

**NATIONAL CONFERENCE
ON STREET AND HIGHWAY SAFETY**

**REPORT OF THE
Committee on Traffic
Accident Statistics**

**APPOINTED BY
THE SECRETARY OF COMMERCE**

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THIS REPORT is one of five issued for consideration in advance of the Third National Conference on Street and Highway Safety. The reports are: I—Protection of Railway Grade Crossings and Highway Intersections; II—Maintenance of the Motor Vehicle; III—Measures for the Relief of Traffic Congestion; IV—Uniform Traffic Regulation (accompanied by Uniform Vehicle Code, Model Municipal Traffic Ordinance and Manual of Standard Street Traffic Signs, Signals and Markings as revised); V—Traffic Accident Statistics. Copies of all of these and of earlier Conference Publications (see list on back of this report) can be obtained from the National Conference on Street and Highway Safety, 1615 H Street N.W., Washington, D. C.

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NATIONAL CONFERENCE ON STREET AND HIGHWAY SAFETY

Committee on Traffic Accident Statistics

*Hon. Robert P. Lamont, Chairman,
National Conference on Street and Highway Safety,
Washington, D. C.*

SIR: Noteworthy progress has been made, since the Second National Conference on Street and Highway Safety in 1926, in the collection, compilation and analysis of street and highway accident statistics.

This progress makes it possible for the Committee on Traffic Accident Statistics at this time to present a report which is more extensive in scope, and more detailed as to important factors considered, than has heretofore been possible.

Effective treatment of all traffic problems must start with accurate knowledge of the underlying facts. The collection, compilation and analysis of street and highway accident statistics thus assumes outstanding importance in dealing with the large and regrettable increase in the number of street and highway accidents, both fatal and nonfatal, in recent years, and especially in 1929. Attention of the whole nation is sharply focused on this increase, which in 1929 was more than ten per cent, and continues in keeping with the steady increase in fatalities year by year for the last decade.

To develop the proper remedy for any ill, a requisite is to know the type and extent of the disease. To check the mounting toll of traffic casualties in the United States, the available data must first be analyzed. What is the trend? Why is it? That is, what are the principal causes? What are we going to do about it?

Other committees of the Conference are offering remedies for certain of the problems of the street and highway situation, such as traffic congestion, protection of railway grade crossings and highway intersections, improvement of various facilities, uniformity in traffic regulation, enforcement and education. With these

problems this Committee does not deal, except again to emphasize the point that effective treatment of all traffic problems can start only from accurate knowledge of the underlying facts.

The Committee has reviewed and studied all the available data, and is able to present a more comprehensive report than was practicable in its previous reports of 1924 and 1926. As a result of its consideration and study of available facts and statistics, the Committee submits the following findings.

By the Committee,

JULIUS H. PARMELEE,

Chairman.

Washington, D. C.,

May 6, 1930.

Findings and Recommendations

1. Aggregate loss of life due to street and highway accidents in the United States during the year 1929 totaled 33,060 persons. This was an increase of 2,513 traffic fatalities, or 8.2 per cent, over the previous year, and an increase of 16,005 fatalities, or 94 per cent, over 1920. Every year of the period from 1920 to 1929, inclusive, showed an increase in traffic fatalities over the next preceding year.

2. The traffic fatality rate per 100,000 population rose steadily from 16.0 in 1920 to 27.2 in 1929.

3. Motor vehicle fatalities in the United States in 1929 numbered 31,000, which is 93.8 per cent of the total number of traffic fatalities. This was an increase of 10.8 per cent over 1928. The increase from 1928 to 1929 was one of the largest increases, both absolutely and relatively, that has occurred during the past decade. Motor vehicle fatalities showed an increase from 1920 to 1929 of 147 per cent.

4. Returns for the first four months of 1930 show no improvement. In fact, statistics indicate an even greater rate of increase over 1929 than 1929 showed over 1928. Clearly, the problem is not only serious, but is growing more serious each year.

5. In 1927, for the first time since statistics have been compiled, the relative increase in motor vehicle fatalities over the next preceding year exceeded the relative increase in number of automobiles registered. The same was true of 1928, and was again true of 1929. For three years past, therefore, the number of fatalities has been mounting at a faster rate than the number of cars.

6. 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.

7. Fatalities due to railway grade crossing accidents increased from 1,791 in 1920 to 2,485 in 1929, or 38.7 per cent. There was a decrease of 3 per cent between 1928 and 1929. During the past seven years, or from 1923 to 1929, grade crossing fatalities have remained relatively constant, ranging between a minimum of

2,149 in 1924 and a maximum of 2,568 in 1928. During the same period, from 1923 to 1929, the number of motor vehicles registered in the United States increased from 15,092,000 to 26,501,000, or 76 per cent.

8. The ratio of grade crossing fatalities to total traffic fatalities showed a generally downward tendency from 1920 to 1929, the percentage being 10.5 per cent in 1920 and 7.5 per cent in 1929.

9. Fatalities due to street car accidents showed a gradually downward tendency from 1920 to 1929, the total number being reduced from 2,124 to 1,600. The ratio to total traffic fatalities declined at a more rapid rate, from a maximum of 12.5 per cent in 1920 to a minimum of 4.8 per cent in 1929.

10. "Other vehicle" fatalities also showed a large decline during the period from 1920 to 1929, both in absolute number and in relation to total traffic fatalities.

11. The outstanding factor in the alarming growth of the traffic accident problem is the development of the motor vehicle and its more intensive and extensive utilization.

12. Accidental deaths in the United States from *all causes* totaled 97,000 in 1929, an increase of 27.6 per cent over 1920. Motor vehicle fatalities accounted for 16.5 per cent of total accidental deaths in 1920 and 32.0 per cent in 1929. In other words, one out of every three accidental fatalities in 1929 was due directly or indirectly to automobile operation, compared with one out of six fatalities in 1920.

13. The accident rate of motor vehicle fatalities *increased* from 11.9 per 100,000 population in 1920 to 25.6 per 100,000 in 1929. The fatality rate from all other accidental causes *declined* from 59.5 per 100,000 population in 1920 to 54.4 per 100,000 in 1929.

14. The increase in child fatalities from motor vehicle accidents has been less than in adult fatalities from the same cause. Between 1922 and 1928 total motor vehicle fatalities increased 82.2 per cent; but child fatalities (under 15 years of age) increased only 22.9 per cent, while adult fatalities (over 15 years of age) increased 106.9 per cent.

15. Data available for the years 1928 and 1929 indicate that the fourth quarter of the year contributes the greatest number of fatalities in automobile accidents. The third quarter comes second, and the second quarter third, while the first quarter contributes the least number.

16. In 1929, approximately 55 per cent of motor vehicle fatalities were due to collisions of the motor vehicle with pedestrians, while collisions between two or more motor vehicles accounted for about 19 per cent. These two principal causes of accidents were responsible for about 74 per cent, or nearly three-fourths, of the total, and focus attention on this phase of the problem.

17. Statistics further indicate that more than fifty per cent of the accidents occur at street intersections, thus supplying a clue as to where safety activities should be centered. With regard to the circumstances of pedestrian-motor vehicle accidents, "crossing the street *at* intersections" is the most productive cause of death, "crossing the street *between* intersections" ranks second, while "at play in the street" ranks third.

18. Motor vehicle drivers "not having the right of way" are charged with the greatest number of casualties in 1929, but resulted in fewer deaths than either "drove off roadway" or "exceeding the speed limit," which rank in that order in the number of deaths. "Driving on the wrong side of the road," "cutting in" and "failed to signal" are other important causes of casualties attributable to drivers of motor vehicles.

19. There is important evidence of relatively better accident records in states which have the more complete systems for licensing motor vehicle operators and administering the traffic law. Comparison of the rates of increase in automobile fatalities and registrations, respectively, between 1920 and 1928 by groups of states shows that in the groups with strong centralized state motor vehicle administration and drivers' license systems with mandatory examination the rate of fatality increase has been less than that of registrations, whereas in the other groups fatalities have greatly outrun motor vehicles in use. In the North Atlantic states fatalities increased by 91 per cent between 1920 and 1928, while registrations increased by 192 per cent; in the Middle West fatalities by 161 per cent and registrations by 146 per cent; in the South fatalities by 286 per cent and registrations by 224 per cent. The records of the Pacific Coast and Mountain states were intermediate between those of the North Atlantic and Middle West. Separate comparison for 1920-1924 and 1924-1928, respectively, shows similar relationships among the several groups of states,

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with the 1924-1928 period presenting in each case a less favorable record than that of 1920-1924.

20. There are encouraging indications of a reduction in the number of automobile fatalities in some of the larger cities. Of the 78 cities of more than 100,000 population for which comparable information is supplied by the Department of Commerce, 24 reported a decrease from 1928 to 1929 in the number of automobile fatalities; in four cities the number remained stationary.

21. Another hopeful sign was the progressive reduction in a few cities. Four of the principal cities showed reductions in automobile fatalities in both 1928 and 1929, while two of these cities reported reductions of 10 per cent or more in both years. The Committee calls particular attention to the record of these cities, as an indication that what has been done in some localities can and should be done in others.

22. The Committee strongly urges that emphasis 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.

23. Safety education is assuming a more important place in community life and is one of the definite means through which a reduction in the accident toll may be brought about in the future.

24. Where they do not now exist, statutes should be passed in every state which would make it the specific business of some state agency, preferably that clothed with authority for issuing or revoking licenses, to receive traffic accident reports and to investigate accidents, whether occurring within or without the corporate limits of municipalities.

25. It should be made obligatory by law for those concerned to report traffic accidents, and an adequate penalty for failure to report should be provided.

26. Reasonable uniformity in reporting and tabulating schedules is essential. Standard definitions of terms should be generally adopted and used.

27. Sufficiently detailed information should be gathered to indicate clearly the circumstances surrounding the accident, as follows:

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

28. Accident spot maps or card files should be maintained, to be used primarily to detect points at which accidents occur most frequently, and as a basis for plans to eliminate the conditions which may lead to accidents.

29. The Committee submits a standard accident report form developed by cooperative effort among various government and private agencies during recent years. This report form is now utilized in states and/or cities with an aggregate population of 68,000,000. Suggestions for the collection, tabulation and analysis of the data contained on the report form are also submitted.

30. When compiled, the next step involves the intelligent use of accident statistics. The Committee submits suggestions in its report as to some of the more important uses to which accident statistics can and should be put.

31. The Committee feels justified in the conclusion that the safety movement and safety education have made some progress in the traffic field. Accident reduction in some cities shows it. The saving in child life emphasizes it. The causes for congratulation are far outweighed, however, by the distressing general increase in traffic fatalities as a whole. The number and rate of fatalities should be reduced, instead of showing steady increase year after year.

32. Statistics are increasingly available, on the basis of which to diagnose this social ill and point the way to effective remedies. These remedies must be applied, and *this appalling and wholly needless loss of human life can and must be checked.*

(The full text of the Committee report follows.)

STATISTICAL DATA ON STREET AND HIGHWAY ACCIDENTS

The Bureau of the Census of the Department of Commerce regularly compiles and publishes the mortality statistics of the registration area of the United States. Mortality due to accidental deaths, including fatalities resulting from street and highway accidents, is presented in some detail in these compilations. This is especially true of deaths in which the motor vehicle is involved.

In the year 1928 the Census Bureau received acceptable mortality reports from states whose population amounted to 95 per cent of the total population of the United States. This compares with reports in 1920 from states having 82 per cent of the total population. Preliminary estimates for 1929 have been made by the Committee, which are included in this report, and which are subject to revision at a later date, when final and complete statistics become available.

In the tables presented in the Appendix, and in certain of the text tables that follow, distinction is made between two sets of statistics: First, those that charge against automobiles and motorcycles only those fatalities in which they are involved as the heavier vehicle. This is the basis utilized by the Census Bureau, which charges to the steam railway train or electric car all fatalities growing out of collisions with motor vehicles. Statistics in which the motor vehicle is the heavier vehicle involved are sometimes called statistics of "primary automobile accidents." Second, statistics of all accidents in which the motor vehicle is involved (whether the heavier vehicle or not) are called statistics of "all motor vehicle accidents." This distinction is followed in the present report and should be kept in mind in all analyses and conclusions drawn from the several tables.

Trend of Traffic Fatalities, 1920-1929

Estimates have been made on a population basis for those states which were not included in the annual compilations of the Census Bureau for the years 1920 to 1928. As to 1929, additional estimates have been made by the Committee and are included in Table I. Total street and highway fatalities and fatality rates

TABLE I.—STREET AND HIGHWAY FATALITIES IN THE UNITED STATES*

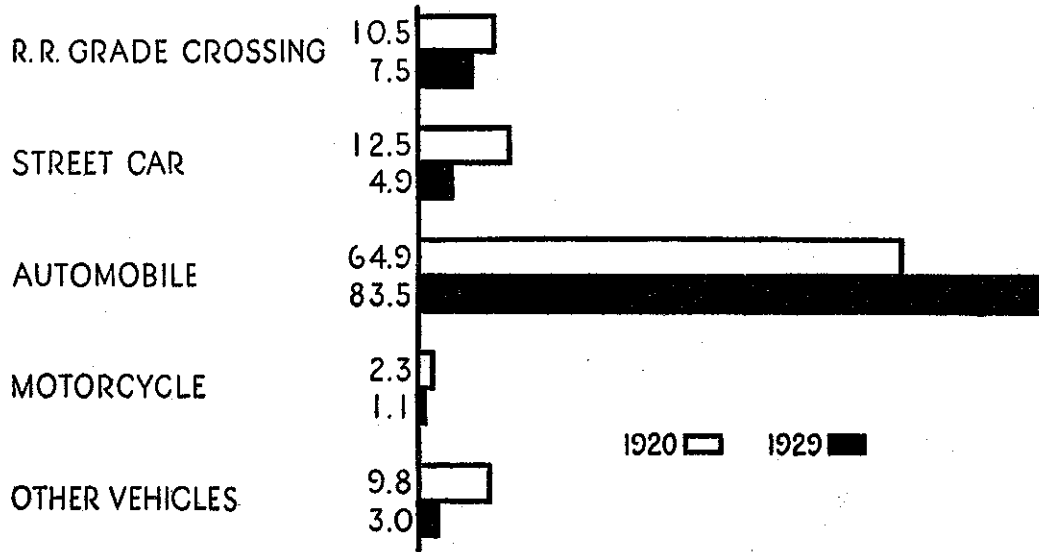
Item	Estimated Fatalities									
	1929†	1928	1927	1926	1925	1924	1923	1922	1921	1920
Railway grade crossing.....	2,485	2,568	2,371	2,491	2,206	2,149	2,268	1,810	1,705	1,791
Street car.....	1,600	1,657	1,590	1,805	1,823	1,836	2,006	1,748	1,776	2,124
Automobile.....	27,600	24,911	23,176	21,014	19,654	17,566	16,452	13,676	12,370	11,074
Motorcycle.....	375	348	319	245	299	274	336	314	361	387
Other vehicles.....	1,000	1,063	1,192	1,255	1,438	1,466	1,559	1,655	1,693	1,679
Total.....	33,060	30,547	28,648	26,810	25,420	23,291	22,621	19,203	17,905	17,055
	Rate Per 100,000 Population									
Railway grade crossing.....	2.0	2.1	2.0	2.2	1.9	1.9	2.0	1.7	1.6	1.7
Street car.....	1.3	1.4	1.3	1.5	1.6	1.6	1.8	1.6	1.6	2.0
Automobile.....	22.8	20.8	19.5	17.9	17.0	15.7	14.9	12.5	11.5	10.4
Motorcycle.....	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.3	0.3	0.3
Other vehicles.....	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.6
Total.....	27.2	25.5	24.1	22.9	22.0	20.7	20.4	17.6	16.6	16.0

* Table based on reports of the Census Bureau and the Interstate Commerce Commission. The Census Bureau compiles statistics of deaths in the registration area, which contained 82.2 per cent of the total population in 1920 and 95.4 per cent in 1928. These statistics have been used as a basis for estimating the total number of street and highway fatalities in the United States. The Census Bureau classifies accidents according to the heavier vehicle involved.

† Preliminary estimates, subject to later revision.

PERCENTAGE, TYPE OF VEHICLE INVOLVED IN TOTAL HIGHWAY FATALITIES, UNITED STATES, 1920 & 1929

Fig. 1



SOURCE: U. S. CENSUS BUREAU, INTERSTATE COMMERCE COMMISSION, NATIONAL SAFETY COUNCIL

per 100,000 population in the United States for the years 1920 to 1929 are included in the table, which is the basis of much of the analysis that follows. Fig. 1, derived from this table, indicates the change in percentages from 1920 to 1929.

Table II separates the totals for each of these same years (1920-1929) according to those fatalities in which all types of motor vehicles were involved, whether they were the heavier

TABLE II.—TRAFFIC FATALITIES IN WHICH MOTOR VEHICLES AND OTHER THAN MOTOR VEHICLES WERE INVOLVED

Year	Street and	All Motor	Other Than	Ratio Of (b) to (a)
	Highway Fatalities (Total) (a)	Vehicle Fatalities* (b)	Motor Vehicle Fatalities (c)	
1920.....	17,055	12,537	4,498	73.6
1921.....	17,905	13,956	3,949	77.9
1922.....	19,203	15,344	3,859	79.9
1923.....	22,621	18,416	4,205	81.4
1924.....	23,291	19,356	3,935	83.1
1925.....	25,420	21,926	3,494	86.3
1926.....	26,810	23,509	3,301	87.7
1927.....	28,648	25,851	2,797	90.2
1928.....	30,547	27,966	2,581	91.6
1929†.....	33,060	31,000	2,060	93.8
Increase, 1929 over 1920.....	16,005	18,443	Dec. 2,438	.....
Per cent of increase.....	93.8	146.8	Dec. 54.2	.....

* Includes collisions of automobiles with heavier vehicles, and motorcycle accidents.
 † Preliminary estimates, subject to revision.

vehicles in the accident or not, and those fatalities in which other than motor vehicles were involved.

The relationship between the statistics of Table I and Table II may be brought out as in Table III by comparing the entries for

TABLE III.—RELATION OF FATALITIES INVOLVING MOTOR VEHICLES TO ALL HIGHWAY FATALITIES

Primary Vehicle	Total Fatalities	Calendar Year 1929	
		Involving Motor Vehicles	Ratio to Total
Railroad train (railway grade crossing).....	2,485	2,085	83.9
Street car.....	1,600	940	58.8
Automobile.....	27,600	27,600	100.0
Motorcycle.....	375	375	100.0
Other vehicles.....	1,000	.....	.....
Total.....	33,060	31,000	93.8

1929, showing how the estimate of 31,000 total motor vehicle fatalities in Table II is built up from the details of Table I.

The total number of fatalities and the fatality rate due to street and highway accidents were higher in 1929 than in any previous year. This is nothing new, for each year in the past decade has told the same story—a new record in the number of deaths.

Nonfatal Injuries

It is reliably estimated that no less than 35 reportable non-fatal injuries occur for every one fatality. If this ratio be correct, and the Committee offers it as a reasonable basis, then the non-fatal injuries from all traffic accidents in 1929 totaled nearly 1,200,000. If the same ratio applies in the case of motor vehicle accidents of all types, approximately 1,000,000 persons were injured in motor vehicle accidents in the United States during 1929.

Economic Loss

As to the economic loss from motor vehicle accidents, the following is quoted from "Accident Facts, 1930," prepared and published by the National Safety Council:

The economic costs of motor vehicle accidents continue to rise along with the number of deaths and injuries. These costs are now approximately \$350,000,000 greater annually than in 1923. The estimate for 1929 is \$850,000,000 compared with \$500,000,000 estimated for 1923 by the First National Conference on Street and Highway Safety. The Conference estimated \$600,000,000 for all traffic accidents, of which approximately \$500,000,000 could be charged to motor vehicles alone. A billion dollars of waste every year from motor vehicle accidents will soon become a reality unless something is done to check the increase.

Comparison of 1929 with 1928

Preliminary fatality statistics for 1929 are presented in Table IV, with the percentage of change from 1928 in each case.

When all motor vehicle fatalities are combined in one total, the increase in 1929 over 1928 becomes 10.8 per cent. All other traffic fatalities declined about 20 per cent.

Analysis of the figures here presented, supplemented by the details in Tables I and II, reveals the annual increases. During the whole period from 1920 to 1929, total street and highway

TABLE IV.—ESTIMATED STREET AND HIGHWAY FATALITIES IN THE UNITED STATES IN 1929 COMPARED WITH 1928

	1929	1928	Net Change Per Cent
Railway grade crossing.....	2,485	2,568	-3.2
Street car.....	1,600	1,657	-3.4
Automobile.....	27,600	24,911	10.8
Motorcycle.....	375	348	7.8
Other vehicles.....	1,000	1,063	-5.9
Total.....	33,060	30,547	8.2
Total motor vehicle.....	31,000	27,966	10.8
All other.....	2,060	2,581	-20.2

fatalities increased 16,005 in number, while all motor vehicle fatalities increased by 18,443. Railway grade crossing fatalities, in which the automobile is involved in more than 85 per cent of the cases, increased by 694. Fatalities due to street car accidents declined 524 in number, while those due to injuries by other vehicles than motor vehicles or trains declined by 679.

Table II shows further that the increase in motor vehicle fatalities from 1920 to 1929 was 147 per cent, whereas other traffic fatalities declined more than one-half (54 per cent). The ratio of motor vehicle to total traffic fatalities showed a continuous rise during the same ten years, from about three-quarters (73.6 per cent) in 1920 to more than nine-tenths (93.8 per cent) in 1929.

Ratio of Motor Vehicle to Total Accidental Fatalities

A total of 76,024 accidental deaths occurred in the United States from all causes in 1920, of which 16.5 per cent were due to motor vehicle accidents. In 1928 there were 95,086 accidental deaths, of which 29.4 per cent were due to motor vehicle accidents. The preliminary ratio for 1929 raises this percentage still further to 32.0 per cent.

The basic statistics from which this general conclusion is drawn appear in Table V and are shown graphically in Figs. 2 and 3.

From 1920 to 1929, motor vehicle fatalities increased by 18,443 or 147 per cent. Accidental deaths from all other causes increased by 2,533 or about 4 per cent.

ACCIDENTAL DEATHS IN THE UNITED STATES, 1920 TO 1929

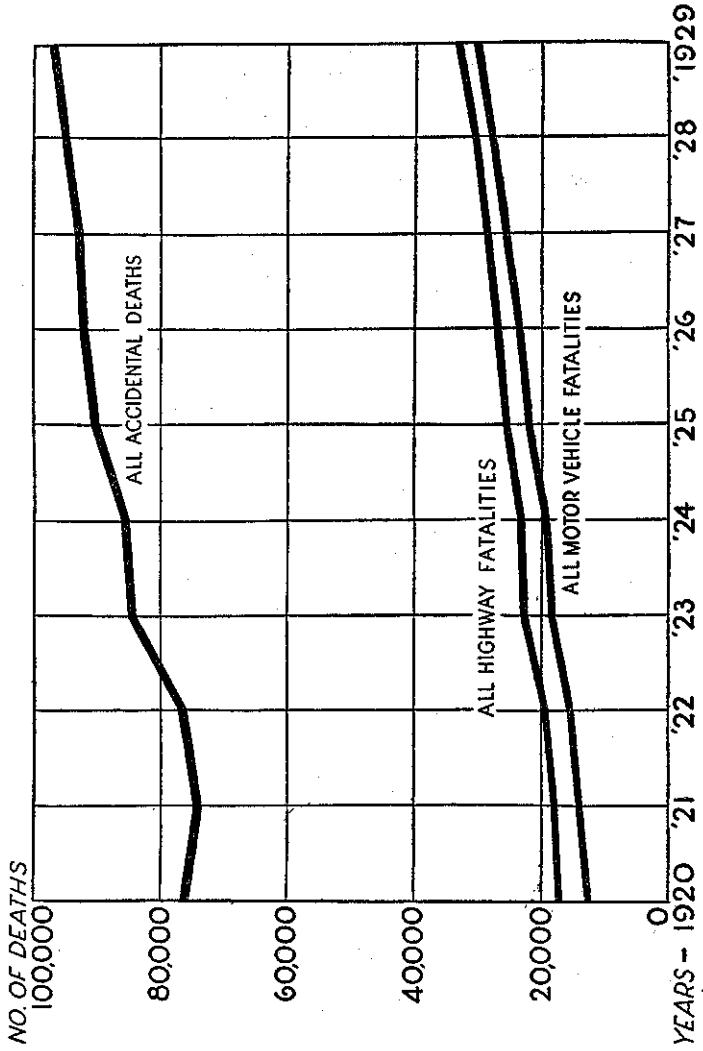


Fig. 2

PERCENTAGE, MOTOR VEHICLE OF TOTAL ACCIDENTAL DEATHS IN THE UNITED STATES, 1920 TO 1929

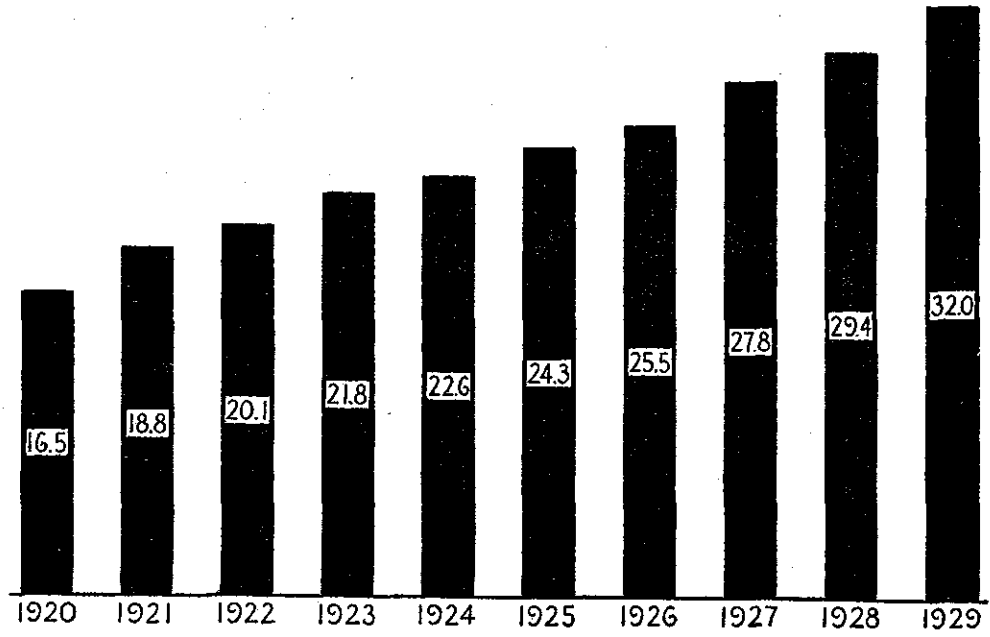


Fig. 3

TABLE V—ESTIMATED ACCIDENTAL DEATHS IN THE UNITED STATES, 1920-1929*

Year	Total Accidental Deaths	Deaths Due to Motor Vehicle Accidents†	Rate per 100,000 Population		Ratio Per Cent of Motor Vehicle to Total Accidental Deaths
			Total Deaths	Deaths Due to Motor Vehicle Accidents†	
1920.....	76,024	12,557	71.4	11.9	16.5
1921.....	74,083	13,956	68.7	12.9	18.8
1922.....	76,510	15,344	70.0	14.0	20.1
1923.....	84,624	18,416	76.4	16.6	21.8
1924.....	85,588	19,356	76.4	17.3	22.6
1925.....	90,351	21,926	78.3	19.0	24.3
1926.....	92,110	23,509	78.6	20.1	25.5
1927.....	93,078	25,851	78.5	21.8	27.8
1928.....	95,086	27,966	79.2	23.3	29.4
1929.....	97,000‡	31,000	80.0	25.6	32.0

* Based on returns to the Census Bureau for the death registration area.

† Includes collisions of automobiles with heavier vehicles, and motorcycle accidents.

‡ Preliminary estimate, subject to later revision.

The ratio of motor vehicle to total accidental fatalities showed a steady rise during the ten years from 1920 to 1929, being nearly twice as high in 1929 as in 1920.

When related to the population, this variation between motor vehicle fatalities and all other deaths from accidental causes becomes even more striking. It appears from Table V that in 1920 the motor vehicle fatality rate was 11.9 per 100,000 population, whereas in 1929 the rate had risen to 25.6 per 100,000. All other accidental deaths showed a fatality rate of 59.5 per 100,000 population in 1920, which *declined* to 54.4 per 100,000 in 1929.

Fatality Trend Compared with Registrations

The only favorable phase of the motor vehicle fatality trend up to 1926 appeared in a comparison of deaths with the number of automobile registrations. In 1920, 136 persons met death in motor vehicle accidents of all kinds for every 100,000 automobiles registered. The ratio declined steadily to 1926, when it was down to 107. In 1927 it turned upward to 112 and rose again in 1928 to 114. The estimate for 1929 indicates another rise to 117 deaths per 100,000 registrations. The basic statistics appear in Table VI.

TABLE VI.—MOTOR VEHICLE FATALITIES COMPARED WITH REGISTRATIONS, UNITED STATES, 1920-1929*

Year	Total Number of Motor Vehicle Deaths	Total Registration of Automobiles	Number of Automobile Fatalities per 100,000 Automobiles Registered
1920.....	12,557	9,231,941	136
1921.....	13,956	10,463,295	133
1922.....	15,344	12,233,375	125
1923.....	18,416	15,092,177	122
1924.....	19,356	17,593,677	110
1925.....	21,926	19,937,274	110
1926.....	23,509	22,001,393	107
1927.....	25,851	23,133,241	112
1928.....	27,966	24,493,124	114
1929.....	31,000	26,501,443	117

* Table taken from records of National Safety Council and United States Bureau of Public Roads. Fatalities include accidents in which automobiles and motorcycles were involved with heavier vehicles.

The major problem in street and highway safety work revolves therefore around the automobile. Fatalities caused by other types of vehicles (other than collisions between steam railway trains and automobiles at grade crossings) seem to be on the decline. The automobile is the major problem in steam-railway-with-highway grade crossing accidents. The following discussion will be almost wholly confined, therefore, to the automobile phase of traffic accidents.

Between 1920 and 1929 the fatality rate from motor vehicle accidents per 100,000 population more than doubled, being 11.9 in 1920 and 25.6 in 1929. In other words, two fatalities occurred in 1929 where only one occurred in 1920. Stated in somewhat different terms, the death hazard to the average citizen from motor vehicle operation in general was doubled during this period.

Urban and Rural Fatality Rates

Table A in the Appendix shows for each of the states in the registration area of the Census Bureau the death rates in urban and rural areas for the years 1920, 1925, 1926 and 1927. Being

drawn from census records, this table excludes collisions of automobiles with heavier vehicles, and motorcycle accidents.

"Urban" includes cities of 10,000 population or more in 1920; the remainder of the state is included in "rural." In 1920 the urban rate was 14.7 fatalities from automobile accidents, and the rural rate 6.2 fatalities, per 100,000 population. In 1927 the urban rate rose to 24.6 fatalities per 100,000, while the rural rate increased to 14.9 fatalities. The urban rate showed a greater absolute increase, but its rate of increase was less than that of the rural rate. From 1920 to 1927 the urban automobile fatality rate per 100,000 population rose from 14.7 to 24.6, an increase of 9.9 points or 67 per cent. The corresponding rural fatality rate rose from 6.2 to 14.9, an increase of 8.7 points, or 140 per cent. The total automobile fatality rate, both urban and rural, moved up from 10.3 per 100,000 in 1920 to 19.4 per 100,000 in 1927, or 88 per cent.

Child and Adult Fatalities

Table VII deals with child and adult automobile fatalities, for the years 1922 to 1928 inclusive. This table excludes collisions with heavier vehicles. Fig. 4 shows the information graphically.

Child fatalities are recorded as those occurring to persons under 15 years of age; adult fatalities are those to persons 15 years of age or over.

There was an almost steady decline in the ratio of child fatali-

TABLE VII.—CHILD AND ADULT AUTOMOBILE FATALITIES, 1922-1928*

Year	Total	Child Fatalities (Under 15 years)	Adult Fatalities (15 years and over)	Ratio Child to Total, Per Cent
1922.....	13,676	4,023	9,653	29.4
1923.....	16,451	4,285	12,166	26.0
1924.....	17,546	4,578	12,968	26.1
1925.....	19,654	4,766	14,888	24.2
1926.....	21,014	4,869	16,145	23.2
1927.....	23,176	5,110	18,066	22.0
1928.....	24,911	4,943	19,968	19.8

* Excludes collisions of automobiles with heavier vehicles, and motorcycle accidents.

CHILD AND ADULT AUTOMOBILE FATALITIES,* U. S. 1922 TO 1928

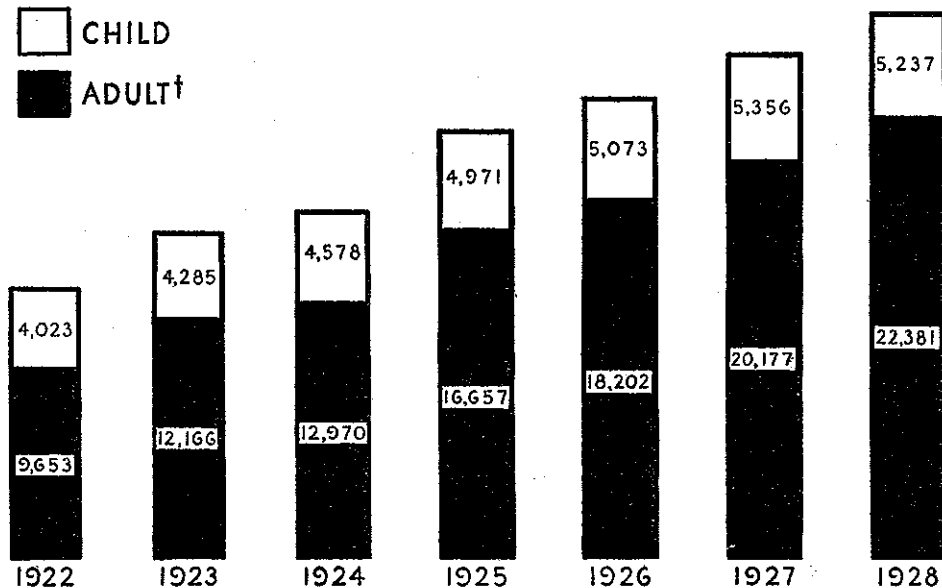


Fig. 4

* EXCLUDES COLLISIONS OF AUTOMOBILES WITH HEAVIER VEHICLES, 1922 TO 1924
 † ADULT = 15 YEARS OF AGE AND OLDER

ties to total fatalities between the years 1922 and 1928, although there was a steady increase in the number of such deaths, amounting to 22.9 per cent for the period. The increase in adult fatalities during the same period was 106.9 per cent, or nearly five times as great as the increase in child fatalities. The ratio of child fatalities to total fatalities fell from 29.4 per cent in 1922 to 19.8 per cent in 1928.

Had the ratio of child to total automobile fatalities remained the same during the years 1923 to 1928 as in 1922—that is, had they increased at the same rate as the adult fatalities—the child mortality would have been greater than it was by an aggregate of 9,748, as shown in Table VIII.

TABLE VIII.—AUTOMOBILE FATALITIES TO CHILDREN

	If Ratio to Total Were Same as in 1922	Actual	Reduction
1922.....	4,023	4,023	
1923.....	5,070	4,285	785
1924.....	5,405	4,578	827
1925.....	6,205	4,971	1,234
1926.....	6,726	5,073	1,653
1927.....	7,526	5,356	2,170
1928.....	8,316	5,237	3,079
Total.....	43,271	33,523	9,748

Thus there was a saving in child lives each year from 1923 to 1928, culminating in a total of more than 3,000 in 1928 alone. Such a saving, regardless of the cause, is one of the few bright spots that stand out in the rather discouraging mass of accident statistics with which the Committee has worked.

Table IX presents another angle of the child and adult accident problem. This table, based on special reports for 1929 to the National Safety Council, includes motor vehicle fatalities of all types, and distributes them both according to type of accident and age group of victim. The age groups are three in number—up to 15 years, the earlier years of life; 15 to 54 years, the active years of adult life; and 55 years or over, the later years of life.

Variations among these groups are quite different in kind, depending largely on the type of accident. Taking the total number of fatalities reported and the principal types separately, the

TABLE IX.—MOTOR VEHICLE FATALITIES BY AGE OF VICTIM AND TYPE OF ACCIDENT, 1929*

(From reports to National Safety Council by certain Police Departments and Motor Vehicle Bureaus)

Type of Accident	All Ages	Percent-age of			
		Total	0-14	15-54	55 and over
Total.....	10,451	100.0	2,229	5,589	2,653
Motor vehicle with pedestrian.....	5,707	54.6	1,758	1,953	1,996
Motor vehicle with motor vehicle.....	1,973	18.9	169	1,513	296
Non-collision operating accident.....	1,131	10.8	109	859	163
Motor vehicle with fixed object.....	705	6.8	43	594	68
Motor vehicle with railroad train.....	485	4.7	55	356	74
Motor vehicle with electric car.....	214	2.1	14	183	17
Motor vehicle with bicycle.....	149	1.4	74	62	13
Motor vehicle with horse-drawn vehicle..	57	0.5	3	34	20
Non-operating accident.....	21	0.2	4	15	2
Motor vehicle with animal.....	4	0.0	0	0	4

* Includes collisions with heavier vehicles, and motorcycle accidents.

TABLE X.—PERCENTAGE DISTRIBUTION OF TYPES OF FATALITIES BY AGE GROUPS

	Child (0-14)	Active Adult (15-54)	Later	Total
			Adult (55 and Over)	
Motor vehicle—pedestrian.....	30.8	34.2	35.0	100.0
Motor vehicle—motor vehicle.....	8.5	76.5	15.0	100.0
Non-collision motor vehicle accident.....	9.6	76.0	14.4	100.0
Motor vehicle—fixed object.....	6.1	84.3	9.6	100.0
Motor vehicle—train.....	11.3	73.4	15.3	100.0
Motor vehicle—electric car.....	6.5	85.5	8.0	100.0
Motor vehicle—bicycle.....	49.7	41.6	8.7	100.0
All other.....	8.5	59.8	31.7	100.0
Total.....	21.3	53.3	25.4	100.0

percentage distribution among the three age groups is as shown in Table X.

For all types of fatal accidents, children were involved in 21.3 per cent, or about one-fifth. They were involved, however, in 30.8 per cent of the pedestrian accidents.

Adults of 55 or over were involved to the greatest degree in pedestrian accidents, their proportion being 35.0 per cent, con-

TYPE OF FATAL MOTOR VEHICLE ACCIDENT IN THE U.S., 1929

PERCENTAGE OF TOTAL FOR CHILD AND ADULT ACCIDENTS

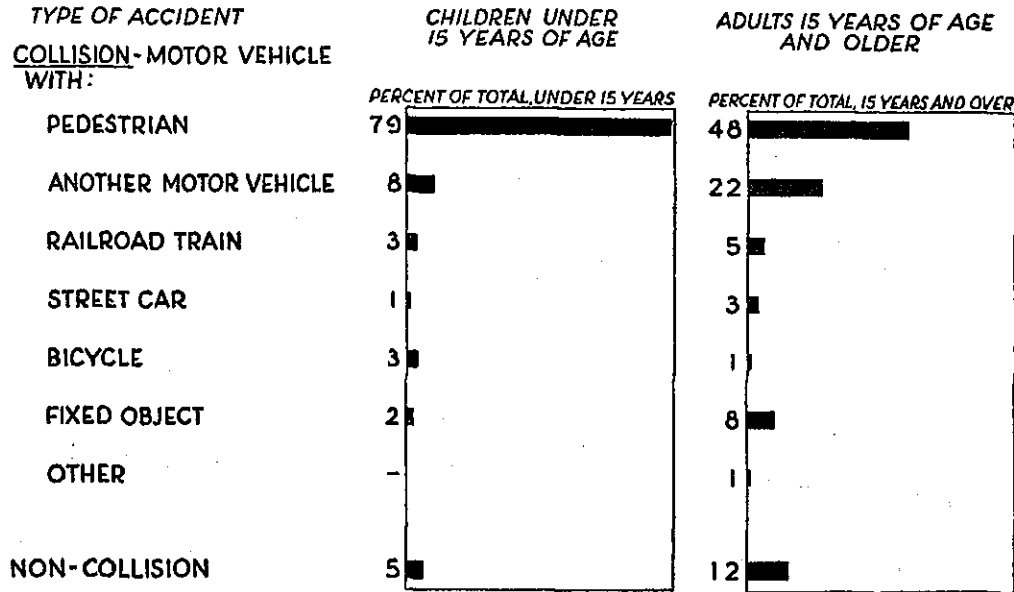


Fig. 5

SOURCE: NATIONAL SAFETY COUNCIL

trusted with a corresponding percentage of 25.4 per cent for all accidents.

Fig. 5 is based on the figures from which Tables IX and X are derived.

Campaigns in various cities and states designed to reduce the injury rate to children while using streets and highways have proved their value. In some cities, these campaigns have taken the form of school safety patrols.

In the District of Columbia, for example, the 1929-30 school year finds 158 patrols in operation, including all schools with the exception of a few in the isolated outskirts. In the patrols are 2,500 boys, equipped by the American Automobile Association with Sam Browne belts, badges to denote their rank, and rain capes and hats for wet weather. Four times daily they guide the school children across the hazardous lanes of traffic.

That the child accident rate in the District has been materially affected by the operation of school boy patrols is attested by a comparison of the accident statistics during the various periods. With a school enrollment of less than 74,000 in 1926, when the patrols were just starting, 15 children of school age were killed in motor vehicle accidents, while in 1929, with a school registration of 79,000, only 10 children of school age were killed. For a period of five consecutive months during 1928 not a child of school age was killed in motor vehicle accidents. During the school year 1928-29 not a child was killed or even seriously injured in the vicinity of a school building in the District of Columbia.

The safety records of Chicago show that the number of children ranging in age from one to fifteen years who were killed by motor vehicles was reduced from 188 in 1926 to 166 in 1929. The number of children injured during that same period, and of the same age range, was reduced from 3,203 in 1926 to 3,193 in 1929.

The records of Detroit show that the number of children ranging in age from one to fifteen years who were killed by motor vehicles was reduced from 108 in 1926 to 88 in 1929. The school enrollment for Detroit in 1926 was 340,111, and in 1929, 402,670.

Seasonal Variation

The seasonal variation of motor vehicle deaths is brought out

TABLE XI.—MOTOR VEHICLE FATALITIES IN THE UNITED STATES, BY MONTHS, 1929 AND 1928*

Month	Number of Fatalities		Percentage Distribution	
	1929†	1928‡	1929	1928
Total.....	31,000	27,966	100.0	100.0
January.....	1,843	1,839	5.9	6.6
February.....	1,843	1,671	5.9	6.0
March.....	1,971	1,672	6.4	6.0
April.....	2,172	1,840	7.0	6.6
May.....	2,288	2,111	7.4	7.5
June.....	2,501	2,079	8.1	7.4
July.....	2,882	2,482	9.3	8.9
August.....	3,422	2,666	11.0	9.5
September.....	2,988	2,816	9.6	10.1
October.....	3,348	2,928	10.8	10.5
November.....	3,263	2,902	10.6	10.3
December.....	2,479	2,960	8.0	10.6

* Including collisions of automobiles with heavier vehicles and motorcycle accidents.

† Estimated from reports to the National Safety Council.

‡ Based on Census Bureau data.

in Table XI, which covers the years 1928 and 1929, and includes all accidents in which motor vehicles were involved.

It appears that the later months of the year are more hazardous than the earlier months. Taken by quarters, the fourth quarter was responsible for the greatest number of deaths, the third quarter produced the second largest, the second quarter the third largest and the first quarter the smallest number.

In 1928, the month of December recorded the greatest number, with the month of October running second. In 1929 the month of August recorded the greatest number, with October again running second. It is clear that conditions vary from year to year so far as monthly variations in motor vehicle accidents and fatalities are concerned.

Comparisons with Foreign Conditions

Table B in the Appendix shows automobile fatality rates per 100,000 population in the Canadian provinces and certain large Canadian cities compared with similar rates for certain United States cities. The years included are 1921, 1925, 1926, 1927 and 1928.

Canadian fatality rates are somewhat lower than in the United States, owing, in the main, to fewer automobile registrations and a lesser density of population in Canada. In 1928, there was one motor vehicle to every nine inhabitants in Canada, compared with one motor vehicle to every five inhabitants in the United States.

Automobile fatality rates per 100,000 population in the United States and some principal foreign countries are shown in Table C of the Appendix. The higher rates shown for the United States are doubtless due to the much greater use of the motor vehicle in this country. If the rates were shown per 100,000 automobiles registered, the result would be more favorable to the United States than the population rates indicate.

Whatever the causes, however, it seems clear that the United States has a motor vehicle and traffic accident problem all its own, which must be recognized and dealt with as its peculiar problem.

Automobile Fatalities and Registrations by States

Table D in the Appendix shows the automobile fatality rates per 1,000 registered cars in the United States, by states, for the years 1920 and 1925 to 1928 inclusive. Based as it is on reports of the Census Bureau, the statistics exclude collisions with heavier vehicles and motorcycle accidents.

In 1928, the state of Iowa reported the lowest rate, 0.4 fatalities per 1,000 registered cars. In the same year Delaware and Georgia reported the highest rate, 1.5 fatalities per 1,000 registered cars.

Comparing 1928 with 1925, 23 of the 41 states for which comparable statistics are available showed increases in the fatality rate per 1,000 cars, 10 states remained the same, while 8 showed decreases.

Automobile Fatality Rates, 1906-1928, by States

Table F in the Appendix is based on a special compilation by the Census Bureau and presents statistics of fatalities from automobile accidents for the years 1906, 1910, 1920, and 1925 to 1928. The registration area is covered in each case, and all states

for which appropriate statistics were available for any of the years.

Confining the comparison to the total registration area, the automobile fatality rate was only 0.4 per 100,000 population in 1906. This rate has shown a steady rise, to 1.8 per 100,000 population in 1910, 10.4 in 1920, 17.0 in 1925 and 20.8 in 1928.

Comparing the final two years, the increase for the registration area as a whole was from a fatality rate of 19.5 per 100,000 population in 1927 to 20.8 in 1928. All but eight of the 41 states for which rates are shown for the same two-year period reported increases, the only exceptions being Arizona, Colorado, Florida, Michigan, South Carolina, West Virginia and Wyoming, where decreases occurred, and Pennsylvania, where there was no change.

Automobile Fatality Increases by Groups of States

There are certain geographical state groups in each of which automobile regulation has thus far developed somewhat differently. For example, the North Atlantic states generally have strong centralized state motor vehicle administration and long established drivers' license systems, including mandatory examination, substantially as provided for in the Uniform Vehicle Code. None of the Middle Western states have such systems, but three of them license all operators without examination, five license only professional chauffeurs and five license no operators at all. Of the Southern states eight require professional chauffeurs to be licensed and five do not have even this requirement. In the eight Rocky Mountain states, until recently, no state required licenses for all operators, while four licensed professional chauffeurs. Of the Pacific Coast states California has an operators' licensing and traffic administration system similar to that of the North Atlantic states. Oregon and Washington, while licensing all operators, do not have mandatory examination.

Taking all states in each group for which Census Bureau automobile fatality figures are available for the years 1920 to 1928, comparisons have been made of the rate of increase in fatalities for this period and also for each of the four year periods 1920-1924 and 1924-1928. To show the possible influence of increased

number of motor vehicles in use upon the fatality increases there are also set up for each period the increases in registration in each group. The results arranged in order of limitation in accident increase in relation to registration increase are as follows:

<i>North Atlantic States—</i>			
Me., N. H., Vt., Mass., R. I.	1920-	1924-	1920-
Conn., N. Y., N. J., Pa., Del., Md.	1924	1928	1928
Increase in automobile fatalities.....	50%	27%	91%
Increase in automobile registrations....	108%	40%	192%
<i>Pacific Coast States—</i>			
Cal., Ore., Wash.			
Increase in automobile fatalities.....	65%	46%	142%
Increase in automobile registrations....	110%	36%	184%
<i>Mountain States—</i>			
Mont., Colo., Utah			
Increase in automobile fatalities.....	45%	50%	117%
Increase in automobile registrations....	55%	41%	119%
<i>Middle Western States—</i>			
O., Ind., Ill., Mich., Wis., Minn., Mo., Neb., Kan.			
Increase in automobile fatalities.....	66%	57%	161%
Increase in automobile registrations....	83%	34%	146%
<i>Southern States—</i>			
Va., N. C., S. C., Fla., Ky., Tenn., Miss., La.			
Increase in automobile fatalities.....	126%	71%	286%
Increase in automobile registrations....	114%	52%	224%

It will be observed that only in the North Atlantic states did fatalities increase less rapidly than registrations in both four-year periods. In the Middle West, Mountain and Pacific states this was true for the period 1920-1924 but subsequently fatalities mounted faster than registrations. In the South fatalities outran registrations in both periods.

Analysis of Preliminary Statistics for 1929

Complete figures for the year 1929 are not available at this time, but sufficient data are at hand to provide a reasonably accurate basis for drawing certain conclusions. From preliminary returns it appears that automobile fatalities (including motorcycle fatalities) will not only surpass those of all preceding years, but the percentage of increase over 1928 will be one

of the largest recorded for a single year. All other types of street and highway fatalities are expected to show a decline.

Table XII shows total estimated highway fatalities over the five-year period, 1925 to 1929. The figures for 1929 are preliminary estimates, with the exception of railway grade crossing deaths, which are final figures for the year. In this table, fatalities in collision accidents are charged against the heavier vehicle involved.

TABLE XII.—ESTIMATED HIGHWAY FATALITIES IN THE UNITED STATES DURING THE PAST FIVE YEARS

	1929	1928	1927	1926	1925
Railway grade crossing.....	2,485	2,568	2,371	2,491	2,206
Street car.....	1,600	1,657	1,590	1,805	1,823
Automobile.....	27,600	24,911	23,176	21,014	19,654
Motorcycle.....	375	348	319	245	299
Injuries by other vehicles.....	1,000	1,063	1,192	1,255	1,438
Total.....	33,060	30,547	28,648	26,810	25,420

During this five-year period, automobile fatalities increased by 40.4 per cent, compared with an increase of 30.1 per cent in total street and highway fatalities. Railway grade crossing fatalities increased 12.6 per cent and motorcycle deaths 25.4 per cent during the same period. Street car and "other vehicle" deaths declined.

Reports to the National Safety Council by certain police departments and motor vehicle bureaus indicate the relative importance of each of the several types of accidents in which motor vehicles were involved in 1929. These data are found in Table IX. In that year 54.6 per cent of the 10,451 fatalities reported were due to collisions between motor vehicles and pedestrians, while 18.9 per cent were due to collisions between two or more motor vehicles. Thus these two causes were responsible for 73.5 per cent of the total number, the remaining 26.5 per cent being distributed among the various other causes indicated in the table.

Table XIII shows the circumstances of pedestrian motor vehicle accidents in 1929. These data were also taken from reports to the National Safety Council by certain police departments and motor vehicle bureaus. "Crossing the street *at* intersections" resulted in the most casualties, there being 41,925 such casualties, with 1,438 fatalities and 40,487 nonfatal injuries. "Crossing the street *between* intersections" ranked next, resulting

in 27,392 casualties, with 1,387 fatalities and 26,005 nonfatal injuries. "At play in the street" ranked third, causing 17,193 casualties, with 597 fatalities and 16,596 nonfatal injuries.

Table XIV deals with actions of drivers in motor vehicle accidents in 1929. Motor vehicle drivers "not having the right of

TABLE XIII.—CIRCUMSTANCES OF PEDESTRIAN MOTOR VEHICLE ACCIDENTS, 1929
(From reports to National Safety Council by certain Police Departments and Motor Vehicle Bureaus)

	Total	Fatal	Nonfatal
Crossing the street at intersections:			
No signal.....	27,177	1,078	26,099
Against signal.....	9,022	196	8,826
With signal.....	4,244	88	4,161
Diagonally.....	1,482	81	1,401
Crossing the street between intersections.....	27,392	1,387	26,005
At play in the street.....	17,193	597	16,596
At work in the roadway.....	2,572	155	2,417
Waiting for or getting on or off street car:			
Safety zone.....	1,304	55	1,249
No safety zone.....	2,077	130	1,947
Riding or hitching on vehicle.....	1,827	144	1,683
Getting on or off other vehicle.....	1,390	58	1,332
Not in roadway.....	2,380	149	2,231
Other actions.....	1,967	121	1,846

TABLE XIV.—ACTIONS OF DRIVERS IN MOTOR VEHICLE ACCIDENTS, 1929
(From reports to National Safety Council by certain Police Departments and Motor Vehicle Bureaus)

	Total	Fatal	Nonfatal
Exceeding the speed limit.....	17,564	1,139	16,425
On wrong side of road.....	16,842	519	16,323
Did not have right of way.....	34,197	703	33,494
Cutting in.....	7,349	150	7,199
Passing standing street car.....	1,577	34	1,543
Passing on curve or hill.....	1,048	67	981
Passing on wrong side.....	1,066	31	1,035
Failed to signal.....	9,159	132	9,027
Improper turning.....	1,314	18	1,296
Failed to stop at through highway or street....	3,802	78	3,724
Disregarded officer or signal.....	1,351	47	1,304
Drove off roadway.....	11,816	1,177	10,139
Drove through safety zone.....	446	23	423
Double or prohibited parking.....	204	2	202

way" caused the most casualties in 1929, but fewer deaths resulted from this cause than either "drove off roadway" or "exceeded speed limit," which rank in that order in the number of deaths. "Driving on the wrong side of the road," "cutting in" and "failed to signal" are other important causes of accidents attributable to drivers of motor vehicles.

State Trends, 1928 to 1929

Statistics covering motor vehicle fatalities of all kinds for the years 1928 and 1929 have been reported to the National Safety Council by 42 states and the District of Columbia. These appear in Table E in the Appendix. Ten states and the District of Columbia reported decreases in 1929, compared with 1928. These states are listed in Table XV.

TABLE XV.—STATES SHOWING FEWER MOTOR VEHICLE FATALITIES IN 1929 THAN 1928

State	Number of Fatalities 1929	Percentage of Total 1929	Percentage of Total 1928	State	Number of Fatalities 1929	Percentage of Total 1929	Percentage of Total 1928
1 Delaware.....	61	0.2	17.6	7 Louisiana.....	315	1.2	5.7
2 South Dakota.....	100	0.4	17.3	8 North Carolina.....	614	2.3	4.0
3 Montana.....	125	0.5	12.0	9 Vermont.....	65	0.2	3.0
4 Rhode Island.....	128	0.5	11.7	10 North Dakota.....	100	0.4	2.9
5 Oregon.....	237	0.9	11.2	11 Illinois.....	2017	7.5	2.5
6 District of Columbia..	112	0.4	6.7				

TABLE XVI.—STATES SHOWING MORE MOTOR VEHICLE FATALITIES IN 1929 THAN 1928

State	Number of Fatalities 1929	Percentage of Total 1929	Percentage of Total 1928	State	Number of Fatalities 1929	Percentage of Total 1929	Percentage of Total 1928
1 Connecticut.....	436	1.6	0.2	17 Alabama.....	467	1.7	16.5
2 Missouri.....	706	2.6	2.2	18 Florida.....	464	1.7	16.9
3 Wisconsin.....	701	2.6	3.4	19 Maine.....	151	0.6	17.0
4 Pennsylvania.....	2198	8.2	5.6	20 New Jersey.....	1275	4.7	17.1
5 Idaho.....	93	0.4	6.9	21 Oklahoma.....	474	1.8	20.0
6 Massachusetts.....	786	2.9	7.1	22 California.....	2243	8.3	20.1
7 Georgia.....	508	1.9	7.5	23 Iowa.....	403	1.5	20.3
8 New Mexico.....	94	0.4	8.0	24 Arkansas.....	272	1.0	20.4
9 Kentucky.....	376	1.4	8.0	25 Tennessee.....	456	1.7	20.4
10 Michigan.....	1541	5.8	8.9	26 Kansas.....	439	1.6	21.3
11 Indiana.....	1054	3.9	9.5	27 Wyoming.....	71	0.3	26.8
12 West Virginia.....	332	1.2	10.3	28 Arizona.....	140	0.5	27.3
13 Minnesota.....	484	1.8	11.3	29 Nebraska.....	235	0.9	28.5
14 Maryland.....	384	1.4	12.3	30 South Carolina.....	357	1.3	45.7
15 Ohio.....	2278	8.5	13.0	31 Virginia.....	475	1.8	47.1
16 New York.....	3066	11.4	14.6	32 Nevada.....	38	0.1	52.1

Thirty-two states registered increases, and are listed in Table XVI.

City Trends, 1928 to 1929

Twenty-four of the 78 cities of 100,000 or more population reporting to the Census Bureau showed a decrease during 1929

TABLE XVII.—MOTOR VEHICLE FATALITIES IN 78 CITIES IN 1929 COMPARED WITH 1928

City	Number of Fatalities 1929	Percentage of Total	Change compared with 1928 per cent-	City	Number of Fatalities 1929	Percentage of Total	Change compared with 1928 per cent-
<i>Decrease Under 1928</i>							
1 Kansas City, Kan.....	6	0.1	40.0	13 Milwaukee.....	102	1.5	15.0
2 El Paso.....	18	0.3	33.3	14 Waterbury.....	14	0.2	12.5
3 Tacoma.....	15	0.2	31.8	15 Chicago.....	750	10.3	11.2
4 Trenton.....	13	0.2	31.6	16 Providence.....	40	0.6	9.1
5 Spokane.....	13	0.2	31.6	17 Bridgeport.....	26	0.4	7.1
6 Wilmington, Del.....	27	0.4	28.9	18 Portland, Ore.....	44	0.6	6.4
7 Springfield, Mass.....	12	0.2	25.0	19 Washington, D. C....	76	1.1	5.0
8 New Bedford.....	6	0.1	25.0	20 Boston.....	115	1.6	4.2
9 San Francisco.....	90	1.3	23.7	21 Cincinnati.....	114	1.6	3.4
10 Rochester.....	33	0.6	22.4	22 Syracuse.....	32	0.5	3.0
11 St. Louis.....	138	2.0	20.2	23 Dayton.....	36	0.5	2.7
12 Fall River.....	12	0.2	20.0	24 Newark, N. J.....	105	1.5	1.9
<i>No Change</i>							
1 Cambridge.....	20	0.3	..	3 Richmond.....	29	0.4	..
2 Lowell.....	12	0.2	..	4 Kansas City, Mo....	69	1.0	..
<i>Increase Over 1928</i>							
1 St. Paul.....	45	0.6	2.3	26 Camden.....	40	0.6	21.2
2 New Orleans.....	97	1.4	4.3	27 Toledo.....	66	0.9	22.2
3 Indianapolis.....	30	1.1	5.3	28 New York.....	1315	18.9	24.9
4 Salt Lake City.....	40	0.6	5.3	29 Seattle.....	80	1.1	25.0
5 Paterson.....	34	0.5	6.3	30 Des Moines.....	24	0.3	26.3
6 Albany.....	15	0.2	7.1	31 New Haven.....	28	0.4	27.3
7 Memphis.....	39	0.6	8.3	32 Schenectady.....	13	0.2	30.0
8 San Diego.....	49	0.7	8.9	33 Los Angeles.....	342	4.9	30.0
9 San Antonio.....	48	0.7	9.1	34 Utica.....	20	0.3	33.3
10 Lynn.....	12	0.2	9.1	35 Birmingham.....	44	0.6	33.3
11 Pittsburgh.....	132	1.9	10.0	36 Fort Worth.....	43	0.6	34.4
12 Akron.....	63	0.9	12.5	37 Louisville.....	58	0.8	34.9
13 Baltimore.....	139	2.0	13.0	38 Denver.....	50	0.7	35.1
14 Buffalo.....	140	2.0	14.8	39 Jersey City.....	68	1.0	36.0
15 Cleveland.....	271	3.9	14.8	40 Youngstown.....	59	0.9	37.2
16 Detroit.....	344	5.0	15.4	41 Yonkers.....	22	0.3	37.5
17 Worcester.....	22	0.3	15.8	42 Somerville.....	16	0.2	45.5
18 Columbus.....	76	1.1	16.9	43 Atlanta.....	79	1.1	46.3
19 Grand Rapids.....	20	0.3	17.6	44 Omaha.....	57	0.8	50.0
20 Oakland.....	64	0.9	18.5	45 Flint.....	30	0.4	50.0
21 Dallas.....	51	0.7	18.6	46 Houston.....	68	1.0	61.9
22 Minneapolis.....	89	1.3	18.7	47 Nashville.....	30	0.4	66.7
23 Philadelphia.....	401	5.8	19.3	48 Erie.....	40	0.6	73.9
24 Canton.....	35	0.5	20.7	49 Oklahoma City.....	36	0.5	80.0
25 Knoxville.....	23	0.3	21.1	50 Duluth.....	28	0.4	133.3

in the number of automobile fatalities (excluding accidents charged to heavier vehicles and motorcycle accidents) caused by accidents within the city limits, four reported the same number in 1929 as in 1928, and fifty reported increases.

Of the 24 cities reporting decreases in 1929, four reported a decrease also in 1928 under 1927, one reported the same figure in 1928 and 1927, eight reported increases in 1928 over 1927 but had a total in 1929 less than in 1927, nine reported increases in 1928 over 1927 and had a total in 1929 more than in 1927, while two did not report in 1927.

Of the four cities reporting the same figure in 1929 as in 1928, three were in excess of the 1927 figure and one did not report in 1927.

Of the 50 cities reporting increases in 1929 compared with 1928, 22 had fewer deaths in 1928 than in 1927, 23 had increases in 1928 over 1927, two had the same number in 1928 as in 1927, and three did not report in 1927.

Table XVII shows the 78 cities reporting to the Census Bureau ranked in accordance with their 1929 record compared with their respective 1928 record in each case.

For the 78 cities combined, the number of fatalities increased 2.4 per cent in 1928 over 1927 and 10.3 per cent in 1929 over 1928. Both of these increases were lower than the corresponding increases in motor vehicle fatalities for the country as a whole, which were 8.2 per cent in 1928 over 1927 and 10.8 per cent in 1929 over 1928.

Railway Grade Crossing Accidents

Railway grade crossing accidents claimed 83 fewer deaths in 1929 than in 1928, the totals being 2,485 fatalities against 2,568. In 1925 there were 2,206 fatalities in such accidents. The 1929 figure is, therefore, 12.6 per cent over 1925, but a reduction of 3.2 per cent under 1928.

Twenty-five states recorded decreases in railway grade crossing fatalities of all kinds, 1929 under 1928. Three reported the same number in 1929 as in 1928, while twenty states and the District of Columbia reported increases. The 25 states in which decreases occurred are shown in Table XVIII, ranked in the descend-

ing number of decreased fatalities; also the states in which no change occurred, and those in which there was an increased number.

The ratio of grade crossing to total traffic fatalities showed the generally declining trend indicated in Table XIX during the period from 1920 to 1929.

TABLE XVIII.—RAILWAY GRADE CROSSING ACCIDENTS BY STATES

State	Num- ber of Fatal- ities 1929	Per- cent- age of Total age	Change com- pared with 1928 per cent- age	State	Num- ber of Fatal- ities 1929	Per- cent- age of Total age	Change com- pared with 1928 per- cent- age
<i>Decrease Under 1928</i>							
1 Rhode Island.....	..	..	100.0	14 Pennsylvania.....	141	5.7	18.0
2 Connecticut.....	3	0.1	88.0	15 Virginia.....	27	1.1	15.6
3 Montana.....	6	0.3	76.0	16 Michigan.....	137	5.5	14.4
4 Utah.....	4	0.2	71.4	17 Mississippi.....	36	1.4	12.2
5 Minnesota.....	37	1.5	43.9	18 Maryland.....	31	1.2	11.4
6 Louisiana.....	19	0.8	40.6	19 North Dakota.....	9	0.4	10.0
7 North Carolina.....	31	1.3	40.4	20 Illinois.....	262	10.5	9.0
8 Oregon.....	10	0.4	33.3	21 Tennessee.....	34	1.4	8.1
9 Washington.....	22	0.9	29.0	22 New York.....	176	7.1	6.9
10 Maine.....	9	0.4	25.0	23 Missouri.....	55	2.2	3.5
11 Oklahoma.....	35	1.4	23.9	24 Florida.....	38	1.5	2.6
12 South Dakota.....	7	0.3	22.2	25 Ohio.....	261	10.5	1.9
13 New Jersey.....	63	2.5	18.2				
<i>No Change</i>							
1 Georgia.....	43	1.7	..	3 Nevada.....	2	0.1	..
2 Kentucky.....	35	1.4	..				
<i>Increase Over 1928</i>							
1 Indiana.....	212	8.5	2.9	12 Nebraska.....	32	1.3	39.1
2 Kansas.....	58	2.3	3.6	13 Colorado.....	30	1.2	42.9
3 West Virginia.....	21	0.8	5.0	14 Texas.....	124	5.0	53.1
4 New Mexico.....	11	0.4	10.0	15 Idaho.....	14	0.6	75.0
5 South Carolina.....	26	1.0	18.2	16 Massachusetts.....	30	1.2	76.5
6 Wisconsin.....	91	3.7	23.0	17 Vermont.....	7	0.3	133.3
7 Iowa.....	72	2.9	24.1	18 New Hampshire.....	16	0.6	166.7
8 Arizona.....	5	0.2	25.0	19 Delaware.....	3	0.3	166.7
9 Arkansas.....	29	1.2	26.1	20 Wyoming.....	2	0.1	*
10 California.....	126	5.1	32.6	21 District of Columbia.....	2	0.1	*
11 Alabama.....	36	1.4	38.5				

* Had no fatalities in 1928.

TABLE XIX.—RELATION OF RAILWAY GRADE CROSSING FATALITIES TO TOTAL TRAFFIC FATALITIES

Year	Per- cent- age	Year	Per- cent- age	Year	Per- cent- age	Year	Per- cent- age	Year	Per- cent- age
1920	10.5	1922	9.4	1924	9.2	1926	9.3	1928	8.4
1921	9.5	1923	10.0	1925	8.7	1927	8.3	1929	7.5

Details of railway grade crossing accidents in the years 1922, 1928 and 1929 will be found in Table XX, and in Fig. 6 with respect to the year 1929. Table XXI gives details of grade crossing fatalities for the same years by states.

TABLE XX.—RAILWAY GRADE CROSSING ACCIDENTS

Cause of Accident	Fatalities		
	1929	1928	1922
Trains striking or being struck by:			
Pedestrians	307	299	273
Passenger automobiles.....	1,741	1,820	1,094
Motor busses.....	7	9	40
Motor trucks.....	337	336	225
Motorcycles or bicycles.....	23	10	20
Trolley cars.....	1	..	2
Animal drawn vehicles.....	28	51	113
Other vehicles or machines.....	6	..	7
Pedestrians passing over or under trains or cars	10	4	1
Miscellaneous.....	25	39	35
Total.....	2,435	2,568	1,810

Collection, Tabulation and Analysis of Traffic Accident Statistics

The Committee on Statistics of the First and Second National Conferences on Street and Highway Safety (1924 and 1926) emphasized the necessity for accurate, complete and up-to-date statistical information regarding traffic accidents. Recommendations were made for standard definitions of terms, reasonable uniformity in reporting and tabulating schedules and the assembly of information regarding the circumstances of accidents.

Since the two previous Conferences, considerable progress has been made in this direction, as partially evidenced by the more complete statistical information contained in the earlier sections of this report.

This progress has been made under the leadership of various governmental agencies, such as police departments, state motor vehicle bureaus, state highway departments, local and state registrars of vital statistics and the United States Census Bureau.

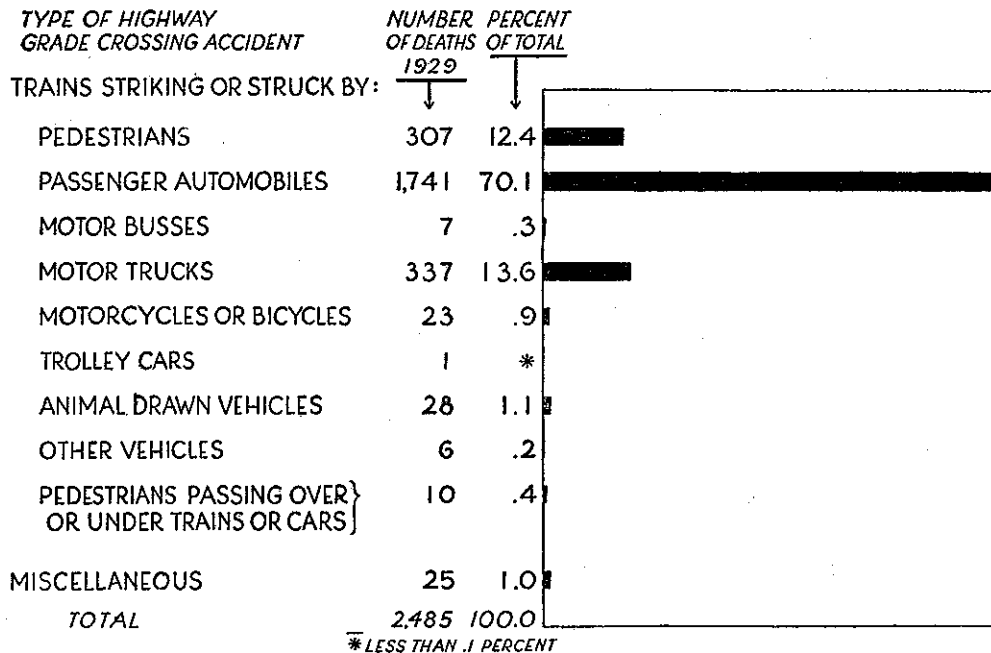
In addition, there has been developed under the sponsorship

TRAFFIC ACCIDENT STATISTICS

TABLE XXI.—FATALITIES RESULTING FROM ACCIDENTS AT HIGHWAY GRADE CROSSINGS

	Accidents in Which Automobiles Were Involved				Total				Accidents in Which Automobiles Were Involved			
	Total		Total		Total		Total		Total		Total	
	1929	1928	1922	1923	1928	1923	1922	1929	1928	1922	1923	1922
Alabama.....	36	26	23	30	21	14	14	2	2	—	1	2
Arizona.....	5	4	11	3	3	9	6	16	6	—	4	6
Arkansas.....	29	23	8	22	19	4	4	63	77	67	49	45
California.....	126	95	83	100	82	68	68	11	10	4	7	5
Colorado.....	30	21	15	28	19	12	12	176	189	119	148	144
Connecticut.....	3	25	14	3	25	6	6	31	52	37	27	46
Delaware.....	8	3	6	8	2	5	5	9	10	7	9	10
Florida.....	38	39	14	29	35	12	12	261	266	181	224	224
Georgia.....	43	43	51	35	38	43	43	35	46	47	31	41
Idaho.....	14	8	4	13	7	1	1	10	15	11	9	15
Illinois.....	262	288	179	210	234	123	123	141	173	117	112	130
Indiana.....	212	206	149	176	183	126	126	2	2	2	22	1
Iowa.....	73	58	61	67	53	50	50	26	25	6	22	10
Kansas.....	58	56	47	52	52	37	37	7	25	4	7	8
Kentucky.....	35	35	21	31	27	13	13	34	37	33	27	31
Louisiana.....	19	32	26	16	27	16	16	124	81	47	112	74
Maine.....	9	12	13	9	12	11	11	4	14	8	3	13
Maryland.....	31	35	17	29	31	13	13	7	3	2	5	2
Massachusetts.....	30	17	22	20	11	15	15	27	32	22	26	27
Michigan.....	137	160	94	108	140	70	70	22	31	16	20	28
Minnesota.....	37	66	54	34	58	44	44	21	20	12	16	15
Mississippi.....	36	41	22	30	36	16	16	91	74	54	79	67
Missouri.....	55	57	46	47	40	38	38	2	—	5	2	—
Montana.....	6	3	3	5	21	2	2	2	—	—	2	—
Nebraska.....	32	23	13	29	22	16	16	2	—	—	2	—
Total.....	2,485	2,568	1,810	2,085	2,165	1,359	1,359	2,485	2,568	1,810	2,085	2,165

HIGHWAY GRADE CROSSING FATALITIES IN U. S., 1929



* LESS THAN .1 PERCENT

SOURCE: INTERSTATE COMMERCE COMMISSION

Fig. 6

of a group of public officials, statisticians and safety engineers, acting as the National Safety Council's Committee on Statistics, a standard accident reporting system which provides for the collection of traffic accident data in a uniform manner.*

The various governmental agencies described above are not in position to secure the necessary information in an exactly comparable manner throughout, but a great degree of similarity has been brought about by cooperative effort, so that the results are essentially comparable.

The basic reporting card recommended by the National Safety Council's Joint Committee on Statistics is 4 inches by 6 inches, small enough to be carried in the pocket or the hat of the police officer, yet large enough to permit legible writing. An important characteristic of this reporting card is that the reverse side, covering the circumstances of the accident, requires practically no writing on the part of the reporting officer. Instead of requesting a general description of the accident, which is made difficult by failure to remember what the essential items are, this card lists a number of important items or circumstances which may apply to any accident. The only thing necessary, then, to describe a particular accident is to check the items which apply. This method has the double advantage of eliminating the necessity of writing, at the same time calling the attention of the patrolman to the circumstances that are regarded as important. Another important fact is that the information requested on this card is objective in character; the opinions of the officer are not requested. This eliminates the possibility of bias, poor judgment and other subjective influences that might otherwise color the officer's report.

The accompanying illustration (Fig. 7) shows the obverse and reverse sides of this accident report card, which, with minor changes to fit the needs of different departments, is now being utilized as standard in 18 states and in 44 cities in other states, with a total population (cities and states) of approximately 68,000,000.

When the accident report cards have been completed for every accident during a particular month, the next step is to classify

* "Public Accident Reporting," a manual published by the National Safety Council, 20 North Wacker Drive, Chicago, contains a detailed explanation of this system, its applications to various reporting conditions, and the use of the data for accident prevention purposes.

them in such a way as to determine the frequency with which conditions and circumstances repeat themselves at different times, and at different locations. This may be done by the use of an accident tally sheet, spot maps or card files. The entries on the tally sheet are made directly from the report cards. This can be done either currently during the month, as the reports come in, or on one stated day at the end of each month.

In large cities, enough accidents are reported every month to justify the use of mechanical tabulation in preparing the reports, instead of a tally sheet. This method is advised for any city where the number of cases reported each month is 1,000 or more, and involves the use of punched cards on which the several details are entered.

The final step in preparing the monthly report is a monthly accident summary. The figures to be entered on the monthly accident summary can be taken directly from the tally sheet or cards.

As some cities find it more convenient to use mechanical tabulation than the tally sheet, some changes have been made in the reporting form and the summary form in those cities to suit the needs of the particular department involved. In making such changes, most departments have been careful to maintain essential comparability with the forms shown. This applies even more particularly to state motor vehicle bureaus. Those states which have adopted the provision in the Uniform Vehicle Code requiring the reporting of accidents have in most cases established a statistical department which receives and analyzes the accident reports. It has been possible for these departments to adapt the standard accident reporting forms to their own uses with a minimum amount of change.

The standard accident reporting system has been given the official endorsement of the International Association of Chiefs of Police and is recommended as a standard part of the police department record system.

The state highway department, because of its engineering operations, needs some information not required by other departments, and the adaptation that has been made is helpful in getting these additional data. The highway department accident reporting form and system has been worked out by a committee

of the American Association of State Highway Officials and the National Safety Council, and has received the endorsement of the Association.

State registrars of vital statistics, as well as local registrars, receive by law reports of all deaths, including those resulting from motor vehicle accidents. The registrars have, therefore, taken the opportunity to obtain special information on conditions and circumstances of automobile deaths such as would be helpful in getting at the causes. A form has also been worked out especially adapted to the use of these officials, which has received the approval of the Vital Statistics Section of the American Public Health Association, comprising registrars throughout the country. In addition to this supplementary form, now in use in several states, a long step forward has been taken by the revision in the standard certificate of death, which now requests information on the place and circumstances of deaths by accident. Each state, as well as the United States Census Bureau, will, as a result, be able to compile more significant and valuable information on automobile deaths.

Copies of all reporting and tabulating forms mentioned in this report may be obtained from the National Safety Council on request. In view of the general endorsement of them by the associations of the officials involved, and in view of the constant study that is made to keep them up to date and in accord with the best practice, the Committee recommends that any official in the groups mentioned, or elsewhere in public service, or other interested persons, investigate these forms before setting up any plan to obtain and analyze traffic accident reports.

Use of Accident Information in Preventing Traffic Accidents

An accident always means that something is wrong. The chief reason for reporting and studying accidents is to find out what is wrong and then apply the proper remedy. In view of the high total cost of accidents, and the large sums spent for street improvements, traffic control equipment, police departments and courts, it is a good investment to spend a moderate amount in collecting information and studying it in every possible way to determine how the various remedies are working or to ascertain what others may be needed.

If, on the other hand, reports are simply piled up in a filing case, or tabulated in an annual report leading to no practical conclusions, the cost of collecting them is wasted.

Uses of traffic accident reports may be classified as (1) educational and legislative, (2) engineering and (3) judicial. The following outline of these uses is suggestive rather than complete:

Educational and Legislative Uses

The mass information shown in tabulations like the Accident Summary Sheet can be put to valuable use; in fact, they should form the basis for the whole safety educational program of the community, and may suggest desirable legislation. In interpreting such tables attention must be given not only to the actual number of deaths or accidents in the various groups, but also to the trend from year to year, and a serious increase in any one item should be given the most careful study. Suppose, for example, there occurs a large number of pedestrian accidents or a serious increase in such accidents. The first step is to observe the distribution among the different age groups and also what the pedestrians were doing at the time of accident. This will at once suggest an educational campaign, and perhaps an effort by the police, to correct the dangerous practices. It may be advisable to take all the pedestrian accident reports for six months or a year and tabulate them separately as to what the driver was doing. It may be found that the city ordinance or state law is not up to date or explicit regarding the rights and responsibilities of drivers or pedestrians at intersections and elsewhere.

If many of the pedestrians are in the 5-14 age group, the information should be passed on to all schools, and should be used also in urging drivers to be especially cautious in school neighborhoods and where children are at play. Such child pedestrian accidents can be further analyzed according to hour of the day, and specific location, to determine whether there is need for playgrounds.

The type of vehicle involved in accidents and the changes in these figures from year to year also deserve study. A large or increasing number of accidents involving any particular group of vehicles will naturally suggest a detailed analysis of such accidents and a campaign of education among the corresponding group of drivers.

Another significant classification is by the age of the driver, especially if the number of accidents can be compared with the number of licensed drivers of various ages. In New York State a study of this sort indicated that the granting of licenses to youthful drivers had been too lenient. As a result of the study, the Commissioner of Motor Vehicles adopted more stringent measures, resulting in improvement.

Other similar possibilities will at once suggest themselves to any one undertaking a thorough study of accident data collected and classified according to the Standard Accident Reporting System.

Engineering Uses

Another class of remedies for traffic accidents has to do with the physical conditions of the street, its surroundings, the traffic control equipment and special local regulations such as through streets, one-way streets, prohibition of turns and the like. To determine the need for such remedies, or the effectiveness of remedies in force, the accident reports must be studied by location; that is, by analyzing the reports of accidents on a particular street or at a particular intersection. Such studies can readily be made if the original reports have been filed according to location.

Accident Investigation

In a growing number of cities it has been found practicable and desirable to provide a special accident investigation bureau or squad in the police department, for the purpose of visiting immediately the scene of every important street accident, taking photographs and exact measurements of the position and course of the vehicles, and noting any other conditions having a bearing on the matter, as well as getting complete accounts of the accident from all witnesses. Where such evidence indicates a violation of law by one or more of the parties involved, they are arrested and often convicted in cases where, without such special investigation, conviction would have been impossible and even arrest might have seemed unjustified. Such accident investigation squads are now at work in a number of cities.

A common example of valuable work by such a squad is in the

case of a right-angle collision of vehicles at an intersection on a through street. The investigation squad, arriving on the scene of the accident within a few minutes, finds skid marks of both vehicles involved, and is able to fix the responsibility for the accident.

There is nothing more conducive to general public observance of law, and careful driving, than the knowledge that carelessness and law violation, if it results in an accident, will be investigated, the circumstances analyzed and the offenders severely dealt with. Expert investigation and analysis of individual accidents, as briefly outlined above, is recommended to all cities, especially those which have a serious law enforcement problem.

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.

(Additional statistical Tables A-F, constituting the Appendix, follow on the next succeeding pages.)

TABLE A—DEATH RATE PER 100,000 ESTIMATED POPULATION FROM AUTOMOBILE ACCIDENTS
(Excluding Collisions with Railroad Trains and Street Cars)

Area	1927			1926			1925			1920		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
Registration States*.....	19.4	24.6	14.9	17.8	22.8	13.4	16.9	22.4	12.1	10.3	14.7	6.2
Alabama.....	14.2	30.1	10.7	12.6	29.8	8.9	10.1	27.2	6.5			
Arizona.....	30.5	68.5	23.3	26.1	46.0	22.4						
Arkansas.....	8.8	25.5	7.3									
California.....	36.7	33.7	40.8	33.9	29.9	39.2	31.7	28.6	35.9	21.1	21.3	20.8
Colorado.....	21.8	26.2	19.1	16.5	18.0	15.7	14.0	14.4	13.8	12.4	16.7	9.6
Connecticut.....	20.0	22.9	11.6	19.1	20.5	15.2	21.6	23.0	17.7	15.6	16.6	12.7
Delaware.....	25.5	31.6	18.9	20.8	23.3	18.1	15.5	17.2	13.8	9.8	12.6	7.1
District of Columbia.....	20.0	20.0	....	18.6	18.6	....	17.1	17.1	....	11.3	11.3	....
Florida.....	31.2	30.2	31.7	39.1	38.4	39.5	35.5	51.6	29.0	10.6	19.1	7.8
Georgia.....												
Idaho.....	14.2	23.3	13.4	14.8	26.1	13.8	11.0	26.6	9.6			
Illinois.....	20.7	25.6	13.2	18.6	23.1	11.8	17.9	22.0	11.8	11.2	15.8	4.5
Indiana.....	21.1	29.0	14.7	17.5	23.8	12.6	16.4	23.8	10.8	8.4	12.3	5.8
Iowa.....	11.7	19.7	8.6	10.9	15.6	9.1	11.2	19.2	8.2			
Kansas.....	13.8	17.0	12.7	13.2	18.0	11.5	13.2	24.6	9.3	8.7	15.4	6.7
Kentucky.....	11.8	25.2	8.1	11.0	22.0	8.0	9.4	24.0	5.6	3.5	11.3	1.8
Louisiana.....	15.3	25.7	10.7	14.1	24.7	9.7	12.7	22.8	8.6	5.0	13.4	1.8
Maine.....	14.1	22.3	10.6	12.7	20.9	9.2	12.5	20.3	9.2	5.6	8.3	4.5
Maryland.....	20.7	22.5	18.3	19.7	23.6	14.7	17.4	20.4	13.4	9.7	13.2	5.3
Massachusetts.....	16.4	16.9	14.3	16.2	17.2	12.2	17.6	18.0	15.9	11.7	11.5	12.5
Michigan.....	28.2	32.2	23.1	25.3	30.5	18.9	22.3	27.6	15.8	11.3	15.0	7.2
Minnesota.....	13.7	19.1	10.8	12.3	18.1	9.2	13.8	20.1	10.5	7.4	12.0	5.0
Mississippi.....	13.6	41.6	10.9	12.0	32.9	10.0	9.5	26.6	8.0	2.2	8.8	1.6
Missouri.....	14.7	19.8	10.9	14.1	21.4	8.7	14.6	24.1	7.8	6.8	13.9	2.0
Montana.....	10.2	19.7	8.1	13.4	23.1	11.1	12.5	23.5	9.9	8.1	11.0	7.3

TABLE A (CONCLUDED)—DEATH RATE PER 100,000 ESTIMATED POPULATION FROM AUTOMOBILE ACCIDENTS

(Excluding Collisions with Railroad Trains and Street Cars)

Area	1927			1926			1925			1920		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
Nebraska.....	14.2	22.2	11.7	11.1	16.5	9.5	9.1	15.9	7.1	8.0	20.3	4.5
New Hampshire.....	15.6	21.1	11.0	15.0	15.5	14.6	19.2	16.6	21.4	11.3	13.9	9.2
New Jersey.....	26.0	29.8	19.4	21.5	24.0	17.2	21.4	24.9	15.5	12.7	14.6	9.2
New York.....	20.9	20.9	20.7	19.3	20.2	16.2	18.9	20.0	15.5	13.5	14.1	11.3
North Carolina.....	17.4	35.8	13.8	15.9	34.9	12.5	13.4	26.7	11.0	5.2	15.2	3.8
North Dakota.....	11.2	21.9	10.2	10.9	22.3	9.9	9.2	13.4	8.8			
Ohio.....	22.3	26.4	16.6	20.0	25.0	13.2	19.9	24.7	13.4	12.3	16.5	7.2
Oregon.....	21.8	23.5	20.7	21.3	19.7	22.3	16.7	17.3	16.3	11.0	14.5	8.9
Pennsylvania.....	19.1	22.6	15.4	18.0	21.6	14.3	16.6	20.4	12.7	11.9	14.9	8.7
Rhode Island.....	18.6	18.8	17.9	18.3	19.8	11.0	19.6	20.5	15.2	12.8	13.3	10.6
South Carolina.....	15.1	38.9	12.1	10.5	33.9	7.7	9.9	29.8	7.6	5.4	18.9	3.8
Tennessee.....	13.9	34.9	8.2	12.6	32.1	7.4	11.4	30.0	6.5	5.5	20.2	2.1
Utah.....	15.1	23.7	10.4	15.6	22.5	11.8	17.7	26.2	12.9	11.3	16.6	8.3
Vermont.....	17.0	47.4	11.9	12.8	29.9	9.9	15.9	30.3	13.5	8.5	6.3	8.9
Virginia.....	14.8	21.8	12.2	12.0	17.8	9.9	10.9	17.1	8.7	4.2	10.1	2.3
Washington.....	23.4	25.2	21.8	22.2	23.9	20.8	19.8	21.1	18.6	13.5	16.1	11.1
West Virginia.....	17.6	33.6	14.0	13.8	30.5	10.1	12.7	24.0	10.2			
Wisconsin.....	17.5	23.4	13.9	13.3	18.5	10.1	13.9	20.9	9.8	6.3	11.3	3.4
Wyoming.....	27.4	46.6	24.0	23.7	31.2	22.4	29.3	40.9	27.2			

* Includes District of Columbia.

NOTE: Each state which was admitted to the area later than 1920 is shown from the date of its admission. "Urban" includes cities of 10,000 population or more in 1920; the remainder of the state is included in "Rural." In 1925 the state registration law of Georgia was declared unconstitutional; the state was readmitted in 1928.

TABLE B—AUTOMOBILE DEATH RATES PER 100,000 POPULATION IN CANADIAN PROVINCES, CITIES OF 100,000 POPULATION AND OVER; U. S. CITIES, 250,000 POPULATION AND OVER

Area	1928	1927	1926	1925	1921
Canadian Provinces:					
Alberta.....	11.7	5.7	5.4	4.3	3.1
British Columbia.....	15.6	13.4	10.6	8.0	6.5
Manitoba.....	8.1	4.9	4.2	5.1	1.5
New Brunswick.....	7.5	5.8	2.7	5.0	2.1
Nova Scotia.....	7.3	5.7	5.2	4.8	2.1
Ontario.....	13.5	12.1	7.7	8.3	3.7
Prince Edward Isle.....	2.3	2.3	1.1	2.3	0
Quebec.....	10.5	9.7	7.1		
Saskatchewan.....	8.7	2.9	2.6	2.2	1.2
Canadian Cities:					
Hamilton.....	13.7	18.0	16.1	17.0	7.9
Montreal.....	9.0	11.3	11.1	9.9	
Ottawa.....	14.0	14.1	10.0	9.2	5.6
Toronto.....	14.1	15.3	8.0	9.1	4.8
Vancouver.....	23.2	20.4	17.1	16.6	13.6
Winnipeg.....	11.4	6.0	9.1	6.7	3.0
U. S. Cities					
Baltimore.....	22.3	20.9	22.0	19.8	13.3
Boston.....	17.3	17.7	18.9	19.8	13.6
Buffalo.....	27.2	24.9	24.8	22.1	15.6
Chicago.....	28.0	25.4	22.7	21.5	20.5
Cincinnati.....	27.6	28.9	26.5	23.1	19.6
Cleveland.....	27.0	25.4	27.6	24.7	17.8
Denver.....	18.7	21.0	16.8	13.2	16.3
Detroit.....	26.1	30.2	30.9	27.3	13.4
Indianapolis.....	31.4	22.4	22.6	21.7	12.3
Jersey City.....	14.8	20.2	12.9	20.3	11.9
Kansas City, Mo.....	24.6	20.9	21.8	23.7	19.9
Milwaukee.....	23.3	22.6	19.5	20.0	11.1
Minneapolis.....	19.5	14.3	15.9	17.9	12.5
Newark.....	24.7	26.1	23.7	24.3	16.0
New Orleans.....	26.5	22.6	20.3	18.8	10.9
New York.....	18.6	18.4	18.3	18.0	15.4
Philadelphia.....	15.4	15.9	16.4	15.0	10.2
Pittsburgh.....	23.7	32.3	25.6	26.3	17.8
Rochester.....	20.7	19.1	20.3	17.0	13.8
St. Louis.....	24.2	18.9	20.7	24.5	15.1
San Francisco.....	23.6	23.8	22.6	18.8	18.1
Washington, D. C.....	22.5	20.0	18.6	17.1	12.1

TABLE C—AUTOMOBILE FATALITIES PER 100,000 POPULATION IN THE UNITED STATES AND PRINCIPAL FOREIGN COUNTRIES

Country	1923	1927	1926	1925	1920
Australia.....	*	12.1	10.1	8.7	*
Belgium†.....	*	4.6	4.2	4.8	2.2
Canada.....	11.2	9.1	6.5	4.6	*
England and Wales.....	10.0	8.4	7.7	6.8	4.3
France.....	*	*	*	3.1	1.8
Germany.....	*	4.0	3.1	*	*
New Zealand†.....	12.7	10.0	11.0	8.1	*
Norway.....	*	2.1	2.0	2.0	*
Scotland†.....	10.4	9.2	8.5	6.5	3.3
Sweden†.....	3.6	2.5	2.0	3.0	1.5
Switzerland†.....	9.6	6.9	7.3	5.2	*
United States.....	20.8	19.5	17.9	17.0	10.4

* Not available.

† Including deaths from motorcycle accidents.

TABLE D—DEATH RATE FROM AUTOMOBILE ACCIDENTS PER 1000 REGISTERED CARS

State	1928	1927	1926	1925	1920	State	1928	1927	1926	1925	1920
Alabama.....	1.4	1.5	1.4	1.3	*	Missouri.....	0.9	0.8	0.8	0.8	0.8
Arizona.....	1.3	1.7	1.6	*	*	Montana.....	0.9	0.6	0.9	0.9	0.7
Arkansas.....	1.0	0.8	*	*	*	Nebraska.....	0.6	0.5	0.4	0.4	0.5
California.....	1.0	1.0	0.9	0.9	1.3	New Hampshire.....	0.7	0.7	0.8	1.1	1.4
Colorado.....	0.8	0.9	0.7	0.6	0.9	New Jersey.....	1.3	1.4	1.2	1.3	1.8
Connecticut.....	1.3	1.2	1.2	1.4	1.8	New York.....	1.2	1.2	1.2	1.3	2.1
Delaware.....	1.5	1.3	1.1	0.9	1.2	North Carolina.....	1.2	1.2	1.2	1.1	0.9
District of Columbia...	1.0	1.0	0.9	0.9	1.5	North Dakota.....	0.5	0.4	0.4	0.4	*
Florida.....	1.1	1.1	1.3	1.6	1.4	Ohio.....	1.0	1.0	0.9	1.0	1.2
Georgia.....	1.5	*	*	*	*	Oklahoma.....	0.6	*	*	*	*
Idaho.....	0.8	0.7	0.8	0.7	*	Oregon.....	1.0	0.8	0.8	0.7	0.8
Illinois.....	1.2	1.1	1.0	1.0	1.3	Pennsylvania.....	1.1	1.2	1.2	1.2	2.0
Indiana.....	1.0	0.8	0.7	0.7	0.7	Rhode Island.....	1.2	1.1	1.1	1.3	1.5
Iowa.....	0.4	0.4	0.4	0.4	*	South Carolina.....	1.2	1.4	1.1	1.1	1.0
Kansas.....	0.6	0.5	0.5	0.5	0.5	Tennessee.....	1.2	1.2	1.1	1.1	1.3
Kentucky.....	1.1	1.0	1.0	0.9	0.8	Utah.....	1.2	0.8	0.9	1.0	1.2
Louisiana.....	1.3	1.2	1.1	1.2	1.2	Vermont.....	0.8	0.8	0.6	0.8	0.9
Maine.....	0.7	0.7	0.7	0.7	0.7	Virginia.....	1.1	1.1	0.9	1.0	0.8
Maryland.....	1.2	1.2	1.2	1.2	1.4	Washington.....	1.1	0.9	0.9	0.9	1.1
Massachusetts.....	1.0	1.0	1.0	1.1	1.7	West Virginia.....	1.1	1.2	1.0	1.0	*
Michigan.....	1.0	1.1	1.0	1.0	1.0	Wisconsin.....	0.8	0.7	0.6	0.7	0.6
Minnesota.....	0.6	0.6	0.5	0.6	0.5	Wyoming.....	1.0	1.3	1.1	1.4	*
Mississippi.....	1.0	1.1	1.0	1.0	0.6						

* Not in registration area for deaths.

NOTE: The number of automobile accidents excludes collisions with railroad trains and street cars.

TABLE E.—MOTOR VEHICLE FATALITIES BY STATES, 1929 AND 1928
(Data reported to the National Safety Council by State Health Departments*)

State	Per cent change		State	Per cent change	
	1929	1928		1929	1928
Alabama.....	467	401	Montana.....	125	142
Arizona.....	140	110	Nebraska†.....	235	183
Arkansas.....	272	226	Nevada†.....	38	25
California.....	2,243	1,869	New Jersey.....	1,275	1,089
Connecticut.....	436	435	New Mexico.....	94	87
Delaware.....	61	74	New York.....	3,066	2,676
District of Columbia.....	112	120	North Carolina.....	614	640
Florida.....	464	397	North Dakota.....	100	103
Georgia†.....	508	473	Ohio.....	2,278	2,016
Idaho.....	93	87	Oklahoma.....	474	395
Illinois.....	2,017	2,068	Oregon.....	237	207
Indiana.....	1,054	962	Pennsylvania.....	2,198	2,080
Iowa.....	403	335	Rhode Island§.....	128	145
Kansas.....	439	362	South Carolina†.....	357	245
Kentucky.....	376	348	South Dakota†.....	100	121
Louisiana†.....	315	334	Tennessee†.....	456	379
Maine.....	151	129	Vermont†.....	65	67
Maryland†.....	384	342	Virginia.....	475	323
Massachusetts†.....	786	794	West Virginia.....	332	301
Michigan.....	1,541	1,415	Wisconsin.....	701	675
Minnesota†.....	484	435	Wyoming.....	71	55
Missouri.....	706	691	All reporting states.....	26,871	24,365

* Reports in some cases provisional.
 † Excludes collisions of automobiles with heavier vehicles.
 ‡ First 10 months only.
 § Data from State Motor Vehicle Department, not available from Department of Health.

TABLE F—DEATHS AND DEATH RATES PER 100,000 ESTIMATED POPULATION FROM AUTOMOBILE ACCIDENTS (EXCLUDING COLLISIONS WITH RAILROAD TRAINS AND STREET CARS) IN EACH STATE, 1906, 1910, 1920, AND 1925 TO 1928

(Each area is shown from the year of its admission to the registration area, beginning with 1906, when automobile accidents were first separately tabulated.)

Area	1928	1927	1926	1925	1920	1910	1906
The registration area in continental United States:							
Population.....	114,495,000	108,327,000	105,167,000	103,108,000	87,486,713	53,831,742	41,983,419
Deaths.....	23,765	21,160	18,871	17,571	9,103	980	183
Death rate.....	20.8	19.5	17.9	17.0	10.4	1.8	0.4
Percentage of total population of continental United States included in registration area.....	95.4	91.3	89.8	89.4	82.2	58.3	48.9
Registration states a:							
Population.....	113,348,000	106,510,200	103,284,000	101,319,000	86,043,627	47,793,607	33,836,029
Deaths.....	23,427	20,704	18,419	17,149	8,878	834	149
Death rate.....	20.7	19.4	17.8	16.9	10.3	1.7	0.4
Cities in registration states a:							
Population.....		49,792,700	48,620,300	47,540,000	41,733,567	25,169,356	18,195,041
Deaths.....	13,430	12,252	11,071	10,640	6,121	575	129
Death rate.....		24.6	22.8	22.4	14.7	2.3	0.7
Rural part of registration states:							
Population.....		56,717,500	54,663,900	53,779,000	44,310,060	22,624,251	15,640,988
Deaths.....	9,997	8,452	7,348	6,509	2,757	259	20
Death rate.....		14.9	13.4	12.1	6.2	1.1	0.1
Registration states of 1900 a:							
Deaths.....	7,269	6,793	6,056	5,877	3,405	472	108
Death rate.....	22.7	21.5	19.5	19.2	12.1	2.0	0.5
Registration states of 1906 b:							
Deaths.....	11,470	10,845	9,741	9,197	5,440	686	149
Death rate.....	23.4	22.4	20.4	19.6	12.7	1.9	0.4
Registration states of 1910 c:							
Deaths.....	14,898	13,786	12,283	11,712	6,782	833	
Death rate.....	23.2	21.6	19.6	19.0	12.1	1.8	
Registration states of 1920 a:							
Deaths.....	21,080	19,237	17,286	16,236	8,878		
Death rate.....	21.7	20.0	18.2	17.4	10.3		

TABLE F (CONTINUED)

Area	1928	1927	1926	1925	1920	1910	1906
Alabama:							
Population.....	2,573,000	2,549,000	2,526,000	2,499,000			
Deaths.....	375	361	319	252			
Death rate.....	14.6	14.2	12.6	10.1			
Arizona:							
Population.....	474,000	459,000	445,000				
Deaths.....	123	140	116				
Death rate.....	25.9	30.5	26.1				
Arkansas:							
Population.....	1,944,000	1,923,000					
Deaths.....	211	170					
Death rate.....	10.9	8.8					
California:							
Population.....	4,556,000	4,433,000	4,316,000	4,180,000	3,480,902	2,400,066	2,034,859
Deaths.....	1,755	1,628	1,464	1,327	734	86	20
Death rate.....	38.5	36.7	33.9	31.7	21.1	3.6	1.0
Colorado:							
Population.....	1,090,000	1,074,000	1,059,000	1,040,000	946,370	802,041	699,451
Deaths.....	221	234	175	146	117	16	.....
Death rate.....	20.3	21.8	16.5	14.0	12.4	2.0	.....
Connecticut:							
Population.....	1,667,000	1,656,000	1,606,000	1,572,000	1,394,324	1,120,461	1,035,529
Deaths.....	407	327	307	340	218	51	6
Death rate.....	24.4	20.0	19.1	21.6	15.6	2.8	0.6
Delaware:							
Population.....	244,000	243,000	240,000	238,000	224,068		
Deaths.....	75	62	50	37	22		
Death rate.....	30.7	25.5	20.8	15.5	9.8		
Florida:							
Population <i>d</i>	1,411,000	1,363,000	1,317,000	1,263,549	979,536		
Deaths.....	404	425	515	494	104		
Death rate.....	28.6	31.2	39.1	35.5	10.6		
Georgia:							
Population <i>e</i>	3,203,000						
Deaths.....	468						
Death rate.....	14.6						
Idaho:							
Population.....	546,000	534,000	522,000	508,000			
Deaths.....	90	76	77	56			
Death rate.....	16.5	14.2	14.8	11.0			

TABLE F (CONTINUED)

Area	1928	1927	1926	1925	1920	1910	1906
Illinois:							
Population.....	7,396,000	7,296,000	7,203,000	7,092,000	6,528,886		
Deaths.....	1,743	1,512	1,538	1,268			
Death rate.....	23.6	20.7	18.6	17.9	11.2		
Indiana:							
Population.....	3,176,000	3,150,000	3,124,000	3,095,000	2,942,210	2,705,801	2,630,067
Deaths.....	784	665	547	509	248	33	3
Death rate.....	24.7	21.1	17.5	16.4	8.4	1.2	0.1
Iowa:							
Population d.....	2,428,000	2,425,000	2,423,000	2,419,327			
Deaths.....	329	284	264	271			
Death rate.....	13.6	11.7	10.9	11.2			
Kansas:							
Population d.....	1,835,000	1,828,000	1,821,000	1,812,986	1,773,989		
Deaths.....	304	253	241	246	155		
Death rate.....	16.6	13.8	13.2	13.2	8.7		
Kentucky:							
Population.....	2,553,000	2,538,000	2,524,000	2,508,000	2,423,156		
Deaths.....	342	299	277	237	85		
Death rate.....	13.4	11.8	11.0	9.4	3.5		
Louisiana:							
Population.....	1,950,000	1,934,000	1,919,000	1,900,000	1,805,837		
Deaths.....	348	295	271	241	90		
Death rate.....	17.8	15.3	14.1	12.7	5.0		
Maine:							
Population.....	795,000	793,000	790,000	787,000	769,334	742,922	723,976
Deaths.....	115	112	100	98	43	7	
Death rate.....	14.5	14.1	12.7	12.5	5.6	0.9	
Maryland:							
Population.....	1,616,000	1,597,000	1,580,000	1,560,000	1,457,608	1,298,658	1,254,146
Deaths.....	343	330	312	271	142	9	2
Death rate.....	21.2	20.7	19.7	17.4	9.7	0.7	0.2
Massachusetts d							
Population.....	4,290,000	4,242,000	4,197,000	4,144,205	3,877,382	3,376,844	3,089,029
Deaths.....	724	695	682	729	454	68	7
Death rate.....	16.9	16.4	16.2	17.6	11.7	2.0	0.2
Michigan:							
Population.....	4,591,000	4,490,000	4,395,000	4,284,000	3,712,613	2,828,500	2,639,362
Deaths.....	1,247	1,266	1,112	955	419	50	3
Death rate.....	27.2	28.2	25.3	22.3	11.3	1.8	0.3

TABLE F (CONTINUED)

Area	1928	1927	1926
Minnesota:			
Population.....	2,722,000	2,686,000	2,651,000
Deaths.....	435	369	326
Death rate.....	16.0	13.7	12.3
Mississippi:			
Population.....	<i>g</i> 1,790,618	<i>g</i> 1,790,618	<i>g</i> 1,790,618
Deaths.....	253	243	215
Death rate.....	14.1	13.6	12.0
Missouri:			
Population.....	3,523,000	3,510,000	3,498,000
Deaths.....	625	517	493
Death rate.....	17.7	14.7	14.1
Montana:			
Population.....	<i>h</i>	714,000	695,000
Deaths.....	118	73	93
Death rate.....	<i>h</i>	10.2	13.4
Nebraska:			
Population.....	1,408,000	1,396,000	1,385,000
Deaths.....	217	198	154
Death rate.....	15.4	14.2	11.1
New Hampshire:			
Population.....	456,000	455,000	454,000
Deaths.....	76	71	68
Death rate.....	16.7	15.6	15.0
New Jersey:			
Population.....	3,821,000	3,749,000	3,680,000
Deaths.....	1,015	973	792
Death rate.....	26.6	26.0	21.5
New York:			
Population <i>d</i>	11,550,000	11,423,000	11,304,000
Deaths.....	2,554	2,384	2,178
Death rate.....	22.1	20.9	19.3
North Carolina:			
Population.....	2,938,000	2,897,000	2,858,000
Deaths.....	577	503	455
Death rate.....	19.6	17.4	15.9
North Dakota:			
Population <i>d</i>	641,192	641,192	641,192
Deaths.....	79	72	70
Death rate.....	12.3	11.2	10.9

	1925	1920	1910	1906
	2,611,000	2,403,164	2,082,391	
	361	178	23	
	13.8	7.4	1.1	
<i>g</i>	1,790,618	<i>f</i> 1,790,283		
	170	39		
	9.5	2.2		
	3,484,000	3,409,758		
	509	231		
	14.6	6.8		
	672,000	557,791	379,762	
	84	45	5	
	12.5	8.1	1.3	
	1,371,000	1,301,737		
	125	104		
	9.1	8.0		
	452,000	443,728	430,841	423,280
	87	50	5	.....
	19.2	11.3	1.2	.....
	3,600,000	3,187,767	2,550,445	2,231,481
	771	405	41	12
	21.4	12.7	1.6	0.5
	11,162,151	10,450,718	9,140,901	8,299,820
	2,111	1,410	208	66
	18.9	13.5	2.3	0.8
	2,812,000	2,577,296	<i>j</i> 362,712	
	376	183	1	
	13.4	5.2	0.3	
	641,192			
	59			
	9.2			

TRAFFIC ACCIDENT STATISTICS—APPENDIX

TABLE F (CONTINUED)

Area	1928	1927	1926
Ohio:			
Population.....	6,826,000	6,710,000	6,600,000
Deaths.....	1,700	1,494	1,317
Death rate.....	25.0	22.3	20.0
Oklahoma:			
Population.....	2,426,000		
Deaths.....	330		
Death rate.....	13.6		
Oregon:			
Population.....	902,000	890,000	877,000
Deaths.....	249	194	187
Death rate.....	27.6	21.8	21.3
Pennsylvania:			
Population.....	9,854,000	9,730,000	9,614,000
Deaths.....	1,832	1,860	1,734
Death rate.....	19.1	19.1	18.0
Rhode Island:			
Population <i>d</i>	716,000	704,000	693,000
Deaths.....	154	131	127
Death rate.....	21.5	18.6	18.3
South Carolina:			
Population.....	1,864,000	1,845,000	1,826,000
Deaths.....	251	279	192
Death rate.....	13.5	15.1	10.5
South Dakota:			
Population.....			
Deaths.....			
Death rate.....			
Tennessee:			
Population.....	2,502,000	2,405,000	2,468,000
Deaths.....	382	345	312
Death rate.....	15.3	13.9	12.6
Utah:			
Population.....	531,000	522,000	514,000
Deaths.....	123	79	80
Death rate.....	23.2	15.1	15.6
Vermont:			
Population.....	<i>g</i> 352,428	<i>g</i> 352,428	<i>g</i> 352,428
Deaths.....	69	60	45
Death rate.....	19.6	17.0	12.8

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	1925	1926	1910	1906
	6,470,000	5,810,498	4,788,415	
	1,285	717	76	
	19.9	12.3	1.6	
	863,000	789,087		
	16.7	11.0		
	9,476,000	8,774,347	7,687,743	7,141,766
	1,576	1,042	103	19
	16.6	11.9	1.3	0.3
	679,260	607,580	543,936	493,976
	133	78	19	3
	19.6	12.8	3.5	0.6
	1,804,000	1,692,394		
	179	91		
	9.9	5.4		
	2,440,000	2,345,770		487,094
	278	130		.....
	11.4	5.5		.....
	504,000	453,313	374,983	
	89	51	7	
	17.7	11.3	1.9	
g	352,428	f 352,246	355,880	351,227
	56	30	3	.....
	15.9	8.5	0.8	

TABLE F
1927

Area	1928	1927
Virginia:		
Population.....	2,575,000	2,546,000
Deaths.....	412	376
Death rate.....	16.0	14.8
Washington:		
Population.....	1,587,000	1,562,000
Deaths.....	424	365
Death rate.....	26.7	23.4
West Virginia:		
Population.....	1,724,000	1,696,000
Deaths.....	283	298
Death rate.....	16.4	17.6
Wisconsin:		
Population.....	2,953,000	2,918,000
Deaths.....	620	511
Death rate.....	21.0	17.5
Wyoming:		
Population.....	247,000	241,000
Deaths.....	59	66
Death rate.....	23.9	27.4

a Including District of Columbia.

b Includes District of Columbia, but excludes South Dakota, which was added to the area in 1906, but dropped in 1910.

c Includes District of Columbia, but excludes North Carolina; from 1910 to 1915 transcripts of death were received only from municipalities of 1,000 population or more, and these represented only about 16% of the population of the entire state, which, as a whole, was added in 1916.

d The population for 1925 is that enumerated by the state census; populations for later years are based on the federal census of 1920 and the state census of 1925.

NOTE: The registration states of 1900—ten in all—include Connecticut, Indiana, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Rhode Island and Vermont. The registration states of 1906—fourteen in all—include, in addition to those of 1900, California, Colorado, Maryland and Pennsylvania. (South Dakota was added to the area in 1906, but dropped in 1910.) The registration states of 1910—twenty in all—include, in addition to those of

(CONTINUED)

1926	1925	1920	1910	1906
2,519,000	2,486,000	2,321,938		
303	271	97		
12.0	10.9	4.2		
1,538,000	1,510,000	1,367,675	1,146,596	
342	299	184	17	
22.2	19.8	13.5	1.5	
1,669,000	1,638,000			
231	208			
13.8	12.7			
2,885,000	2,846,000	2,647,426	2,340,259	
384	397	167	19	
13.3	13.9	6.3	0.8	
236,000	229,000			
56	67			
23.7	29.3			

e In 1925 the state registration law was declared unconstitutional, and from then until 1928 no returns were received from the state as a whole; in that year it was readmitted, owing to a new law passed by the state legislature.

f Based on federal census of 1910 and 1920.

g Population January 1, 1920. Decrease between 1920 and 1910; no estimate made.

h Estimate of population unsatisfactory.

j Includes only municipalities having a population of 1,000 or more in 1900.

1906, Minnesota, Montana, Ohio, Utah, Washington and Wisconsin. (North Carolina, which was added in 1910, included only municipalities of 1,000 or more.) The registration states of 1920—thirty-four in all—include, in addition to those of 1910, Delaware, Florida, Illinois, Kansas, Kentucky, Louisiana, Mississippi, Missouri, Nebraska, North Carolina, Oregon, South Carolina, Tennessee and Virginia. The District of Columbia is included in each of these groups.

PUBLICATIONS ON STREET AND HIGHWAY SAFETY

**Available on Request to National Conference on Street
and Highway Safety, 1615 H Street, N. W.
Washington, D. C.**

Committee reports submitted to Third National Conference, May 27-29,
1930:

Traffic Accident Statistics
Protection of Railway Grade Crossings and Highway Intersections
Maintenance of the Motor Vehicle
Measures for the Relief of Traffic Congestion
Uniform Traffic Regulation, accompanied by
Uniform Vehicle Code, consisting of
 Uniform Motor Vehicle Registration Act
 Uniform Motor Vehicle Anti-Theft Act
 Uniform Motor Vehicle Operators' and Chaffeurs' License Act
 Uniform Act Regulating Traffic on Highways
Model Municipal Traffic Ordinance
Report on Street Traffic Signs, Signals and Markings

Reports of former committees and conferences:

1924	1926
Statistics	Statistics*
Traffic Control	Uniformity of Laws and Regula- tions*
Construction and Engineering	Enforcement
City Planning and Zoning	Causes of Accidents*
Insurance	Metropolitan Traffic Facilities
Education	Public Relations
The Motor Vehicle	Second National Conference
Public Relations	
First National Conference	

In addition to the foregoing the National Conference has available for distribution publications relative to these subjects issued by participating organizations.

*Out of print.