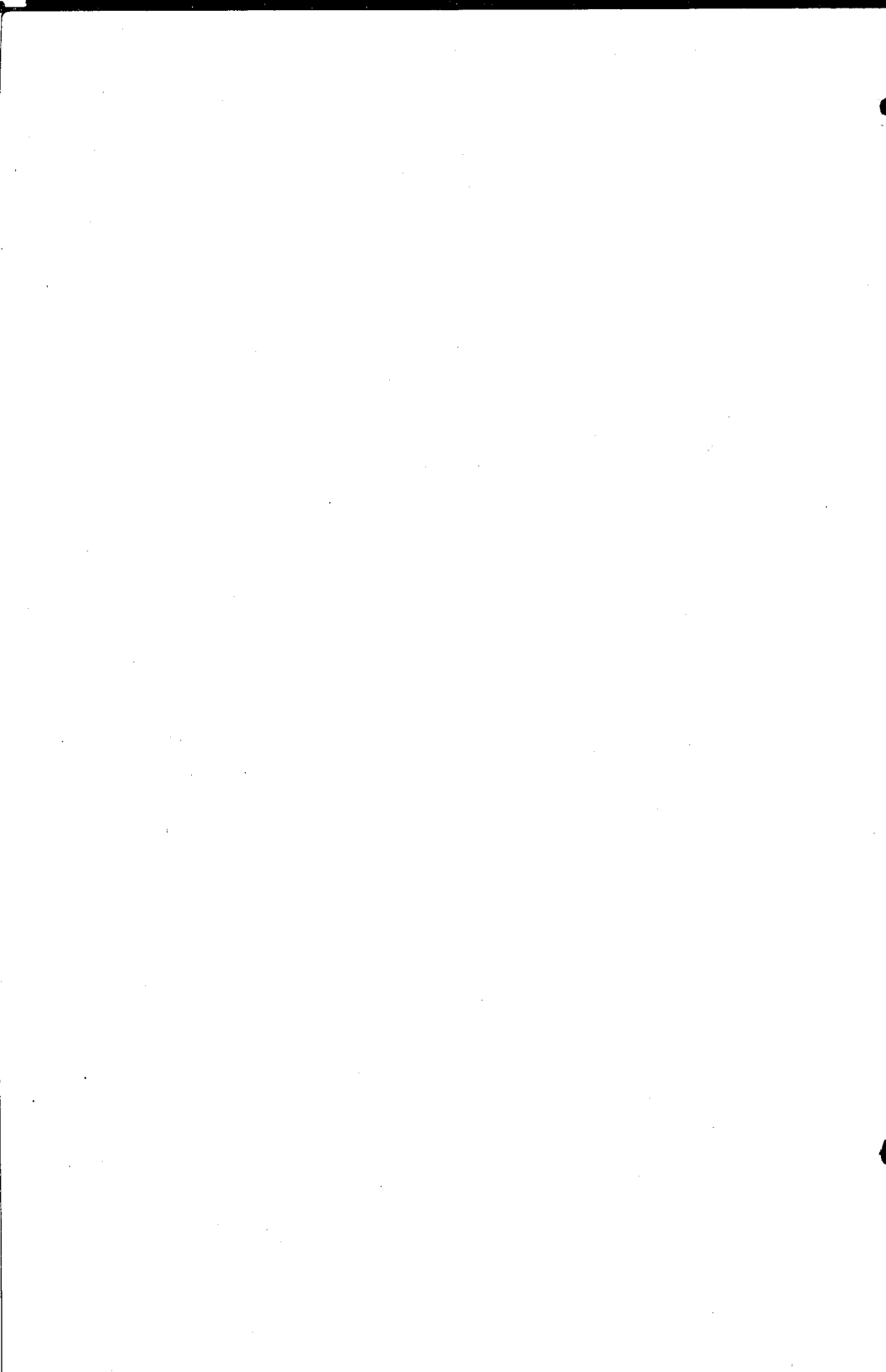
I cannot speak too highly of the importance of the work which has been done by your Committees, both those whose reports are now before you and those of the preceding Conference in 1924 and 1926. Some of these earlier reports are practically as up to date now as when they were written and I wish to draw attention to them, especially to the reports of the Committees on Education, Enforcement and Construction and Engineering.

In preparing the reports for this Conference, as was done in 1924 and 1926, the committee members under the fine guidance of their able and conscientious chairmen have given freely of their time and expert knowledge. These Committees have included state, municipal and other officials as well as private citizens from all walks of life. Their reports are voluminous and they must needs be so, for the problems of traffic are complex and are not to be solved by any easy simple solution. The various phases are largely dealt with by different groups of men, all of whom are represented in your membership. The results of your deliberations should represent the best crystallized knowledge upon each particular subject.

The task before this Conference is to scrutinize each proposal with care, to test each against your combined experience and judgment so that upon adjournment all of us may feel that we have available a practical working program to guide and assist us in our further efforts, each of us in his own field.

It will then remain to put this program into execution, and this, as President Hoover has pointed out, is primarily a responsibility upon the states and municipalities. Theirs is a responsi-

bility, however, which cannot be carried out without widespread popular support. Here we must turn to the groups and associations which many of you represent. They have rendered invaluable service in the past. Through them the responsible authorities can find the aid they need in carrying out this program and in reaching the individual citizen, who, in the last analysis, must be reached if we are to improve conditions upon our streets and highways.



Recommendations of National Conference

Findings of All Conference Committees and of General Meetings of Conference, as Summarized and Approved by the Third National Conference

President Hoover, in opening this Conference, said:

"The great loss of human life in street and highway accidents, and the toll of suffering among surviving victims, is a national concern of grave importance. You thus are gathered here to consider a humanitarian and economic problem which touches every man, woman and child in the land."

The problems of street and highway traffic are numerous and diverse in character. They are subject to solution by no single sweeping remedy. They must be dealt with by many different agencies, official and unofficial, working wherever the problems exist.

The First National Conference on Street and Highway Safety in 1924 and the Second Conference in 1926, including representatives of these agencies, developed a program of recommendations to facilitate their work.

This Conference has considered the reports of its committees which have studied special phases of the traffic problem during the past year. The Conference has also reviewed the recommendations of the previous Conferences and the experience of the states and cities which have put them into effect.

As a result of its deliberations the Conference submits an amplified program of recommendations which it confidently believes will furnish the best available basis for all concerned to apply in doing their part to ameliorate traffic conditions on our streets and highways. This program is presented under the headings (a) Uniform Traffic Regulation, (b) Enforcement of Traffic Laws and Regulations, (c) Education of Highway Users, (d) Traffic Accident Records, (e) Construction and Maintenance of Motor Vehicles and (f) Street and Highway Traffic Facilities.

Uniform Traffic Regulation

Having largely wiped out political boundaries from the standpoint of traffic, the motor vehicle has created a universally recog-

nized need for uniformity in traffic laws and regulations in all jurisdictions which participate to any considerable degree in vehicle movement between different jurisdictions. In some respects, such as rules of the road, meanings of traffic signals and other operating features, complete uniformity is of paramount importance. In other respects substantial uniformity is desirable to assure an effective and harmonious system throughout the country and to facilitate understanding by the highway user of the requirements of any state or locality in which he may find himself.

To meet these needs the following models for uniform state motor vehicle laws, municipal traffic ordinances and traffic signs, signals and markings are recommended*:

- (a) A Uniform Code for state enactment, consisting of:
 - (i) A Uniform Motor Vehicle Registration Act
 - (ii) A Uniform Motor Vehicle Anti-Theft Act
 - (iii) A Uniform Motor Vehicle Operators' and Chauffeurs' License Act
 - (iv) A Uniform Act Regulating Traffic on Highways
- (b) A Model Municipal Traffic Ordinance for enactment by municipalities.
- (c) A standard system of street traffic signs, signals and markings.

These models are printed in separate pamphlets which contain notes explanatory of their various provisions.

Enforcement of Traffic Laws and Regulations

The report of the Committee on Traffic Accident Statistics discloses that a very large percentage of traffic accidents, both fatal and nonfatal, are attributable to a comparatively small number of circumstances and causes. With respect to pedestrians the records show the largest percentage occurring to pedestrians crossing at intersections where there are no traffic signals, or between intersections. This demonstrates the necessity for pedestrian right of way at intersections as provided in the Uniform Vehicle

*Report of Committee on Uniform Traffic Regulation, 1930, p. 13.

Code. The accidents to pedestrians crossing between intersections prove the need for education and enforcement of regulations prohibiting this practice. Adoption in all states of the Uniform Code provisions relative to rights and duties of pedestrians and enforcement and education directed along the same lines would undoubtedly contribute largely to reduction of accidents involving pedestrians.

Regarding accidents involving occupants of motor vehicles, the records show that a very large percentage are attributable to two or three major causes and circumstances. Violation of right of way is one of the most pronounced causes. This demonstrates the need for adoption of definite right of way regulations as set forth in the Code and shows, furthermore, that enforcement and education should be particularly directed to such regulation. Another most frequent cause of such accidents is driving on the wrong side of the highway. This likewise points to the need for enactment and enforcement of restrictive measures requiring operation on the right half of highways. In a large number of motor vehicle accidents the operator drove off the highway and overturned. This illustrates the need for enforcement of the standard rules of the road requiring safe practices and particularly the need for education of motorists as to the hazards incident to operation at excessive speed on curves or narrow highways on embankments, or speed excessive for the conditions as they exist.

The Conference, therefore, desires to direct the attention of enforcement and other agencies to the value of careful analysis of traffic accident records, and recommends enforcement designed to overcome the dangerous practices of the character outlined above, and many others.

The Uniform Vehicle Code and the Model Municipal Traffic Ordinance contemplate the establishment of adequate agencies for the administration and enforcement of the traffic laws and regulations. The organization of this branch of state and municipal administration involves important detailed problems which have been discussed in reports prepared by the National Safety Council at the request of the Executive Committee of the Na-

tional Conference on Street and Highway Safety. The enforcement of the traffic laws and regulations by the police and the courts was the subject of a report rendered to and approved by the National Conference in 1926 by its Committee on Enforcement. The Third National Conference believes these reports present sound principles regarding enforcement, and submits the following revised summary of recommendations on this subject:

State laws should prescribe a uniform system of enforcement to be applied in part by state administrative machinery and the state courts and in part by the local authorities. The necessary special traffic control and traffic patrol police should be provided and the regular police should cooperate in traffic enforcement. Provision should be made for prompt and thorough collection of evidence and investigation of accidents; for the proper preparation of traffic cases for trial; for special traffic courts or special traffic sessions of general courts, and traffic violations bureaus with a schedule of penalties for disposing of minor infractions, so as to give the courts more time to deal adequately with more serious cases; uniform permanent records of all convictions of traffic violations and traffic accidents, suspensions and revocations of operators' licenses and refusals to grant licenses; and exchange of detailed information between jurisdictions as to suspensions and revocations of licenses and convictions for serious traffic offenses. Neither the traffic officers nor the court judges should receive any fees from the money collected from traffic convictions.*

The courts, the prosecuting attorneys and the police through vigorous enforcement and even-handed treatment of offenders should instill in the public respect for the traffic laws and regulations.†

Public opinion in support of enforcement should be organized through a representative citizens' committee in each locality, forming part of an organized effort of all elements

* Report of Committee on Enforcement, 1926, pp. 7-9, conclusions 1, 3, 6-7 and 12-14, and pp. 11-16 and 18-20.

† Same, p. 8, conclusion 8, and pp. 16 and 17.

in the community interested in street and highway accident reduction.*

As grade crossings and highway intersections account for such a large percentage of traffic accidents, special attention of the police to enforcement of the laws and regulations at such points is warranted, and where police authorities do not now exist to do this, the requirements of safety indicate the importance of provision therefor. The same consideration indicates that, in examinations for licensing of operators and chauffeurs, test should be made of the working knowledge of applicants as to the rules and regulations governing traffic at grade crossings and highway intersections. Police having general authority over street and highway traffic should recognize that the function of railroad crossing watchmen is limited to stopping traffic on the approach of trains, and that in other respects the compliance of the highway users with the traffic laws and regulations at grade crossings as well as at highway intersections and elsewhere is under supervision of such general traffic police.†

Education of Highway Users

Uniform laws and regulations and effective enforcement, however essential, are not alone adequate for the control of traffic. Intelligent cooperation by the individual is obviously necessary. Almost from the advent of the automobile organized efforts have been under way for the education of highway users in the special conditions and problems of motor traffic. This has been a fundamental purpose of motor clubs, and their work in this field has been steadily extended. Safety councils and other special organizations have also taken an important part in this work. Business organizations, notably associations of common carrier transportation agencies, insurance companies and fleet owners, have carried on educational measures directed both toward their employees and toward the general public. Education in traffic mat-

* Report of Committee on Enforcement, 1926, p. 9, conclusion 17, and pp. 21-24.

† Report of Committee on Railway Grade Crossings and Highway Intersections, 1930, p. 21, conclusion 7, and pp. 43, 44, 57 and 58.

ters has been the subject of extensive study and reports by educators, psychologists and other groups. Since the establishment of state motor vehicle departments and bureaus and municipal traffic authorities these agencies have also assumed more and more responsibility for the education of street and highway users.

Public schools throughout the country have organized admirable courses for specific safety education. The interest of school children has been aroused further through a national essay contest conducted annually. These safety educational activities have shown their ability to awaken public consciousness of the character of the accident problem and of means for avoiding hazards. These efforts have been particularly noteworthy among children of school age, among whom the accident rate has actually decreased during the period of general national increase.

The First and Second National Conferences on Street and Highway Safety gave extended attention to education in traffic safety. The new Committees of the Conference have considered certain educational aspects of the subjects before them. Based on its consideration of all of the above this Conference submits the following summary of its findings:

Strong emphasis should be given to safety education in the schools. Fatalities to children under 15 years of age in traffic accidents should receive the serious consideration of the school authorities in every community, with a view to augmenting instruction in safety methods and accident prevention in the schools, and reducing this annual toll to the lowest possible minimum. School authorities should join with police officials in providing for the safety of children, and compelling compliance with traffic regulations in the vicinity of school buildings.*

Education in safety and accident prevention should be incorporated in the curricula of elementary schools, both public and private, parochial schools, night schools, vocational schools, citizenship schools and schools for non-Eng-

* Report of Committee on Traffic Accident Statistics, 1930, p. 14, conclusion 22, and pp. 26-31.

lish speaking adults, and should also be carried on through educational contests, organized playground training, school safety patrols, boy and girl scouts, and junior safety organizations. More advanced training in safety and traffic matters should be developed in secondary schools, normal schools, schools for playground supervisors, engineering schools and universities, including training of traffic engineers.*

A uniform manual should be compiled and distributed for the education of operators of motor vehicles in safe driving practices, divided into two sections, one comprising special instructions to drivers of commercial vehicles and the other special instructions to drivers of private passenger automobiles; and further development of education in safe driving and accident prevention of the employees of steam and electric railways, employees of taxicab and motor bus companies, and the drivers employed by operators of commercial vehicles.†

The following methods for the education in safety of the general public have been found valuable and should be continued on a broader scale:

- (a) Newspaper and magazine publicity, including the foreign language press.
- (b) Posters in public places.
- (c) Motion pictures and lantern slides.
- (d) Radio talks.
- (e) Schools for motorists, including both men and women.
- (f) Safe drivers' clubs.
- (g) Safety programs or addresses at meetings of various organizations.
- (h) The churches.
- (i) Mass meetings.
- (j) Plans for reaching parents through school children.
- (k) Special campaigns.‡

Standardized plans should be developed for the selection and training of traffic officers, and such plans should be put

*Report of Committee on Education, 1924, pp. 7 and 8, conclusions 1-5, and pp. 9-15.

†Report of Committee on Insurance, p. 8, conclusion 1b, and p. 12; Committee on Education, 1924, p. 8, conclusion 7, and pp. 16-18.

‡Report of Committee on Education, 1924, p. 8, conclusion 8, and pp. 18-21.

into operation by all communities either alone or in cooperation with other communities, or on a state-wide basis, so that the benefits of such training may be available to the smaller communities.*

School safety patrols, coupled with instruction to children in the schools to use the crossings protected by such patrols and follow the instructions of the patrols, have proved very effective in reducing accidents to school children. They should be instituted in all cities not having them. The patrols should not attempt to stop motor traffic, but should confine their work to directing school children as to the safe time to cross. Severe punishment should be imposed upon motorists violating the right of way of school children proceeding under direction of school safety patrols.†

In view of the fact that collisions of motor vehicles with pedestrians amount to more than 50 per cent of the total number of fatal traffic accidents, the education and regulation of pedestrians as well as of drivers should be given greater attention than at present. Pedestrians and motorists should bear a considerate attitude each to the other. Along rural highways, wherever there are suitable sidewalks or paths pedestrians should use them, and it is suggested that consideration by State Highway Departments might well be directed to including the construction of definite footways or sidewalks along the public highways as an appropriate and valuable adjunct, from the point of view of safety, to roadside betterment and beautification. Where there are no sidewalks, pedestrians can generally walk most safely on the left-hand side facing the traffic, but should not be required by law to do so, inasmuch as at certain points, as on the inside of curves, this is a dangerous procedure. In congested areas of cities pedestrians should be urged or required to keep on the sidewalk or within the boundaries of safety zones and crosswalks and to obey the traffic rules and regulations. Motorists should

* Report of Committee on Education, 1924, p. 8, conclusion 6, and pp. 15 and 16.

† Report of Committee on Traffic Accident Statistics, 1930, p. 31.

be required to give special heed to all regulations affecting the safety of pedestrians.*

Despite all efforts of the authorities to eliminate hazards, to provide ample warning and traffic control measures, and to enforce the rules and regulations applicable at grade crossings and highway intersections, the public must in the main be depended upon for voluntary compliance with the rules of proper conduct at such points. Therefore it is of fundamental importance that knowledge of the laws, regulations, traffic control measures and proper practices in these regards be carried to all of the public concerned. The special degree of hazard at railway grade crossings and the special warning and protective measures adopted at such points place upon highway users responsibility for a corresponding degree of prudence and caution in crossing the tracks. At highway intersections such a degree of hazard can exist only if one party is driving recklessly or otherwise in violation of law, but the prudent driver will nevertheless exercise caution against this class of extra hazard at highway intersections in much the same manner as he does against the special hazards inherent in railway grade crossings.†

Traffic Accident Records

Committees of the First and Second National Conferences, and those Conferences themselves, emphasized the importance of more adequate statistics and more extensive studies of the causes of accidents as a basis for accident reduction and development of more orderly traffic. In the intervening years there has been decided improvement in accident investigation and records in some of the states, and there has been general improvement in the recording of accidents on a nation-wide basis. The Third National Conference has had the benefit of another special study

*Report of Committee on Traffic Control, 1924, p. 10, conclusion 12, and pp. 20 and 21; Act IV, Uniform Vehicle Code, pp. 31 and 32, Secs. 33-41; Model Municipal Traffic Ordinance, pp. 17-19, Secs. 15-18.

†Report of Committee on Protection of Railway Grade Crossings and Highway Intersections, pp. 21 and 22, conclusion 8, and pp. 44, 45 and 58.

of this question by its Committee on Traffic Accident Statistics and summarizes its recommendations as follows:

In accordance with the Uniform Vehicle Code, statutes should be passed in every state where they do not now exist which would make it the specific business of some state agency, preferably that clothed with authority, for issuing and revoking licenses, to receive traffic accident reports and investigate accidents, whether occurring within or without the corporate limits of municipalities, and it should be made obligatory by law for those concerned to report traffic accidents, for use of the traffic authorities only, with provision of an adequate penalty for failure to report. Reasonable uniformity in reporting and tabulating schedules, with standard definitions of terms, is essential. Sufficient detailed information should be included to indicate clearly the circumstances surrounding the accident, as follows:

- (a) Recklessness, carelessness or incapacity of persons;
- (b) Fault of mechanism of the vehicle, or maintenance of same;
- (c) Physical condition of the locality where the accident occurred.*

Accident spot maps and card files should be maintained to detect points where accidents occur most frequently and to form a basis for plans to eliminate the conditions which may lead to accidents.†

The standard accident report form developed by cooperative effort among the various government and private agencies during recent years, and now utilized in states and/or cities with an aggregate population of 68,000,000, should be generally adopted. The information obtained on such accident report cards should be classified, utilizing mechanical tabulation if 1,000 or more cases are reported monthly, and monthly accident summaries should be prepared. The uses of such reports may be classified as:

* Report of Committee on Traffic Accident Statistics, 1930, pp. 14 and 15, conclusions 24-27; Committee on Maintenance of the Motor Vehicle, 1930, p. 15, conclusion 16, and p. 30.

† Report of Committee on Traffic Accident Statistics, 1930, p. 15, conclusion 28.

- (1) Educational and legislative,
- (2) Engineering, and
- (3) Judicial.*

Prevention of traffic accidents is a problem of education, engineering and enforcement, and accident records should play an important part in each of these three fields of work.†

Comprehensive research into the causes of street and highway accidents is needed for the purpose of determining the direct and contributing causes of accidents and the frequency of the various hazards, and of pointing the way to improvements from the standpoint of safety in design, construction and adjustment of motor vehicles; design, construction and maintenance of streets and highways; traffic laws, regulations, signs, signals, markings and other devices for the control of traffic; and methods of examining applicants for operators' licenses, including special examinations for chauffeurs, persons suffering from physical or mental handicaps and persons who may be brought before the courts or other motor vehicle commissioners for repeated traffic violations. Such research should obviously embrace thorough study of the efficacy of intended remedies.‡

The great and increasing toll of death and injury and the economic loss from traffic accidents, rapidly approaching a billion dollars a year, emphasize the importance of adequate accident records and analyses as a basis for applying remedial measures.

Construction and Maintenance of Motor Vehicles

The First National Conference, acting on the report of its Committee on the Motor Vehicle, made the following recommendation regarding vehicle construction:

* See Report of Committee on Traffic Accident Statistics, 1930, p. 15, conclusions 29 and 30, and pp. 42-50, and the manual "Public Accident Reporting" published by the National Safety Council, 20 North Wacker Drive, Chicago, for a detailed explanation of this system, its application to various reporting conditions and the use of the data for accident prevention purposes.

† Report of Committee on Traffic Accident Statistics, 1930, p. 51.

‡ Report of Committee on Causes of Accidents, 1926, pp. 9-11, conclusions 7-14, and pp. 16-23.

"Continued effort on the part of manufacturers is urged with a view to improving further the design and construction of motor vehicles and accessories from the safety standpoint, with particular reference to proper road illumination without dangerous glare; construction and location of controls, accelerator and brake pedals to minimize possibility of confusion or uncertainty of application by the driver; greater certainty, durability and readiness of adjustment of brakes; improvement of driver vision, and other safety features."

In the years since this recommendation was made there has been notable improvement in the design and construction of motor vehicles and accessories from the safety standpoint, and this valuable work is being actively continued by the manufacturers. Maintenance of vehicles by fleet owners has also progressed in notable degree, but there has not been corresponding improvement in maintenance by individual owners. Available records indicate that vehicular defects are important or a contributing factor in at least 15 per cent of fatal motor vehicle accidents, defects in brakes and glaring or insufficient lights being large factors, while defective steering gear, horns and other accessories and badly worn tires also contribute. The subject of maintenance has, therefore, been studied by a Committee of the Conference during the past year. Its report, which is approved by the Third National Conference, contains recommendations which can be summarized as follows:

There should be furnished with each new car complete and simple instructions regarding the care of the various parts and equipment. Dealers, service stations and garages should encourage regular attention by car owners to maintenance, and to facilitate prompt and reliable inspection and service, whether required by a police officer or voluntarily desired by the motorists, such stations should be provided with brake and headlight testing equipment, or special testing stations should be established under state control. The owners of all commercial vehicles should arrange for regular inspection and servicing of all parts and equipment requisite to safety.*

* Report of Committee on Maintenance of the Motor Vehicle, 1930, pp. 13 and 14. conclusions 7-9, and pp. 19-25.

Every state should adopt the provisions of the Uniform Vehicle Code (Act IV) relating to equipment, together with the necessary detailed administrative regulations, and there should be periodic inspection of all vehicles in the state under rigid state supervision and preferably under authorization by state law. A certificate of inspection not more than three months old should be required before the issuance of registration plates, either for all cars or for all cars more than four years old and of cars which have been repurchased.*

Old cars which can no longer be mechanically kept in safe condition should be eliminated from the highway, whether by proper provision in the certificate of title law or by the "highway safety plan" of the manufacturers, which provides an allowance for the junking of decrepit cars.†

Every state should have an adequate highway patrol force trained to recognize the symptoms of mechanical defects, make simple tests, impress upon motorists the need for prompt repair of defective cars and withdraw from the highway forthwith cars in really hazardous condition.‡

Both the importance and methods of proper inspection and maintenance should be emphasized in all educational campaigns for safety, and especially in the educational work of motor clubs among their own members and of manufacturers among the sales and service organizations, with particular reference to uneducated, untrained and immature drivers.§

Street and Highway Traffic Facilities

The rapid growth in use of the motor vehicle has imposed upon existing streets and highways a demand which generally exceeds or threatens to exceed existing capacity. Remedies for this condition have been the subject of study and recommendation by both of the preceding Conferences and by many other agencies. In recognition of the great importance of these problems, new

* Report of Committee on Maintenance of the Motor Vehicle, 1930, p. 14, conclusions 10-12, and pp. 25-27; Act IV, Uniform Vehicle Code, Secs. 58-76.

† Report of Committee on Maintenance of the Motor Vehicle, 1930, pp. 14 and 15, conclusion 13, and p. 28.

‡ Same, p. 15, conclusion 14, and p. 29.

§ Same, p. 15, conclusion 15, and pp. 29 and 30.

committee studies have, during the past year, been made by the Committee on Measures for the Relief of Traffic Congestion and the Committee on Protection of Railway Grade Crossings and Highway Intersections. The work of these Committees supplements and amplifies that of earlier Committees of the Conference—those on Traffic Control, Construction and Engineering, City Planning and Zoning and Metropolitan Traffic Facilities. Many of the findings of the earlier Committees are still applicable to present conditions and have not been specifically repeated by the two new Committees. The outstanding recommendations of the six Committees approved by the Conference may therefore be summarized as follows:

Safety Requirements in Street and Highway Construction

There should be adequate roadway width for the traffic, with separate footways along highways of heavy vehicular and pedestrian traffic, and adequate rights of way to provide for parking space, clear view at curves and intersections and future roadway widenings; space for parking off the traveled portion of rural highways, either continuously or at intervals not exceeding 300 feet; reasonable grades of not more than 6 per cent where feasible, and curves of not less than 300 feet radius, on highways of primary importance; widening and banking of curves; avoidance of combinations of heavy grades and sharp curves; cross-sections of the pavement or roadway as flat as drainage conditions will permit; guard railings of substantial type on the shoulders of embankments; clear view of approaching vehicles for at least 500 feet on highways of primary importance, provided by necessary control of private advertising signs on the right of way or on private property near the highway, and by removing the trees, shrubs and sloping banks on or off the right of way, and the cutting down of sharp hillcrests; bridges at least 22 feet wide to enable two lines of traffic to pass without difficulty, and suitable provision for the safety of pedestrians on such bridges; careful selection and clear marking of detours, maintenance thereof in safe condition, and prompt removal of obsolete detour or temporary construction signs;

maintenance in good condition of pavements and roadway shoulders; prompt snow removal from streets and highways of heavy traffic; and proper illumination of city streets and of highways wherever financially practicable.*

Elimination of Railroad Grade Crossings

Elimination of railroad grade crossings, either by relocation of highways or rail lines or by grade separation, which constitutes the only perfect solution of the problem, should be carried on under a proper program, first eliminating the most dangerous crossings on thoroughfares carrying heavy traffic, and with due recognition of the enormous costs involved, which, if elimination were attempted on a wholesale scale, would impose an excessive financial burden resting in the last analysis upon the public. The program should have due regard to the relative costs and advantages of grade crossing elimination and other methods of protection, and should be given the most thorough joint consideration by proper authority. In laying out new highways or railroads, or relocating existing highways or railroads, grade crossings should be avoided or eliminated whenever feasible. In eliminating grade crossings, narrow or obstructed underpasses and sharp turns in the approaches thereto should be avoided. Authority to order grade separations or proper protection at grade crossings should be vested in the commission having jurisdiction over the railways, and this commission should also determine the proper division of costs between the railroads and the public in states where this is not predetermined by state law. The state highway department or other highway authorities should plan the improvement and initiate the proceedings for all highways under their jurisdiction. Time is an essential element and a prompt decision should be provided for in the law.†

* Report of Committee on Construction and Engineering, 1924, pp. 5-8, conclusions 1-2, 4-10, 14-16 and 23; and pp. 9-14, 18-20 and 24.

† Report of Committee on Construction and Engineering, 1924, p. 6, conclusions 11 and 12, and pp. 15-17; Committee on City Planning and Zoning, 1924, p. 7, conclusion 1a, and pp. 10 and 11; Committee on Public Relations, 1924, pp. 9 and 10; Committee on Protection of Railway Grade Crossings and Highway Intersections, pp. 13 and 14, conclusion 2, and pp. 27 and 28.

Protection of Railroad Grade Crossings

Protection of railroad grade crossings should include reduction of physical hazards and installation of special protective measures. Reducing physical hazards to a minimum requires a practically level and smooth highway surface over the tracks for at least 25 feet and preferably 50 feet on each side thereof; approach grades not exceeding 4 or 5 per cent; widening of the roadway at the crossing; avoidance of sharp highway turns and junctions within 250 feet thereof; avoidance of standing railroad cars, parked highway vehicles or other temporary obstacles, and removal of banks, trees, shrubs, standing crops, buildings, billboards or other permanent obstructions to sufficient view of the tracks; special care where artificial lighting of crossings is practicable to locate the lights so as to illuminate the fixed signs without glare interfering with visibility.*

At each grade crossing there should be standard fixed signs as follows:

(a) An advance warning sign at each highway approach; in addition, on hard surfaced, heavy-traveled highways, where rail traffic is fast or frequent, the standard form of pavement markings approved by the American Association of State Highway Officials;

(b) If the view of the track is not obstructed and no special hazard exists, a 25-mile speed limit sign; or, if the view is obstructed, a 15-mile speed limit sign; or, if, due to extreme limitation of view or other special hazard the proper authority has designated the crossing as one at which all vehicles must stop, a standard stop sign; and, where the speed or stop sign cannot be seen sufficiently in advance, a standard slow sign in advance thereof;

(c) At all grade crossings a standard railroad cross-buck sign carrying indication of the number of tracks in case of multiple tracks.†

At grade crossings where the amount or character of railway and highway traffic warrants special warning of the approach of trains, there should also be:

* Report of Committee on Protection of Railway Grade Crossings and Highway Intersections, 1930, pp. 14 and 15, conclusion 3, and pp. 28-31.

† Report of Committee on Protection of Railway Grade Crossings and Highway Intersections, 1930, pp. 15-17, conclusion 4, and pp. 34-37; report of American Engineering Council on Street Traffic Signs, Signals and Markings, 1929, pp. 11, 12, 16 and 29.

(a) Automatic train approach signals consisting of either wig-wag or flashing light signals at crossings where there are sufficient intervals between train movements, or

(b) Manually controlled crossing gates or signals or watchmen where frequent switching movements or shortness of intervals between train movements require more prompt and positive indication of approach of trains and of clearance of the crossing.*

To facilitate prompt provision of more adequate protection of railway crossings there should be a fair division of costs of such protection as well as of elimination of obstruction to view and other hazards, and of maintenance of roadway between and adjacent to the tracks, following the principles which have been recognized in apportionment of costs of grade separations.†

Protection of Highway Intersections

Protection of highway intersections should also include reduction of physical hazards and installation of special protective measures. Reduction of physical hazards to a minimum requires the same considerations as with respect to grade crossings. As special protective measures at highway intersections standard fixed signs and markings may be called for as follows:

(a) Advance warning signs in the form of standard "Cross Road" or "Side Road" crossing signs at approaches to highway intersections which would not otherwise be readily recognized as such, or where there is hazard not otherwise obvious; also center line markings on roadways of heavy traffic, and lane markings on wide roadways;

(b) At points nearer the intersection, 20-mile speed limit signs where the view is obstructed or other special hazard exists and the highway is not protected against crossing traffic by stop signs, and stop signs at the entrance to through highways; where these signs cannot be seen sufficiently in advance, standard slow signs in ad-

* Report of Committee on Protection of Railway Grade Crossings and Highway Intersections, 1930, pp. 17 and 18, conclusion 4, and pp. 37-39; report of American Engineering Council, 1929, p. 27. (These reports include details of signs, signals and markings referred to as to shape, color and proper distance from crossing.)

† Report of Committee on Protection of Railway Grade Crossings and Highway Intersections, 1930, p. 15, conclusion 4, and pp. 31-34.

vance thereof; pavement markings if needed to supplement the stop and slow signs;

(c) Short directional lines on the pavement with arrows to indicate direction, or suitable traffic markers (buttons), may be desirable to direct the movement of traffic within an intersection.*

When traffic is dense on both highways at an intersection, unless grade separation is economically feasible or unless special conditions make a traffic "circle" desirable, there should be stop-and-go control of traffic by automatic signal or by traffic officers. Where traffic is dense on one highway and light on the other, traffic-actuated signals afford a means of avoiding excessive interruption of the main road traveled.†

Careful study of traffic conditions and discrimination are needed in determining upon traffic control installations, protected stop highways and other systems of fixed protection signs, and particularly in the allocation of available funds as between such protection measures on the one hand and the reduction or elimination of physical hazards on the other.‡

Measures for the Relief of Traffic Congestion

Traffic commissions when organized under vigorous official leadership to centralize responsibility and secure effective administration, specialized engineering guidance and the forceful execution of sound programs of improvement based on factual surveys will materially alleviate, if not eliminate, most traffic congestion.

The four years intervening since the Second National Conference on Street and Highway Safety have seen marked improvement in the traffic conditions of those cities and com-

* Report of Committee on Protection of Railway Grade Crossings and Highway Intersections, 1930, pp. 18 and 19, conclusion 4(a), and pp. 49-55; report of American Engineering Council on Street Traffic Signs, Signals and Markings, 1929, pp. 11, 12, 13, 16, 23 and 29; report of Committee on Measures for the Relief of Traffic Congestion, 1930, pp. 35 and 36.

† Report of Committee on Protection of Railway Grade Crossings and Highway Intersections, 1930, p. 20, conclusion 4, and p. 56; report of American Engineering Council, pp. 21-27; report of Committee on Measures for the Relief of Traffic Congestion, 1930, p. 15, conclusion 13, paragraphs a, b, c and m; p. 16, conclusion 14, paragraphs b and g; and pp. 30-34, 48-50, 53-56 and 61-62.

‡ Report of Committee on Protection of Railway Grade Crossings, 1930, p. 18, conclusion 4 (a), and pp. 52 and 53.

munities which have made use of the principles of organization developed at that time. Many through traffic surveys have been made in the last four years, and when followed by plans worked out under competent technical guidance and vigorously executed have proved their effectiveness. In fact, the results achieved by well organized commissions and by a sound engineering approach to the traffic problem have been outstanding experiences in street and highway traffic practice since the last conference.

Each municipality faced with serious traffic problems should have a traffic commission with appropriate official and citizen representation. In metropolitan areas a similar agency should be established to coordinate the traffic control plans of the various jurisdictions comprising the area.

Larger communities should have the continuing service of an engineer with specialized traffic and transportation experience. Smaller communities are equally in need of sound technical advice and may well devote to traffic part of the time of an engineer or engineers normally employed in other departments. In this way continuous study of the traffic problem will be secured. Special problems can be met by utilizing consulting services.

All improvement plans and revisions thereof should be based upon data secured through continuing up-to-date traffic surveys.*

Effective and lasting remedies must correct the primary causes of congestion; they must put the available facilities to the best use, provide needed additional traffic capacity and coordinate land utilization with traffic and transportation facilities.

The program of improvement in any community will divide into immediate relief measures and a program of permanent improvements.†

Immediate relief measures are obtained largely through improvement in regulatory control with little or no physical

* Report of Committee on Measures for the Relief of Traffic Congestion, 1930, pp. 12 and 13, conclusions 2-7, and pp. 18-21.

† Same, pp. 14 and 15, conclusion 12, and p. 29.

change in existing facilities. Thus, adequate control of traffic at important intersections, proper posting and enforcement of sound parking regulations, establishment and marking of through highways, by-passing of through traffic, standardizing of rules governing turns, and the marking of traffic lanes, particularly at intersections, are among the more important measures that can be adopted almost at once.*

Permanent improvements will require a longer time and adequate financing to develop, but are absolutely essential to the lessening of present and avoidance of future traffic congestion. This permanent program may include improvement of street and highway intersections according to the physical conditions and traffic needs, widening of roadways, elimination of bottlenecks, provision of a continuing paving program, creation of new through arterial highways, development of off-street parking and loading facilities and provision of playgrounds for children.†

One of the most important features of such a long time improvement program is the necessity of securing at the earliest possible date the right of way that will be needed for future street and highway improvement.‡

There is also the fundamental need of creating an adequate plan of major thoroughfares with consideration given to the appropriate use thereon of all modern agencies of transportation—rapid transit, street cars, motor buses, commercial vehicles, taxicabs and private automobiles—so correlated as to serve best the needs of the community.§

Sound planning of traffic facilities also involves study of the character of land occupancy. As the intensity of land use increases in a given area, traffic will also increase. Traffic and transportation facilities must accordingly be kept in balance with land use. This can be facilitated by a departure from traditional methods of street and highway design

* Report of Committee on Measures for the Relief of Traffic Congestion, 1930, pp. 15 and 16, conclusion 13, and pp. 30-52.

† Same, pp. 16 and 17, conclusion 14, and pp. 52-69.

‡ Same, p. 17, conclusion 15, and p. 70.

§ Same, p. 16, conclusion 14, paragraph a, and p. 52.

accompanied by radical changes in the methods of land subdivision. Such change might involve the construction of parkways and other "freeways" for through traffic with no direct access from abutting property, and roadways in residential districts so planned as to discourage traffic other than that need to serve the local community.*

The federal, state and local governments should give prompt consideration to the problems of traffic congestion that will arise through the erection of new buildings for governmental use, and by recognizing the need for adequate street service adjacent to these areas, easy access to the buildings, requirements for off-street parking and similar needs, establish a wholesome example to all concerned.†

The estimated annual loss of more than \$2,000,000,000 per annum through traffic congestion and related losses clearly calls for prompt and decisive action, particularly in view of the abundant relief so readily available. An enlarged expenditure program for permanent improvements cannot be long avoided in the face of so costly a delay.

Traffic is a matter of state and local control. Its regulation has developed diversely in various jurisdictions. Such diversity is not necessary, however, as there are large groups of states and localities in which the essential characteristics do not vary materially. The elimination of the existing diversity in traffic administration and control, as well as the inculcation of safe driving practices, establishment of adequate traffic facilities and education of the public in regard to these matters, are susceptible of a large degree of standardization throughout the country. To attain these ends, without further centralization of authority in the Federal Government, requires a high degree of cooperation and acceptance of a common program by the states, the local authorities, associations and individuals throughout the country.

It is unthinkable that our people will permit present conditions to continue indefinitely. The way for improvement has been pioneered. Practically every one of the proposals now sub-

* Report of Committee on Measures for the Relief of Traffic Congestion, 1930, p. 17, conclusion 14, paragraph 1, and conclusion 16, and pp. 23 and 55.

† Same, p. 23.

mitted has been tested in practice. To reap the benefit of this experience on a nation-wide scale will require some yielding of state and local preferences; it will require devotion of increased resources which no state or community can afford to withhold; it will in many jurisdictions require the setting up of more adequate administration; it will require the loyal effort of enforcing authorities; it calls for devoted efforts of a wide variety of organizations concerned with the various phases of the problem; and, finally, it demands of the individual citizen a new order of self-restraint and sense of responsibility corresponding to the enhanced degree of freedom which the new means of transportation has given us.

The National Conference submits the foregoing statement of its findings and recommends them to the favorable consideration of state and municipal authorities and all others concerned with street and highway traffic.

Closing Remarks of Secretary Lamont

Your work is finished. This has been a very successful Conference. You will be interested in knowing that last evening the President asked me how you were getting along, showing his continued interest.

The deliberations of this Conference have, I think, been impressive in two respects. They have brought into clear perspective the gravity and complexity of the problem with which it has dealt and indicated practicable methods by which it must be approached.

This subject is one of vital concern to all of us and touches the well-being of the whole people. As such it calls for concerted action not only by governmental authorities of all the states and all the municipalities but by the national associations and organizations through which the public interest, not to say the public responsibility, is expressed.

The Conference itself is an avowal of this singleness of purpose and of public responsibility. Its conclusions represent the best thought and judgment available brought to focus upon the many aspects of the traffic problem.

This is an accomplishment of no little magnitude, but it is the beginning, not the end, of your endeavor. The task that remains is to put your conclusions into effect, to apply the solutions upon which you have agreed.

How is this to be done? It is not for the Federal Government to undertake to carry out your recommendations. That cannot be done without violence to our fundamental political principles and the genius of our institutions. It is the proper function and desire of the Federal Government to assist the states and municipalities in carrying out the purposes of the Conference, but not to encroach upon the authority which rightfully belongs to them.

The task rests primarily with the states. The responsibility is theirs. I think the deliberations of the Conference are a convinc-

ing guaranty that they will have the earnest support of the organizations and associations which have been represented here.

Finally the success of this important undertaking rests with the public, with the individual citizens whose welfare is the end sought by this gathering.

May I bespeak for your efforts this necessary individual cooperation and express my own personal appreciation of the highly important work you have done.

Resolutions Adopted By Conference

Follow-Up of Conference Action

Whereas, It has been evident throughout the proceedings of this Conference that the objectives of the Conference can be consummated only through the vigorous prosecution of certain measures following the adjournment of this meeting, including

1. The refinement of the text of the various amendments of the Uniform Vehicle Code, Model Municipal Traffic Ordinance and other committee reports,

2. Coordinated efforts of all the parties in this Conference to obtain adoption of the recommended measures in the several states and cities, and

3. Frequent consultation of the various bodies active or interested in the field of street and highway safety with regard to problems which may arise; therefore, be it

Resolved, That we request the Secretary of Commerce to continue in existence the Executive Committee of this Conference under which its activities have been conducted, such Executive Committee to have general supervision over the various activities that may be necessary to carry out the findings and recommendations of the Conference; and be it further

Resolved, That such Executive Committee, with the approval of the Secretary of Commerce, be authorized to continue in existence the Committee on Uniform Traffic Regulation, and that the latter Committee be authorized to complete and perfect the Uniform Vehicle Code, Model Municipal Traffic Ordinance, and report on Street Traffic Signs, Signals and Markings so as to carry out the decisions and intent of the Conference; and be it further

Resolved, That the Executive Committee be then authorized in the name of this Conference to submit the Uniform Vehicle Code as revised to the National Conference of Commissioners on Uniform State Laws for its consideration and approval.

Traffic Research

Whereas, The various committees of this Conference, in their efforts to base their reports not on opinions but on facts, have

been seriously handicapped by the lack of authoritative and comprehensive data on many vital phases of the traffic, transportation and safety problems; and congestion in urban communities is of growing importance and complexity, with resultant economic loss conservatively estimated at two billions of dollars annually, and an appalling annual toll in human lives and suffering; and

Whereas, There is a close relationship between congestion of vehicles on the city streets and city planning, highway design, land utilization, and the public transit facilities of the community; and

Whereas, Public authorities, civic organizations, property owners, business, financial and insurance interests, transportation agencies, automobile manufacturers and owners of automobiles are interested in the development of measures, both corrective and preventive, for the relief of congestion which shall bring about the greatest possible improvement at minimum costs, equitably distributed; now, therefore, be it

Resolved, (1) That the Third National Conference on Street and Highway Safety urgently requests the cooperation of the Federal Government, through such technical research and fact-finding experimentation as could properly be conducted by the Bureau of Public Roads of the Department of Agriculture, the Department of Commerce, and other governmental offices; and to this end, the Conference earnestly recommends to the Congress of the United States that necessary legislation be provided to permit the proper governmental agencies to conduct such research and experimentation upon important phases of the traffic and congestion problem, and to cooperate in these matters with municipal and other local authorities; and

(2) That the Conference further requests that the Honorable Robert P. Lamont, as its Chairman, appoint a committee to consider ways and means of establishing a national foundation, non-governmental in character, equipped with the funds and manpower adequate to conduct comprehensive studies of such problems of congestion affecting public safety, the stability of property values and the orderly development of urban communities as are indicated on the list appended hereto. It is suggested that,

in its research on these and similar problems, the proposed foundation use as fully as practicable the cooperation of existing organizations, and educational and research institutions in their respective fields.

**Typical Problems Bearing Upon the Relief of Traffic Congestion
Which Require Thorough Research and Experimentation**

(1) The relation between traffic and transit conditions and facilities, and the trends in centralization or decentralization of cities with particular attention to the effects of these trends upon the stability of property values and upon the efficient conduct of business, upon living conditions and upon the public welfare generally.

(2) Factors to be considered in determining the relative advantages and cost of several possible programs of increasing street capacity; i.e., widening of existing main traffic streets, development of new thoroughfares, double-deck highways, arcaded or elevated sidewalks and the construction of off-street transit facilities.

(3) Comparative advantages and cost of the widening of radial traffic arteries from a central business area, and the construction of by-pass routes to relieve that area of traffic not destined thereto.

(4) The relationship of building bulks and intensity and character of lot occupancy to traffic density and transportation requirements.

(5) Comparison of various street intersection designs, existing or proposed, with respect to traffic facilitation, safety and cost.

(6) The relation between automobile speeds, street capacity and accidents.

(7) Effective traffic capacity per lane of highways of various widths and characteristics.

(8) The effect of standardization of traffic regulations upon accidents, speed and street capacity.

(9) Factors which should determine public policy with respect to railroad or highway grade separation.

(10) Principles which should guide in planning public transportation facilities as part of a city plan.

(11) Effect of various types of traffic control and particularly signals upon the capacity of streets, the movement of traffic and public safety.

(12) Factors to be considered in the planning of express parkways, main traffic highways or super-highways in the residential environs of metropolitan areas.

(13) The economic relationship of street and highway lighting to traffic facilitation and safety.

(14) Characteristics of various types of pavements, and effects of defective pavements, in relation to traffic capacity, speed and accidents.

Resolution to President Hoover

Resolved, That the Chairman of this Conference be requested to transmit the following message to the President:

"Under the inspiration of your appeal to this Conference at its opening meeting to promulgate effective measures for the reduction of traffic accidents and congestion, the Conference has considered and adopted reports covering every phase of this vital and complex problem, and the members thereof, representing nearly every state and important civic or business group in the nation, return to their communities and to their official, professional and business responsibilities inspired with a deep determination to make the recommendations of this Conference effective, so that your confidence in us may not have been misplaced.

"The uniform standards and recommendations approved by this Conference represent, it is confidently believed, a great advance in the principles of safe use of public streets and highways, resulting from the cooperative and cumulative efforts of traffic leaders throughout the nation, made possible by your wisdom and foresight in organizing the National Conference in 1924.

"Before adjourning we wish once more to express our gratitude for your leadership in this movement, and we believe and expect that the future will demonstrate the ability of the American people to solve or at least ameliorate this problem."

ORGANIZATION OF THE

National Conference on Street and Highway Safety

HON. ROBERT P. LAMONT, Secretary of Commerce.....*Chairman*
A. B. BARBER, Chamber of Commerce of the United States.....*Director*
A. W. KOEHLER, 1615 H St., N. W., Washington, D. C.....*Secretary*
JULIUS H. PARMELEE, Director, Bureau of Railway Economics....*Treasurer*

Governing Board

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JAMES P. BARNES, Louisville, Ky.; Past President, American Electric Railway Association.

JAMES A. BEHA, New York, N. Y.; General Manager, National Bureau of Casualty and Surety Underwriters.

WILLIAM BUTTERWORTH, Washington, D. C., President, Chamber of Commerce of the United States.

W. W. CLOUD, Baltimore, Md.; President, National Association of Taxicab Owners.

THOMAS P. HENRY, Detroit, Mich.; President, American Automobile Association.

ALVAN MACAULEY, Detroit, Mich.; President, National Automobile Chamber of Commerce.

J. M. McCOMB, New York, N. Y., President, Motor and Equipment Association.

C. E. PETTIBONE, Boston, Mass.; President, National Safety Council.

JOHN L. TRAIN, Utica, N. Y.; Chairman, Board of Governors, American Mutual Alliance.

SAMUEL WOOLNER, JR., New York, N. Y.; President, Rubber Manufacturers' Association.

Executive Committee

WILLIAM E. METZGER, *Chairman*, Detroit, Mich.; Director, American Automobile Association.

A. B. BARBER, *Vice-Chairman*, Washington, D. C.; Manager, Transportation and Communication Department, Chamber of Commerce of the United States.

W. W. CLOUD, Baltimore, Md.; President, National Association of Taxicab Owners.

J. M. EATON, Chicago, Ill.; Assistant General Manager, American Mutual Alliance.

CHARLES GORDON, New York, N. Y.; Managing Director, American Electric Railway Association.

A. V. HALL, Grand Rapids, Mich.; Motor and Equipment Association.

ALVAN MACAULEY, Detroit, Mich.; President, National Automobile Chamber of Commerce.

MILLER McCLINTOCK, Cambridge, Mass.; Vice President, National Safety Council.

JULIUS H. PARMELEE, Washington, D. C.; Director, Bureau of Railway Economics, American Railway Association.

A. L. VILES, New York, N. Y.; General Manager, Rubber Manufacturers' Association.

A. W. WHITNEY, New York, N. Y.; Associate General Manager, National Bureau of Casualty and Surety Underwriters.

Alternates

GUY C. HECKER, New York, N. Y.; American Electric Railway Association.

M. L. HEMINWAY, New York, N. Y.; Motor and Equipment Association.

NORMAN DAMON, Washington, D. C.; National Automobile Chamber of Commerce.

ERNEST N. SMITH, Washington, D. C.; American Automobile Association.

C. W. STARK, Washington, D. C.; Chamber of Commerce of the United States.

J. G. WILLIAMS, Chicago, Ill.; National Association of Taxicab Owners.

SIDNEY J. WILLIAMS, Chicago, Ill.; National Safety Council.

COMMITTEES, 1929-1930

Committee on Protection of Railway Grade Crossings and Highway Intersections

WILLIAM R. DAWES, Vice-President, Central Trust Company
of Illinois.....*Chairman*

JULIUS H. PARMELEE, Director, Bureau of Railway Economics...*Secretary*

Committee on Maintenance of the Motor Vehicle

WILLIAM CANDLER, Vice-President, Atlanta-Biltmore Hotel
Company.....*Chairman*

HOWARD M. STARLING, American Automobile Association.....*Secretary*

Committee on Measures for the Relief of Traffic Congestion

E. J. MEHREN, Vice-President, McGraw-Hill Publishing
Company.....*Chairman*

NORMAN DAMON, National Automobile Chamber of
Commerce.....*Secretary*

Committee on Uniform Traffic Regulation

- WILLIAM E. METZGER, Detroit.....*Chairman*
 J. ALLEN DAVIS, Associate Counsel, Automobile Club of
 Southern California.....*Legislative Draftsman*
 C. W. STARK, Chamber of Commerce of the United States.....*Secretary*

Committee on Traffic Accident Statistics

- JULIUS H. PARMELEE, Director, Bureau of Railway Economics..*Chairman*
 A. W. KOEHLER.....*Secretary*

FORMER COMMITTEES

Committee on Statistics, 1924-26

- W. M. STEUART, Director, Bureau of the Census.....*Chairman*

Committee on Traffic Control, 1924

- ROY F. BRITTON, President, Automobile Club of Missouri.....*Chairman*

Committee on Construction and Engineering, 1924

- FRANK PAGE, Vice-President, Wachovia Bank & Trust
 Company; formerly Chairman, North Carolina State
 Highway Commission*Chairman*

Committee on City Planning and Zoning, 1924

- F. A. DELANO, President, American Civic Association.....*Chairman*

Committee on Insurance, 1924

- S. S. HUEBNER, Professor of Insurance, University of
 Pennsylvania*Chairman*

Committee on Education, 1924

- A. W. WHITNEY, Acting General Manager, National Bu-
 reau of Casualty and Surety Underwriters.....*Chairman*

Committee on the Motor Vehicle, 1924

- H. M. CRANE, Technical Assistant to President, General
 Motors Corporation*Chairman*

Committee on Public Relations, 1924-26

- GEORGE M. GRAHAM, Assistant to President, Willys-Over-
 land Company*Chairman*

Committee on Uniformity of Laws and Regulations, 1925-26

- Gen. NATHAN WILLIAM MACCHESNEY, Past President,
 National Conference of Commissioners on Uniform
 State Laws*Chairman*

Committee on Enforcement, 1925-26

*HON. WILLIAM McADOO, Chief City Magistrate, New
York City*Chairman*

Committee on Causes of Accidents, 1925-26

DR. WALTER V. BINGHAM, Director, Personnel Research
Federation*Chairman*

Committee on Metropolitan Traffic Facilities, 1925-26

F. A. DELANO, President, American Civic Association.....*Chairman*

Committee on Municipal Traffic Ordinances and Regulations, 1927-28

WILLIAM E. METZGER, Detroit.....*Chairman*

**American Engineering Council Committee on Street Traffic Signs,
Signals and Markings**

W. B. POWELL, Consulting Engineer.....*Chairman*
L. W. WALLACE, Executive Secretary, American Engi-
neering Council*Secretary*

*Deceased.

List of Members of Third National Conference on Street and Highway Safety, May 27-29, 1930

A

- L. A. ABBOT, Associate Statistical Engineer, Bureau of Public Roads, 515 14th St., N. W., Washington, D. C.
- JOHN W. ABERCROMBIE, Assistant State Superintendent, Montgomery, Ala.
- MARTIN ACKERMAN, Vice President, Peoples Ry., Dayton, Ohio.
- JAMES B. ADAMS, 111 Adam St., Johnstown, Pa.
- W. W. ADAMS, Bureau of Mines, Washington, D. C.
- B. H. ADCOCK, Chamber of Commerce, Knoxville, Tenn.
- MUSTAPHA AHMET, Turkish Embassy, Washington, D. C.
- R. H. AIGHTON, President, American Railway Association, 17th and H Sts., N. W., Washington, D. C.
- R. J. ALDEN, Bendix Aviation Corp., 99 Forest Park Ave., Springfield, Mass.
- E. O. ALLARD, Mgr., Safety Engineering & Inspection Dept., American Surety Co., 100 Broadway, New York, N. Y.
- V. ALTMAN, Secretary, Terminal Commission, 1201 Douglas Ave., Racine, Wis.
- H. W. AMOS, Protect-All Motor Signal Co., Syracuse, N. Y.
- B. T. ANDERSON, Union Switch & Signal Co., Swissvale, Pa.
- CHARLES M. ANDERSON, Executive Vice President, Memphis Chamber of Commerce, Memphis, Tenn.
- W. G. ANDERSON, Publisher, Daily Courier, Winfield, Kans.
- W. T. ANDERSON, Editor, The Macon Telegraph, Macon, Ga.
- J. H. M. ANDREWS, Assistant to the President, Philadelphia Rapid Transit Co., Philadelphia, Pa.
- ROMOLO ANGELONE, Commercial Attache, Royal Italian Embassy, Washington, D. C.
- J. A. ANTHONY, Automatic Signal Corp., 205 Church St., New Haven, Conn.
- H. S. APPENZELLAR, Chamber of Commerce, Chambersburg, Pa.
- MAJ. ROBERT H. ARCHER, Assistant Attorney General, Title Bldg., Baltimore, Md.
- WILLIAM F. ARBERN, Vice President, Milwaukee Western Fuel Co., Milwaukee, Wis.
- ALEXANDER ARMSTRONG, Attorney, Calvert Bldg., Baltimore, Md.
- HON. CHAS. M. ARMSTRONG, Secretary of State, Denver, Colo.
- R. S. ARMSTRONG, Secretary, Motor Vehicle Conference Committee, 366 Madison Ave., New York, N. Y.
- D. G. ARNSTEIN, Hertz Drivervelf Stations, 1860 Broadway, New York, N. Y.
- LEON ARONOWITZ, Statistician, State Bureau of Motor Vehicles, Albany, N. Y.
- S. D. ASHFORD, Signal Engineer, Bureau of Safety, Interstate Commerce Commission, Washington, D. C.
- C. A. ASPINWALL, Security Storage Co., 1140 15th St., N. W., Washington, D. C.
- L. P. ARWOOD, Railroad Commission of Wisconsin, Madison, Wis.
- OWEN B. AUGSPURGER, President, New York Auto Club, Buffalo, N. Y.

B

- DR. E. L. BAER, First Secretary, German Embassy, 1439 Massachusetts Ave., N. W., Washington, D. C.
- FRED W. BAER, President, International Association of Fire Fighters, 207 A. F. of L. Bldg., Washington, D. C.
- R. R. BAGGE, Attache, Legation of Sweden, Washington, D. C.
- H. J. BAIR, Manager, Toncan Colvert Manufacturers' Association, Massillon, Ohio.
- ROBERT H. BAKER, Commissioner of Highways and Public Works, Nashville, Tenn.
- FRANK E. BALLANTYNE, Manager, Maine Automobile Association, Falmouth Hotel, Portland, Me.
- W. H. BALLARD, National Association of Building Owners and Managers, W. H. Ballard Co., Boston, Mass.
- HERBERT S. BALLIET, Engineer, New York Central Lines, 452 Lexington Ave., New York, N. Y.
- LEON F. BANIGAN, Editor, Motor World Wholesale, Chestnut and 56th Sts., Philadelphia, Pa.
- A. B. BARBER, Manager, Transportation and Communication Dept., Chamber of Commerce of the U. S., Washington, D. C.; Director, National Conference on Street and Highway Safety.
- JAMES P. BARNES, President, Louisville Ry., Louisville, Ky.
- J. W. BARNETT, Chairman, State Highway Commission, Atlanta, Ga.
- R. C. BARR, Chief Safety Engineer, Lumbermen's Mutual Casualty Co., 4750 Sheridan Road, Chicago, Ill.
- HARLAND BARTHOLOMEW, Consulting Engineer, 317 North Eleventh St., St. Louis, Mo.
- W. S. BATTLE, JR., Vice President, Norfolk & Western Ry., Roanoke, Va.
- JACOB L. BAUER, State Highway Engineer, State House Annex, Trenton, N. J.
- COL. E. AUSTIN BAUGHMAN, State Commissioner of Motor Vehicles, Guilford Ave. and 21st St., Baltimore, Md.
- JAMES E. BAUM, Deputy Manager, American Bankers' Association, 100 E. 42nd St., New York, N. Y.

- JOHN BRAKEY, Traffic Engineer, State Highway Department, Salem, Ore.
 D. H. BEATTY, Superintendent of Safety, Southern Ry., Washington, D. C.
 DAVID BEECROFT, Bendix Corp., New York Central Bldg., New York, N. Y.
 JAMES BEHA, General Manager, National Bureau of Casualty & Surety Underwriters, 1 Park Ave., New York, N. Y.
 A. L. BELLE ISLE, President, Black and White Cab Co., 62 Ellis St., N. E., Atlanta, Ga.
 L. G. BENTLEY, General Safety Agent, Chesapeake & Ohio Ry., Richmond, Va.
 HON. J. P. BENGSTON, State Capitol, St. Paul, Minn.
 FRANCIS W. BENNETT, Atlantic City, N. J.
 LOUIS L. BERG, Director of Traffic, Police Department, Detroit, Mich.
 LIEUT. OSCAR C. BERGDAHL, Traffic Division, Jamestown, N. Y.
 DAVID S. BEYER, Vice President and Chief Engineer, Liberty Mutual Insurance Co., Park Square Bldg., Boston, Mass.
 J. ROWLAND BIBBINS, Engineer, 2301 Connecticut Avenue, N. W., Washington, D. C.
 C. O. BRCKELHAUPT, American Telephone & Telegraph Co., 195 Broadway, New York, N. Y.
 J. P. BICKELL, Registrar of Motor Vehicles, Toronto, Ont.
 COL. W. Y. BINGHAM, Director, Personnel Research Federation, 29 West 39th St., New York, N. Y.
 F. J. BISHOP, Toledo Terminal R. R., Terminal Bldg., Toledo, Ohio.
 C. H. BISSELL, Crouse-Hinds Co., Syracuse, N. Y.
 A. D. BLACK, Director of Public Safety, Toledo, Ohio.
 R. W. BLACK, Standard Oil Co. of New Jersey, P. O. Box 37, Elizabeth, N. J.
 MAJ. GEN. W. M. BLACK, Consulting Engineer, 2723 N St., N. W., Washington, D. C.
 WENDELL W. BLACK, Jackson Chamber of Commerce, Lamar Bldg., Jackson, Miss.
 HON. E. H. BLACKMON, Member South Carolina House of Representatives, Orangeburg, S. C.
 C. H. BLAKEMORE, Superintendent of Safety, Norfolk & Western Ry., Roanoke, Va.
 HON. B. W. BLANCHARD, Mayor, Bangor, Maine.
 LLOYD BLANCHARD, Executive Secretary, Governor's Committee on Street and Highway Safety, Boston, Mass.
 NORMAN M. BLANEY, Director, Farm to Market Road Dept., Farm Bureau Federation, 58 East Washington St., Chicago, Ill.
 HENRY H. BLOOD, Chairman, State Highway Commission, Salt Lake City, Utah.
 B. L. BOBROFF, Teleoptic Corp., Racine, Wis.
 J. W. A. BOLLONG, Traffic Engineer, Seattle, Wash.
 COL. C. B. BORLAND, Director of Public Safety, Municipal Bldg., Norfolk, Va.
 MAJOR W. S. BOUTON, Indian Motorcycle Co., 837 State St., Springfield, Mass.
 HON. J. B. BOWDEN, Augusta Automobile Club, Inc., 711 Eve St., Augusta, Ga.
 T. J. BOWLER, Alderman, City Hall, Chicago, Ill.
 J. R. BOYD, Secretary, National Crushed Stone Association, 1735 14th St., N. W., Washington, D. C.
 R. H. BOYKIN, Division Superintendent, Erie R. R., Youngstown, Ohio.
 N. H. BOYNTON, National Lamp Works of General Electric Co., Nela Park, Cleveland, Ohio.
 F. R. BRADFORD, Boston & Maine R. R., Causeway St., Boston, Mass.
 JAMES L. BRADLEY, Commissioner of Motor Vehicles, Indianapolis, Ind.
 W. E. BRAITHWAITE, Division of Simplified Practice, Bureau of Standards, Washington, D. C.
 J. H. BRAUN, General Counsel, Chicago Motor Club, 66 E. South Water St., Chicago, Ill.
 S. J. BRAUN, Pro-Tect-All Motor Signal Co., 304 Twin Hills Drive, Syracuse, N. Y.
 JOHN BRAYSHAW, 817 A St., N. E., Washington, D. C.
 H. P. BRECKENRIDGE, Automatic Signal Corp., New Haven, Conn.
 MISS RACHEL BRETHERTON, Domestic Commerce Div., Dept. of Commerce, Washington, D. C.
 HON. CLAY STONE BRIGGS, Member of Congress, Washington, D. C.
 MAJOR ROY F. BRITTON, President, Automobile Club of Missouri, 4218 Lindell Blvd., St. Louis, Mo.
 HOWARD D. BROWN, Attorney, Detroit Automobile Club, 139 Bagley Ave., Detroit, Mich.
 LEON R. BROWN, New York State Rys., 267 State St., Rochester, N. Y.
 HON. C. D. BUCK, Governor of Delaware, Dover, Del.
 W. V. BUCK, State Highway Engineer, Topeka, Kans.
 EDWARD J. C. BULLOCK, Warren, R. I.
 ALFRED J. BUNYIN, Wisconsin Legislative Interim Traffic Committee, 719 Rosedale Ave., Milwaukee, Wis.
 JAMES S. BURCH, Assistant Engineer, American Road Builders' Association, 914 National Press Bldg., Washington, D. C.
 DR. GEORGE K. BURGESS, Director, Bureau of Standards, Washington, D. C.
 EDWARD F. BURKE, Lieutenant of Police, Rochester, N. Y.
 WILLIAM BUTLER, General Counsel, United States Casualty Co., 80 Maiden Lane, New York, N. Y.
 HAROLD S. BUTTENHEIM, Editor, The American City, 443 Fourth Ave., New York, N. Y.
 WM. BUTTERWORTH, President, Chamber of Commerce of the United States, 1615 H St., N. W., Washington, D. C.
 W. W. BUTTS, Butts Realty Co., 726 Chestnut St., St. Louis, Mo.
 H. S. BYERS, Chief of Police, Chambersburg, Pa.

C

- HON. SHERMAN D. CALLENDER, Judge, Recorders Court, Traffic Div., Detroit, Mich.
- W. H. CAMERON, Managing Director, National Safety Council, 20 North Wacker Drive, Chicago, Ill.
- WILLIAM CANDLER, Vice President, Atlanta-Biltmore Hotel Co., Atlanta, Ga.
- WM. S. CANNING, Engineer, Keystone Automobile Club, 250 South Broad St., Philadelphia, Pa.
- WILLIAM P. CAPES, Executive Secretary, Conference of Mayors, City Hall, Albany, N. Y.
- EDMOND O. CARL, Vice President, Call Carl, Inc., 614 H St., N. W., Washington, D. C.
- J. A. CARNEY, Superintendent of Safety, Chicago, Burlington & Quincy R. R., 547 W. Jackson Blvd., Chicago, Ill.
- A. A. CARROLL, Superintendent of Police, Grand Rapids, Mich.
- THOMAS H. CARROW, Supervisor of Safety, Pennsylvania R. R., Philadelphia, Pa.
- ARTHUR C. CARRUTHERS, Editor-President, Safety Engineering, New York, N. Y.
- Mrs. J. B. CARSON, President, Women's Vigilance Assn., 373 Partridge St., Albany, N. Y.
- R. I. CATLIN, Assistant Vice President, Aetna Casualty & Surety Co., Hartford, Conn.
- Mrs. E. W. CHAFFEE, 6101 Connecticut Ave., Chevy Chase, Md.
- LESTER G. CHASE, Division of Building & Housing, Bureau of Standards, Washington, D. C.
- JUAN B. CHEVALIER, Secretary, Legation of Panama, Washington, D. C.
- C. P. CLARK, General Manager, American Automobile Association, Mills Bldg., Washington, D. C.
- W. M. CLARK, Vice President, Order of Railway Conductors of America, 10 B St., S. W., Washington, D. C.
- B. C. CLARKE, Publicity Manager, National Conference on Street and Highway Safety, 1615 H St., N. W., Washington, D. C.
- G. E. CLARKSON, Manager, Western Pennsylvania Safety Council, 2409 First National Bank Bldg., Pittsburgh, Pa.
- CARL C. CLEMENTS, International Association of Milk Dealers, 120 Broadway, New York, N. Y.
- P. J. CLIFFORD, 1304 F St., N. W., Washington, D. C.
- C. L. CLOSE, Manager, United States Steel Corp., 71 Broadway, New York, N. Y.
- W. W. CLOUD, President, Yellow Cab Co., 1123 Cathedral Ave., Baltimore, Md.; President, National Association of Taxicab Owners.
- R. L. COCHRAN, Secretary, State Highway Department, Lincoln, Neb.
- J. W. COGLEY, Dixie Minerals Corp., Cherokee, Ala.
- W. GRAHAM COLE, Director, Safety Service, Policyholders' Service Bureau, Metropolitan Life Insurance Co., 1 Madison Ave., New York, N. Y.
- FRANK J. COLEMAN, American Federation of Labor, Washington, D. C.
- WM. A. COLEMAN, Deputy Chief, Traffic Division, Grand and Centre Sts., New York, N. Y.
- JOHN B. COLPOYS, Editor, The Trade Unionist, 720 Fifth Street, N. W., Washington, D. C.
- R. KEITH COMPTON, Director of Public Works, City Hall, Richmond, Va.
- C. N. CONNER, Engineer-Executive, American Road Builders' Assn., 914 National Press Bldg., Washington, D. C.
- THOMAS CONWAY, Jr., President, Cincinnati, Hamilton & Dayton Ry., Franklin Trust Bldg., Philadelphia, Pa.
- GEORGE E. COOK, Victor Bldg., Washington, D. C.
- JAMES A. COOK, Superintendent, Electrical Dept., Lynn Gas & Electric Co., 90 Exchange St., Lynn, Mass.
- DELBERT W. CORBIN, Eastern Representative, Laundry Owners' National Association of the United States and Canada, 2539 Pennsylvania Ave., N. W., Washington, D. C.
- E. L. COND, President, Auburn Automobile Co., Auburn, Ind.
- CHARLES L. CORNELIUS, Nashville Automobile Club, Nashville, Tenn.
- JOSE W. CORONADOR, Legacion de Colombia, Washington, D. C.
- WILLIAM J. COX, Assistant Professor of Engineering Mechanics, Yale University, New Haven, Conn.
- EDWARD CRANE, Bureau of Statistics, Interstate Commerce Commission, Washington, D. C.
- H. M. CRANE, Technical Assistant to President, General Motors Corp., Broadway and 57th St., New York, N. Y.
- JOSEPH CRAWFORD, New Jersey Traffic Commission, City Hall, Newark, N. J.
- JOHN F. CREMEN, General Agent, Massachusetts Mutual Life Insurance Co., 914 Evans Bldg., Washington, D. C.
- P. R. CRIPPEN, Secretary, Police Department, 1121 S. State St., Chicago, Ill.
- DR. E. C. CRITTENDEN, Chief, Electrical Division, Bureau of Standards, Washington, D. C.
- DR. J. W. CROFT, 152 W. Main St., Waynesboro, Pa.
- E. A. CUNNINGHAM, Efficiency Engineer, Canadian Pacific Ry., Montreal, Que.
- W. H. CUNNINGHAM, Inspector of Motor Vehicles, State Department of Motor Vehicles, 91 Sisson Ave., Hartford, Conn.
- COL. FLOYD E. CUNNINGHAM, Member, State Road Commission, Charleston, W. Va.
- FRANK B. CURRAN, Highway Specialist, Dept. of Commerce, 19th St. and Pennsylvania Ave., N. W., Washington, D. C.
- HARRY K. CURTIS, President, Motorists' Association of Illinois, 111 West Washington St., Chicago, Ill.
- T. H. CUTLER, Chief Engineer, State Highway Department, Jefferson City, Mo.

D

NORMAN DAMON, National Automobile Chamber of Commerce, Transportation Bldg., Washington, D. C.

G. W. DANIELS, 14 Coenties Slip, New York, N. Y.

L. N. DANTZLER, President, Dantzler Lumber & Export Co., Tampa, Fla.

J. ALLEN DAVIS, Associate Counsel, Automobile Club of Southern California, Figueroa St. at Adams, Los Angeles, Calif.

J. O. DAVIS, Chief of Highway Patrol, 124 Memorial Bldg., Nashville, Tenn.

WILLIAM R. DAWES, Vice President, Central Trust Co. of Illinois, Chicago, Ill.

W. A. DEARBORN, Chief Engineer, Lumbermen's Mutual Casualty Co., 260 Tremont St., Boston, Mass.

W. W. DEBERARD, Associate Editor, Engineering News-Record, 520 N. Michigan Ave., Chicago, Ill.

LEWIS A. DEBLOIS, 19 W. 10th St., New York, N. Y.

HON. SPENCER M. DECOLIER, Mayor, Bradford, Pa.

DR. WILLIAM DEKLEINE, Medical Assistant to Vice Chairman, American Red Cross, Washington, D. C.

GEO. DE LA BARRA, First Secretary, Bolivian Legation, 1303 New Hampshire Ave., Washington, D. C.

F. A. DELANO, President, American Civic Association, Union Trust Bldg., Washington, D. C.

W. T. DEMPSEY, Superintendent, Service Maintenance Dept., New York Edison Co., 28 W. 17th St., New York City.

MRS. LOUIS T. DE VALIERE, Fourth Vice President, National Congress of Parents and Teachers, 720 Riverside Ave., Trenton, N. J.

MRS. F. H. DEVERE, National Congress of Parents and Teachers, 677 Park Ave., Auburn, R. I.

J. M. DEVERS, Attorney, State Highway Commission, Salem, Ore.

D. L. DEVINE, Railway Safety Inspector,

Missouri-Kansas-Texas R. R., Parsons, Kans.

DR. H. C. DICKINSON, Chief, Heat and Power Division, Bureau of Standards, Washington, D. C.

I. W. DIGGES, Secretary, General Outdoor Advertising Co., 1 Park Ave., New York, N. Y.

GROVER C. DILLMAN, State Highway Commissioner, Lansing, Mich.

W. N. DOAK, National Legislative Representative, Brotherhood of Railway Trainmen, 10 B St., S. W., Washington, D. C.

ROBT. B. DODDS, JR., Automatic Signal Corp., 205 Church St., New Haven, Conn.

R. W. DOLE, Director of Highways, State Highway Commission, Topeka, Kans.

EDWARD J. DONAHUE, Commissioner of Traffic, Department of Public Safety, Cleveland, Ohio.

MILLARD C. DORNTCE, International Garage Association, Buffalo, N. Y.

N. W. DOUGHERTY, Professor of Civil Engineering, University of Tennessee, Knoxville, Tenn.

PROCTOR L. DOUGHERTY, Director, Eyesight Conservation Council, National Press Bldg., Washington, D. C.

FAYETTE B. DOW, American Petroleum Institute, Washington, D. C.

J. M. N. DOWNES, President, Buckhannon Chamber of Commerce, Buckhannon, W. Va.

J. R. DRANEY, National Traffic Products, Inc., Penobscot Bldg., Detroit, Mich.

DR. LOUIS I. DUBLIN, Statistician, Metropolitan Life Insurance Co., New York, N. Y.

FRANK DUNCAN, Assistant Chief Engineer, City of Baltimore, Baltimore, Md.

DR. KNIGHT DUNLAP, Professor of Experimental Psychology, Johns Hopkins University, Baltimore, Md.

C. FRANK DUNN, Executive Secretary, Kentucky Progress Commission, Frankfort, Ky.

E

LEE J. EASTMAN, President, Packard Motor Car Co. of New York, Broadway at 61st St., New York, N. Y.

J. M. EATON, Assistant General Manager, American Mutual Alliance, 180 North Michigan Ave., Chicago, Ill.

RALPH W. EATON, Public Service Engineer, Providence, R. I.

SEÑOR DON MIGUEL ECHEGARAY Y ROMEA, Attache, Spanish Embassy, Washington, D. C.

W. J. ECK, Assistant to Vice President, Southern Ry., McPherson Square, Washington, D. C.

JOHN JOY EDSON, Chairman of the Board, Washington Loan & Trust Co., Washington, D. C.

M. O. ELDRIDGE, Assistant Director of Traffic, Washington, D. C.

WILLIAM G. ELIOT, 3d, Associate Highway Economist, Bureau of Public Roads, 1515 14th St., N. W., Washington, D. C.

GEORGE W. ELLIOTT, General Secretary, Philadelphia Chamber of Commerce, Philadelphia, Pa.

G. E. ELLIS, Secretary, Joint Committee on Automatic Train Control, American Railway Assn., Transportation Bldg., 17th & H Sts., N. W., Washington, D. C.

EDWIN W. ELY, Division of Simplified Practice, Department of Commerce, Washington, D. C.

R. W. EMERSON, Vice President and General Manager, Cleveland Ry., Cleveland, Ohio.

JAS. A. EMBRY, General Counsel, National Association of Manufacturers, Union Trust Bldg., Washington, D. C.

H. F. ENLWS, Director, First Aid and Life Saving, American Red Cross, Washington, D. C.

CAPT. FRANK ERVIN, Traffic Division, Department of Public Safety, Portland, Ore.

DONALD P. EVANS, Chief Investigator, U. S. Bureau of Efficiency, Washington, D. C.
ISADORA EVANS, Chamber of Commerce and Civics of the Oranges and Maplewood, 21 N. Walnut St., East Orange, N. J.

FREDERICK E. EVERETT, Highway Commissioner, Concord, N. H.

HERBERT EVISON, Executive Secretary, National Conference on State Parks, 905 Union Trust Bldg., Washington, D. C.

O. A. EYERMAN, Department of Police Cumberland, Md.

BENJAMIN G. EYNON, Commissioner of Motor Vehicles, Department of Revenue, Harrisburg, Pa.

F

A. C. FAEB, General Manager, Chicago Automobile Trade Association, 2324 Michigan Ave., Chicago, Ill.

R. N. FALGE, Head, Lighting Section, Research Laboratories, General Motors Corp., Detroit, Mich.

BELMONT FARLEY, Assistant Director, Division of Publications, National Editors' Association, 1201 16th St., N. W., Washington, D. C.

CAPT. C. D. FARMER, State Highway Patrol, North Carolina State Highway Commission, Raleigh, N. C.

D. C. FENNER, Manager, Public Works Department, Mack - International Motor Truck Corp., 25 Broadway, New York, N. Y.

JAMES L. FIESER, Vice Chairman, American Red Cross, 17th & D Sts., N. W., Washington, D. C.

I. B. FINKELSTEIN, Delaware Hardware Co., Second and Shipley Sts., Wilmington, Del.

SAM E. FINLEY, 292 North Ave., N. W., Atlanta, Ga.

WILLIAM A. FISHER, 70 Fenway, Boston, Mass.

HOWARD S. FISK, Deputy Adjutant, American Legion, Transportation Bldg., Washington, D. C.

T. FITZGERALD, Vice President, Pittsburgh Railways Co., 435 Sixth Ave., Pittsburgh, Pa.

P. W. A. FITZSIMMONS, President, Michi-

gan Mutual Liability Co., 1209 Washington Blvd., Detroit, Mich.

H. B. FLOWERS, President, New Orleans Public Service, Inc., 317 Baronne St., New Orleans, La.

T. C. FOLEY, Chamber of Commerce of Pittsburgh, Pittsburgh, Pa.

GEN. ALFRED F. FOOTE, Commissioner of Public Safety, Boston, Mass.

B. B. FORDNEY, American Safety Headlight Corp., Louisville, Ky.

R. L. FORNEY, Statistician, National Safety Council, 20 North Wacker Drive, Chicago, Ill.

COL. C. P. FORTNEY, Chairman, State Road Commission of West Virginia, Capitol Bldg., Charleston, W. Va.

LELAND W. FOX, Firestone Tire & Rubber Co., Akron, Ohio.

MRS. CLARENCE FRALM, General Federation of Women's Clubs, Wilmington, Del.

HON. T. MCCALL FRAZIER, Director, Division of Motor Vehicles, Richmond, Va.

MRS. ARTHUR M. FREE, 3024 Tilden St., N. W., Washington, D. C.

GEN. AMOS A. FRIES, American Legion, 3305 Woodley Road, N. W., Washington, D. C.

K. G. FRITZSCHING, Consular Secretary, German Embassy, 1439 Massachusetts Ave., N. W., Washington, D. C.

W. W. FÜLLER, Superintendent of Safety, Seaboard Air Line Ry., Savannah, Ga.

G

JOHN C. GALL, National Association of Manufacturers, Union Trust Bldg., Washington, D. C.

C. W. GALLOWAY, Operating Vice President, Baltimore & Ohio R. R., Baltimore, Md.

A. B. GALT, Division of Simplified Practice, Department of Commerce, Washington, D. C.

J. X. GALVIN, President, Pennoyer Merchants Transfer Co., 742 West Polk St., Chicago, Ill.

FREDERICK A. GARDNER, Assistant Engineer, State Highway Department, Concord, N. H.

H. B. GARRETT, Chairman, Oklahoma Automobile Club, Oklahoma City, Okla.

ROBERT J. GASKILL, Superintendent, Fire & Police Signal Service, Ft. Wayne, Ind.

C. C. GATES, President, Gates Rubber Co., Denver, Colo.

P. M. GAULT, Signal Engineer, Missouri Pacific R. R., St. Louis, Mo.

CHARLES D. GEEB, Automatic Signal Corp., 205 Church St., New Haven, Conn.

SEN. BERNARD GETTELMAN, Chairman, Wisconsin Legislative Interim Traffic Committee, State Capitol, Madison, Wis.

J. L. GILBERT, Birmingham Electric Co., 2100 North First Ave., Birmingham, Ala.

GIBS GILCHRIST, State Highway Engineer, Austin, Tex.

JOHN M. GILLESPIE, International Brotherhood of Teamsters, Chauffeurs, Stablemen & Helpers of America, 222 E. Michigan St., Indianapolis, Ind.

A. C. GODWARD, Executive Engineer, Minneapolis Committee, Industrial Bureau, New York Life Bldg., Minneapolis, Minn.

W. S. GODWIN, President, W. S. Godwin Co., Baltimore, Md.

O. F. GOETZ, Assistant Highway Engineer, Nashville, Tenn.

FRANK S. GOLD, President, Automobile Club of Minneapolis, La Salle at 13th St., Minneapolis, Minn.

N. H. GOLDSTICK, Assistant Corporation Counsel, Police Headquarters, Detroit, Mich.

STANLEY GOOD, Traffic Captain, Police Department, El Paso, Tex.

A. R. GOODALE, Assistant Secretary, Travelers Insurance Co., Hartford, Conn.

ERNEST P. GOODRICH, Consulting Engineer, 175 5th Ave., New York, N. Y.

CHARLES GORDON, Managing Director, American Electric Railway Association, 292 Madison Ave., New York, N. Y.

JOHN B. GORDON, New York Oil Trade Association, 1251 National Press Bldg., Washington, D. C.

HAROLD M. GOULD, Traffic Executive, Crowley Milliner Co., Detroit, Mich.

GEORGE M. GRAHAM, Assistant to President, Willys-Overland Co., Toledo, Ohio.

Mrs. WILLIS M. GRAHAM, 4746 Woodlawn Ave., Chicago, Ill.

C. A. GRAINGER, Asbestos Corp., 21st St. and Godfrey Ave., Philadelphia, Pa.

HON. CHARLES H. GRANTLAND, Secretary of State, Dover, Del.

BARNEY GRAVES, Mitten Management, Mitten Bldg., Philadelphia, Pa.

CHESTER H. GRAY, Michigan State Farm Bureau, Washington, D. C.

S. S. GREENBERG, Maxwell-Davis, Inc., 64 Pearl St., Hartford, Conn.

CHARLES GREENWOOD, Traffic Department, Toronto Police Department, 29 Cavendish St., Toronto, Ont.

JOHN F. GRIFFIN, Motor Vehicle Commissioner, Concord, N. H.

F. W. GRISWOLD, Griswold Safety Signal Co., 20 E. Hennepin Ave., Minneapolis, Minn.

H. C. GROSSMAN, General Counsel, American Drivervself Association, Pontiac, Mich.

A. V. GRUHN, General Manager, American Mutual Alliance, 180 North Michigan Avenue, Chicago, Ill.

P. F. GUERKE, Traffic Manager, Chamber of Commerce, Wilmington, Del.

E. J. GUTHRIE, Marine Superintendent, Central Vermont Ry., New London, Conn.

H

PAUL B. HARANS, Commissioner of Public Safety, New Orleans, La.

FRANCIS B. HAGUE, 18 Bleeker St., Newark, N. J.

A. V. HALL, Chairman, Sherwood Hall Co., Grand Rapids, Mich.

JOHN J. HALL, National Bureau of Casualty & Surety Underwriters, 1 Park Ave., New York, N. Y.

HON. LEVI M. HALL, Judge of Municipal Court, Minneapolis, Minn.

MAXWELL HALSEY, Traffic Engineer, Department of Public Works, State House, Boston, Mass.

C. A. HALVERSON, General Electric Co., Lynn, Mass.

C. C. HANCH, General Manager, National Association of Finance Companies, 33 S. Clark St., Chicago, Ill.

GEN. JAMES W. HANSON, Chief of State Highway Police Force, Augusta, Me.

*VAL HARENSAPE, Secretary, Contest Board, American Automobile Association, Washington, D. C.

RICHARD HARFEST, General Manager, Detroit Automobile Club, 139 Bagley Ave., Detroit, Mich.

W. H. HARLAND, Director of Traffic, Washington, D. C.

Mrs. L. P. HARLOW, 515 Columbia Drive, Tampa, Fla.

DALE HARMON, Yellow Cab Co. of Kansas City, 207 W. 14th St., Kansas City, Mo.

D. HARRINGTON, Bureau of Mines, Washington, D. C.

DR. JOHN A. HARRISS, President Broadway Association, New York, N. Y.

F. HARTENSTEN, Assistant to General Manager, Lehigh Valley R. R., Bethlehem, Pa.

CHARLES D. HASTINGS, Chairman of the

Board, Hupp Motor Car Corp., Detroit, Mich.

E. M. HASTINGS, Chief Engineer, Richmond, Fredericksburg & Potomac R. R., Richmond, Va.

JAMES T. HAVILAND, Vice President, Lumbermen's Mutual Casualty Co., 203 Midland Ave., Wayne, Pa.

CHAS. M. HAYES, President, Chicago Motor Club, 66 E. South Water St., Chicago, Ill.

WM. J. HAYS, Deputy Commissioner of Motor Vehicles, 1523 Chillicothe St., Portsmouth, Ohio.

GUY C. HECKER, General Secretary, American Electric Railway Association, 292 Madison Ave., New York, N. Y.

S. R. HELLER, P. O. Box 1124, Norfolk, Va.

M. L. HEMINWAY, Managing Director, Motor and Equipment Association, 250 W. 57th St., New York, N. Y.

H. H. HEMMINGS, Metropolitan Life Insurance Co., 1 Madison Ave., New York, N. Y.

JOHN P. HENNESSEY, Deputy Commissioner of Motor Vehicles, Albany, N. Y.

THOS. P. HENRY, President, American Automobile Association, 41 Burroughs St., Detroit, Mich.

CHARLES Z. HESKETT, City Solicitor, Cumberland, Md.

DEAN C. E. HEWITT, Assistant to the Director, American Council on Education, 26 Jackson Pl., N. W., Washington, D. C.

FRED HEWITT, Editor, Merchants' Monthly Journal, 701 Machinists' Bldg., Washington, D. C.

EDWARD F. HILKER, Secretary, Wisconsin

* Deceased.

Legislative Interim Traffic Committee, State Capitol, Madison, Wis.

ARTHUR M. HILL, Vice President and General Manager, Charleston Interurban R. R., Charleston, W. Va.

CHAS. E. HILL, General Safety Agent, New York Central Lines, 466 Lexington Ave., New York, N. Y.

V. G. HILL, Manager, Nebraska Motor Club, Lincoln Hotel, Lincoln, Neb.

C. G. HOBART, W. A. Wieboldt & Co., Milwaukee Ave. at Paulina St., Chicago, Ill.

E. G. HOFFMAN, Executive Secretary, Seattle Automobile Dealers' Association, 1510 Broadway, Seattle, Wash.

F. L. HOFFMAN, Prudential Insurance Co., Wellesley Hills, Mass.

HAROLD G. HOFFMAN, New Jersey Traffic Commission, South Amboy, N. J.

PAUL G. HOFFMAN, Vice President, Studebaker Corp. of America, South Bend, Ind.

REYBURN HOFFMAN, Secretary - Manager, St. Louis Safety Council, 511 Locust St., St. Louis, Mo.

D. M. HOLMAN, General Manager, United States Mutual Liability Insurance Co., Granite Trust Bldg., Quincy, Mass.

Mrs. HELEN LUCILLE HOLT, Director, Safety Conference, California State Chamber of Commerce, San Francisco, Calif.

ROBERT P. HOOPER, President, Wm. E. Hooper & Sons Co., Philadelphia, Pa.

R. W. HOOPER, Assistant Engineer, Buffalo, Rochester & Pittsburgh Ry., 155 W. Main St., Rochester, N. Y.

HON. HERBERT HOOVER, President of the United States, Washington, D. C.

T. A. HORROCKS, Secretary, Minnesota Truck Owners' Association, 715 Lumber Exchange Bldg., Minneapolis, Minn.

HERBERT HOSKING, Automotive Industries, Chestnut & 56th Sts., Philadelphia, Pa.

HON. HAL E. HOSS, Secretary of State, Salem, Ore.

PHILIP D. HOYT, Deputy Commissioner of Police, New York, N. Y.

S. S. HUERNER, Professor of Insurance, University of Pennsylvania, Philadelphia, Pa.

J. GEO. HUFNAGEL, Clifford Grade Crossing Device, 8th & Linden Sts., Scranton, Pa.

HARTER B. HULL, President, Harter B. Hull Co., 301 West 29th St., Baltimore, Md.

EDWARD M. HUNT, Commissioner of Public Works, Portland, Maine.

J. H. HUNT, General Motors Corp., General Motors Bldg., Detroit, Mich.

J. G. HUNTER, Transportation Engineer, Railroad Commission of California, State Building, San Francisco, Calif.

CHARLES T. HVASS, 508 E. 19th St., New York, N. Y.

I

DR. NILO IDMAN, Secretary, Legation of Finland, Washington, D. C.

JOHN IELDER, Executive Director, Pitts-

burgh Housing Association, 401 Granite Bldg., Pittsburgh, Pa.

J

F. E. JACK, Vice President, Chicago Motor Club, 66 E. South Water St., Chicago, Ill.

HON. WM. T. JACKSON, Mayor, Toledo, Ohio.

E. W. JAMES, Chief, Division of Design, Bureau of Public Roads, 515 14th St., N. W., Washington, D. C.

MISS HARLEAN JAMES, Executive Secretary, American Civic Association, 901 Union Trust Bldg., Washington, D. C.

STEPHEN JAMES, Director, Highway Education Board, 1723 N St., N. W., Washington, D. C.

CHARLES C. JANES, Secretary, Ohio State Automobile Association, Neil House, Columbus, Ohio.

HOLGER JENSEN, Manager, Engineering and Rating Division, Maryland Casualty Co., Baltimore, Md.

J. R. JEWELL, Department of Vocational Education, Lincoln, Neb.

A. N. JOHNSON, Dean, Engineering College, University of Maryland, College Park, Md.

E. R. JOHNSON, President, Roanoke Automobile Association, Box 930, Roanoke, Va.

F. W. JOHNSON, Managing Director, Citizens' Safety Commission, Philadelphia Chamber of Commerce, 12th and Walnut Sts., Philadelphia, Pa.

GUY R. JOHNSON, Engineer, Bureau of Accidents, Public Service Commission, Harrisburg, Pa.

PYKE JOHNSON, Washington Representative, National Automobile Chamber of Commerce, Transportation Bldg., Washington, D. C.

WESLEY C. JOHNSON, Commissioner of Public Safety, Bridgeton, N. J.

W. M. JOHNSON, Incandescent Lamp Department, General Electric Co., Nela Park, Cleveland, Ohio.

C. J. JOLLY, Legal Department, General Motors Corp., Detroit, Mich.

R. M. JONES, Secretary, Tack Associates of Massachusetts, 70 Brookside Ave., Brockton, Mass.

WILLIAM H. JORDAN, City Electrician, East Orange, N. J.

RUDOLPH JOSE, President, The Washington Cadillac Co., Washington, D. C.

H. H. JUNSON, Safety Engineer, N. Y. Edison Co., 4 Irving Pl., New York, N. Y.

K

A. J. KAVANAUGH, Chief of Police, 137 Exchange St., Rochester, N. Y.

O. V. KEAN, Automatic Signal Corp., New Haven, Conn.

G. G. KELCEY, American Gas Accumulator Co., Elizabeth, N. J.

HUGH A. KELLEY, New Jersey Traffic Commission, 89 Sherman Pl., Jersey City, N. J.

CAPT. JAMES KELLEY, Supervisor of Traffic, Trenton, N. J.

R. E. KELLEY, Northwestern Pacific R. R., 65 Market St., San Francisco, Calif.

HON. BOLIVAR E. KEMP, Member of Congress, Washington, D. C.

JAMES S. KEMPER, President, Lumbermen's Mutual Casualty Co., Pantheon Bldg., Chicago, Ill.

C. H. KERR, City Hall, Independence, Kans.

C. S. KLUGH, Manager, Pennsylvania Au-

tomotive Association, 298 Walnut St., Harrisburg, Pa.

NORMAN L. KLAUSS, Division of Building and Housing, Bureau of Standards, Washington, D. C.

ALFRED B. KOCH, President, LaSalle & Koch Co., Toledo, Ohio.

A. W. KOEHLER, Secretary, National Conference on Street and Highway Safety, 1615 H St., N. W., Washington, D. C.

E. W. KOPF, Metropolitan Life Insurance Co., New York, N. Y.

E. P. KRICK, American Red Cross, 5130 Connecticut Ave., N. W., Washington, D. C.

A. D. KUNZE, Secretary, Rubber Manufacturers' Association, Inc., 250 W. 57th St., New York, N. Y.

L

L. E. LAHER, President, Bedford County Motor Club, Everett, Pa.

HON. ROBERT P. LAMONT, Secretary of Commerce, Washington, D. C.

DAN R. LAMSON, American Road Builders' Association, 914 National Press Bldg., Washington, D. C.

JOHN L. LANDFAIR, House Office Bldg., Washington, D. C.

EARL LANGSTROTH, Manager, Publicity Department, Rubber Manufacturers' Association, 250 West 57th St., New York, N. Y.

ETIENNE LARDY, Counselor, Legation of Switzerland, Washington, D. C.

G. W. LAUGHLIN, Assistant Grand Chief, Brotherhood Locomotive Engineers, 10 B St., S. W., Washington, D. C.

MICHAEL LAUGHLIN, Chief of Police, Fort Wayne, Ind.

ALFRED M. LEE, II, Educational Secretary, Better Traffic Committee of Pittsburgh, 908 City-County Bldg., Pittsburgh, Pa.

P. H. LEUENBERGER, Traffic Director, Department of Public Safety, Fort Wayne, Ind.

HAROLD M. LEWIS, Executive Engineer, Regional Plan of New York and Its Environs, New York, N. Y.

LOYD R. LEWIS, 2009 Van Buren St., Wilmington, Del.

JOHN H. LIEGLER, 526 Wisconsin Ave., Racine, Wis.

J. H. LINDENBERGER, 129 Raymond Ave., Louisville, Ky.

THOMAS J. LITTLE, JR., Holley Carburetor Co., Detroit, Mich.

D. F. LITTLE, State Highway Department, Columbia, S. C.

WILLIAM F. LITTLE, Electrical Testing Laboratories, 80th St. and East End Ave., New York, N. Y.

DR. MORTON G. LLOYD, Chief, Section of Safety Engineering, Bureau of Standards, Washington, D. C.

HORACE L. LOHNES, National Petroleum Association, 930 Munsey Bldg., Washington, D. C.

W. H. LOLLER, Secretary, Youngstown Automobile Club, W. Boardman St., Youngstown, Ohio.

LIEUT. COL. FRANK S. LONG, Indian Motorcycle Co., 837 State St., Springfield, Mass.

JOHN C. LONG, Manager of Institutional Publications, Bethlehem Steel Co., Bethlehem, Pa.

J. E. LONG, Superintendent of Safety, Delaware & Hudson Co., Albany, N. Y.

EDWARD F. LOOMIS, Secretary, Motor Truck Committee, National Automobile Chamber of Commerce, 366 Madison Ave., New York, N. Y.

RALPH P. LORD, Secretary, Rhode Island Automobile Dealers' Association, Providence, R. I.

DR. M. O. LORENZ, Director, Bureau of Statistics, Interstate Commerce Commission, Washington, D. C.

A. R. LOSH, State Highway Engineer, Oklahoma City, Okla.

ARTHUR J. LOVELL, Vice President, Brotherhood of Locomotive Firemen and Engineers, 10 B Street, S. W., Washington, D. C.

G. V. LOVERING, Bureau of Safety, Interstate Commerce Commission, Washington, D. C.

JOHN L. LOVETT, General Manager, Michigan Manufacturers' Association, 1001 First National Bank, Detroit, Mich.

C. F. LOWETH, Chief Engineer, Chicago, Milwaukee, St. Paul & Pacific R. R., 898 Union Station, Chicago, Ill.

W. R. LOYD, Manager, Safety Department, Alabama Power Co., Birmingham, Ala.

H. M. LUCIUS, Secretary, Automobile Club of Maryland, Baltimore, Md.

HON. FRED E. LUKENS, Secretary of State, Boise, Idaho.

PAUL B. LUM, Autocar Co., 1053 31st St., N. W., Washington, D. C.

GEORGE E. LURZ, Inspector, Police Department, Baltimore, Md.

F. E. LYMAN, Commissioner, Commonwealth of Massachusetts, Department of Public Works, State House, Boston, Mass.

F. C. LYNCH, Director, Kansas City Safety Council, American Bank Bldg., Kansas City Mo.

MRS. F. C. LYNCH, American Auxiliary, 9 W. 68th St. Terrace, Kansas City, Mo.

M

- ALVAN MACAULEY, President, Packard Motor Car Co., Detroit, Mich.; President, National Automobile Chamber of Commerce.
- GEN. NATHAN WILLIAM MACCHESNEY, Attorney, 30 N. La Salle St., Chicago, Ill.
- JOHN A. MACDONALD, Commissioner, State Highway Department, Hartford, Conn.
- JAMES H. MACDONALD, American Road Builders' Association, National Press Bldg., Washington, D. C.
- THOMAS H. MACDONALD, Chief, Bureau of Public Roads, 515 14th St., N. W., Washington, D. C.
- ROBT. MACHATTON, Highway Education Board, 1723 N St., N. W., Washington, D. C.
- W. W. MACK, Chief Engineer, State Highway Department, Dover, Del.
- K. W. MACKALL, Engineering Dept., Crouse-Hinds Co., Syracuse, N. Y.
- H. H. MAGESICK, Nela Park, Cleveland, Ohio.
- A. W. MAGEE, Deputy Commissioner, Department of Motor Vehicles, 4 Delsea Drive, Glassboro, N. J.
- LEIFUR MAGNUSSON, International Labor Board, Washington, D. C.
- HON. JOHN J. MAHER, Judge, Recorder's Court, Traffic Division, Detroit, Mich.
- LIEUT. MALCOLM, Traffic Police, Atlanta, Ga.
- JOHN P. MALLOY, Safety Engineer, General Accident Co., 100 William St., New York, N. Y.
- W. R. MANIER, Assistant to the President, Chamber of Commerce, Nashville, Tenn.
- CARLOS MANTILLA, Minister of Ecuador, 1712 New Hampshire Ave., N. W., Washington, D. C.
- J. FRED MARGERUM, Secretary, New Jersey Traffic Commission, Trenton, N. J.
- KENNETH MARKWELL, Engineer, Columbian Mutual Tower, Memphis, Tenn.
- BURTON W. MARSH, Traffic Engineer, 537 City Hall, Philadelphia, Pa.
- SIDNEY G. MARTIN, Universal Atlas Cement Co., 208 S. La Salle St., Chicago, Ill.
- JUAN MAS, Mexican Embassy, Washington, D. C.
- C. T. MATTHEWS, Carolina Motor Club, Inc., 347-349 N. Elm St., Greensboro, N. C.
- E. C. MATTHEWS, President, American Drivurself Association, 703 Gay St., Knoxville, Tenn.
- W. W. MATTHEWS, Bureau of Motor Vehicles, Harrisburg, Pa.
- WALTER J. MATRISON, Assistant City Attorney, City Hall, Milwaukee, Wis.
- PROF. MARK A. MAY, Yale University, New Haven, Conn.
- SI MAYER, President, Automobile Club of Illinois, 5600 Sheridan Rd., Chicago, Ill.
- ROBT. MAYO, JR., Office of Superintendent of Architects, 7000 Piney Branch Rd., Takoma Park, Md.
- *HON. WILLIAM McADOO, Chief City Magistrate, New York, N. Y.
- HON. WALTER K. McADORY, Chief Law Enforcement Officer, Montgomery, Ala.
- I. P. McBRIDE, Chairman, State Highway Commission, Phoenix, Ariz.
- CHARLES M. McCABE, Nashville Automobile Club, Nashville, Tenn.
- T. B. McCARTHY, Vice President, Protect-All-Motor Signal, Inc., 107 E. Washington St., Syracuse, N. Y.
- DR. MILLER McCLINTOCK, Director, Albert Russel Erskine Bureau for Street Traffic Research, Harvard University, Cambridge, Mass.
- J. M. McCOMB, Vice President, Crucible Steel Co. of America, 17 E. 42nd St., New York, N. Y.; President, Motor & Equipment Association.
- H. E. McCONNELL, Motor Vehicle Department, Department of State, Lansing, Mich.
- J. F. McCRARY, City Manager, Bristol, Va.
- W. L. McCROY, Teleoptic Corp., Racine, Wis.
- A. R. McDONALD, Member, Railroad Commission of Wisconsin, Madison, Wis.
- M. J. McDONOUGH, President, Building Trades Department, A. F. of L. Bldg., Washington, D. C.
- WM. R. McELROY, Sales Manager, Neon Signal Devices, Inc., 1507 Clark Bldg., Pittsburgh, Pa.
- JAMES McEVoy, General Motors Corp., Detroit, Mich.
- DR. J. HORACE McFARLAND, Harrisburg, Pa.
- PAUL J. McGAHAN, National Executive Committee, American Legion, 1240 National Press Bldg., Washington, D. C.
- E. J. McILRATH, Staff Engineer, Chicago Surface Lines, 231 S. La Salle St., Chicago, Ill.
- L. W. McINTYRE, Professor of Civil Engineering, University of Pittsburgh, Pittsburgh, Pa.
- DR. J. GORDON McKAY, Director, Cleveland Highway Research Bureau, Terminal Tower, Cleveland, Ohio.
- PAUL J. McKEONE, Welsbach Traffic Signal Co., 261 N. Broad St., Philadelphia, Pa.
- DONALD M. McNEIL, Acting Traffic Engineer, 909 City-County Bldg., Pittsburgh, Pa.
- A. D. McWHORTER, General Superintendent, Memphis Street Ry., Memphis, Tenn.
- SEN. HUNTINGTON P. MEECH, West Hartford, Conn.
- E. J. MEHREN, Vice President, McGraw-Hill Publishing Co., Inc., 520 N. Michigan Ave., Chicago, Ill.
- EMERY A. MELENDY, Highway Department, Montpelier, Vt.
- DR. A. B. MEREDITH, State Commissioner of Education, Hartford, Conn.
- WILLIAM E. METZGER, 56 Longfellow Ave., Detroit, Mich.
- L. L. MILES, President, Louisville Taxicab & Transfer Co., Louisville, Ky.
- BUELL G. MILLER, President, Miller North Broad Storage Co., Philadelphia, Pa.

* Deceased.

Mrs. D. EDWIN MILLER, General Federation of Women's Clubs, 1300 Macon Ave., Pittsburgh, Pa.

FRED C. MILLS, Director, Swimming & Water Safety, Boy Scouts of America, 2 Park Ave., New York, N. Y.

F. W. MILLS, Bureau of Public Roads, Washington, D. C.

S. N. MILLS, Assistant Director, Bureau of Safety, Interstate Commerce Commission, Washington, D. C.

GEORGE L. MINER, Vice President, Providence Safety Council, Providence, R. I.

HENRY J. MINEUR, Director of Safety, Borden Co., 350 Madison Ave., New York, N. Y.

THOMAS C. MIEKIL, Pennsylvania State Chamber of Commerce, State Chamber Bldg., Harrisburg, Pa.

I. J. MOE, State Highway Commissioner, Valley City, N. D.

H. R. MOFFITT, Location Engineer, Department of Highways, Harrisburg, Pa.

CAPT. ALBERT B. MOORE, Inspector of New York State Police, State Capitol, Albany, N. Y.

J. T. MOORE, State Highway Commission, Pittsburgh, Kans.

CHARLES H. MOOREFIELD, State Highway Engineer, Columbia, S. C.

W. G. NAGLE, American Auto Club, Lewisburg, Pa.

ROBERT H. NAY, Secretary, Street Traffic Committee, Chicago Association of Commerce, 10 S. LaSalle St., Chicago, Ill.

JOHN H. NESSON, Chief, Bureau of Engineering and Surveys, Philadelphia, Pa.

WM. F. V. NEUMANN, Secretary, Detroit Automobile Club, 139 Bagley Ave., Detroit, Mich.

WILLIAM M. NEVIN, Nevin Bus Lines, 203 West 33rd St., New York, N. Y.

F. H. NEWELL, President, Research Serv-

W. E. OAKES, South Fork Foundry & Machine Co., South Fork, Pa.

WM. OGDEN, Manager, Manufacturers' Division, American Road Builders' Association, National Press Bldg., Washington, D. C.

J. R. OISHEI, Trico Products Corp., Buffalo, N. Y.

OSCAR G. OLANDER, Commissioner, Department of Public Safety, Lansing, Mich.

A. C. OLIPHANT, Washington Bldg., Washington, D. C.

Mrs. EDWARD R. PADGETT, American Civic Association, 901 Union Trust Bldg., Washington, D. C.

FRANK PAGE, Vice President, Wachovia Bank & Trust Co., Raleigh, N. C.

ROBERT P. PAGE, Jr., President, Autocar Co., Ardmore, Pa.

JOY E. MORGAN, Editor, The Journal, National Education Association, 1201 16th St., Washington, D. C.

V. V. MOULTON, President, Auto-Owners' Insurance Co., 615 N. Capitol Ave., Lansing, Mich.

AHMED MAMDOUH MOURSI, Second Secretary, Royal Legation of Egypt, Washington, D. C.

HON. JULIUS MUENCH, City Hall, St. Louis, Mo.

P. SANTOS MUNOZ, Secretary, Embajada de la Republica Argentina, Washington, D. C.

EDMUND J. MURPHY, Director of Information Service, American Electric Railway Association, 292 Madison Ave., New York, N. Y.

DR. T. F. MURPHY, Chief Statistician for Vital Statistics, Bureau of the Census, Washington, D. C.

C. E. MYERS, Director of City Transit, Philadelphia, Pa.

HUGH B. MYERS, Superintendent of Police, New Orleans, La.

JOSEPH G. MYERSON, Assistant General Attorney, C. I. T. Corporation, 1 Park Ave., New York, N. Y.

N

ice, Shoreham Bldg., Washington, D. C.
GURNEY NEWLIN, Attorney, 458 South Spring St., Los Angeles, Calif.

D. V. NICHOLSON, Assistant Secretary, California State Automobile Association, 150 Van Ness Ave., San Francisco, Calif.

CLAUDE NOLAN, Cadillac Motors, Jacksonville, Fla.

JOHN E. NORTHWAY, Secretary-Manager, Hamilton Chamber of Commerce, Rent-schler Bldg., Hamilton, Ohio.

GEO. H. NYE, City Engineer, Municipal Bldg., New Bedford, Mass.

O

WM. F. O'NEILL, Superintendent of Police, Providence, R. I.

GEORGE OEP, Safety Engineer, Detroit Edison Co., 2000 Second Ave., Detroit, Mich.

THOS. O'REILLY, Inspector, Police Department, Toledo, Ohio.

MISS E. A. OSBORN, Department of Commerce, Washington, D. C.

JOSEPH E. O'TOOLE, 1001 15th St., N. W., Washington, D. C.

W. W. OWENS, Railway Express Agency, 416 Munsey Bldg., Washington, D. C.

P

GEORGE PALMBAUM, 3612 Springdale Ave., Baltimore, Md.

L. H. PALMER, Vice President and General Manager, Fifth Avenue Coach Co., 605 West 132nd St., New York, N. Y.

Mrs. L. H. PALMER, Chairman, Committee on Fire Protection, Street and High-

way Safety, General Federation of Women's Clubs, 96 Greenacres Ave., Scarsdale, N. Y.
 LEW R. PALMER, Conservation Engineer, Equitable Life Assurance Society of the United States, New York, N. Y.

DR. JAN PAPANEK, Secretary, Czechoslovak Legation, Washington, D. C.

CAPT. GEO. A. PARKER, State Registrar of Motor Vehicles, Commonwealth Pier, Boston, Mass.

W. C. PARKER, Motor Truck Committee, National Automobile Chamber of Commerce, Lansing, Mich.

A. E. PARMELEE, Vice President, Ramp Building Corp., 41 East 40th St., New York, N. Y.

DR. JULIUS H. PARMELEE, Director, Bureau of Railway Economics, Transportation Bldg., Washington, D. C.

J. H. PAYNE, Parish Engineer, Jefferson Bank Bldg., Gretna, La.

O. A. PEARSON, City Council, 101 Court House, Minneapolis, Minn.

L. A. H. PETERS, Attache, Royal Netherlands Legation, 1470 Euclid St., Washington, D. C.

PETER S. PETERSON, Proprietor, Underwood Implement Co., Underwood, Iowa.

ANTON L. PETERSON, Commissioner of Streets & Public Improvements, Prospect St., Passaic, N. J.

C. E. PETTIBONE, Vice President, American Mutual Liability Insurance Co., 142 Berkeley St., Boston, Mass.; President, National Safety Council.

L. O. PFAHL, Teleoptic Corp., Racine, Wis.

HAROLD D. PHELPS, Erie County Highway Department, 577 Ellicott Square, Buffalo, N. Y.

L. H. PHELPS, Phelps-Roberts Corp., 1818 14th St., N. W., Washington, D. C.

J. A. QUEENEY, Vice President-Operation, Mitten Management, Inc., Broad and Locust Sts., Philadelphia, Pa.

JOHN J. RAMSEY, Detroit Automobile Inter-Ins. Exchange, 139 Bagley Ave., Detroit, Mich.

R. L. RANKIN, Salisbury Chamber of Commerce, Salisbury, N. C.

MRS. J. ENOS RAY, General Federation of Women's Clubs, R. F. D. No. 1, Hyattsville, Md.

CHAS. E. REDFERN, Claim Agent, United Electric Railways Co., 100 Fountain St., Providence, R. I.

EARL J. REEDER, Supervising Engineer, Public Safety Division, National Safety Council, 20 North Wacker Drive, Chicago, Ill.

ALFRED REEVES, General Manager, National Automobile Chamber of Commerce, 366 Madison Ave., New York, N. Y.

J. G. REGAN, Traffic Control Specialist, General Electric Co., Schenectady, N. Y.

T. P. REGAN, President, New Brunswick

HON. JAMES K. PHILLIPS, Justice of the Peace, Seaford, Del.

A. L. PERCE, General Manager, Borough Electrical Works, Wallingford, Conn.

HON. CHARLES T. PERCE, Commissioner of Motor Vehicles, Montpelier, Vt.

FRANK PERCE, Secretary-Treasurer, League of Iowa Municipalities, Marshalltown, Iowa.

SEN. WALTER POLAKOWSKI, Wisconsin Legislative Interim Traffic Committee, Milwaukee, Wis.

N. B. POPE, Editor, Automobile Topics, 1790 Broadway, New York, N. Y.

DR. ANDREI POPOVICI, Secretary, Rumanian Legation, Washington, D. C.

H. T. POORE, General Counsel, Automobile Dealers Association, Bankers Trust Bldg., Knoxville, Tenn.

H. B. PORTER, Vice President and General Manager, United Railways and Electric Co., Baltimore, Md.

INSPECTOR W. L. PORTS, Superintendent of Signal Bureau, Police Department, Detroit, Mich.

PERRY O. POWELL, Wisconsin Legislative Interim Traffic Committee, 222 Century Bldg., Milwaukee, Wis.

W. B. POWELL, Consolidated Packing Machinery Corp., 1400 West Ave., Buffalo, N. Y.

THEODORE D. PRATT, General Manager, Motor Truck Association of America, 38 Park Row, New York, N. Y.

G. H. PRIDE, President, Pride Transportation Co., Adams and Front Sts., Brooklyn, N. Y.

JOHN R. PRYDE, 4 Boylston St., Bradford, Pa.

C. H. PURCELL, State Highway Engineer, Sacramento, Calif.

HON. GLADYS PYLE, Secretary of State, Pierre, S. D.

J. H. QUIRK, City Engineer, Bradford, Pa.

Automobile Association, Ritchie Bldg., Saint John, N. B.

R. A. REID, Assistant Engineer, Street Lighting Sales Engineer Department, General Electric Co., Lynn, Mass.

HENRY REIMERS, Executive Secretary, National Furniture Warehousemen's Association, 4051 Cottage Grove Ave., Chicago, Ill.

B. H. REMALY, Chief Engineer, The Independence Companies, Independence Bldg., Philadelphia, Pa.

ROBT. RANDALL, 2540 Boulevard, Jersey City, N. J.

W. R. RICHARDS, Safety Director, Associated General Contractors of America, Washington, D. C.

Z. P. RICHARDSON, Jr., President, Benton-Bailey Co., Inc., Richmond, Va.

R. V. RICKCORD, New York Edison Co., 51 Clark St., Brooklyn, N. Y.

F. RINGER, Chief Engineer, Missouri-Kansas-Texas R. R., St. Louis, Mo.

COLEMAN W. ROBERTS, Vice President, Carolina Motor Club, 361-363-365 N. Elm St., Greensboro, N. C.

J. W. ROBERTS, Assistant Vice President, Pennsylvania R. R., Pennsylvania Station, New York, N. Y.

DR. JOHN DILL ROBERTSON, Medical Director, Motorists' Association of Illinois, 2400 S. Michigan Ave., Chicago, Ill.

W. G. ROBERTSON, Secretary and Treasurer, Ontario Motor League, Lumsden Bldg., Toronto, Ont.

LEWIS K. ROCKEFELLER, Assistant Commissioner of Taxation and Finance, Albany, N. Y.

F. W. RODENHEBER, Manager, Louisville Safety Council, 416 Louisville National Bank and Trust Bldg., Louisville, Ky.

M. T. ROGERS, President, Burton & Rogers Manufacturing Co., 197 Grove St., Bloomfield, N. J.

Mrs. M. V. ROGERSON, Chicago Woman's Association of Commerce, 2402 20th St., N. W., Washington, D. C.

Miss I. K. ROLPH, Division of Domestic Commerce, Department of Commerce, Washington, D. C.

B. P. ROOR, Highway Specialist, Bureau of Foreign and Domestic Commerce, Dept. of Commerce, Washington, D. C.

M. C. ROSE, Engineering Department, Chesapeake & Potomac Telephone Co. of Baltimore City, 1210 Standard Oil Bldg., Baltimore, Md.

RICHARD SACHSE, Los Angeles Railway, 1007 Los Angeles Railway Bldg., Los Angeles, Calif.

LOUIS ST. JOHN, Outdoor Advertising Association of America, Inc., Atlantic City, N. J.

FRANK J. SANTRY, President, Nash-Cincinnati Motors Co., Reading Road at Morgan, Cincinnati, Ohio.

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T. L. STOKES, Brownsville Safety Council, Box 670, South Brownsville, Pa.

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