CHANGING CHARACTERISTICS OF HIGH
ACCIDENT DRIVERS OVER A FIVE YEAR
PERIOD

SEPTEMBER 1972 — NUMBER 29

BY

JOHN E. GOODSON

JHRP

JOINT HIGHWAY RESEARCH PROJECT
PURDUE UNIVERSITY AND
INDIANA STATE HIGHWAY COMMISSION

Final Report
CHANGING CHARACTERISTICS OF HIGH ACCIDENT
DRIVERS OVER A FIVE YEAR PERIOD

by
John E. Goodson
Graduate Assistant in Research

Joint Highway Research Project

Project No.: C-36-150

File No.: 8-5-15

Conducted By
Joint Highway Research Project
Engineering Experiment Station
Purdue University
In Cooperation With
Indiana State Highway Commission

Purdue University
West Lafayette, Indiana
September 7, 1972

Final Report

September 7, 1972

Project: C-36-150

The attached Final Report "Changing Characteristics of High Accident Drivers Over a Five Year Period" is submitted as fulfillment of the objectives of the research proposal approved by the Board. The Report was written and the research conducted by Mr. John E. Goodson, Graduate Assistant in Research on our staff, under the direction of Professor H. L. Michael.

The report notes that almost all individuals who had three or more accidents in the year 1967 had a much decreased accident rate in each of the following four years. Only a very few drivers continued to exhibit high accident rates for the next four years and driver or accident characteristics exhibited in 1967 would not have enabled selection of these drivers. There was an indication, however, that following several years of continued accident history an extremely small number of drivers could have been noted who would probably continue to have accidents at a high rate.

The Report is presented to the Board for acceptance as fulfillment of the objectives of the study.

Respectfully submitted,

Harold & Michael

Harold L. Michael
Associate Director

HLM:ms

cc: W. L. Dolch
R. L. Eskew
W. H. Goetz
M. J. Gutzwiller
G. K. Hallock
R. H. Harrell

M. L. Hayes
C. W. Lovell
G. W. Marks
R. D. Miles
J. W. Miller
G. T. Satterly

C. F. Scholer
M. B. Scott
J. A. Spooner
N. W. Steinkamp
H. R. J. Walsh
E. J. Yoder

Digitized by the Internet Archive
in 2011 with funding from
LYRASIS members and Sloan Foundation; Indiana Department of Transportation

ACKNOWLEDGEMENTS

The author wishes to express his sincere appreciation to Professor Harold L. Michael, Associate Director of the Indiana Joint Highway Research Project, for his guidance in selecting the topic, performing the research and his review of the manuscript; to Professor William L. Grecco of the School of Civil Engineering for his advice and review of the manuscript; and to Professor Leonard Z. Breen of the Sociology Department for his advice and review of the manuscript.

The author is very grateful for the cooperation of the Indiana State Police and the generous assistance provided by Major C. W. McCarter, Lieutenant J. H. Romack, Sergeant J. S. Kinder, and the rest of the staff of the Accident Records Department.

Acknowledgement is also given to the Indiana Bureau of Motor Vehicles and in particular to Mr. Morris Carter, Mrs. M. H. Smith, and Mrs. Alberta Bauer for their assistance in providing and interpreting the driver record summaries.

Special thanks are extended to Dr. Edward Kannel for his valuable assistance during all phases of the research; to Miss Kathy DeWald; and to the many other individuals who participated in the study.

The author is especially grateful to his wife for her countless hours of assistance and encouragement.

TABLE OF CONTENTS

	Page
LIST OF TABLES	v
LIST OF FIGURES.	vii
ABSTRACT	viii
INTRODUCTION	1
PURPOSE.	5
DATA COLLECTION.	6
High Accident Driver	7
The Control Driver Group	12
Additional Data.	13
ANALYSIS OF DATA	15
High Accident Driver	15
The Control Driver Group	19
Final Data Groups.	19
RESULTS.	20
The Accident Picture	20
Seriousness of the Accidents	27
Where the Accidents Occurred	30
Driver Characteristics	35
License Type	39
The Driving Record	41
The Combined Characteristics as Accident Predictors.	43
CONSEQUENCES OF LICENSE SUSPENSION OR REVOCATION . . .	51
Drivers Having Three Accidents During the Year 1967	51
Drivers Having Four Accidents During the Year 1967	54
Drivers Having Five Accidents During the Year 1967	56
Drivers Having Six or More Accidents During the Year 1967	56

	Page
CASE HISTORIES OF SELECTED HIGH ACCIDENT DRIVERS	59
Clear Driving Record	59
Drivers With Improved Driving Records After 1967 .	61
Three Accidents in 1967 and Continued High Accident Rate Afterward	64
Drivers With Multiple Suspensions.	68
Fifteen or More Accidents During the Five Year Study Period.	74
Summary Comments	80
CONCLUSIONS.	82
RECOMMENDATIONS.	84
LIST OF REFERENCES	86
APPENDICES	
Appendix A: State Record Summaries.	90
Appendix B: Driving Regulations	102
Appendix C: Data Collection Forms and Related Information	104
Appendix D: Driver Characteristics.	108

LIST OF TABLES

Table	Page
1. 1967 Multiple Accident Drivers.	20
2. Total Accident Involvement During Five Year Study Period 1967-1971 By Drivers Involved in Three or More Accidents in 1967.	22
3. Summary Statistics.	23
4. Number of Accidents in 1967 in Relation to Number of Accidents in the Following Four Year Period 1968-1971	25
5. Type of Accident.	29
6. Accident Involvement in Five Indiana Cities . .	31
7. Residence of Drivers for Five Indiana Cities. .	32
8. Age Distribution.	36
9. 1967 Violation Citations.	42
10. 1967 Serious Violations	44
11. 1967 License Suspensions.	45
12. 1967 Suspensions for Driving While Intoxicated.	46
13. Additional Accidents During 1968-1971 by Drivers with Three Accidents During 1967.	53
14. Additional Accidents During 1968-1971 by Drivers with Four Accidents During 1967	55
15. Additional Accidents During 1968-1971 by Drivers with Five Accidents During 1967	57
16. Licenses on File in Indiana	91
17. Standard Summary of Motor Vehicle Traffic Accidents	92
18. Age and Sex Related to Total Accident Involvement	109

Table	Page
19. License Restrictions Related to Total Accident Involvement.	111
20. Weight/Height Index in Relation to Total Accident Involvement.	113
21. Residence of Drivers.	115
22. Accident Involvement by City.	118

LIST OF FIGURES

Figure	Page
1. Seriousness of Accidents in Relation to Total Accident Involvement	28
2. Residence and Accident Occurrence in Indianapolis in Relation to Total Accident Involvement.	33
3. Residence and Accident Occurrence in Fort Wayne in Relation to Total Accident Involvement. .	34
4. Results of Automatic Interaction Detector Program.	49
5. Excerpts from <u>Indiana Driver's Manual</u>	103
6. Accident Record	105
7. Driver Record	106
8. Soundex Code	107

ABSTRACT

Goodson, John Earl. MSCE, Purdue University, August, 1972. Changing Characteristics of High Accident Drivers Over a Five Year Period. Major Professor: Harold L. Michael.

The purpose of this research was to determine the number and characteristics of drivers who had a high accident involvement during a particular year. Then, using information available in the accident and driver record files, the changes in their characteristics and accident involvement during the following four year period were determined.

Accident record summaries were collected for the years 1967 through 1971 for all drivers who were identified as having been involved in three or more accidents during the year 1967. Driver record summaries were collected for drivers involved in three or more accidents during the year 1967 and a total of five or more accidents during the entire five year study period. Included in the final analysis were 776 drivers for which both driver and accident record summaries had been obtained and an additional 1288 drivers for which only accident records were collected.

It was found that the accident records of most of the drivers studied exhibited much improvement during the four year period following the base year. Approximately forty

percent of the drivers who were involved in three or more accidents during the base year were identified as having no additional reported accidents during the following four year period.

Using only information available in the accident and driver record files, it was found that it is difficult to predict, with any degree of accuracy, which drivers who were high accident drivers during a particular year would continue to be excessive accident repeaters during following years. Two characteristics studied that appeared to have the greatest value as accident predictors were the number of accidents during a year and the type of license. For the average driver of a high accident group, it was found that as the number of accidents in which he was involved during the base year increased, the probability of his being involved in additional accidents during the following years also increased. Persons with chauffeur's licenses and particularly public passenger chauffeur's licenses were found to share a much greater proportion of the high accident groups than their proportions of the licensed drivers would indicate.

In general, the accident record of a driver during one year, even when combined with information available in the Indiana Drivers Records, does not enable a reasonable prediction of the drivers accident record for future years.

INTRODUCTION

In order to develop an effective accident prevention program it is necessary to know the characteristics of all of the system components involved: the environment, the vehicle, and the driver. The characteristics that are least understood and the most difficult to predict are those of the individual driver, and it is the driver who is held responsible for the great majority of traffic accidents.

Various research reports in this field have presented contradictory statements regarding the characteristics of drivers involved in accidents. For example, according to Waller (18), "Two fallacies have seriously hampered meaningful programs against traffic accidents. The first is the belief that traffic accidents happen to almost everyone. The second is the attitude that most accidents are the result of voluntary violation of traffic laws, and are subject to correction by the issuance of citations." Evidence given by Crancer (4,5,6) indicates that it is the non-average driver that is involved in fatal accidents, while Goldstein (7) states that most accidents occur to normal, average people.

Penn's report (13) summarizes that "The accident process is stated to consist essentially of a driver breakdown of some sort which allows the underlying accident potential

to come into play. In the case of a large body of drivers, this breakdown factor is probably temporary; in other groups of operators, it is more enduring."

Each year a small percentage of drivers are involved in an excessive number of accidents. Very little is known about the characteristics of these drivers or how their accident histories vary over periods of time longer than a year. In a 1946 report by Johnson (9), it was stated that "Operators who are accident-repeaters in one period tend to regress toward the average of the group in another period." This temporary nature of accident proneness is further reinforced by more recent reports of Schuster and Guilford (14) and Campbell (1), but is contradicted by Shaw and Sichel (16) who say, "... The man whose past record has been unsatisfactory is unlikely to improve, punishing him will have very little effect, and retraining him means throwing good money after bad. The only practical way of insuring that he does not have accidents is to prevent him from driving."

It is very probable that the accident-repeater is not the average driver nor the average person. According to Penn (13) "The person likely to become involved in an accident is a disturbed person, at odds with the world around him." It may be that the conditions or circumstances that plague the accident-repeater and involve him in several collisions are the same, at least temporarily, for the average person or driver who has an accident. By studying the records of the accident-repeater, determining his

characteristics and how they change with time, it should be possible to determine accident causative factors that apply to the entire population of drivers. Some such factors may be difficult to pinpoint in the driver that is only occasionally involved in an accident, but may be more apparent in the accident-repeater.

It is recognized that one method of possibly reducing accidents would be to restrict the driving liberty of those who could be classified as accident repeaters. But to provide such restrictions, good evidence of the benefits to society will be necessary. It would be desirable to know the answer to several questions, for example; Why do some individuals have more accidents than other drivers? Does an individual's relative accident involvement rate in one year remain the same in succeeding years or does it increase or decrease? If improvements or deteriorations are noted, what are the causative factors of these changes?

In 1967 there were about 2.7 million drivers licensed in the State of Indiana. During that year, 301,921 drivers were involved in 175,886 reported motor vehicle accidents within the State. During that same year more than two thousand drivers were involved in three or more accidents. It was found that 2064 of these drivers were involved in a total of 6573 reported accidents. Thus less than one tenth of one percent of the total licensed drivers were involved in over 3.7 percent of the accidents that were reported during the year 1967.

While 3.7 percent is not a very large proportion of the total accidents, it is a substantial number. If it could be determined that these high accident drivers were going to continue to become involved in such a large number of accidents during the following years, it would be foolish to allow them to continue as a threat to society. Therefore, this study was directed toward those 2064 individuals who were involved in three or more accidents during the year 1967.

PURPOSE

The objectives of this study were to:

1. Determine the number and characteristics of drivers who had an excessively high accident involvement during a particular year.

2. Evaluate the records of these drivers for a period of years beyond the base year to determine changes which take place over time in accident involvement and in their characteristics.

3. From information available in the accident and driver record files, correlate changes in accident involvement with present or possible corrective procedures, such as revocation of operators permit, drivers training courses, etc.

DATA COLLECTION

A driving record of all persons licensed by the State of Indiana to drive a motor vehicle is maintained by the Bureau of Motor Vehicles. This driving record includes information about the personal characteristics, type of license, and violation citations of each driver. Accidents in which a person is involved are not recorded on the driver record unless the driver was proven responsible for the accident.

A completely separate record of all reported accidents is maintained by a completely separate organization: the Indiana State Police. This record includes driver identification and date, location and type of accident.

Data were collected for two groups of drivers for the purpose of this study. The first group of drivers included all persons who were identified as being involved in three or more accidents during the year 1967. Complete accident record summaries were collected for this group for the years 1967 through 1971. In addition, driver record summaries were collected for all drivers in this group who had a total of five or more accidents during the entire five year study period.

The second group of drivers was selected randomly from the entire population of Indiana drivers. This group of

drivers was selected to serve as a control group to which the multiple accident driver could be compared. Complete accident record summaries for the years 1967 through 1971 were collected for all drivers in the control group. Driver record summaries were also collected for all control group drivers.

High Accident Driver

Accident Record Summaries

Indiana State Law requires that a written report be filed with the State Police within five days of an accident in the event of a death, injury or over fifty dollars damage. The State Police maintain a record of all reported motor vehicle accidents. Unlike the driver record which files all infractions to a particular driver, the accident record treats each accident individually. In other words, a listing is not maintained for each driver giving his individual accident history.

Each year a name listing of drivers involved in traffic accidents during the year is prepared. These name listings identify drivers by their last name, first name and middle initial. Since the year 1967, the name listings have further identified drivers by their date of birth. The last name of each driver is Soundex Coded so that all names that are spelled identically or that sound the same are grouped together. (A more detailed explanation of the Soundex Code will be found in Appendix C). The first name and middle initial are listed alphabetically within each Soundex group.

For each reported accident that a driver has during a particular year, he is listed once in that years accident name listing. Therefore, to determine which drivers had multiple accidents during a particular year it is necessary to search the name listing for that year for multiple listings of drivers with the same identification.

Since 1967 was the first year that accident name listings were maintained that included the date of birth of the driver, that year was selected as the base year for this study. The date of birth was required for the purpose of making positive identification of the drivers. There are approximately one hundred licensed drivers in Indiana that have the same first and last name and middle initial and the same date of birth as another licensed driver. These drivers are distinguished by the notation "Suffix 1" or "Suffix 2" on their driver record. None of these drivers were involved in this study as high accident drivers (three or more accidents in 1967 and five or more accidents 1967-1971).

State Police records show that 301,921 drivers were involved in 175,886 motor vehicle accidents in Indiana during the year 1967 (See Appendix A). A preliminary sampling of the 1967 Accident Name Listing was made to determine the frequency at which multiple accident listings occurred. This preliminary review indicated that roughly one driver had three or more accidents for every one hundred-fifty

accident listings. On this basis the decision was made to limit this study to only those drivers who had three or more reported accidents during the year 1967.

Each of the 301,921 accident name listings for the year 1967 was checked name by name for multiple listings of three accidents or more. Those names found three or more times were then checked for identical birthdates. Once a driver was positively identified as having been involved in three or more accidents during the year 1967, the following information was recorded from the accident name listing (See Appendix C for sample data collection form):

1. Driver's last name, first name, and middle initial;
2. Driver's date of birth;
3. Residence of driver at time of accident;
4. Age of driver at time of accident;
5. City or township in which accident occurred;
6. County in which accident occurred;
7. Date that accident occurred;
8. Type of accident (property damage, injury, or fatal);
9. State Police accident code identification number.

Information was recorded on 2093 drivers who had three or more accidents during the year 1967. Some drivers were found in the accident name listing that appeared to have three or more accidents but no date of birth was listed. Under these circumstances positive identification of the driver was not possible and these names were not included in

the study. It is also possible that a few drivers who had three or more accidents might have been missed due to human error. However, the search for multiple accident drivers was very thorough and if any drivers were missed, the number is very few.

Once the base sample of drivers for the year 1967 was complete, a thorough search was made of the Accident Name Listings for the years 1968, 1969, 1970, and 1971, to determine the additional accidents in which these drivers were involved. Once a driver from the 1967 base sample was positively identified as having been involved in one or more additional accidents during the following four year period, the same accident information was recorded as was for the year 1967.

Driver Record Summaries

Of the base sample of drivers who had three or more accidents in 1967, 805 had a total of five or more accidents during the five year study period. These drivers were selected for a study of their driver record. The names and birthdates of these drivers were submitted to the Bureau of Motor Vehicles. The Bureau then provided copies of the driver record summary for 799 of the 805 drivers. No record could be found for the remaining six drivers. The names and birthdates of these six drivers were rechecked for correctness and then resubmitted to the Bureau of Motor Vehicles. Another search of their files was still unsuccessful in identifying these drivers.

Each driver record summary contains the following information (See Appendix C for sample driver record summary):

1. Residence of driver;
2. Type of license (learner permit, driver education permit, probation operator, chauffeur, public passenger chauffeur);
3. Color of hair and eyes;
4. Sex;
5. Date of birth;
6. Weight and height of driver;
7. Date last license was applied for;
8. Date re-exam due;
9. Date license expires.

In addition to the above information which is recorded on every driver record summary, the following data are recorded where applicable:

1. License restrictions (required to wear glasses, required to have outside rearview mirror, daylight driving only, etc.);
2. Date and changes of license type (operator to chauffeur, driver education to operator, etc.);
3. Convictions for moving violations, type of violation, violation points and date;
4. Convictions for failing to appear for driver instruction, interview or court appearance;
5. Actions taken against drivers (interviews, probation, suspension of license, etc.);

6. Date suspension or probation is closed;
7. If driver has reported an out of state move, date of move and place to where he moved;
8. Deceased drivers noted;
9. Current driving status (clear, on probation, suspended, total active violation points).

The Control Driver Group

In order to have a basis of comparison, a control group of drivers was selected randomly from the entire population of Indiana drivers. This was accomplished through the use of Bureau of Motor Vehicle records.

Accident Record Summaries

A search was made of the accident name listings for each driver in the control group to determine his accident history during the five year study period. When the records indicated that a control driver had been involved in one or more accidents at any time during the five year study period, the same information was recorded as was for the high accident driver.

Driver Record Summaries

Copies of driver record summaries were obtained for each control group driver from the Bureau of Motor Vehicles. The summaries contained the same type of information as those collected for the high accident driver. Complete accident and driver records were collected for a control group of 367 drivers.

Additional Data

Additional statistical information used in this study was taken from the "Standard Summary of Motor Vehicle Traffic Accidents in Indiana." This report is prepared annually by the Indiana State Police. Information was taken from the reports for the years 1967 through 1971. Information concerning total licensed drivers in the state for the years 1967 through 1971 comes from reports prepared by the Bureau of Motor Vehicles (Copies of these reports will be found in Appendix A).

Due to the confidential nature of accident reports and State Laws protecting their confidentiality, no names or other identifying information were taken from the offices of the State Police. Therefore, once all the data had been collected and assembled, drivers names and other traceable identifying information were removed from the information collected and case study numbers were assigned.

It must be observed that the information recorded on the driver and accident records conveys only a small amount of information about that person's driving performance. Furthermore, a driver may continuously violate traffic laws but will receive a citation which will be recorded on his record only when observed by a law enforcement official or perhaps when involved in an accident. A driver may be involved in many potential accidents-near misses-but is recorded as having an accident only when an accident actually

occurs and damage over fifty dollars results and/or an injury or fatality occurs. Even then it is possible that a driver may have one or more accidents that go unreported.

ANALYSIS OF DATA

High Accident Driver

Drivers in the high accident group were placed into two categories: those who had a total of five accidents or more and for which driver records had been obtained and those who had a total of three or four accidents and for which driver records had not been obtained. The driver record summary of each person in the first group was examined to determine if that person was an Indiana driver during the entire five year study period. When it could be determined from the record that a person was an Indiana driver for less than fifty-four months of the sixty month study period, that driver was eliminated from the study. Methods of determining that a person was not an Indiana driver for the full study period included record notations that indicated he had moved out of state, his license had expired and had never been renewed, or he had died. However, if it was noted that a driver that had moved out of state had subsequent notations on his records for accidents, citations, license renewal, or other reasons, and if any such notation was within six months of his date of move, it was assumed that he had returned to Indiana and he was included in the study. Drivers were not removed from the study due to license suspensions. Twenty three drivers were removed for not being an Indiana

driver for the five year study period.

Of the original 799 drivers for which both driver and accident records were obtained, this total was now reduced to 776. All of these drivers had a total of five or more accidents during the five year study period of which at least three occurred during the year 1967. The following information from the driver and accident records of these drivers was coded and punched onto computer cards:

1. Case number of the driver;
2. Residence of the driver;
3. Index of weight/height of the driver;
4. Age of driver at the time of first accident during the year 1967;
5. Sex;
6. License type;
7. License restrictions;
8. License changes and date of changes;
9. Total violation points during five year period,
(An explanation of the violation point system will be found in Appendix B);
10. Total license suspensions during five year period;
11. Total months license was suspended;
12. Total license suspensions during five year period for:
 - (a) Driving while intoxicated;
 - (b) Failure to appear;

- (c) Responsibility for an accident;
 - (d) Leaving the scene of an accident;
 - (e) Violation of Implied Consent law;
- 13. Type, date, and number of points of each violation citation;
 - 14. Date, place, and type of each accident.

Once all of the data were coded, punched onto cards, and verified, computer programs were written to determine the following additional characteristics of each driver:

- 1. Mean time in days between accidents;
- 2. Total number of accidents during the five year period;
- 3. Mean time in days between violation citations;
- 4. Total violation citations during the five year period;
- 5. Number of fatal accidents during the five year period;
- 6. Number of injury accidents during the five year period;
- 7. Number of property damage only accidents during the five year period;
- 8. Number of accidents during the year 1967;
- 9. Number of each of the following during the year 1967:
 - (a) Total license suspensions;
 - (b) License suspensions for driving while intoxicated;

- (c) License suspensions for failure to appear;
 - (d) License suspensions for responsibility for an accident;
- 10. Number of violation citations during the year 1967;
 - 11. Number of serious violation citations during the year 1967.

For the purpose of this study a serious violation was defined as a violation that requires mandatory license suspension or carries five or more violation points. This definition is not intended to convey the idea that other violations are not serious. It is intended to distinguish between violations that may occur accidentally or through driver inattention and violations that are nearly always willful. Examples of the possible accidental type of violation include driving the wrong way on a one way street and running a stop sign or traffic signal. Examples of the willful violation, the one being defined as serious, include "drag racing", reckless driving, leaving the scene of an accident, and driving while license is suspended.

License types were initially coded into six categories: operator's license, chauffeur's license, public passenger chauffeur's license, learner's permit, driver education permit, and probation operator's license. In the final analysis the learner's permit, driver education permit, and probation operator's license were all combined under the operator's license category. Thus the final categories of

license type that appear in the analysis are the operator's license, the chauffeur's license, and the public passenger chauffeur's license.

The Control Driver Group

The driving records of all control group drivers were examined using the same criteria as for the high accident driver. A total of forty-one drivers were removed from the control group because it was determined that they were Indiana drivers for less than fifty-four months of the sixty month study period. This left a control group of 326 drivers. With the exception of age, the information was then coded and punched onto computer cards in the exact format as for the high accident driver. The age of the driver was coded as his age on January 1, 1967.

Final Data Groups

The final data for which both accident and driver records were available were organized into four groups as follows:

<u>Group</u>	<u>Number of Drivers in Group</u>
Control Group	326
5 Accident Total	361
6-7 Accident Total	288
<u>>8</u> Accident Total	127

In addition to these four main groups, information concerning accident records and age and residence of drivers was available for drivers who had three and four accidents.

RESULTS

The Accident Picture

The search of the 1967 accident records produced 2064 drivers who had three or more accidents in Indiana during that year and who are believed to have been Indiana drivers for most of the five year study period. The number of accidents in which these drivers were involved during that single year ranged from three to nine accidents as shown in Table 1. The group as a whole were involved in a total of 6573 accidents during the year.

Table 1. 1967 Multiple Accident Drivers.

Number of Accidents Per Driver During The Year 1967	Number of Drivers	Total 1967 Accidents	Total Additional Accidents During Following Four Year Period 1968-1971
3	1763	5289	2102
4	241	964	393
5	46	230	131
6	10	60	56
7	3	21	11
8	0	0	0
9	<u>1</u>	<u>9</u>	<u>3</u>
	2064	6573	2696

Looking at the accident record of this same group of drivers for the entire five year study period, 1967 through 1971, it was found that the number of accidents in which the individual drivers were involved ranged from a low of three, all in 1967, to a high of twenty-nine accidents (See Table 2). The group as a whole were involved in 9269 reported accidents during the entire five year study period.

Taken as a group, it is clear that the accident record of these 2064 drivers underwent much improvement during the four year period following the 1967 base year. In 1967, the group had an average of 3.18 accidents per driver while the average per year for the following four year period was 1.30 accidents per driver. In comparison, the control driver was found to have an average of 0.09 accidents per year. This latter figure is shown in Table 3, a summary of important statistics of the drivers in the control group and in the study group. Therefore, taken as a group, the drivers who had three or more accidents in 1967 showed improvement in their accident record during the following four year period, but they still had more than ten times the number of accidents as the average driver would be expected to have.

Table 4 presents some interesting statistics on the accident picture over the 5-year period of the drivers in the study group. Of the group of 1763 drivers who had three accidents in 1967, 728 or 41.3 percent of the group had no additional accidents during the following four year period.

Table 2. Total Accident Involvement During Five Year Study Period 1967-1971 By Drivers Involved in Three or More Accidents in 1967.

Total Accidents Per Driver 1967-1971	Number of Drivers	Total Accidents	Total Accidents Per Driver 1967-1971	Cumu- lative Number of Drivers
3	728	2184	<u>≥</u> 3	2064
4	560	2240	<u>≥</u> 4	1336
5	361	1805	<u>≥</u> 5	776
6	195	1170	<u>≥</u> 6	415
7	93	651	<u>≥</u> 7	220
8	50	400	<u>≥</u> 8	127
9	38	342	<u>≥</u> 9	77
10	13	130	<u>≥</u> 10	39
11	9	99	<u>≥</u> 11	26
12	7	84	<u>≥</u> 12	17
13	4	52	<u>≥</u> 13	10
14	2	28	<u>≥</u> 14	6
15	1	15	<u>≥</u> 15	4
.				
.				
.				
17	1	17	<u>≥</u> 17	3
.				
.				
.				
23	1	23	<u>≥</u> 23	2
.				
.				
.				
29	1	<u>29</u>	<u>≥</u> 29	1
		9269		

Table 3. Summary Statistics.

Numbers in Parentheses refer to number of drivers, suspensions or violations upon which percentage or mean is based.

	Control Group 326 Drivers	5 Accident Group* 361 Drivers	6-7 Accident Group* 288 Drivers	≥ 8 Accident Group* 127 Drivers
Percent Male	59.2 (193)	95.6 (345)	94.8 (273)	97.6 (124)
Mean Age	38.7	29.6	29.9	32.3
Median Age	36.6	25.1	25.3	27.9
License Type				
Percent Operator	90.5 (295)	70.9 (256)	67.0 (193)	58.3 (74)
Percent Chauffeur	7.7 (25)	24.7 (89)	26.0 (75)	23.6 (30)
Percent Public Passenger Chauffeur	1.8 (6)	4.4 (16)	7.0 (20)	18.1 (23)
Percent of Drivers With One Or More Violation Citations in 1967	4.9 (16)	42.1 (152)	41.0 (118)	45.7 (58)
Mean Number of Violation Citations Per Driver in 1967	0.055 (18)	0.620 (224)	0.670 (193)	0.653 (83)
Percent of Drivers With One or More Serious** Violation Citations in 1967	1.2 (4)	12.5 (45)	13.5 (39)	11.8 (15)
Mean Number of Serious Violation Citations Per Driver in 1967	0.012 (4)	0.161 (58)	0.170 (49)	0.142 (18)
Percent of Drivers With One or More License Suspension in 1967	0.3 (1)	3.0 (11)	2.4 (7)	3.1 (4)
Mean Number of License Suspensions Per Driver in 1967	0.003 (1)	0.050 (18)	0.038 (11)	0.032 (4)

Table 3. (Continued)

	Control Group 326 Drivers	5 Accident Group* 361 Drivers	6-7 Accident Group* 288 Drivers	≥ 8 Accident Group* 127 Drivers
Percent of Drivers With One or More Suspensions for Driving While Intoxicated in 1967	0.3 (1)	1.7 (6)	1.0 (3)	2.4 (3)
Mean Number of Suspensions For Driving While Intoxicated in 1967	0.003 (1)	0.022 (8)	0.010 (3)	0.024 (3)
Percent of Drivers With One or More Suspensions For Failing to Appear in 1967	0 (0)	0.6 (2)	0.7 (2)	0.8 (1)
Mean Number of Suspensions For Failing to Appear in 1967	0 (0)	0.006 (2)	0.007 (2)	0.008 (1)
Percent of Drivers With One or More Suspensions for Leaving the Scene of an Accident in 1967	0 (0)	1.1 (4)	0.7 (2)	0 (0)
Mean Number of Suspensions for Leaving the Scene of an Accident in 1967	0 (0)	0.014 (5)	0.010 (3)	0 (0)
Mean Number of Accidents in 1967	0.080 (26)	3.216 (1161)	3.403 (980)	3.850 (489)
Mean Number of Accidents During Entire Study Period 1967-1971	0.454 (148)	5.000 (1805)	6.323 (1821)	9.578 (1219)

* Total accidents during the five year study period.

** Serious violation refers to a violation with a point count of five or more or a violation that requires mandatory license suspension.

Of that same group, 58.7 percent had one or more additional accidents and 31.4 percent had two or more additional accidents during the same four year period.

Of that group of 241 drivers who had four accidents in 1967, 32.8 percent had no additional accidents during the following four year period. Of that same group, 67.2 percent had one or more additional accidents and 41.5 percent had two or more additional accidents during the following four year period.

Of that group of forty-six drivers who had five accidents during the year 1967, only eight drivers, or 17.4 percent of the group remained accident free during the following four year period. Of that same group, 82.6 percent had one or more additional accidents, 60.9 percent had two or more additional accidents, and 34.8 percent had three or more additional accidents, all during the same four year period.

Of the ten drivers who were found that had six accidents during the year 1967, all had at least one accident during the following four year period. Nine drivers or 90.0 percent of the group had two or more accidents during the same four year period. Half of the drivers in this group had four or more accidents during this same four year period.

Only four drivers were found that had seven or more accidents during the year 1967. All four of these drivers

had two or more accidents during the following four year period.

It is clear that the greater number of accidents that a driver has during a particular year increases the probability that he will have additional accidents during the following years.

Seriousness of the Accidents

State Police records classify accidents into three categories based on the type of accident. These categories are property damage only for accidents in which fifty dollars or more damage results and no one is killed or injured; injury accidents in which someone sustains a personal injury; and fatality accidents in which a death results.

Using these three categories as a criterion on which to base the seriousness of an accident, the data indicates that, in general, the more accidents that a driver has, the less serious the accidents are. As shown in Figure 1 and Table 5, about twenty-seven percent of the reported accidents in which the three-accident driver group were involved were either injury or fatality accidents. In comparison, less than ten percent of the reported accidents in which the eight or more accident group were involved were injury or fatality accidents.

FIGURE 1 SERIOUSNESS OF ACCIDENTS IN RELATION TO TOTAL ACCIDENT INVOLVEMENT

Table 5. Type of Accident.

Total Accidents Per Driver During Five Year Study Period 1967-1971	Percent of Accidents That Were Property Damage Only	Percent of Accidents That Were Injury Accidents	Percent of Accidents That Were Fatal Accidents	Percent of Accidents That Were Injury or Fatal Accidents
3 Accident Group (2184)*	72.62 (1586)	26.51 (579)	0.87 (19)	27.38 (598)
4 Accident Group (2240)	75.09 (1682)	24.69 (553)	0.22 (5)	24.91 (558)
5 Accident Group (1805)	83.27 (1503)	16.68 (301)	0.05 (1)	16.73 (302)
6-7 Accident Group (1821)	85.78 (1562)	14.00 (255)	0.22 (4)	14.22 (259)
≥ 8 Accident Group (1219)	90.48 (1103)	9.19 (112)	0.33 (4)	9.52 (116)

* Numbers in parentheses refer to number of accidents.

Where the Accidents Occurred

A definite relationship was found between the number of accidents that a driver had and his residence and the location of the accidents. As shown in Tables 6 and 7 and Figure 2, about thirteen percent of the drivers in the control group were found to reside in Indianapolis while more than twenty-nine percent of the drivers in the eight or more accident group resided in Indianapolis. About fourteen percent of the accidents incurred by the drivers of the control group took place in Indianapolis. More than thirty-two percent of the accidents of the eight or more accident driver group occurred in Indianapolis.

Similar results were found for the city of Fort Wayne. As shown in Figure 3 and Tables 6 and 7, about seven percent of the drivers and about seven percent of the accidents of the control driver group occurred in Fort Wayne. Of the group of drivers who had eight or more accidents during the five year study period, fifteen percent of the drivers were residents of Fort Wayne and more than fourteen percent of the accidents in which this group of drivers were involved occurred in Fort Wayne.

Over forty-six percent, or nearly half of all accidents in which the drivers of the group who had eight or more accidents were involved occurred either in Fort Wayne or Indianapolis.

These findings seem to suggest that the high accident driver, one involved in multiple accidents in a given year,

Table 6. Accident Involvement in Five Indiana Cities.

City	Percent of Accidents in Each Group				
	3	4	5	6-7	> 8
	Control Group 326 Drivers 148 Accidents	Accident Group 728 Drivers 2184 Accidents	Accident Group 560 Drivers 2240 Accidents	Accident Group 361 Drivers 1805 Accidents	Accident Group 288 Drivers 1821 Accidents
Indianapolis	14.2 (21)	15.0 (328)	15.8 (354)	20.3 (367)	19.5 (356)
Fort Wayne	7.4 (11)	8.8 (192)	9.5 (212)	10.6 (191)	14.3 (261)
Gary	8.1 (12)	3.7 (81)	5.1 (115)	6.0 (109)	5.6 (102)
South Bend	4.1 (6)	3.9 (85)	4.3 (96)	3.7 (66)	7.0 (128)
Kokomo	4.7 (7)	1.2 (26)	0.9 (21)	1.6 (29)	1.8 (32)
	38.5	32.6	35.6	42.2	48.2
					58.4

Table 7. Residence of Drivers for Five Indiana Cities.

City	Percent of Accidents in Each Group					
		3	4	5	6-7	> 8
	Control Group 326 Drivers	Accident Group 728 Drivers	Accident Group 560 Drivers	Accident Group 361 Drivers	Accident Group 288 Drivers	Accident Group 127 Drivers
Indianapolis	13.2 (43)	15.2 (111)	19.3 (108)	21.9 (79)	22.6 (65)	29.1 (37)
Fort Wayne	7.1 (23)	10.3 (75)	9.8 (55)	10.2 (37)	14.9 (43)	15.0 (19)
Gary	6.7 (22)	5.1 (37)	6.1 (34)	6.4 (23)	6.3 (18)	7.9 (10)
South Bend	1.5 (5)	4.7 (34)	5.4 (30)	4.2 (15)	7.3 (21)	2.4 (3)
Kokomo	1.5 (5)	2.2 (16)	1.1 (6)	1.7 (6)	2.1 (6)	3.9 (5)
	30.0	37.5	41.7	44.4	53.2	58.3

FIGURE 2 RESIDENCE AND ACCIDENT OCCURRENCE IN INDIANAPOLIS IN
RELATION TO TOTAL ACCIDENT INVOLVEMENT

FIGURE 3 RESIDENCE AND ACCIDENT OCCURRENCE IN FORT WAYNE IN
RELATION TO TOTAL ACCIDENT INVOLVEMENT

is most likely to be a resident of a large urbanized, more densely populated area. This seems reasonable since there are more vehicles and pedestrians in these areas, more congestion, and thus many more conflicts and opportunities for accidents to occur.

Driver Characteristics

Several personal characteristics of the drivers were available from the driver and accident records. These characteristics include age, sex, weight and height of the driver, and license restrictions. It would have been informative to have additional information on the drivers such as occupation, economic status and education, but limitations of the data prevented this. Much might also have been learned about driver attitudes if it would have been possible to interview some of the drivers. This, however was not possible due to the confidential nature of the accident records.

Age

The high accident driver is, in general, younger than the average driver. The control driver was found to have a mean age of 38.65 years and a median age of 36.6 years as shown in Table 8. The mean age of the high accident driver ranged from 29.59 years for the five accident group to 32.46 years for the three accident group. The median age for the high accident driver ranged from 25.1 years for the five accident group to 27.9 years for the eight or more accident group.

Table 8. Age Distribution.

Age Groups-Years	Percent of Drivers in Age Groups					
	Control Group	3 Accident Group	4 Accident Group	5 Accident Group	6-7 Accident Group	> 8 Accident Group
15	1.5 (5)	0 (0)	0.2 (1)	0.8 (3)	0.4 (1)	0 (0)
16	3.1 (10)	3.8 (28)	4.8 (27)	6.4 (23)	5.2 (15)	3.9 (5)
17	2.8 (9)	7.0 (51)	7.0 (39)	6.1 (22)	8.3 (24)	6.3 (8)
18-19	6.1 (20)	14.7 (107)	13.8 (77)	15.5 (56)	14.9 (43)	11.8 (15)
20-24	11.0 (36)	18.0 (131)	17.3 (97)	19.9 (72)	20.1 (58)	19.7 (25)
25-34	23.3 (76)	19.5 (142)	20.0 (112)	20.8 (75)	20.1 (58)	22.8 (29)
35-44	13.2 (43)	14.8 (108)	14.6 (82)	15.8 (57)	15.7 (45)	12.6 (16)
45-54	19.0 (62)	11.7 (85)	10.2 (57)	8.9 (32)	8.3 (24)	11.8 (15)
55-64	12.6 (41)	6.1 (44)	8.0 (45)	3.6 (13)	4.5 (13)	7.9 (10)
65-74	6.1 (20)	2.6 (19)	2.7 (15)	1.4 (5)	2.1 (6)	3.2 (4)
≥ 75	1.3 (4)	1.8 (13)	1.4 (8)	0.8 (3)	0.4 (1)	0 (0)
	100.0 (326)	100.0 (728)	100.0 (560)	100.0 (361)	100.0 (288)	100.0 (127)

Table 8. (Continued)

Age Groups-Years	Percent of Drivers in Age Groups					
	Control Group	3 Accident Group	4 Accident Group	5 Accident Group	6-7 Accident Group	> 8 Accident Group
Mean Age	38.65	32.46	32.38	29.58	29.91	32.29
Median Age	36.6	27.5	26.8	25.1	25.3	27.9

Many studies have noted that certain age groups, most notably the younger drivers, have a higher probability of being involved in accidents (8,10,11,12,19,20). The data from this study agrees with this finding. However, in most cases, this study indicates that age has little value as a predictor of which drivers who are high accident drivers during a particular year will continue to have accidents during the following years.

The 728 drivers who had three accidents in 1967 and no additional accidents during the following four year period had a mean age of 32.46 years and a median age of 27.5 years as indicated in Table 8. In contrast, the 127 drivers who had eight or more accidents during the five year study period had a mean age of 32.29 years and a median age of 27.9 years. There is less than half a years difference between either the means or medians of the ages of these two driving groups. Clearly the age of the driver who had already had three or more accidents during a particular year will, in most cases, be of little use in predicting whether he will have additional accidents during following years.

The remaining driver characteristics studied are for drivers who had a total of five or more accidents during the five year study period with at least three of these accidents occurring during the year 1967.

Sex

While it is well established that male drivers have a greater accident involvement than females, the results of this study are striking. As indicated in Table 3, less than sixty percent of the licensed drivers in Indiana are male; however, male drivers account for over ninety-four percent of the drivers with three or more accidents during the year 1967 and a total of five or more accidents during the entire five year study period. Of the 776 drivers in this group of drivers, only thirty-four were female.

Other Driver Characteristics

The results of this study found little difference between the control driver group and any of the high accident groups for the variables: index of weight/height or license restrictions. Findings for this phase of the analysis will be found in Appendix D.

License Type

It is unfortunate that no information was available concerning the exposure rate of the drivers under study. The number of miles that a person drives and the circumstances under which they are driven should undoubtedly be an important consideration in this type of an accident study. It is probable that a person who holds a chauffeur or public passenger chauffeur's license is driving more than the average person with just an operator's license. However, it

is also probable that the high accident drivers in this study are not average drivers. It is certainly possible that many of these high accident drivers also travelled many more miles in 1967 and the years following than the average driver with an operator's license.

The summary statistics of this study, as shown in Table 3, indicate that as the number of accidents in which a driver is involved goes up, the probability that he is a holder of either a chauffeur or public passenger chauffeur's license also goes up.

While only 7.7 percent of the control group were drivers with chauffeur's licenses, 23.6 percent of the drivers with eight or more accidents during the five year study period were drivers with chauffeur's licenses. The accident involvement of drivers holding the public passenger chauffeur's license is even more stunning. While they constitute only 1.8 percent of the control group, 18.1 percent of the drivers in the eight or more accident group were public passenger chauffeur's license holders.

This evidence that a high percentage of the drivers who had a high number of accidents during the five year study period hold chauffeur's or public passenger chauffeur's licenses probably provides some explanation of some of the other characteristics of this group. The finding that a high number of the drivers of this group resided in large urban areas and had accidents there is undoubtedly highly correlated with the license type. Similarly the finding that as the

number of accidents increased the seriousness of the accidents decreased probably results from the fact that many of these accidents are in urban areas where speeds are low and congestion great and that those possessing chauffeur's or public passenger chauffeur's licenses are likely driving during these congested conditions.

The question now arises, is it realistic to expect that a person who makes his living by driving will be involved in more accidents because he travels more miles and thus has a greater number of opportunities to become involved in an accident? Or should we expect the person who makes his living by driving to be such a better driver that he will be involved in fewer accidents? Unfortunately, an answer to these questions is not yet available.

The Driving Record

The 1967 driving record of drivers with three or more accidents during the year 1967 and a total of five or more accidents during the entire five year study period appears to be of little use in predicting those drivers that will continue to have accidents. Drivers who had no violation citations in 1967 constituted 54.3 percent of the drivers who had eight or more accidents during the five year study period and 57.9 percent of the drivers who had five accidents during the same period (See Table 9). Those drivers who had two or more violation citations during the year 1967 constituted 13.9 percent of the drivers who had five total

Table 9. 1967 Violation Citations.

Number of Citations in 1967	Control Group			5 Accidents*			6-7 Accidents*			> 8 Accidents*		
	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent
0	310	95.1	100.0	209	57.9	100.0	170	59.0	100.0	69	54.3	100.0
1	14	4.3	4.9	102	28.2	42.1	71	24.7	41.0	40	31.5	45.7
2	2	0.6	0.6	35	9.7	13.9	28	9.7	16.3	13	10.2	14.2
3	0	-	-	12	3.3	4.2	12	4.2	6.6	3	2.4	4.0
4	0	-	-	1	0.3	0.9	5	1.7	2.4	2	1.6	1.6
5	0	-	-	1	0.3	0.6	2	0.7	0.7	0	-	-
6	0	-	-	0	-	0.3	0	-	-	0	-	-
7	0	-	-	1	0.3	0.3	0	-	-	0	-	-
	326	100.0		361	100.0		288	100.0		127	100.0	

* Total accidents during the five year study period.

accidents and 14.2 percent of the drivers who had eight or more total accidents. The percentage of drivers having various numbers of citations from each of the high accident groups is roughly the same, thus making violation citations of little use as a predictor to determine whether a driver who has a number of accidents during a particular year will continue to have accidents during the following years.

As can be seen in Table 10, the same situation seems to be true of serious violations. The fact that a driver had one or more serious violations during the year 1967 did not have any significant relationship to the number of accidents in which the driver was involved during the following years.

Tables 11 and 12 report the relationship of 1967 license suspensions (Table 11) and 1967 license suspensions for driving while intoxicated (Table 12) with 1967 and future accident record. The numbers of such suspensions are so small as to make findings impossible.

While in many cases the violation record of a driver may be highly correlated to his accident record (2,3,5,10, 12,15), it appears to be of little use for predicting whether drivers who are high accident drivers during one period will continue to be high accident drivers in the following period.

The Combined Characteristics as Accident Predictors

As it has already been noted, the variables so far examined in this study do not clearly indicate which drivers with high accident records during a particular year will

Table 10. 1967 Serious Violations*

Number of Serious Violations in 1967	Control Group			5 Accidents Group			6-7 Accidents Group			> 8 Accidents Group		
	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent
0	322	98.8	100.0	316	87.5	100.0	249	86.5	100.0	112	88.2	100.0
1	4	1.2	1.2	38	10.5	12.5	33	11.5	13.5	13	10.2	11.8
2	0	-	-	5	1.4	2.0	3	1.0	2.0	1	0.8	1.6
3	0	-	-	1	0.3	0.6	2	0.7	1.0	1	0.8	0.8
≥ 4	0	-	-	1	0.3	0.3	1	0.3	0.3	0	-	-
	326	100.0		361	100.0		288	100.0		127	100.0	

* Serious violation refers to a violation with a point count of five or more or a violation that requires mandatory license suspension.

Table 11. 1967 License Suspensions.

Number of License Suspensions in 1967	Control Group			5 Accident Group			6-7 Accident Group			≥ 8 Accident Group		
	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent
0	325	99.7	100.0	350	96.9	100.0	281	97.6	100.0	123	96.8	100.0
1	1	0.3	0.3	7	1.9	3.1	5	1.7	2.4	4	3.2	3.2
2	0	-	-	2	0.6	1.2	1	0.35	0.7	0	-	-
3	0	-	-	1	0.3	0.6	0	-	0.35	0	-	-
4	0	-	-	1	0.3	0.3	1	0.35	0.35	0	-	-
	326	100.0		361	100.0		288	100.0		127	100.0	

Table 12. 1967 Suspensions for Driving While Intoxicated.

Number of Suspensions for Driving While Intoxicated in 1967	Control Group			5 Accident Group			6-7 Accident Group			> 8 Accident Group		
	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent	Number of Drivers	Percent	Cumulative Percent
0	325	99.7	100.0	355	98.3	100.0	285	99.0	100.0	124	97.6	100.0
1	1	0.3	0.3	5	1.4	1.7	3	1.0	1.0	3	2.4	2.4
2	0	-	-	0	-	0.3	0	-	-	0	-	-
3	0	-	-	1	0.3	0.3	0	-	-	0	-	-
	326	100.0		361	100.0		288	100.0		127	100.0	

continue to have a high accident rate. In order to evaluate the effects of all the variables combined, a technique called Automatic Interaction Detector, or AID, was utilized. This program, supplied by the Purdue University Computer Center, uses a least squared technique to determine that dichotomy based on any predictor that has the largest correlation with the dependent variable. Having made the initial split the program continues the splitting process in a stepwise manner using predictors in order of their relative importance (17).

The 776 drivers who had five or more accidents during the five year study period were tested using this program in an attempt to determine characteristics known in 1967 that would allow prediction of their future accident involvement. The dependent variable used was the total accidents during the years 1968 through 1971. If a driver had two reported accidents or less during this four year period, he was coded with a "zero". If the driver was involved in three or more accidents he was coded with a "one". Therefore, a subgroup with a mean of zero would indicate that all the drivers in that group had two accidents or less during the four year period following the year 1967. A mean of 1.0 would indicate that all drivers in that subgroup had three or more accidents during the same period. A mean of 0.4 would indicate that 40 percent of the drivers in that subgroup had three or more accidents. Of the

original group of 776 drivers, 342 drivers or 44.1 percent of the group were drivers who had three or more accidents during the period following the year 1967.

The following driver characteristics were used as predictors in the AID program:

1. Sex,
2. Age,
3. License type,
4. License suspensions in 1967,
5. Driving while intoxicated suspensions in 1967,
6. Serious violations in 1967,
7. Total accidents in 1967, and
8. Total violations in 1967.

The results of the program are shown in Figure 4. As can be seen, there are only four subgroups in which more than sixty-five percent of the drivers were ones who had three or more accidents during the four year period following 1967.

Looking at Subgroup 3, forty drivers out of fifty-nine or 67.8 percent of the 1967 high accident drivers who held public passenger chauffeur's licenses had three or more accidents during the four year period following the year 1967. As shown in Subgroup 25, twenty-six out of thirty-four drivers or 76.5 percent of the drivers in this public passenger chauffeur group who were between the ages of 15 to 24 or 45 or older, had three or more accidents during the four year period following the year 1967.

Subgroup 13 were drivers who had three accidents in 1967, had an operator's or chauffeur's license, were twenty-five years of age or older, and had two or more violations during the year 1967, none of which were defined as serious violations. Ten of the fourteen drivers, or 71.4 percent of this group, had three or more accidents during the four year period following the year 1967.

Subgroup 27 included those drivers who were twenty-five years old or older, held an operator's or chauffeur's license and were involved in four or more accidents during the year 1967. These drivers also had one violation citation during the year 1967 which was defined as a serious violation. Eight of the twelve drivers in this group, or 66.7 percent, had three or more accidents during the following four year period.

It is clear that using only the characteristics available from the driver and accident records, it is extremely difficult to predict with much accuracy which drivers that have a high number of accidents during a particular year will continue to have a high number of accidents during following years.

CONSEQUENCES OF LICENSE SUSPENSION OR REVOCATION

One of the purposes of this study was to evaluate controls that would best prevent drivers who have a number of accidents during one year from having additional accidents during future years. The only method that will absolutely assure that a driver does not have accidents is to prevent him from driving. In todays society where personal automobile transportation is a necessity in many areas, this form of restriction may have devastating effects on the mobility and economic status of a family or individual. The importance of the driving privilege might be noted by the fact that a large number of drivers in this study who had license suspensions also had citations for driving while their license was suspended.

If a persons driving privileges are to be suspended, perhaps there should be a reasonable indication that he has a high probability of becoming involved in further accidents.

Drivers Having Three Accidents During the Year 1967

If all of the 1763 drivers in this study who had three accidents during the year 1967 were prevented from driving during the following four year period, they as a group would not have become involved in the 2102 additional accidents that they had during this period as shown in Table 13.

However, 728 drivers or 41.3 percent (See Table 13) of the group had no additional reported accidents during the following four year period and denying them the right to drive would have provided no recognizable benefits to society. An additional 481 drivers or 27.3 percent of the group had only one additional accident during the following four year period. It was determined that the mean number of accidents per driver over the five year period for the control group was 0.45, as shown in Table 3. This means that the average accident rate of the Indiana control group is about one accident per driver every eleven years. Perhaps one accident during a four year period is not too bad of a record. Even two accidents in four years might not be considered too unusual. Therefore, by denying licenses to all drivers who had a total of three accidents during the year 1967, 728 individuals who had no additional accidents plus 481 who had only one additional accident during the following four year period would have suffered in order to prevent 554 persons from this group from having 1621 accidents.

If only those drivers who had three or more additional accidents during the following four year period were considered, then 1500 persons who had two accidents or less during this period would have lost their license in order to prevent 263 drivers from having 1039 accidents.

Table 13. Additional Accidents During 1968-1971 by Drivers with Three Accidents During 1967.

Number of Additional Accidents During the Following Four Year Period 1968-1971	Drivers With Three Accidents During The Year 1967				Cumulative No. of Total Accidents During The Years 1968-1971
	Number of Drivers	Total Accidents During Four Year Period 1968-1971	Percent of Drivers	Percent of Total Accidents During Four Year Period 1968-1971	Cumulative Number of Drivers
0	728	0	41.3	0	1763
1	481	481	27.3	22.9	1035
2	291	582	16.5	27.7	554
3	140	420	7.9	20.0	263
4	56	224	3.2	10.6	123
5	23	115	1.3	5.5	67
≥ 6	44	280	2.5	13.3	44
	1763	2102	100.0	100.0	

Drivers Having Four Accidents During The Year 1967

If the 241 drivers who had four accidents during the year 1967 had been prevented from driving during the following four year period, 393 accidents would have been prevented as indicated in Table 14. Seventy-nine drivers or 32.8 percent of this group had no additional accidents during this four year period and sixty-two drivers or 25.7 percent had only one additional accident. Thus by denying driving privileges to the entire group of drivers who had four reported accidents during the year 1967, 141 or 58.5 percent of the group who had either no further additional accident involvement or only one additional accident during the following four year period would also have lost their driving privileges. Only 100 drivers, or 41.5 percent of the group, had more than two accidents in the following four year period. These 100 drivers, however, had 331 accidents, 84.2 percent of the total for this group.

If only the drivers who had three or more additional accidents during the following four year period were considered, 186 drivers or 77.2 percent of the drivers who had two accidents or less during this period would have lost their licenses in order to remove from the highways 55 drivers, 22.8 percent of the group, who had 241 accidents, 61.3 percent of the accidents.

Table 14. Additional Accidents During 1968-1971 by Drivers with Four Accidents During 1967.

Number of Additional Accidents During the Four Year Period 1968-1971	Drivers With Four Accidents During The Year 1967					
	Number of Drivers	Total Accidents During Four Year Period 1968-1971	Percent of Drivers	Percent of Total Accidents During Four Year Period 1968-1971	Cumulative Number of Drivers	Cumulative No. of Total Accidents During The Years 1968-1971
0	79	0	32.8	0	241	393
1	62	62	25.7	15.8	162	393
2	45	90	18.7	22.9	100	331
3	24	72	10.0	18.3	55	241
4	16	64	6.6	16.3	31	169
5	5	25	2.1	6.4	15	105
≥ 6	10	80	4.1	20.3	10	80
	—	—	—	—	—	—
	241	393	100.0	100.0		

Drivers Having Five Accidents During the Year 1967

If all of the forty-six drivers who were involved in five accidents during the year 1967 were prevented from driving during the following four year period, 116 accidents would have been prevented as indicated in Table 15. During this same period, eight drivers or 17.4 percent of the group had no additional accidents and ten drivers or 21.7 percent of the group had only one additional accident. Thus by denying driving privileges to the entire group of drivers who had five accidents during the year 1967, 18 drivers or 39.1 percent of the group who had either an accident free record or only one additional accident during the following four years would be denied the privilege of driving. On the other hand, 28 drivers, 60.9 percent of this group, who had 106 accidents would have been taken off the road.

If only those drivers who had three or more accidents during the four year period following the year 1967 were considered, 30 drivers or 65.2 percent of the group who had two accidents or less during this same period would be suspended in order to prevent the 16 drivers, 34.8 percent of the group, that accounted for 82 accidents from driving.

Drivers Having Six or More Accidents During the Year 1967

If all of the fourteen drivers who had six or more accidents during the year 1967 were prevented from driving during the following four year period, seventy accidents would have been prevented as indicated in Table 1. All of

Table 15. Additional Accidents During 1968-1971 by Drivers with Five Accidents During 1967.

Number of Additional Accidents During the Four Year Period 1968-1971	Drivers With Five Accidents During The Year 1967				
	Number of Drivers	Total Accidents During Four Year Period 1968-1971	Percent of Drivers	Percent of Total Accidents During Four Year Period 1968-1971	Cumulative Number of Drivers
0	8	0	17.4	0	46
1	10	10	21.7	8.6	38
2	12	24	26.1	20.7	28
3	7	21	15.2	18.1	16
4	4	16	8.7	13.8	9
5	2	10	4.4	8.6	5
> 6	3	35	6.5	30.2	3
	—	—	—	—	—
	46	116	100.0	100.0	116

the drivers in this group except one had at least two or more accidents during the following four year period. The one exception had a single accident during the same period. Eight of the drivers or 57.1 percent of the group had three or more accidents during the four year period. The group as a whole had an average of 1.25 accidents per driver per year during the four year period following the year 1967.

CASE HISTORIES OF SELECTED

HIGH ACCIDENT DRIVERS

In order to paint a more vivid picture of the characteristics of the high accident driver, case histories of several selected drivers are presented here. Entries on their driving records and accident records have been combined and chronologically ordered so that the sequence of events in their driving history over the five year study period may be noted.

Clear Driving Record

The first three individuals presented are drivers with clear driving records; that is, with no citations for violations.

DRIVER: 2174
 RESIDENCE: Crown Point
 LICENSE: Chauffeur
 AGE: 38
 SEX: Male
 RESTRICTIONS: Glasses or contact lenses, outside review mirror

<u>DATE</u>	<u>ACTION</u>	<u>VIOLATION POINTS</u>
1/31/67	Property damage accident	
2/18/67	Injury Accident	
6/05/67	Property damage accident	

4/24/68	Property damage accident
1/31/69	Injury accident
9/24/70	Chauffeur license issued
11/23/70	Property damage accident
1/12/71	Property damage accident
3/12/71	Property damage accident
6/ 7/71	Property damage accident
10/15/71	Chauffeur license issued
2/10/72	Current status-clear

Five year summary:	Total accidents	9
	Total violations	0
	Total violation points	0
	Total suspensions	0

DRIVER:	3077
RESIDENCE:	Indianapolis
LICENSE:	Operator
AGE:	41
SEX:	Male
RESTRICTIONS:	None

<u>DATE</u>	<u>ACTION</u>	<u>VIOLATION POINTS</u>
3/10/67	Property damage accident	
5/30/67	Injury accident	
7/29/67	Property damage accident	
8/14/67	Property damage accident	
3/02/68	Property damage accident	
4/17/68	Operator license issued	
1/17/69	Property damage accident	
3/03/69	Injury accident	
5/21/70	Operator license issued	
7/31/70	Injury accident	
2/10/72	Current status-clear	

Five year summary:	Total accidents	8
	Total violations	0
	Total violation points	0
	Total suspensions	0

DRIVER: 1996
 RESIDENCE: Indianapolis
 LICENSE: Operator
 AGE: 24
 SEX: Male
 RESTRICTIONS: None

<u>DATE</u>	<u>ACTION</u>	<u>VIOLATION POINTS</u>
10/08/67	Property damage accident	
12/23/67	Injury accident	
12/25/67	Property damage accident	
5/03/68	Operator license issued	
2/19/69	Property damage accident	
5/07/70	Operator license issued	
11/19/71	Property damage accident	
4/20/72	Current status-clear	

Five year summary:	Total accidents	5
	Total violations	0
	Total violation points	0
	Total suspensions	0

Drivers with Improved Accident
Records After 1967

Two individuals are presented next who displayed a much improved accident record during the four year period following the year 1967. The first driver had five reported accidents during the year 1967 and none during the following four year period. The second driver had six accidents

during the year 1967 and only one additional accident during the first quarter of the year 1968. No further accidents were noted.

DRIVER: 1269
 RESIDENCE: Kokomo
 LICENSE: Operator
 AGE: 49
 SEX: Female
 RESTRICTIONS: Glasses or contact lenses, outside rearview mirror

This driver had two previous violation citations during the year 1964.

<u>DATE</u>	<u>ACTION</u>	<u>VIOLATION POINTS</u>
1/23/67	Property damage accident	
2/03/67	Sign violation	4
3/02/67	Property damage accident	
5/29/67	Injury accident	
5/30/67	Injury accident	
6/16/67	Injury accident	
8/09/68	Operator license issued	
8/12/70	Operator license issued	
2/15/72	Current status-clear	

Five year summary:	Total accidents	5
	Total violations	1
	Total violation points	4
	Total suspensions	0

DRIVER: 2625
 RESIDENCE: Elkhart
 LICENSE: Chauffeur
 AGE: 49

SEX: Male
 RESTRICTIONS: Glasses or contact lenses

This driver had a record of three violation citations totaling twelve points during the years 1963 through 1966.

<u>DATE</u>	<u>ACTION</u>	<u>VIOLATION POINTS</u>
2/15/67	Property damage accident	
5/26/67	Property damage accident	
7/03/67	Injury accident	
7/25/67	License suspended-responsible for accident (5/26/67)	
10/14/67	Property damage accident	
10/16/67	Speeding violation-60 mph in 55 mph zone	2
11/22/67	Suspension closed	
12/13/67	Property damage accident	
12/19/67	Property damage accident	
12/20/67	Signal violation	4
3/04/68	Property damage accident	
5/20/68	On probation	
11/20/68	Probation closed	
5/15/70	Chauffeur license issued	
5/25/70	Speeding violation-50 mph in 40 mph zone	2
3/31/71	Chauffeur license issued	
2/10/72	Current status-clear	

Five year summary:	Total accidents	7
	Total violations	3
	Total violation points	8
	Total suspensions	1

Three Accidents in 1967 and Continued
High Accident Rate Afterward

The next three drivers presented all had only three reported accidents during the year 1967. They all continued, however, to have three or more additional accidents during the four year period following the year 1967.

DRIVER: 1376
 RESIDENCE: Indianapolis
 LICENSE: Public passenger chauffeur
 AGE: 43
 SEX: Male
 RESTRICTIONS: Glasses or contact lenses, automatic transmission

During the years 1962 through 1966, this driver accumulated fifteen violation citations with a total point value of 50 points. He was placed on probation in 1963 and again in 1964, 1965 and 1966.

<u>DATE</u>	<u>ACTION</u>	<u>VIOLATION POINTS</u>
4/29/67	Speeding violation-85 mph in 70 mph zone	2
8/08/67	On probation (1)	
9/15/67	Injury accident	
10/16/67	Property damage accident	
11/11/67	Property damage accident	
1/25/68	Turning violation	2
2/08/68	Probation (1) closed	
12/13/68	Speeding violation-67 mph in 50 mph zone	3
2/28/69	Signal violation	4
6/11/69	Property damage accident	
1/16/70	Turning violation	2

1/17/70	Signal violation-local ordinance	2
1/22/70	Signal violation-local ordinance	2
1/22/70	Signal violation-local ordinance	2
7/13/70	On probation (2)	
7/28/70	Property damage accident	
9/18/70	Public passenger chauffeur license issued	
1/13/71	Probation (2) closed	
2/03/71	Property damage accident	
2/23/71	Turning violation	2
9/20/71	Speeding violation-42 mph in 30 mph zone	2
9/28/71	Public passenger chauffeur license issued	
(1/10/72	Signal violation-local ordinance	2)
(2/03/72	Turning violation	2)
2/15/72	Current status- 8 active violation points	

Five year summary:	Total accidents	6
	Total violations	10
	Total violation points	23
	Total suspensions	0

DRIVER: 2753
 RESIDENCE: Valparaiso
 LICENSE: Operator
 AGE: 22
 SEX: Male
 RESTRICTIONS: None

This driver had two speeding violation citations during the year 1966.

<u>DATE</u>	<u>ACTION</u>	<u>VIOLATION POINTS</u>
3/13/67	Property damage accident	
9/28/67	Property damage accident	

11/04/67	Signal violation	4
12/05/67	Injury accident	
2/28/68	Injury accident	
6/18/68	Operator license issued	
10/12/68	Speeding violation-60 mph in 45 mph zone	2
12/06/68	Speeding violation-57 mph in 45 mph zone	2
2/05/69	Property damage accident	
2/10/69	Speeding violation-50 mph in 30 mph zone	3
3/05/69	Property damage accident	
5/01/69	Property damage accident	
6/08/69	Injury accident	
8/16/69	Injury accident	
9/04/69	On probation	
12/22/69	Injury accident	
3/24/70	Injury accident	
5/16/70	License suspended-responsible for accident (12/22/69)	
6/25/70	Injury accident	
9/04/70	Probation closed	
10/15/70	Suspension closed	
1/03/71	Injury accident	
1/20/71	Operator license issued	
5/29/71	Injury accident	
2/10/72	Current status-clear	

Five year summary:	Total accidents	14
	Total violations	4
	Total violation points	11
	Total suspensions	1

DRIVER:	1032
RESIDENCE:	Indianapolis
LICENSE:	Public passenger chauffeur

AGE: 65
 SEX: Male
 RESTRICTIONS: Glasses or contact lenses

During the years 1960 through 1966, this driver had a record of two license suspensions and eleven violation citations totaling 39 points.

<u>DATE</u>	<u>ACTION</u>	<u>VIOLATION POINTS</u>
1/04/67	Property damage accident	
1/05/67	Injury accident	
1/30/67	Property damage accident	
9/20/67	Turning violation	2
1/19/68	Property damage accident	
4/11/68	Turning violation	2
6/21/68	Property damage accident	
9/24/68	Injury accident	
11/29/68	Sign violation	2
3/25/69	Signal violation	4
8/16/69	Injury accident	
8/20/69	Speeding violation-47 mph in 30 mph zone	3
9/02/69	License suspended(1)-failure to appear for driver instruction	
9/09/69	Signal violation	4
9/29/69	On probation(1)	
9/29/69	Suspension(1) closed	
1/23/70	Public passenger chauffeur license issued	
2/15/70	Injury accident	
2/12/70	Turning violation	2
2/16/70	Probation(1) closed	
2/16/70	On probation(2)	
3/24/70	Turning violation	2
10/05/70	On probation(3)	

10/05/70	Probation(2) closed
1/04/71	Public passenger chauffeur license issued
3/24/71	Property damage accident
6/07/71	License suspended(2)-responsible for accident (3/24/71)
10/05/71	Probation(3) closed
2/10/72	Current status-suspended

It is difficult to understand why a driver with this record should be issued a public passenger chauffeur's license less than four months after his suspension was closed and while he was still on probation.

Five year summary:	Total accidents	9
	Total violations	8
	Total violation points	21
	Total suspensions	2

Drivers With Multiple Suspensions

The following three drivers are presented as examples of individuals with multiple license suspensions. All had three or more suspensions during the five year study period. The last driver's license was suspended during the entire study period.

DRIVER:	2683
RESIDENCE:	South Bend
LICENSE:	Operator
AGE:	37
SEX:	Male
RESTRICTIONS:	None

This driver had a history of ten licenses suspensions during the years 1954 through 1966. Three of those suspensions were for being responsible for accidents.

<u>DATE</u>	<u>ACTION</u>	<u>VIOLATION POINTS</u>
3/25/67	Property damage accident	
5/24/67	License suspended(1)-responsible for accident(3/25/67)	
6/03/67	Property damage accident	
8/02/67	License suspended(2)-responsible for accident(6/03/67)	
9/16/67	Speeding violation-80 mph in 65 mph zone	2
10/14/67	Injury accident	
10/25/67	License suspended(3)-failure to appear for driver instruction	
11/15/67	Suspension(1) closed	
12/13/67	License suspended(4)-responsible for accident(10/14/67)	
6/03/68	Suspension(2) closed	
6/30/68	Driving while suspended violation	
6/30/68	License suspended(5)-driving while suspended	
10/14/68	Suspension(4) closed	
4/30/69	Suspension(5) closed	
5/18/69	Property damage accident	
7/03/69	Speeding violation-45 mph in 30 mph zone	2
9/13/69	License suspended(6)-responsible for accident(5/18/69)	
5/18/70	Suspension(6) closed	
3/11/71	Suspension(3) closed	
3/23/71	Operator license issued	
9/16/71	Property damage accident	
9/28/71	Operator license issued	

11/25/71 License suspended(7)-responsible
for accident(9/16/71)

4/21/72 Current status-suspended

Five year summary:	Total accidents	5
	Total violations	3
	Total violation points	4
	Total suspensions	7

DRIVER: 2018
RESIDENCE: Fort Wayne
LICENSE: Operator
AGE: 22
SEX: Male
RESTRICTIONS: None

During the years 1962 through 1966, this driver received eight violation citations. Four of these were serious violations, three of which required mandatory license suspension. His license was suspended one additional time during this period for failure to appear for driver instruction.

<u>DATE</u>	<u>ACTION</u>	<u>VIOLATION POINTS</u>
2/09/67	Property damage accident	
2/23/67	Reckless driving violation	6
4/10/67	License suspended(1)-responsible for accident(2/09/67)	
7/14/67	Suspension(1) closed	
9/13/67	Reckless driving violation	6
9/19/67	Property damage accident	
11/18/67	License suspended(2)-responsible for accident(9/19/67)	
12/03/67	Injury accident	

1/03/68	Sign violation	4
1/24/68	Speeding violation-63 mph in 45 mph zone	3
1/24/68	Driving while suspended violation	
2/09/68	Suspension(1) closed	
3/07/68	License suspended(3)-driving while suspended(1/24/68)	
9/19/68	Suspension(2) closed	
1/07/69	Suspension(3) closed	
1/23/69	Property damage accident	
2/17/69	Operator license issued	
5/04/69	Property damage accident	
5/22/69	Reckless driving violation	6
6/12/69	License suspended(4)-failure to appear for driver instruction	
9/12/69	On probation	
10/02/69	Suspension(4) closed	
6/12/70	Probation closed	
8/20/70	Negligent driving violation	2
9/30/70	Operator license issued	
7/03/71	Property damage accident	
7/14/71	Signal violation	4
9/02/71	License suspended(5)-responsible for accident(7/03/71)	
9/08/71	Speeding violation-89 mph in 70 mph zone	3
10/21/71	Suspension(5) closed	
2/16/72	Current status- 9 active violation points	

Five year summary:	Total accidents	6
	Total violations	9
	Total violation points	34
	Total suspensions	5

DRIVER: 1590
 RESIDENCE: St. Anthony
 LICENSE: Operator
 AGE: 45
 SEX: Male
 RESTRICTIONS: None

This driver had a record of four license suspensions, two of which were for driving while intoxicated, during the years 1960 through 1966. His last suspension was still in effect during the first part of the year 1967.

<u>DATE</u>	<u>ACTION</u>	<u>VIOLATION POINTS</u>
5/29/67	Property damage accident	
6/10/67	Reckless driving violation	6
6/10/67	Leaving the scene of an accident violation	
6/10/67	License suspended(1)-leaving the scene of an accident(6/10/67)	
7/01/67	Property damage accident	
7/10/67	Failed to report accident violation	7
7/10/67	Driving while suspended violation	
9/02/67	Injury accident	
10/09/67	Reckless speed violation	6
10/09/67	Driving while intoxicated violation	
10/09/67	Driving while suspended violation	
12/10/67	License suspended(2)-driving while suspended(7/10/67)	
6/10/68	Suspension(2) closed	
6/10/68	License suspended(3)-driving while suspended(10/09/67)	
10/21/68	Driving while intoxicated violation	
10/21/68	Driving while suspended violation	

12/10/68	License suspended(4)-driving while intoxicated(10/09/67)	
11/01/69	Property damage accident	
11/01/69	Property damage accident	
11/03/69	Reckless driving violation	6
11/03/69	Driving while suspended violation	
12/10/69	License suspended(5)-driving while intoxicated(10/21/68)	
3/15/70	Driving while intoxicated violation	
3/15/70	Driving while suspended violation	
3/22/70	License suspended(6)-responsible for accident(11/01/69)	
5/21/70	Suspension(6) closed	
12/10/70	License suspended(7)-driving while suspended(10/21/68)	
12/10/71	License suspended(8)-driving while suspended(11/03/69)	
12/14/71	Suspension(7) closed	
12/10/72*	License suspended(9)-driving while intoxicated(3/15/70)	
12/10/73*	License suspended(10)-driving while suspended(3/15/70)	
2/15/72	Current status-suspended until 6/08/74	

*These are dates that the suspensions will automatically go into effect for the past violations listed.

The fact that this driver's license was suspended during the entire five year study period gives emphasis to the need for better controls to prevent unlicensed individuals from driving.

Five year summary:	Total accidents	5
	Total violations	13
	Total violation points	25
	Total suspensions	10

Fifteen or More Accidents During
the Five Year Study Period

This last group of drivers are presented because they are certainly high accident drivers. All of them had fifteen or more accidents during the five year period. The last driver presented had a high of twenty-nine accidents.

DRIVER: 2670
RESIDENCE: Bloomington
LICENSE: Public passenger chauffeur
AGE: 40
SEX: Male
RESTRICTIONS: Glasses or contact lenses

This driver had a single speeding violation in 1965 and had his license suspended in 1966 for being responsible for an accident.

<u>DATE</u>	<u>ACTION</u>	<u>VIOLATION POINTS</u>
1/24/67	Property damage accident	
2/03/67	Property damage accident	
5/05/67	Property damage accident	
9/01/67	Property damage accident	
10/31/67	License suspended-responsible for accident(9/01/67)	
11/07/67	Property damage accident	
3/11/68	Suspension closed	
3/30/68	Speeding violation-56 mph in 45 mph zone	2
5/20/68	Public passenger chauffeur license issued	
6/15/68	Speeding violation-65 mph in 55 mph zone	2
10/29/68	Injury accident	

2/11/69	Property damage accident
3/27/69	Property damage accident
12/15/69	Property damage accident
12/20/69	Property damage accident
4/17/70	Property damage accident
9/24/70	Public passenger chauffeur license issued
10/26/70	Property damage accident
1/29/71	Property damage accident
5/26/71	Property damage accident
9/28/71	Public passenger chauffeur license issued
10/19/71	Injury accident
2/10/72	Current status-clear

Five year summary:	Total accidents	15
	Total violations	2
	Total violation points	4
	Total suspensions	1

DRIVER:	1395
RESIDENCE:	Indianapolis
LICENSE:	Public passenger chauffeur
AGE:	47
SEX:	Male
RESTRICTIONS:	None

This driver had two previous license suspensions, one in 1963 and one in 1964. He also had four violation citations, three of which were in 1963 and one in 1964. A public passenger chauffeur's license was issued to him in January 1965, and his violation record has been clear since that date.

<u>DATE</u>	<u>ACTION</u>	<u>VIOLATION POINTS</u>
1/13/67	Property damage accident	
3/14/67	License suspended-responsible for accident(1/13/67)	
3/27/67	Property damage accident	
6/12/67	Property damage accident	
8/21/67	Property damage accident	
10/11/67	Property damage accident	
10/23/67	Suspension closed	
11/29/67	Property damage accident	
2/13/68	Public passenger chauffeur license issued	
5/20/68	Property damage accident	
7/23/68	Property damage accident	
9/24/68	Property damage accident	
5/13/69	Property damage accident	
9/18/69	Property damage accident	
10/08/69	Property damage accident	
11/26/69	Injury accident	
1/18/70	Injury accident	
11/13/70	Injury accident	
12/17/70	Public passenger chauffeur license issued	
7/22/71	Property damage accident	
10/22/71	Injury accident	
12/30/71	Public passenger chauffeur license issued	
2/10/72	Current status-clear	

Five year summary:	Total accidents	17
	Total violations	0
	Total violation points	0
	Total suspensions	1

DRIVER: 1396
 RESIDENCE: Indianapolis
 LICENSE: Public passenger chauffeur
 AGE: 33
 SEX: Male
 RESTRICTIONS: Glasses or contact lenses, outside rearview mirror

This driver had eight violation citations on his record during the years 1955 and 1962. He also had three suspensions during this same period for failure to appear for driver instruction.

<u>DATE</u>	<u>ACTION</u>	<u>VIOLATION POINTS</u>
1/21/67	Property damage accident	
3/19/67	Property damage accident	
5/10/67	Injury accident	
5/11/67	Property damage accident	
11/07/67	Property damage accident	
1/18/68	Property damage accident	
1/19/68	Property damage accident	
3/18/68	Speeding violation-50 mph in 30 mph zone	2
7/13/68	Injury accident	
8/05/68	Injury accident	
3/09/69	Property damage accident	
9/04/69	Property damage accident	
10/01/69	Property damage accident	
10/15/69	Property damage accident	
11/10/69	Property damage accident	
1/06/70	Property damage accident	
1/30/70	Turning violation	2
2/06/70	Property damage accident	
4/05/70	Property damage accident	

4/10/70	Property damage accident	
5/15/70	Public passenger chauffeur license issued	
6/22/70	Property damage accident	
6/23/70	Injury accident	
7/06/70	License suspended(1)-responsible for accident(2/06/70)	
9/10/70	Suspension(1) closed	
10/18/70	Property damage accident	
10/30/70	Property damage accident	
2/05/71	Property damage accident	
2/22/71	Signal violation	2
5/24/71	Public passenger chauffeur license issued	
10/29/71	License suspended(2)-judgement	
12/07/71	Suspension(2) closed	
2/10/72	Current status- 2 active violation points	

Five year summary:	Total accidents	23
	Total violations	3
	Total violation points	6
	Total suspensions	2

DRIVER:	2745
RESIDENCE:	Indianapolis
LICENSE:	Public passenger chauffeur
AGE:	29
SEX:	Male
RESTRICTIONS:	None

This driver had one violation for speeding for which his license was suspended for one month in 1960.

<u>DATE</u>	<u>ACTION</u>	<u>VIOLATION POINTS</u>
1/20/67	Property damage accident	
6/22/67	Property damage accident	
9/05/67	Property damage accident	
10/26/67	Injury accident	
10/29/67	Property damage accident	
11/11/67	Property damage accident	
3/29/68	Chauffeur license issued	
7/06/68	Property damage accident	
8/29/68	Injury accident	
11/06/68	Property damage accident	
1/11/69	Injury accident	
5/30/69	Injury accident	
6/05/69	Property damage accident	
6/17/69	Property damage accident	
7/11/69	Speeding violation-44 mph in 30 mph zone	2
10/25/69	Property damage accident	
12/24/69	Property damage accident	
12/30/69	Property damage accident	
1/02/70	Injury accident	
1/07/70	Property damage accident	
1/12/70	Signal violation	2
1/16/70	Injury accident	
4/14/70	Injury accident	
5/04/70	Property damage accident	
5/18/70	Signal violation-local ordinance	2
6/12/70	Property damage accident	
8/15/70	Injury accident	
9/03/70	Injury accident	
9/18/70	Property damage accident	
11/08/70	Property damage accident	
2/12/71	Property damage accident	
2/18/71	Injury accident	
5/10/71	Operator license issued	

5/11/71	Property damage accident	
6/24/71	Signal violation-local ordinance	2
6/24/71	Signal violation-local ordinance	2
7/09/71	Public passenger chauffeur license issued	
2/10/72	Current status- 6 active violation points	

The longest period that this driver was able to go during the five year study period without having an accident was less than six months. During the same period he averaged approximately one accident every two months.

Five year summary:	Total accidents	29
	Total violations	5
	Total violation points	10
	Total suspensions	0

Summary Comments

The 15 case studies of high accident drivers in 1967 which have been presented indicate the dissimilar characteristics which are available from the driver's and accident records. Three cases are presented of high accident drivers who had no driving violations on their Indiana record. Two drivers are discussed who had some violations but who have had a much improved accident record after a bad 1967. Three case studies are presented of drivers who following a high accident record in 1967 continued to have a large number of accidents during the next four years. Violations, both predating and in the study period, are rather numerous for these three. Three drivers with more than one suspension of

their license, at least one of which was for driving while suspended, are also presented. These drivers, however, had only 5, 6 and 5 accidents during the five year period of which three or more were in 1967. Their accident record since 1967 has not been exceptionally excessive.

Finally, the only four drivers who had 15 or more accidents during the five years are reviewed. All of them have a history of violations and at least one suspension. The violations, however, in some of the cases were very few in the five year study period.

There is some indication that a study of the history of a few driver's driver and accident records over a period of several years would permit a reasonably accurate prediction of their future accident involvement. The evidence, however, must be so great that only an extremely small number of drivers could be so rated. Unfortunately, it appears this can be predicted only after they have had numerous accidents and violations. Even if these drivers were removed from the road - which driver license suspension does not do - only an extremely small reduction in the accidents in any one year would result.

It should also be noted that a study of drivers and their accident records is not now easily done in Indiana. Accident records and driver records are maintained separately and accident records are not maintained on a driver basis. The result is that a driver's records do not show his accident history.

CONCLUSIONS

The following conclusions concerning high accident drivers summarize the findings of this research.

1. As a group, the accident record of drivers who are involved in three or more accidents during a particular year tends to show much improvement during following years.
2. A large proportion of those drivers who are involved in three or more accidents during a particular year remain accident free during the following four years.
3. Nearly all high accident drivers are male.
4. Drivers with chauffeur's licenses and particularly public passenger chauffeur's licenses account for a large proportion of the individuals who are high accident drivers during one year and continue to be high accident drivers during the following years.
5. High accident drivers are likely to be residents of large urban areas.
6. The violation record of a driver who has a high accident involvement during a particular year has little relationship to his accident record in the following years.

7. The following are applicable to the average driver in a high accident group:
 - a. The more accidents in which a driver is involved during a particular year increases the probability that he will be involved in additional accidents during the following years.
 - b. As the number of accidents that a driver has increases, the seriousness of these accidents in terms of injury and fatality accidents tends to decrease.
8. In general, the accident record of a driver during one year, even when combined with information available in the Indiana drivers records, does not enable a reasonable prediction of the drivers accident record for future years. In a very few cases, where a history of numerous violations and accidents are recorded, a reasonable prediction of continued high accident involvement can possibly be made.

RECOMMENDATIONS

It would be very informative to be able to obtain additional information about high accident drivers that is not available from Indiana driver or accident records. Much more knowledge could be realized about high accident drivers if qualified researchers were allowed to conduct thorough investigations and interviews of selected drivers.

The accident record file is maintained on a yearly basis and in order to determine an individuals accident history it is necessary to search the records for each year that the history is desired. It is recommended that the accident record file be coded by driver license numbers and that an accident record file be maintained for each driver involved in one or more accidents.

At the present time it is very time consuming to correlate an individuals accident record with his driver record. The accident record file is maintained by the State Police while the driver record file is maintained by the Bureau of Motor Vehicles and both files are completely separate. It is recommended that these files be linked together. A properly designed system would make it simple for personnel from either the State Police or the Bureau of Motor Vehicles to obtain a record of an individual's complete driver and

accident history. This would greatly facilitate identification of problem drivers.

Additional study is needed on that class of drivers who hold chauffeur's and public passenger chauffeur's licenses. It appears that their involvement in the high accident groups is excessive to the proportion to their numbers in the driving population. This may be due to their increased exposure rate. Nevertheless, it appears that more stringent licensing controls would be in order for these drivers, particularly those in the public passenger chauffeur class.

LIST OF REFERENCES

1. Campbell, B. J., "Who Really Causes the Accidents?", Signal 99, North Carolina Governor's Highway Safety Program, Vol. 1, No. 2, Spring 1971.
2. Carlson, W. L., "Identifying the Problem Driver from State Driver Records", Research, Michigan University, Ann Arbor, May 1968, pp. 1-7.
3. Coppin, R. S., Peck, R. C., The 1964 California Driver Record Study, Part 8, The Prediction of Accident Involvement Using Concurrent Driver Record Data, Report No. 20, Research and Statistics Section, California Department of Motor Vehicles, Sacramento, January 1967.
4. Crancer, Alfred, Jr., "Involvement of the Problem Driver in Fatal Motor Vehicle Accidents", Traffic Quarterly, October 1967, pp. 601-610.
5. Crancer, Alfred, Jr., Accident and Violation Rates for Washington Drivers, Washington Department of Motor Vehicles, Olympia, Report No. 003, May 1967.
6. Crancer, Alfred, Jr., McMurray, Lucille, Credit Ratings as a Predictor of Driving Behavior and Improvement, Washington Department of Motor Vehicles, Olympia, Report No. 010, May 1968.
7. Goldstein, Leon G., "Psychological Aspects of Traffic Accidents", Traffic Digest and Review, Vol. 12, No. 6, July 1964, pp. 10-12, 23.
8. Homburger, Wolfgang S., "On the Analysis of Accident Trends", Accident Analysis and Prevention, Vol. 1, 1969, pp. 101-104.
9. Johnson, H. M., "The Detection and Treatment of Accident Prone Drivers", Psychological Bulletin, No. 43, 1946, pp. 489-533.
10. Kaestner, Noel F., "The Similarity of Traffic Involvement Records of Young Drivers and Drivers in Fatal Traffic Accidents", Traffic Safety Research Review, Vol. 8, No. 2, 1964, pp. 34-40.

11. McFarland, Ross, "Psychological and Behavioral Aspects of Automobile Accidents", Traffic Safety Research Review, Vol. 12, No. 3, September 1968, pp. 71-80.
12. O'Neill, P. A., Relationship of Accident Involvement and Number of Citations: 1966 Data, Washington Department of Motor Vehicles, Olympia, Report No. 006, 1967.
13. Penn, H. S., Causes and Characteristics of Single Car Accidents, Parts 3 & 4, California Highway Patrol, Sacramento, January 1965.
14. Schuster, D. H., Guilford, J. P., An Analysis of Accident Repeater and Chronic Violator Drivers, Traffic Project Report No. 1, U.S. Public Health Grant M-2353, Los Angeles, California, 1956.
15. Schuster, D. H., "Prediction of Follow-up Driving Accidents and Violations", Research Review, March 1968, pp. 17-21.
16. Shaw, L., Sichel, H. S., "The reduction of Accidents in a Transport Company by the Determination of the Accident Liability of Individual Drivers", Research Review, December 1961.
17. Sonquist, J. A., Morgan, J. N., The Detection of Interaction Effects, 5th ed., Cushing-Malloy, Inc., 1969.
18. Waller, Julian A., "Traffic Accidents, A Medical Viewpoint, Part 1," Automotive Industries, Vol. 136, No. 8, April 15, 1967, pp. 87-90.
19. Waller, Julian A., "Traffic Accidents, A Medical Viewpoint, Part 2," Automotive Industries, Vol. 136, No. 10, May 15, 1967, pp. 92-94.
20. Zylman, Richard, "Comparing Collision Drivers with the Driving Population-at-Risk: A Challenge to Conventional Methods," Behavioral Research in Highway Safety, Vol. 1, Summer 1970, pp. 78-86.

General References

Adams, James R., "Personality Variables Associated With Traffic Accidents," Behavioral Research in Highway Safety, Vol. 1, No. 1, January 1970, pp. 3-18.

Baker, Susan P., Characteristics of Fatally Injured Drivers - Final Report, School of Hygiene and Public Health, John Hopkins University, Baltimore, Maryland, February, 1970.

Berkey, Ben, "The Average Man - and the Non-average Driver," California Highway Patrolman, Vol. 32, No. 11, January 1969, pp. 7, 16, 32, 36.

Brenner, R., Mosher, W. W., The Use of Mass, Non-specific Accident Data in Research, Institute of Transportation and Traffic Engineering, University of California at Los Angeles, 1965.

Burg, Albert, "The Stability of Driving Record Over Time", Accident Analysis and Prevention, Vol. 2, No. 1, May 1970, pp. 57-65.

Coppin, R. S., Samuels, I., Control of the Negligent Driver, Part I, Characteristics of Negligent Drivers, C.F.S.T.I. PB 177 647, 1961.

Coppin, R. S., Van Oldenbeek, G., Control of the Negligent Driver, Part II, Driving Performance of Negligent Drivers, C.F.S.T.I. PB 177 648, 1962.

Coppin, R. S., et al., The Fatal Accident Reexamination Program in California, California Department of Motor Vehicles, Sacramento, January 1966.

Crancer, Alfred, Jr., Quiring, D. L., Driving Records of Persons Arrested for Illegal Drug Use, Washington Department of Motor Vehicles, Olympia, Report No. 011, May 1968.

Garrett, J. W., Tharp, J. B., Development of Improved Methods for Reduction of Traffic Accidents, National Cooperative Highway Research Program, Report 79.

Greenshields, B. D., Driving Behavior and Traffic Accidents, Transportation Institute, University of Michigan, Ann Arbor, November 1, 1962.

Greenshields, B. D., Platt, F. N., "Development of a Method of Predicting High Accident and High Violation Drivers", Journal of Applied Psychology, Vol. 51, No. 3, 1967, pp. 205-210.

Harrington, David M., "Factor Analysis of Driver Record", Traffic Safety and Research Review, Vol. 12, No. 3, September 1968, pp. 81-87.

Kraus, A. S., et al., "Pre-driving Identification of Young Drivers with a High Risk of Accidents", Journal of Safety, Research, Vol. 2, No. 2, June 1970, pp. 55-66.

Levonian, E., Prediction of Negligent Operators, Institute of Transportation and Traffic Engineering, University of California at Los Angeles, December 1963.

Levonian, E., "Prediction of Accidents and Violations Using Non-driving Predictors", American Association of Motor Vehicle Administrators-Summary of Proceedings: Research Conference and Workshop, April 4-7, 1966, pp. 6-8.

McFarland, Ross, "Measurement of Human Factors in Accident Research", Traffic Digest and Review, Vol. 14 No. 6, June 1966, pp. 4-11, 19, 20.

Rice, R. A., Tindall, J. T., "Police Use of Accident and Violation Records in Queensland for Accident Reduction and Driver Improvement Purposes," Australian Road Research, Proceeds of Third Conference, Vol. 3, Pt. 1, 1966, pp. 604-627.

Schuster, D. H., Guilford, J. P., The Psychometric Prediction of Problem Drivers, University of Southern California, Los Angeles, December 1961.

Shaw, L., Sichel, H. S., Accident Proneness, Pergamon Press, New York, 1971.

Stoner, J. E., et al., Highway Traffic Accident Records, Their Analysis, Use, and Improvement, Indiana University, 1966.

Waller, Julian A., "The High Traffic Accident Rate Among the Middle-aged, A problem and Its Solution, Part II", Traffic Digest and Review, Vol. 15, No. 9, September 1967, pp. 13-18.

APPENDICES

Appendix A

State of New York

The Board of Regents of the University of the State of New York

do hereby certify that the following is a true and correct copy of the

report of the Board of Regents of the University of the State of New York

APPENDICES

APPENDICES

Appendix A

State Record Summaries

The tables in this Appendix provide accident record summaries as compiled by the Indiana State Police and number of licensed drivers as compiled by the Indiana Bureau of Motor Vehicles.

Table 16. Licenses On File In Indiana.

	Operator		Chauffeur		Public Passenger Chauffeur	
	Male	Female	Male	Female	Male	Female
1971	1,314,664	1,281,718	183,814	1,545	18,932	2,992
Subtotal	2,596,382		185,359		21,924	
Grand Total			2,803,665			
1970	1,265,409	1,223,305	186,958	1,473	19,252	2,730
Subtotal	2,488,714		188,431		21,982	
Grand Total			2,699,127			
1969	1,337,596	1,279,664	200,385	1,265	19,028	2,501
Subtotal	2,617,260		201,650		21,529	
Grand Total			2,840,439			
1968	1,203,611	1,150,002	196,957	1,080	18,877	2,071
Subtotal	2,353,613		198,037		20,948	
Grand Total			2,572,598			
1967	1,258,299	1,157,635	219,700	1,261	22,059	2,137
Subtotal	2,415,934		220,961		24,196	
Grand Total			2,661,091			

The figures in this table reflect the number of licenses on file with the Bureau of Motor Vehicles at the end of a particular year. As the files are not purged every year to remove records of drivers who are deceased or have migrated, the figures are only an approximation of the actual number of drivers in Indiana.

Table 17. Standard Summary of Motor Vehicle Traffic Accidents

National Safety Council
Chicago

STANDARD SUMMARY OF MOTOR VEHICLE TRAFFIC ACCIDENTS

for INDIANA

for CALENDAR YEAR 1967

(Month or other period)

1. TYPE OF ACCIDENT	Number of Occurrences				Number of Persons			
	Total	Fatal	Non-Fatal	Property Damage	Total	Fatal	Non-Fatal	Property Damage
1. All accidents	17779	326	4167	10986	379	9157	1454	2950
2. Controlled to road	720	10	373	337	10	510	216	189
3. Intersection	1121	164	2958	-	144	3104	1158	1198
4. Intersection - traffic	117974	555	29893	87528	709	49092	13304	13056
5. Intersection - no traffic	20578	21	1915	18442	23	2608	1079	711
6. Non-intersection	743	78	263	402	98	383	201	89
7. Roadside	1271	30	1233	8	32	1322	444	570
8. Other	1218	1	140	1057	1	207	74	74
9. Unimproved	11413	114	3690	7407	134	5094	2654	1521
10. Other road	341	2	80	259	2	105	64	33
11. Other	523	14	184	323	15	221	112	81
12. Farm Veh.	200	1	78	121	1	112	48	35
Total	175884	1320	47294	127270	1570	71479	23818	20927

SUMMARY of All Reported Accidents

Legally responsible accidents are those involving death, bodily injury or property damage of \$500 or more.

☒ In the accident

☐ To the property of the victim

This summary includes reports and information available as of

March 1, 1968

REPORT PREPARED BY

INDIANA STATE POLICE
100 N. Senate Avenue
Indianapolis, Indiana
Rob't A. O'Neal Supt.

2A. COMPARATIVE TOTALS	Changes-1967 vs 1966				1967 vs 1966				1967 vs 1966			
	Total	Fatal	Non-Fatal	Property Damage	Total	Fatal	Non-Fatal	Property Damage	Total	Fatal	Non-Fatal	Property Damage
1. All accidents	+1893	+81	+744	17779	379	9157	15884	298	8411	+33	1454	2950
2. Controlled to road	- 97	- 2	-174	720	10	510	817	12	634	-17	216	189
3. Intersection	+ 141	Equal	+187	1121	144	3104	2944	144	2917	+8	1158	1198
4. Intersection - traffic	+5349	-40	-243	117974	709	49092	112427	749	49317	- 8	13304	13056
5. Intersection - no traffic	+ 244	+10	-156	20578	23	2608	20344	13	2542	+77	1079	711
6. Non-intersection	+ 61	- 2	- 20	743	98	383	481	100	403	- 2	201	89
7. Roadside	- 63	+11	- 31	1271	32	1322	1314	21	1353	+52	444	570
8. Other	+ 120	+ 1	+ 18	1218	1	207	1098	-	189	+8	74	74
9. Unimproved	-1117	-44	-538	11413	134	5094	12530	178	5684	-25	2654	1521
10. Other road	+ 52	+ 1	+ 18	341	2	105	289	1	87	+100	64	33
11. Other	- 40	+10	- 45	523	15	221	543	5	264	+200	112	81
12. Farm Veh.	+ 27	- 2	+ 6	200	1	112	173	3	106	- 67	48	35
Total	+6410	+ 8	-250	175884	1570	71479	149274	1564	71929	+ 2	23818	20927

* 1st death was of driver of tractor v. automobile, age 35, killed in July.

3. LOCATION	Number of Occurrences				Number of Persons			
	Total	Fatal	Non-Fatal	Property Damage	Total	Fatal	Non-Fatal	Property Damage
1. All accidents	15355	19	3126	11182	59	1419	1319	1118
2. Controlled to road	14147	15	1004	12618	50	5822	5822	5822
3. Intersection	14407	24	3874	12705	28	8102	8102	8102
4. Intersection - traffic	10944	27	2494	8240	29	3800	3800	3800
5. Intersection - no traffic	33902	99	7909	25594	104	11117	11117	11117
6. Non-intersection	25879	44	4497	19114	70	9515	9515	9515
7. Roadside	2156	20	172	1442	24	493	493	493
8. Other	1824	25	747	1034	31	1130	1130	1130
9. Unimproved	126154	357	29508	96251	399	42248	42248	42248
10. Other road	15311	319	5114	8874	144	8801	8801	8801
11. Other	22849	251	7433	15155	314	11289	11289	11289
12. Farm Veh.	12094	304	4396	7394	384	7949	7949	7949
Total	50823	468	17504	32349	1153	28944	28944	28944
Total	175884	1320	47294	127270	1570	71479	71479	71479

* Does not include Toll Road.... or Does include Toll Road....

4. TIME	Number of Occurrences				Number of Persons			
	Total	Fatal	Non-Fatal	Property Damage	Total	Fatal	Non-Fatal	Property Damage
1. All accidents	15355	60	10	117	7	173	173	173
2. Controlled to road	14147	66	104	12618	8	287	287	287
3. Intersection	14407	69	135	12705	9	274	274	274
4. Intersection - traffic	10944	33	107	8240	3	198	198	198
5. Intersection - no traffic	33902	33	100	25594	3	124	124	124
6. Non-intersection	25879	33	118	19114	3	179	179	179
7. Roadside	2156	36	634	1442	3	750	750	750
8. Other	1824	36	634	1034	3	695	695	695
9. Unimproved	126154	38	1443	96251	10	1351	1351	1351
10. Other road	15311	39	1185	8874	7	1202	1202	1202
11. Other	22849	34	891	15155	7	832	832	832
12. Farm Veh.	12094	36	919	7394	2	919	919	919
Total	50823	42	1206	32349	7	1329	1329	1329
Total	175884	42	1206	127270	7	1329	1329	1329

Calendar Year 1947 - STATEWIDE INDIANA MOTOR VEHICLE TRAFFIC ACCIDENTS

AGE OF CASUALTY	Number of Persons Killed												Number of Persons Injured											
	Transportation						Recreation						Education						Other					
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female						
0-17	58	34	22	22	15	7	-	-	-	2525	1370	1155	422	266	156	15	12	3						
18-24	60	38	22	24	20	4	10	6	4	3539	1992	1547	1083	719	364	451	362	89						
25-34	64	40	24	14	8	6	14	13	1	3243	1739	1504	462	264	196	572	482	90						
35-44	291	218	73	11	8	3	6	4	-	14462	8590	5872	282	156	126	128	111	17						
45-54	211	143	68	10	8	2	-	-	-	10460	6141	4319	102	61	38	18	15	3						
55-64	209	143	66	4	5	1	2	2	-	10858	4394	6464	144	102	62	7	6	1						
65-74	177	124	53	11	8	3	-	-	-	8653	4844	3809	141	94	47	10	9	1						
75-84	164	117	47	13	8	5	-	-	-	7137	3425	3512	158	99	59	4	2	2						
85-94	127	94	33	14	11	3	-	-	-	4715	2380	2335	158	84	72	8	8	-						
95-104	117	72	45	21	14	7	-	-	-	2698	1211	1287	125	69	56	5	4	1						
105-114	91	59	32	23	16	7	-	-	-	944	510	434	91	57	34	1	1	-						
115-124	1	1	-	1	1	-	-	-	-	2423	1117	1506	103	71	32	64	58	6						
Total	1570	1127	443	175	122	53	32	27	5	71679	39413	32066	1291	7069	1262	1283	1070	211						

4. **DIRECTIONAL ANALYSIS** – An ordered sequence of a series of columns, venturing etc., is classified according to the first aspect in the row.

A TWO MOTOR VEHICLE ALL		Year	First accident	Second accident	Third or more yrs.
a. Powering up again	31705	180	9535	21490	
b. Power down direction - left going through	2802	6	478	2320	
c. Same - not down through	7006	7	1361	5638	
d. Same - not stopped	14766	6	1270	12892	
e. Same - all others	529	-	55	496	
f. Power up/down direction - right going through	676	11	233	657	
g. Same - not off road - not through	5613	33	1793	3787	
h. Same - all others	467	6	67	396	
i. No event	1	-	-	1	
Total	45583	264	17762	17525	

2. TWO MOTOR VEHICLE ACC.	Year	1990-1994	1995-1999	2000-2004
1. Single operator involved - with injury	7563	220	2271	5052
2. Single operator involved - with property	11702	48	2679	8975
3. Two operator	20629	31	1984	18445
4. Two operator involved	13867	15	6230	9522
5. Two operator involved - property	357	-	20	337
6. Two operator involved - injury	6018	1	236	1803
7. Two operator involved - property	5777	10	1104	1358
8. Two operator involved - injury	8694	14	1233	7269
9. All other	760	2	126	634
10. Total	2	-	-	2
Total	73171	331	14124	58715

C. PEDESTRIAN ACCIDENTS	All Reported Accidents	Total Accidents			Accidents from the 1000		
		Total	Intersection	Non-Intersection	Total	Intersection	Non-Intersection
1. Car gets caught	270	161	17	144	250	652	1088
2. Car moving up	85	1	1	-	84	73	11
3. Car moving left	261	1	1	-	260	237	23
4. Car moving	61	-	-	-	61	8	53
5. Unknown	13	-	-	-	13	3	10
6. No event	-	-	-	-	-	-	-
Total	312	163	20	143	298	973	1088

ALL OTHER ACCOUNTS		Total	From Deposits	From Savings	From Transfers
1	Deposits	534	5	498	31
2	1. Payroll savings	2322	1	718	1600
3	2. Savings in cash	106	1	57	50
4	3. Savings	1281	4	514	721
5	Deposits	2648	134	1158	1436
6	1. Payroll savings	9091	112	2972	6007
7	2. Savings in cash	612	9	314	287
8	3. Savings	5148	112	2022	2994
9	Deposits	11390	188	3931	7271
10	1. Payroll savings	14	10	125	11
11	2. Savings	718	6	141	571
12	3. Savings	35,000	0	13,452	20,000

7. PEDESTRIAN ACTIONS BY BUS	Pedestrians	Type of Pedestrian Action (See Notes)									
		Stop	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44
1. Crossing or entering roadway or intersection	21	812	32	215	120	74	27	84	125	125	10
2. Walk - all or intersection	81	1315	257	593	163	64	20	70	83	63	12
3. Walking in roadway - with traffic	15	106	1	10	14	32	8	12	15	10	4
4. Walk - against traffic	6	57	2	7	8	13	1	8	9	7	2
5. Standing in roadway	4	85	4	3	5	18	10	25	11	7	2
6. Getting on or off other vehicle	1	28	2	4	2	4	5	7	3	1	-
7. Pushing or walking or running in roadway	2	40	-	1	-	2	6	24	7	-	-
8. Other walking in roadway	-	13	-	-	-	1	-	8	4	-	-
9. Riding in roadway	4	90	34	38	17	1	-	-	-	-	-
10. Other in roadway	10	312	48	80	46	27	17	43	32	13	6
11. Not in roadway	10	83	7	9	23	20	4	10	6	2	2
12. Not count	17	524	57	159	78	37	13	30	50	32	66
TOTAL	191	3,645	467	1,109	326	201	113	181	145	250	104

AGE OF DEVEL	All Children	First Borns	Later Borns
1. 0 to 4 years	475	13	241
2. 5 to 9	8428	64	2610
3. 10	13046	77	3780
4. 10 to 14	27245	104	8014
5. 15 to 19	45140	311	13497
6. 20 to 24	54224	395	16174
7. 25 to 29	45544	334	13204
8. 30 to 34	36372	254	10420
9. 35 to 39	23564	147	4731
10. 40 to 44	11561	97	3103
11. 45 to 49	3638	50	879
12. 50 and over	32240	14	2901
Totals	101921	1074	81459

SEX OF DRIVER	1980-1984	1985-1989	1990-1994
1. Male	217275	1430	58759
2. Female	74306	323	21917
3. Not stated	10340	14	980
Total	301921	1767	81656

ED RESIDENCE OF DRIVER	All Accidents	Major Accidents	Minor Accidents
1. Local residents	22572	1076	40913
2. Working residents in area	1398	583	13155
3. Non-residents of area	21748	303	6760
4. Not stated	8046	12	805
Totals	30187	1978	81623

TYPE OF VEHICLE	2000	2001	2002
1. Passenger car	285,378	1592	744,83
2. Passenger car and truck	251	-	52
3. Light truck	24,438	174	4,214
4. Heavy truck and semi-trailer	4,995	157	1,351
5. Other truck	336	1	57
6. Passenger and light truck	318	14	110
7. School	1,99	1	134
8. Bus	870	3	194
9. Other bus	452	3	97
10. Motorcycle	2,351	54	1,810
11. Other motorcycle	142	4	125
12. Other motorcycle	54,85	7	388
Total	322,730	2,032	1,401

11 ROAD SURFACE CONDITION	All locations	Typical locations	Other locations
1. Dry	1066.95	979	3008.6
2. Wet	4522.1	267	1281.3
3. Snow or ice	1773.7	40	331.6
4. Other	71.7	10	21.8
5. Not coded	771.5	6	8.1
	17586.4	1320	4720.4

14. KIND OF LOCATION	No. Occupants	Trans. Occupants	Motor Occupants
a. Building	127790	481	32718
b. Non-building	37930	833	13397
c. Non-motor	10144	6	1181
Total	175864	1320	47296

18. LIGHT CONDITION	#1 Occurrence	#2 Occurrence	#3 Occurrence
1. Absence	11090	407	2915
2. Shortly after	7448	58	1912
3. Sudden	5294	646	15927
4. No sound	3220	9	303
5. Other	17584	1320	17291

CONTRIBUTING CIRCUMSTANCES INDICATED	All Respondents	Female Respondents	Male Respondents
1. Spouse or partner	120%	235	1,839
2. Family or household of respondent	233%	141	725%

1	Household	4685	18	2223
2	Household	4096	40	1275
3	Household	2165	24	910
4	Household	3317	42	1412
5	Household	10219	6	3747
6	Household	4831	23	950
7	Household	19899	125	4914
8	Household	1735	10	569
9	Household	396	4	123
10	Household	7772	131	3124
11	Household	36476	1036	3135

Table 17. (Continued)

STANDARD SUMMARY OF MOTOR VEHICLE TRAFFIC ACCIDENTS

National Safety Council
Chicago

IN INDIANA

For Calendar Year 1968

1. TYPE OF ACCIDENT	Number of Accidents					Number of Persons				
	Total	Fatal	Non-Fatal	Property Damage	Total Killed	Total	Fatal	Non-Fatal	Property Damage	Total Injured
1. All accidents	19062	325	6981	11756	368	9694	1622	3017	2055	
2. Controlled traffic	711	4	380	327	6	491	183	201	107	
3. Pedestrian	2943	183	2760	-	186	2911	1029	1158	724	
4. Motor vehicle in traffic	120473	511	30491	89471	665	49726	12878	13017	23831	
5. Private motor vehicle	21705	23	2012	19670	25	2434	1066	764	654	
6. Commercial motor vehicle	722	54	266	402	70	389	205	99	85	
7. Bicyclist	1206	16	1179	11	16	1245	392	593	260	
8. Animal	1486	3	155	1328	3	185	61	68	56	
9. Farm vehicle	12896	139	1150	8607	154	5799	2940	1680	1179	
10. Other vehicle	380	1	74	305	1	102	38	41	23	
11. Other nonmotorist	542	11	180	351	11	220	99	74	47	
12. Farm Veh.	266	13	89	164	14	119	48	62	29	
Total	182392	1283	48717	132392	1519	73385	23561	20774	29050	

SUMMARY - All Reported ACCIDENTS

Legally responsible accidents are those involving death or injury to property belonging to

50.00

100.00

To the property of the owner

This summary includes reports and information available to

March 12, 1969

REPORT PREPARED BY

Indiana State Police
100 N. Senate Ave.
Indianapolis, Indiana 46204
Robert K. Konkle, Supt.

2A. COMPARATIVE TOTALS	Year Month Last Year			This Year to Date			Year Month Last Year			Change Compared to Last Year
	All accidents	Fatal	Non-Fatal	All accidents	Fatal	Non-Fatal	All accidents	Fatal	Non-Fatal	
1. All accidents	19062	325	6981	17779	379	9157	17779	379	9157	-29
2. Controlled traffic	711	4	380	720	10	510	720	10	510	-40
3. Pedestrian	2943	183	2760	3125	166	3104	3125	166	3104	+12
4. Motor vehicle in traffic	120473	511	30491	117976	709	19051	117976	709	19051	-62
5. Private motor vehicle	21705	23	2012	20578	23	2408	21705	23	2408	+9
6. Commercial motor vehicle	722	54	266	742	98	383	722	54	383	-29
7. Bicyclist	1206	16	1179	1271	32	1322	1206	16	1322	-50
8. Animal	1486	3	155	1218	1	207	1486	3	207	+200
9. Farm vehicle	12896	139	1150	11413	134	5096	12896	139	5096	+15
10. Other vehicle	380	1	74	341	2	105	380	1	105	-50
11. Other nonmotorist	542	11	180	523	15	221	542	11	221	-27
12. Farm Veh.	266	13	89	200	1	112	266	13	112	+130
Total	182392	1519	73385	175886	1570	71679	182392	1519	71679	-32

2B. MILEAGE RATES

	This Year to Date	Last Year Same Period	Percent Change
1. All accidents	1519	1570	-32
2. Controlled traffic	29,363	28,351	+3.6
3. Private motor vehicle	5.17	5.53	-6.5
4. Commercial motor vehicle	4.36	4.65	-6.2
5. Fatal Accidents	1283	1320	-28
6. Persons Injured	73385	71679	+24

3. LOCATION	A. Tollways Administered by Government Agencies (See Highway Dept. sources, cities, towns, villages, etc.)					B. Tollways Administered by Independent Agencies (Gas, gasoline, electric, telephone and communications, etc.)				
	Total	Fatal	Non-Fatal	Property Damage	Total Killed	Total	Fatal	Non-Fatal	Property Damage	Total Injured
1. 1,000 to 10,000	14889	46	3229	11614	50	1655				
2. 10,000 to 25,000	17245	50	4254	12941	60	6174				
3. 25,000 to 50,000	17002	40	3794	13168	43	5320				
4. 50,000 to 100,000	11384	25	2545	8814	25	3649				
5. 100,000 to 250,000	15094	101	8116	26877	117	11618				
6. 250,000 or more	24897	78	6448	18371	84	9186				
Under 1000	2092	19	436	1637	21	623				
1000-2500	1112	24	870	3248	27	1257				
Total urban and rural	126745	383	29692	96670	427	42482				
1. Controlled access highway	14747	301	5257	9189	356	8716	1198	16	317	865
2. State routes	25149	244	8125	16780	281	12297				
3. County routes	12102	293	4540	7569	369	8005				
U.S. Roads	2151	46	786	1319	64	1292				
Interstate	54449	884	18708	34857	1070	30310				
Total road *	182392	1283	48717	132392	1519	73385				

* Does not include Toll Road.... ** Does include Toll Road....

4. TIME	Hour		Hour		Hour		Hour		Hour		Hour		Hour		Hour		Hour	
	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal	Total	Fatal
6. 6:00-7:00	4917	64	289	5	454	9	440	4	557	8	565	7	1298	20	1314	11		
7. 7:00-8:00	4135	60	225	3	376	5	335	7	436	5	441	9	1158	18	1164	13		
8. 8:00-9:00	3783	65	157	-	291	5	272	2	365	6	420	7	1109	25	1169	20		
9. 9:00-10:00	2168	46	127	-	180	4	163	2	209	7	231	7	640	14	618	12		
10. 10:00-11:00	1511	31	105	3	114	1	138	5	155	4	179	5	390	6	430	7		
11. 11:00-12:00	1369	28	115	1	157	2	157	1	165	10	176	4	324	7	275	3		
12. 12:00-1:00	3878	35	529	4	674	6	692	7	592	7	683	2	443	5	262	4		
13. 1:00-2:00	8002	47	1257	10	1611	6	1594	7	1342	10	1375	7	587	4	236	3		
14. 2:00-3:00	7135	36	1074	6	1326	5	1268	6	1092	6	1210	1	804	6	361	6		
15. 3:00-4:00	6211	31	915	4	970	4	867	3	833	6	884	2	1094	6	648	6		
16. 4:00-5:00	7328	42	1005	3	1074	5	937	10	917	1	979	8	1602	7	814	8		
17. 5:00-6:00	8933	36	1226	5	1225	3	1151	4	1141	4	1221	5	1966	10	1003	5		
18. 6:00-7:00	9805	50	1297	3	1372	10	1160	4	1242	7	1492	3	1812	12	1216	11		
19. 7:00-8:00	9094	37	1235	4	1210	2	1164	3	1192	9	1304	9	1770	5	1219	5		
20. 8:00-9:00	10061	51	1347	10	1393	4	1263	8	1261	5	1540	6	1911	13	1366	5		
21. 9:00-10:00	14552	72	2064	9	2194	11	2131	13	2109	10	2482	7	2133	10	1439	12		
22. 10:00-11:00	16285	76	2474	7	2415	8	2365	15	2382	10	3024	17	2116	6	1509	13		
23. 11:00-12:00	14284	75	2073	20	2051	8	2019	11	2109	7	2691	9	1905	13	1436	7		
24. 12:00-1:00	9892	69	1243	8	1207	6	1270	10	1332	6	1873	21	1708	12	1259	6		
25. 1:00-2:00	8967	83	1048	13	1058	10	1075	6	1259	12	1823	19	1691	13	1013	10		
26. 2:00-3:00	7391	59	875	5	848	6	882	12	1114	5	1467	9	1428	13	777	9		
27. 3:00-4:00	7160	49	814	7	926	3	850	5	1078	8	1408	11	1376	12	708	3		
28. 4:00-5:00	6709	63	725	10	759	6	780	7	891	6	1530	17	1460	14	564	3		
29. 5:00-6:00	6041	77	589	9	595	4	709	14	716	8	1475	18	1535	22	422	2		
30. 6:00-7:00	2784	1	398	-	396	-	320	-	361	-	479	-	498	1	332	-		
Total	182392	1283	23206	119	24076	133	24202	166	24830	167	30959	210	32765	274	21554	184		

Calendar Year - 1968 Statewide All Reported Accidents

4 AGE OF CASUALTY	Number of Persons Killed										Number of Persons Injured									
	Total killed			Pedestrians			Bicyclists				Total injured			Pedestrians			Bicyclists			
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
1. Under 5	58	28	86	24	13	37	-	-	-	2446	1301	1145	353	231	122	13	9	22	4	4
2. 5 to 9	65	34	99	38	19	57	3	1	4	3509	2026	1483	1081	684	397	408	334	742	74	74
3. 10 to 14	42	29	71	9	6	15	5	3	8	3166	1688	1478	423	239	184	582	496	1078	86	86
4. 15 to 19	234	172	406	9	6	15	4	2	6	14367	8499	5868	257	161	96	126	112	238	14	14
5. 20 to 24	211	167	378	7	6	13	1	1	2	11209	6519	4690	145	90	55	12	9	21	3	3
6. 25 to 29	231	181	412	14	7	21	-	-	-	11550	6700	4850	139	94	45	6	3	9	3	3
7. 30 to 34	170	126	296	11	9	20	1	1	2	8845	4693	4152	142	82	60	7	4	11	3	3
8. 35 to 39	155	115	270	14	11	25	1	1	2	7346	3718	3628	147	93	54	4	2	6	2	2
9. 40 to 44	137	99	236	16	12	28	-	-	-	4721	2371	2350	120	68	52	5	4	9	1	1
10. 45 to 49	109	64	173	20	12	32	1	1	2	2552	1280	1272	115	73	42	4	4	8	-	-
11. 50 and over	101	70	171	32	20	52	-	-	-	1029	518	511	93	58	35	5	5	10	-	-
12. Not stated	6	3	9	3	2	5	-	-	-	2645	1151	1494	95	57	38	45	41	86	4	4
Totals	1519	1088	2607	197	123	320	16	10	26	73385	40464	32921	3110	1930	1180	1217	1023	2240	194	194

6. DIRECTIONAL ANALYSIS - An accident consisting of a series of collisions, overturning, etc., is classified according to the first event on the road.

A. TWO MOTOR VEHICLE ACC.	Total				Total				Total			
	Accidents	Fatal	Non-Fatal	Property Damage	Accidents	Fatal	Non-Fatal	Property Damage	Accidents	Fatal	Non-Fatal	Property Damage
1. Following in single file	32685	150	9683	22852								
2. From same direction - left going straight	3123	3	568	2552								
3. Same - one turn, one straight	7310	18	1396	5896								
4. Same - one stopped	16504	1	4158	12345								
5. Same - all others	679	-	58	621								
6. From opposite direction - left going straight	592	4	171	417								
7. Same - one turn, one straight	5726	35	1923	3768								
8. Same - all others	442	-	41	401								
9. Not stated	-	-	-	-								
Totals	67061	211	17998	48852								

B. TWO MOTOR VEHICLE ACC.	Total				Total				Total			
	Accidents	Fatal	Non-Fatal	Property Damage	Accidents	Fatal	Non-Fatal	Property Damage	Accidents	Fatal	Non-Fatal	Property Damage
1. Going opposite direction - left turning	7625	213	2449	4963								
2. Going same direction - left turning	12679	60	2835	9784								
3. On the parallel	21813	23	2021	19769								
4. On one stopped or yielding	13899	8	4291	9600								
5. On one entering parked position	338	-	31	307								
6. On one leaving parked position	3971	2	206	3763								
7. On one entering alley or driveway	5715	8	1414	4293								
8. On one leaving alley or driveway	8653	10	1252	7391								
9. All others	668	2	88	578								
10. Not stated	1	-	-	1								
Totals	75362	326	14587	60449								

C. PEDESTRIAN ACCIDENTS	Total				Total				Total			
	Accidents	Fatal	Non-Fatal	Property Damage	Accidents	Fatal	Non-Fatal	Property Damage	Accidents	Fatal	Non-Fatal	Property Damage
1. Crossing street	2596	171	22	149	2425	599	1826					
2. Crossing street - left turn	79	3	2	1	76	70	6					
3. Crossing street - right turn	208	8	8	-	200	188	12					
4. Crossing street - all others	49	1	-	1	48	7	41					
5. All others	11	-	-	-	11	2	9					
6. Not stated	-	-	-	-	-	-	-					
Totals	2943	183	32	151	2760	866	1894					

D. ALL OTHER ACCIDENTS	Total				Total				Total			
	Accidents	Fatal	Non-Fatal	Property Damage	Accidents	Fatal	Non-Fatal	Property Damage	Accidents	Fatal	Non-Fatal	Property Damage
1. Collision with	529	2	495	32								
2. Fixed object or animal	2651	1	750	1900								
3. Obstructed view	109	-	62	47								
4. Left turn	1325	5	506	814								
5. Collision with	2889	73	1107	1709								
6. Fixed object or animal	10249	139	3402	6706								
7. Obstructed view	603	4	318	281								
8. Left turn	5611	134	2186	3291								
9. Right turn	12135	192	4290	7653								
10. Pedal four wheel vehicle	105	10	91	4								
11. All others	820	3	165	652								
12. Not stated	-	-	-	-								
Totals	37026	563	13372	23091								

7. PEDESTRIAN ACTIONS BY AGE	Age of Pedestrian (Total and Injured)											
	Total	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 and over	Not stated
1a. Crossing at wrong location or intersection	33	724	34	206	105	63	30	75	97	105	9	
2a. Same - not at intersection	82	1286	209	602	150	58	36	81	75	64	11	
3a. Walking on roadway - with traffic	23	100	1	6	21	25	4	14	15	11	3	
4a. Same - against traffic	5	66	5	9	9	15	9	4	7	7	1	
5a. Stepping in roadway	8	79	2	4	9	7	11	21	12	9	4	
6a. Stepping across all other vehicles	1	41	2	6	2	3	6	10	9	2	1	
7a. Pushing or leaning on vehicle or roadway	1	36	-	1	2	6	7	10	8	1	1	
8a. Other walking in roadway	-	13	-	-	-	3	2	3	4	-	1	
9a. Playing in roadway	3	76	22	37	13	3	1	-	-	-	-	
10a. Other in roadway	21	305	39	90	38	28	20	38	24	22	6	
11a. Not in roadway	3	105	5	10	20	18	9	19	13	9	2	
12a. Not stated	17	476	58	148	63	37	17	31	33	28	61	
Totals	197	3307	377	1119	432	266	152	306	297	258	100	

Shower of vehicles in same parking location are included

8. AGE OF DRIVER	Total			Total			Total		
	Accidents	Fatal	Non-Fatal	Accidents	Fatal	Non-Fatal	Accidents	Fatal	Non-Fatal
1. 10 to 14 years	640	8	205						
2. 15	9104	41	2595						
3. 16	13536	61	3919						
4. 17 to 19	27781	179	7991						
5. 20 to 24	48882	319	14299						
6. 25 to 29	57135	424	17041						
7. 30 to 34	45024	299	13278						
8. 35 to 39	36950	266	10687						
9. 40 to 44	24205	164	6775						
10. 45 to 49	11667	97	3169						
11. 50 and over	3791	58	956						
12. Not stated	32292	26	4835						
Totals	311007	1942	83750						

9. SEX OF DRIVER	Total			Total			Total		
	Accidents	Fatal	Non-Fatal	Accidents	Fatal	Non-Fatal	Accidents	Fatal	Non-Fatal
1. Male	222555	1618	59852						
2. Female	77414	301	22900						
3. Not stated	11038	23	998						
Totals	311007	1942	83750						

10. RESIDENCE OF DRIVER	Total			Total			Total		
	Accidents	Fatal	Non-Fatal	Accidents	Fatal	Non-Fatal	Accidents	Fatal	Non-Fatal
1. Local resident	232513	1075	62250						
2. Non-local resident in state	44944	537	13654						
3. Non-resident of state	22043	307	6785						
4. Not stated	11507	23	1061						
Totals	311007	1942	83750						

Vehicles in same parking location are included

12. TYPE OF VEHICLE	Total			Total			Total		
	Accidents	Fatal	Non-Fatal	Accidents	Fatal	Non-Fatal	Accidents	Fatal	Non-Fatal
1. Passenger car	293925	1519	76637						
2. Passenger car and truck	260	-	50						
3. Truck and car	28305	162	6732						
4. Truck and car and truck	5267	231	1408						
5. Other motor vehicle	388	-	85						
6. Four motor vehicle and truck	293	13	95						
7. Truck	441	1	125						
8. Bus	899	4	216						
9. School bus	456	2	88						
10. Motorcycle	1744	34	1360						
11. Motor vehicle in water body	75	-	67						
12. Other not stated	6180	16	408						
Totals	338233	1982	87271						

13. ROAD SURFACE CONDITION	Total			Total			Total		
----------------------------	-------	--	--	-------	--	--	-------	--	--

Table 17. (Continued)

National Safety Council
Chicago

STANDARD SUMMARY OF MOTOR VEHICLE TRAFFIC ACCIDENTS

In

INDIANA
(Cont.)

For Calendar Year 1969

(Month or other period)

1. TYPE OF ACCIDENT	Number of Accidents					Number of Persons				
	Total	Fatal	Non-Fatal	Property Damage	Total Injured	Total	Fatal	Non-Fatal	Property Damage	Total Injured
A. All accidents	19969	345	7096	12528	1407	10012	4633	3163	2216	8412
1. Collision	667	6	336	325	6	114	187	177	80	364
2. Pedestrian	2798	178	2620	-	181	2746	991	1109	646	2100
3. Motor vehicle vs. motor vehicle	128135	575	31723	95831	734	51560	13275	13749	24536	27024
4. Motor vehicle vs. pedestrian	22641	18	2071	20552	18	2531	1070	796	685	1866
5. Bicycle vs. motor vehicle	776	77	273	376	96	129	231	109	89	340
6. Bicycle vs. pedestrian	1175	27	1131	17	28	1204	405	570	229	984
7. Horse vs. motor vehicle	1733	7	199	1527	7	255	90	84	81	174
8. Horse vs. pedestrian	15227	158	4854	10215	176	6583	3295	1957	1331	5242
9. Other motor vehicle	346	1	83	262	1	104	31	39	34	70
10. Other pedestrian	569	7	185	377	7	213	91	69	53	262
11. Farm Veh.	263	11	80	169	15	115	41	45	29	86
Total	19969	345	7096	12528	1407	10012	4633	3163	2216	8412

SUMMARY OF All Reported ACCIDENTS

Report prepared by the Bureau of Motor Vehicle Safety, Indiana State Police

150.00 - 100

100 - 100

100 - 100

This summary includes all reported accidents in

March 31, 1970

REPORT PREPARED BY

Indiana State Police
100 N. Senate Ave.
Indianapolis, Indiana 46204
Robert K. Kenkle, Supt.

2A. COMPARATIVE TOTALS	Last Year (1968)					This Year (1969)					Change (1969-1968)
	Total	Fatal	Non-Fatal	Property Damage	Total Injured	Total	Fatal	Non-Fatal	Property Damage	Total Injured	
A. All accidents	19969	345	7096	12528	1407	10012	4633	3163	2216	8412	+11
1. Collision	667	6	336	325	6	114	187	177	80	364	+3
2. Pedestrian	2798	178	2620	-	181	2746	991	1109	646	2100	+10
3. Motor vehicle vs. motor vehicle	128135	575	31723	95831	734	51560	13275	13749	24536	27024	+28
4. Motor vehicle vs. pedestrian	22641	18	2071	20552	18	2531	1070	796	685	1866	+37
5. Bicycle vs. motor vehicle	776	77	273	376	96	129	231	109	89	340	+75
6. Bicycle vs. pedestrian	1175	27	1131	17	28	1204	405	570	229	984	+113
7. Horse vs. motor vehicle	1733	7	199	1527	7	255	90	84	81	174	+14
8. Horse vs. pedestrian	15227	158	4854	10215	176	6583	3295	1957	1331	5242	+36
9. Other motor vehicle	346	1	83	262	1	104	31	39	34	70	+7
10. Other pedestrian	569	7	185	377	7	213	91	69	53	262	+10
11. Farm Veh.	263	11	80	169	15	115	41	45	29	86	+10
Total	19969	345	7096	12528	1407	10012	4633	3163	2216	8412	+11

2B. MESSAGE RATES	Per 100,000 Population		Per 100,000 Registered Motor Vehicles	Per 100,000 Licensed Drivers
	1968	1969		
A. All accidents	1676	1519	+10	
1. Collision	31902	29363	+9	
2. Pedestrian	5.25	5.17	+08	
3. Motor vehicle vs. motor vehicle	4.4	4.4	Even	
4. Motor vehicle vs. pedestrian	11.1	10.8	+10	
5. Bicycle vs. motor vehicle	7.6	7.6	Even	
6. Bicycle vs. pedestrian	11.1	10.8	+10	
7. Horse vs. motor vehicle	11.1	10.8	+10	
8. Horse vs. pedestrian	11.1	10.8	+10	
9. Other motor vehicle	11.1	10.8	+10	
10. Other pedestrian	11.1	10.8	+10	
11. Farm Veh.	11.1	10.8	+10	

7. LOCATION		A. Trafficway Administered by Cooperative Agency State Highway Dept. (includes county, town, village, etc.)					B. Trafficway Administered by Noncooperative Agency Towns, villages, cities, towns, counties and cities, etc.							
		Number of Accidents			Number of Persons		Number of Accidents			Number of Persons				
		Total	Fatal	Non-Fatal	Property Damage	Total	Injured	Total	Fatal	Non-Fatal	Property Damage	Total	Injured	
1. All accidents	1. 1,000 or less	16410	37	3402	12971	45	1841							
	2. 1,001 to 25,000	18163	58	4335	14070	64	6197							
	3. 25,001 to 50,000	17583	34	3845	13704	37	5354							
	4. 50,001 to 100,000	12387	23	2718	9646	28	3876							
	5. 100,001 to 250,000	36002	116	8076	27808	126	11699							
	6. 250,001 or more	25266	66	6442	18758	78	9157							
	Under 1000	2121	27	1591	1950	34	740							
	1000-2500	4486	16	950	3520	20	1374							
	Total above	133018	377	30284	102377	432	43238							
	Complete county highway								1270	13	315	942	16	528
2. Interstate	1. Interstate	16165	335	5653	10177	401	9587							
	2. County roads	27826	126	8710	16790	368	13151							
	US Routes	12973	305	4656	8012	377	8092							
	Interstate	2997	57	1053	1857	62	1720							
	Total above	59961	1023	20072	36866	1228	32660							
Total above and below		131219	1113	92651	142185	1676	76226							

Standard Summary of Motor Vehicle Traffic Accidents - Indiana - Calendar Year 1969
All Reported

*** Does not include late reports.**

A. AGE OF CASUALTY	Number of Persons Killed									Number of Persons Injured								
	Total			Fatal			Non-Fatal			Total			Fatal			Non-Fatal		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Under 16	63	32	95	20	7	27	13	-	13	2,866	1,315	1,171	343	227	116	14	12	26
16 to 19	55	31	86	24	14	38	10	6	16	3,445	1,964	1,081	944	587	357	428	348	776
20 to 24	70	51	121	23	18	41	5	13	18	3,228	1,757	1,471	402	269	153	533	455	988
25 to 29	257	192	449	14	10	24	4	5	9	15,188	9,035	6,153	283	174	109	112	99	211
30 to 34	262	188	450	10	9	19	1	-	1	12,147	7,135	5,012	159	95	64	9	8	17
35 to 39	262	217	479	11	11	22	3	-	3	12,156	7,168	4,988	144	97	47	13	10	23
40 to 44	188	140	328	14	10	24	4	-	4	8,826	4,759	4,067	139	87	52	7	5	12
45 to 49	178	123	301	17	13	30	4	1	5	7,903	3,768	4,135	122	65	57	6	6	12
50 to 54	155	98	253	23	17	40	6	-	6	4,810	2,379	2,431	116	63	53	4	4	8
55 to 59	122	73	195	19	13	32	6	-	6	2,717	1,296	1,421	134	66	68	7	7	14
60 to 64	84	49	133	20	11	31	9	2	11	1,079	567	512	82	47	35	3	3	6
65 and over	-	-	-	-	-	-	-	-	-	2,641	1,077	1,564	62	37	25	38	32	70
Totals	1,676	1,194	2,870	198	133	331	65	27	92	76,226	42,220	34,006	2,930	1,794	1,136	1,174	989	2,163

B. DIRECTIONAL ANALYSIS - An accident involving a series of collisions, overtaking, etc., is classified according to the first event on the road.

A. TWO MOTOR VEHICLE ACC.	Total	Fatal Accidents	Non-Fatal Accidents	Property Damage Acc.
1. Following at close range	34,193	198	10,200	23,795
2. Front-end collision - both going straight	3,396	-	614	2,782
3. Side - rear collision - both going straight	7,266	8	1,390	5,868
4. Side - rear collision - one stopped	17,922	5	4,280	13,647
5. Side - side collision	802	-	65	737
6. Front-end collision - both going straight	623	1	207	415
7. Side - rear collision - one stopped	6,508	32	2,099	4,377
8. Side - side collision	377	-	43	334
9. Not stated	1	-	-	1
Totals	71,088	264	18,838	52,006

B. TWO MOTOR VEHICLE ACC.	Total	Fatal Accidents	Non-Fatal Accidents	Property Damage Acc.
1. Going against direction - both moving	7,691	229	2,403	5,059
2. Going same direction - both moving	13,789	60	3,161	10,568
3. One car parked	22,709	18	2,080	20,611
4. One car stopped in traffic	14,533	20	4,154	10,359
5. One car entering parked position	379	-	20	359
6. One car leaving parked position	4,297	-	216	4,081
7. One car entering alley or driveway	6,397	13	1,554	4,830
8. One car leaving alley or driveway	9,537	7	1,357	8,173
9. All others	596	4	87	505
10. Not stated	1	-	-	1
Totals	79,929	351	15,032	64,546

C. PEDESTRIAN ACCIDENTS	All Pedestrians	Fatal Accidents	Non-Fatal Accidents	Property Damage Acc.
1. Crossing street	2,466	171	139	2,295
2. Crossing sidewalk	58	1	1	57
3. Crossing road	224	4	4	220
4. Crossing driveway	45	2	2	43
5. All others	5	-	-	5
6. Not stated	-	-	-	-
Totals	2,798	178	144	2,620

D. ALL OTHER ACCIDENTS	Total	Fatal Accidents	Non-Fatal Accidents	Property Damage Acc.
1. Collisions with: a. Motor vehicle, truck, tractor, etc.	517	6	164	447
b. Fixed object - road	3,001	-	557	2,444
c. Unimproved road	123	-	66	57
d. Left wheel	1,647	2	614	1,031
e. Motor vehicle, truck, tractor, etc.	2,366	105	1,127	1,134
f. Fixed object - road	12,228	159	3,997	8,072
g. Unimproved road	545	7	270	268
h. All others	5,722	152	2,203	3,367
i. Collisions with: a. Motor vehicle, truck, tractor, etc.	12,612	198	4,280	8,034
b. Fixed object - road	112	9	98	5
c. All others	1,561	2	145	1,374
10. Not stated	-	-	-	-
Totals	40,434	640	14,161	25,633

7. PEDESTRIAN ACTIONS BY AGE	Total	Age of Pedestrian, Killed and Injured									
		Under 16	16 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 and over
1. Crossing at intersection - on crosswalk	37	726	25	203	97	67	40	75	96	116	7
2. Side - rear collision	77	1,105	211	442	171	77	28	66	59	48	3
3. Walking in roadway - with traffic	14	87	1	6	21	24	7	13	9	5	1
4. Side - rear collision	6	50	-	7	7	12	4	5	6	8	1
5. Standing in roadway	6	62	1	4	1	8	12	22	11	3	-
6. Crossing on or off other vehicle	2	34	5	4	2	5	5	6	3	4	-
7. Pushing or pulling on vehicle in roadway	5	30	-	1	2	3	7	8	7	2	-
8. Other walking in roadway	-	19	-	-	-	1	2	7	7	-	2
9. Pushing or pulling	1	49	15	25	5	3	-	1	-	-	-
10. Other in roadway	16	307	33	100	39	26	17	42	30	16	4
11. Not in roadway	13	78	2	11	14	9	11	12	10	8	1
12. Not stated	21	581	70	165	66	62	36	54	40	45	43
Totals	198	3,128	363	968	425	297	169	311	278	255	62

8. AGE OF DRIVER	All Accidents	Fatal Accidents	Non-Fatal Accidents
1. Under 16	692	10	222
2. 16	10,601	42	2,930
3. 17	15,183	70	4,160
4. 18 to 19	30,144	197	8,469
5. 20 to 24	53,304	358	15,256
6. 25 to 29	60,485	472	17,790
7. 30 to 34	45,615	333	13,192
8. 35 to 39	38,781	275	10,881
9. 40 to 44	25,243	156	6,883
10. 45 to 49	12,590	116	3,371
11. 50 to 54	4,177	48	1,067
12. Not stated	34,140	19	2,898
Totals	330,865	2,096	87,119

9. SEX OF DRIVER	All Accidents	Fatal Accidents	Non-Fatal Accidents
1. Male	235,616	1,724	62,114
2. Female	84,343	356	24,052
3. Not stated	10,906	16	953
Totals	330,865	2,096	87,119

10. RESIDENCE OF DRIVER	All Accidents	Fatal Accidents	Non-Fatal Accidents
1. Local resident	246,993	1,226	64,721
2. Visiting residence in state	4,9013	585	14,453
3. Not resident of state	23,297	269	6,931
4. Not stated	11,562	16	1,014
Totals	330,865	2,096	87,119

11. TYPE OF VEHICLE	All Accidents	Fatal Accidents	Non-Fatal Accidents
1. Passenger car	310,573	1,667	79,263
2. Passenger car, not motor	300	1	61
3. Truck, dump truck	31,312	192	7,317
4. Truck, motor and semi-trailer	5,584	201	1,549
5. Other truck combination	379	2	81
6. Farm tractor and/or farm implement	291	15	91
7. Tractor	459	-	107
8. Bus	803	3	197
9. School bus	517	1	100
10. Motorcycle	1,984	55	1,552
11. Motor scooter or motor bicycle	52	-	41
12. Other and not stated	6,888	16	439
Totals	359,142	2,153	90,798

13. ROAD SURFACE CONDITION	All Accidents	Fatal Accidents	Non-Fatal Accidents
1. Dry	124,783	1,092	34,942
2. Wet	4,0553	245	11,013
3. Snow or ice	19,905	57	3,656
4. Other	558	10	176
5. Not stated	8,450	9	864
Totals	194,249	1,413	50,651

14. KIND OF LOCATION	All Accidents	Fatal Accidents	Non-Fatal Accidents
1. Rural	138,711	525	33,998
2. Suburban	44,479	674	15,406
3. Not stated	11,059	14	1,247
Totals	194,249	1,413	50,651

15. LIGHT CONDITION	All Accidents	Fatal Accidents	Non-Fatal Accidents
1. Daylight	125,272	659	31,553
2. Dusk or dawn	8,023	67	2,044
3. Darkness	58,200	674	16,808
4. Not stated	27,554	13	246
Totals	194,249	1,413	50,651

16. CONTRIBUTING CIRCUMSTANCES INDICATED	All Accidents	Fatal Accidents	Non-Fatal Accidents
1. Speed too fast	15,159	292	5,998
2. Following too close	25,234	156	7,794
3. Wrong turn or lane	7,354	172	2,526
4. Improper passing	4,692	37	1,523
5. Poor road design	2,069	42	868
6. Unimproved safety	3,630	42	1,534
7. Faulty road design	10,443	8	3,615
8. Wrong speed	5,010	27	1,004
9. Other improper driving	25,098	100	6,027
10. Faulty vehicle	1,813	9	583
11. Improper lights	381	4	111
12. Not seen	7,724	251	3,076
Totals	108,807	1,140	36,559

Table 17. (Continued)

STANDARD SUMMARY OF MOTOR VEHICLE TRAFFIC ACCIDENTS

National Safety Council
Chicago

IN INDIANA

For Calendar Year - 1970

Includes all later.

I. TYPE OF ACCIDENT	Number of Accidents				Number of Persons			
	Total	Fatal	Non-Fatal	Property Damage	Total Killed	Total Injured	Total	Non-Fatal
1. Run off road	18785	308	6745	11732	355	9351	1168	3092
2. Overturned on road	755	4	389	362	8	520	221	203
3. Pedestrian	2891	177	2714	-	183	2842	1035	1119
4. Motor vehicle in traffic	134764	547	31796	102421	679	51387	12753	14310
5. Fatal motor vehicle	24143	9	1957	22177	11	2435	988	743
6. Railroad car	754	70	302	382	94	445	245	102
7. Bicyclist	1339	25	1308	6	26	1405	457	678
8. Animal	1877	2	214	1661	2	285	85	119
9. Road block	16311	159	5085	11067	173	6851	3247	2198
10. Other street	335	2	51	282	2	55	25	20
11. Other non-street	616	19	200	397	19	226	105	78
12. Farm Veh.	310	10	83	217	11	129	53	16
Totals	202880	1332	50844	150704	1563	75931	23382	22709

SUMMARY of All Reported ACCIDENTS

Locality separate accidents and those involving death.

Locality injury or property damage of

\$ 50.00 or less

☒ in the accident☐ to the property of one person

This summary includes reports and information available as of

April 21, 1971

REPORT PREPARED BY

Indiana State Police
100 North Senate Ave.
Indianapolis, Indiana 46204
Robert E. Konkle, Supt.

II. COMPARATIVE TOTALS	Last Month Last Year			This Year to Date			Same Period Last Year		
	All accidents	Fatal	Non-Fatal	All accidents	Fatal	Non-Fatal	All accidents	Fatal	Non-Fatal
1. Run off road	18785	308	6745	18785	308	6745	18785	308	6745
2. Overturned on road	755	4	389	755	4	389	755	4	389
3. Pedestrian	2891	177	2714	2891	177	2714	2891	177	2714
4. Motor vehicle in traffic	134764	547	31796	134764	547	31796	134764	547	31796
5. Fatal motor vehicle	24143	9	1957	24143	9	1957	24143	9	1957
6. Railroad car	754	70	302	754	70	302	754	70	302
7. Bicyclist	1339	25	1308	1339	25	1308	1339	25	1308
8. Animal	1877	2	214	1877	2	214	1877	2	214
9. Road block	16311	159	5085	16311	159	5085	16311	159	5085
10. Other street	335	2	51	335	2	51	335	2	51
11. Other non-street	616	19	200	616	19	200	616	19	200
12. Farm Veh.	310	10	83	310	10	83	310	10	83
Totals	202880	1332	50844	202880	1332	50844	202880	1332	50844

III. MILEAGE RATES	This Year to Date	Last Year Same Period	Percent Change
1. Motor vehicle traffic deaths	1563	1676	-7
2. Estimated motor vehicle mileage involved in fatal	32.58	31.90	+3
3. Deaths per 100,000 motor vehicle miles	4.8	5.3	-5
4. Fatal accidents per 100,000 motor vehicle miles	4.1	4.4	-3
5. Fatal Accidents	1332	1413	-6
6. Persons Injured	75931	77970	-3

I. LOCATION	A. Trafficway Administered by Government Agencies (State Highways, Dept. of Transportation, etc.)						B. Trafficway Administered by Non-Government Agencies (Private property, utilities, business, etc.)					
	Number of Accidents			Number of Persons			Number of Accidents			Number of Persons		
1. U.S. Routes	Total	Fatal	Non-Fatal	Total	Fatal	Non-Fatal	Total	Fatal	Non-Fatal	Total	Fatal	Non-Fatal
2. State Routes	17777	57	3645	14075	67	5185						
3. County Roads	19401	46	4232	15123	51	6045						
4. U.S. Routes	18690	40	3970	14680	41	5575						
5. State Routes	12745	30	2641	10074	32	3758						
6. County Roads	37338	114	8210	29014	126	11858						
7. U.S. Routes	27345	63	6520	20762	65	9072						
8. State Routes	2678	19	536	2123	22	819						
9. County Roads	1685	34	917	3734	36	1329						
Totals	140659	403	30671	109585	440	43641	1276	9	328	939	11	610
10. U.S. Routes	16306	311	5562	10433	380	9231						
11. State Routes	28696	278	8735	19683	318	13045						
12. County Roads	12630	272	4426	7932	346	7625						
13. U.S. Routes	3313	59	1122	2132	68	1779						
14. State Routes	60945	220	19845	40180	1112	31680						
15. County Roads	202880	1332	50844	150704	1563	75931						

* Does not include Toll Road.... ** Does include Toll Road....

II. TIME	Total				Rainfall				Snow				Fog				Other			
	All	Fatal	Non-Fatal	Property Damage	All	Fatal	Non-Fatal	Property Damage	All	Fatal	Non-Fatal	Property Damage	All	Fatal	Non-Fatal	Property Damage	All	Fatal	Non-Fatal	Property Damage
1. 5:00 a.m. - 5:59 a.m.	5296	59	329	3	494	4	495	5	662	10	721	6	1321	17	1274	14				
2. 6:00 a.m. - 6:59 a.m.	4502	54	215	1	372	4	403	3	539	9	511	6	1136	18	1266	13				
3. 7:00 a.m. - 7:59 a.m.	3867	72	177	3	313	5	318	9	423	8	417	10	1135	18	1084	19				
4. 8:00 a.m. - 8:59 a.m.	2709	54	123	2	214	5	209	2	292	5	302	7	758	18	811	14				
5. 9:00 a.m. - 9:59 a.m.	1758	32	88	1	150	2	141	2	194	4	233	4	479	10	473	10				
6. 10:00 a.m. - 10:59 a.m.	1540	21	154	1	181	4	157	1	202	3	242	3	301	6	303	3				
7. 11:00 a.m. - 11:59 a.m.	3897	35	660	3	688	8	539	5	673	6	678	4	396	6	263	3				
8. 12:00 p.m. - 12:59 p.m.	8476	34	1744	6	1666	6	1336	6	1107	4	1552	4	535	4	296	4				
9. 1:00 p.m. - 1:59 p.m.	7720	37	1462	9	1426	7	1175	6	1303	1	1276	6	703	4	375	4				
10. 2:00 p.m. - 2:59 p.m.	6568	38	1023	4	963	1	835	4	938	7	1068	7	1045	13	696	2				
11. 3:00 p.m. - 3:59 p.m.	7200	31	1202	5	1067	4	989	7	1094	2	1224	3	1617	3	707	7				
12. 4:00 p.m. - 4:59 p.m.	10418	38	1594	11	1352	2	1348	2	1415	5	1657	11	2095	5	957	2				
13. 5:00 p.m. - 5:59 p.m.	11196	64	1680	14	1480	6	1453	11	1469	8	1915	11	2031	8	1168	6				
14. 6:00 p.m. - 6:59 p.m.	10827	61	1609	7	1428	5	1293	6	1465	8	1749	13	2034	13	1271	9				
15. 7:00 p.m. - 7:59 p.m.	11525	61	1736	7	1409	5	1416	8	1634	7	1873	11	2108	13	1349	10				
16. 8:00 p.m. - 8:59 p.m.	16585	66	2690	15	2196	8	2368	6	2440	7	2957	13	2273	10	1461	7				
17. 9:00 p.m. - 9:59 p.m.	17658	70	2818	17	2527	12	2526	14	2701	7	3224	7	2231	18	1581	5				
18. 10:00 p.m. - 10:59 p.m.	15289	72	2516	9	2055	13	2093	7	2292	15	2914	13	1945	7	1474	8				
19. 11:00 p.m. - 11:59 p.m.	10944	71	1494	8	1310	12	1427	9	1471	12	2068	14	1867	7	1307	9				
20. 12:00 a.m. - 12:59 a.m.	9958	78	1285	7	1140	11	1214	4	1375	12	1979	22	1812	15	1153	7				
21. 1:00 a.m. - 1:59 a.m.	8190	86	1080	11	926	7	973	13	1143	13	1565	18	1571	11	932	13				
22. 2:00 a.m. - 2:59 a.m.	7703	66	953	13	893	6	967	2	1088	14	1528	12	1467	10	807	9				
23. 3:00 a.m. - 3:59 a.m.	7343	63	779	8	831	5	891	4	1039	9	1564	24	1560	9	679	4				
24. 4:00 a.m. - 4:59 a.m.	6972	67	702	11	649	5	751	4	908	9	1694	13	1736	21	1492	4				
25. 5:00 a.m. - 5:59 a.m.	3969	2	571	1	545	1	483	1	554	1	735	1	651	2	430	1				
Totals	202880	1332	28684	175	26455	147	25468	131	28723	185	35626	248	34867	266	22609	146				

Standard Summary of Motor Vehicle Traffic Accidents - Calendar Year 1970 Includes all late reports.

AGE OF CASUALTY	Status of Person Killed									Status of Person Injured								
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
1. 14 & under	47	26	21	20	14	6	-	-	-	2507	1341	1166	358	227	131	15	12	3
2. 15-19	61	37	24	33	19	14	7	5	2	3554	2010	1544	933	584	349	146	86	66
3. 20-24	56	35	21	11	9	2	12	7	5	3474	1908	1566	412	260	152	626	496	130
4. 25-29	277	209	68	16	11	5	6	6	-	14938	8622	6316	340	201	139	143	118	25
5. 30-34	211	166	45	10	6	4	-	-	-	12382	7152	5230	151	96	55	29	25	4
6. 35-39	225	179	47	11	9	2	-	-	-	12011	6931	5080	158	96	62	8	7	1
7. 40-44	160	114	46	12	9	3	-	-	-	8444	4543	3901	123	65	58	5	3	2
8. 45-49	150	98	52	12	8	4	1	1	-	7356	3708	3648	119	95	54	8	7	1
9. 50-54	157	102	55	19	16	3	-	-	-	4968	2480	2488	134	82	52	5	5	-
10. 55-59	116	62	54	20	14	6	-	-	-	2612	1215	1397	112	59	53	6	6	-
11. 60 & over	97	58	39	28	23	5	-	-	-	1122	576	546	73	41	32	3	3	-
12. Not stated	6	3	3	1	1	-	-	-	-	2583	1112	1471	86	62	24	53	50	3
Totals	1563	1068	495	193	139	54	26	19	7	75931	41598	34333	3029	1868	1161	1347	1092	255

6. DIRECTIONAL ANALYSIS: An accident consisting of a series of collisions, overrunning, etc., is classified according to the first event on the road.

A. TWO MOTOR VEHICLE ACC.	Total	First Accidents	Other Accidents	Persons Struck by
1. Passing or being passed	35135	193	10189	24753
2. From same direction - both going straight	3519	3	544	2972
3. From same direction - both turning	8110	16	1484	6610
4. From same direction - one going straight, one turning	19508	6	4195	15387
5. From opposite direction - both going straight	845	-	55	790
6. From opposite direction - both turning	661	1	197	463
7. From opposite direction - one going straight, one turning	6552	30	2080	4442
8. From same direction - one going straight, one turning	343	-	44	299
9. All other	-	-	-	-
Totals	74753	249	18788	55716

B. TWO MOTOR VEHICLE ACC.	Total	First Accidents	Other Accidents	Persons Struck by
1. Going opposite direction - both going straight	8089	209	2441	5439
2. Going same direction - both going straight	14047	62	3036	10949
3. One on parked	24252	9	1967	22276
4. One on stopped or moving	15280	11	4211	11058
5. One on moving parked position	445	-	14	401
6. One on moving parked position	4406	-	186	4220
7. One on moving other in driveway	7097	9	1705	5383
8. One on moving other in driveway	10143	7	1392	8744
9. All other	719	6	90	623
10. Not stated	2	-	1	1
Totals	84450	313	15043	69094

C. PEDESTRIAN ACCIDENTS	All Accidents	First Accidents	Other Accidents	Persons Struck by
1. Crossing against	2506	166	24	142
2. Crossing right	92	-	-	92
3. Crossing left	220	10	9	210
4. Crossing	61	1	1	60
5. All other	11	-	-	11
6. Not stated	1	-	-	1
Totals	2891	177	33	2714

D. ALL OTHER ACCIDENTS	Total	First Accidents	Other Accidents	Persons Struck by
1. Stationary vehicle - none struck	540	4	495	41
2. First struck in road	3189	1	932	2256
3. Struck in road	69	1	67	1
4. Left road	1410	-	521	889
5. Stationary vehicle - none struck	2539	93	1293	1153
6. First struck in road	13125	158	4153	8814
7. Struck in road	608	4	323	301
8. Left road	5362	142	2130	3090
9. Stationary vehicle - none struck	12019	168	4096	7755
10. First struck in road	146	18	122	6
11. All other	1699	4	167	1528
12. Not stated	-	-	-	-
Totals	40725	593	14299	25834

7. PEDESTRIAN ACTIONS BY AGE	Age of Pedestrian Killed or Injured											
	Total	First Accidents	Other Accidents	Total	First Accidents	Other Accidents	Total	First Accidents	Other Accidents	Total	First Accidents	Other Accidents
1. Crossing or entering roadway or intersection	31	686	28	186	87	68	30	69	113	99	6	6
2. Same - not in intersection	72	1098	212	454	151	78	26	53	68	47	9	9
3. Walking in roadway or on sidewalk	23	124	1	4	18	52	12	14	14	8	1	1
4. Same - against traffic	11	49	1	4	7	13	1	8	5	10	3	3
5. Standing in roadway	12	77	1	4	3	9	16	19	16	6	3	3
6. Getting on or off other vehicle	-	34	-	4	4	3	5	11	4	1	2	2
7. Pushing or pulling on vehicle or surface	3	30	-	-	1	6	12	5	5	1	2	2
8. Other walking in roadway	-	19	-	-	1	5	6	6	6	1	-	-
9. Playing in roadway	2	67	12	35	15	5	-	-	-	-	-	-
10. Other in roadway	17	299	37	77	51	29	23	40	23	14	5	5
11. Not in roadway	7	100	7	11	8	21	7	22	14	9	1	1
12. Not stated	15	639	79	187	78	72	32	50	46	37	58	58
Totals	193	3222	378	966	423	356	161	304	314	213	87	87

8. AGE OF DRIVER	All Accidents	First Accidents	Other Accidents
1. 14 & under	763	10	286
2. 15	10948	57	2900
3. 16	15423	77	4056
4. 17-19	30434	173	8375
5. 20-24	56156	360	15711
6. 25-29	62801	417	17757
7. 30-34	46649	281	12826
8. 35-39	39611	268	10806
9. 40-44	26600	188	7019
10. 45-49	13180	103	3358
11. 50 & over	4637	50	1172
12. Not stated	38754	23	2985
Totals	345956	2007	87251

9. SEX OF DRIVER	All Accidents	First Accidents	Other Accidents
1. Male	242532	1641	61375
2. Female	91646	347	24837
3. Not stated	11778	19	1039
Totals	345956	2007	87251

10. RESIDENCE OF DRIVER	All Accidents	First Accidents	Other Accidents
1. Local resident	258728	1175	64889
2. Resident elsewhere in state	51256	528	14508
3. Resident out of state	23109	295	6725
4. Not stated	12863	19	1129
Totals	345956	2007	87251

12. TYPE OF VEHICLE	All Accidents	First Accidents	Other Accidents
1. Passenger car	322261	1549	78317
2. Passenger car not driven	309	-	60
3. Truck or truck tractor	34090	215	7762
4. Truck tractor and semi-trailer	5706	183	1538
5. Other truck combination	354	-	64
6. Farm tractor and/or farm vehicle	331	13	92
7. Trolley	437	1	106
8. Bus	859	5	193
9. School bus	558	1	113
10. Motorcycle	2386	58	1834
11. Motor vehicle in road closely	99	1	79
12. Other not listed	8306	13	565
Totals	375696	2039	80723

13. ROAD SURFACE CONDITION	All Accidents	First Accidents	Other Accidents
1. Dry	126157	1046	34322
2. Wet	43388	225	11486
3. Snow or ice	22997	47	3951
4. Other	576	8	154
5. Not stated	9762	6	931
Totals	202880	1332	50844

14. KIND OF LOCATION	All Accidents	First Accidents	Other Accidents
1. Business	146499	537	34536
2. Residential	44344	787	15078
3. Not stated	12037	8	1230
Totals	202880	1332	50844

15. LIGHT CONDITION	All Accidents	First Accidents	Other Accidents
1. Daylight	130628	635	31814
2. Dawn or dusk	7929	56	1974
3. Darkness	58751	634	16545
4. Not stated	5572	7	511
Totals	202880	1332	50844

16. CONTRIBUTING CIRCUMSTANCES INDICATED	All Accidents	First Accidents	Other Accidents
1. Speed too fast	14235	253	5611
2. Failed to yield right of way	26027	174	7969
3. Wrong lane or road	7560	178	2516
4. Improper overtaking	4726	30	1413
5. Failed stop sign	2239	31	950
6. Improper vehicle signal	3672	33	1588
7. Failed to clear	10631	5	3537
8. Wrong vehicle type	5089	24	1047
9. Other improper driving	27003	106	6525
10. Inattention	1845	6	607
11. Impaired sight	4419	1	136
12. Not seen driving	7881	226	3119
Totals	111327	1067	35018

National Safety Council
Chicago

For Calendar Year - 1971

Includes all Later

SUMMARY OF All Reported ACCIDENTS

Logging equipment accidents are those involving death, disability, injury or property damage of:

\$50.00 per year

☐ To the readers of our journal

The authors would like to thank the referees for their helpful comments.

May 11, 1972

REPORT PREPARED BY

Indiana State Police
100 N. Senate Avenue
Indianapolis, Indiana 46204
Robert K. Konkle, Supt.

PER MILEAGE RATES		Old Rate Per Mile	New Rate Per Mile	Change
1	Motor vehicle liability	1611	1563	+ 3
2	Commercial motor vehicle liability (excluding taxicab)	35.43	32.54	+6.8
3	Auto (not over 100,000 lbs.) liability only	4.5	4.8	- .3
4	Auto (not over 100,000 lbs.) liability only	3.8	4.1	- .3
5	Fatal Accidents	1353	1332	+1.6
6	Persons Injured	73337	75971	-3.5

5 TIME	Twp		Roads		Towns		Rivers		Thames		Fishes		Squirrels		Turtles		No. total	
	All	Fall	All	Fall	All	Fall	All	Fall	All	Fall	All	Fall	All	Fall	All	Fall	All	Fall
1. 100	5039	57	313	1	500	5	529	6	543	7	726	8	1355	15	1073	15		
2. 100	4068	48	229	4	347	2	360	3	411	4	523	13	1126	8	1072	14		
3. 100	3701	75	144	2	302	9	305	5	405	8	478	6	1071	23	996	22		
4. 100	2555	49	104	-	203	6	215	1	268	7	342	5	723	18	700	12		
5. 100	1594	34	114	2	149	6	149	1	156	1	198	4	422	9	406	11		
6. 100	1624	30	177	1	150	4	147	3	224	4	235	2	351	10	270	6		
7. 100	4018	40	648	6	667	5	769	4	686	13	634	6	370	5	242	1		
8. 100	8237	47	1478	7	1544	8	1602	10	1496	9	1388	5	465	5	264	3		
9. 100	7399	36	1310	6	1330	6	1344	7	1243	3	1100	8	743	3	329	3		
10. 100	6340	37	1009	8	881	4	904	2	809	4	977	5	1080	5	680	9		
11. 100	7976	26	1102	6	1080	3	1006	4	1055	3	1223	4	1654	5	816	1		
12. 100	9898	46	1217	7	1328	4	1295	4	1776	9	1669	6	2068	13	945	3		
13. 100	10642	51	1406	7	1432	6	1451	14	1446	7	1901	10	1916	5	1090	2		
14. 100	10142	40	1420	3	1293	2	1256	4	1289	6	1787	8	1920	13	1177	4		
15. 100	11148	57	1571	8	1416	5	1410	4	1436	10	1977	14	1985	10	1333	6		
16. 100	16072	76	2288	7	2389	12	2301	14	2321	8	3183	18	2186	9	1404	8		
17. 100	16932	75	2476	9	2415	12	2406	7	2940	9	3384	13	2220	13	1491	12		
18. 100	14665	83	1977	10	2070	7	2038	11	2138	13	3042	15	1886	12	1464	15		
19. 100	10572	85	1325	9	1302	10	1246	8	1371	7	2209	25	1720	14	1399	12		
20. 100	9384	67	1153	9	1057	5	1144	12	1182	8	2038	12	1715	14	1095	7		
21. 100	7824	79	899	9	888	10	964	11	1067	12	1693	13	1422	21	691	3		
22. 100	7582	63	876	6	883	5	975	9	982	9	1643	17	1339	11	824	6		
23. 100	6981	63	737	10	805	7	840	6	821	5	1714	14	1407	20	657	1		
24. 100	6487	85	586	9	705	8	759	8	787	12	1686	20	1419	21	945	7		
25. 100	3747	4	539	1	464	-	505	-	521	-	672	1	628	2	418	-		
TOTAL	104607	1353	25148	142	25602	151	24920	158	26573	178	36422	252	33191	284	21641	183		

Calendar Year - 1971 Includes All Lates
Indiana Standard Summary of Motor Vehicle Traffic Accidents All Reported

AGE OF CASUALTY	Total Fatal						Total Reported						Total Reported					
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
1. 14 & under	48	24	24	16	13	3	-	-	-	2430	1340	1156	374	250	124	11	10	1
2. 15-19	70	37	33	40	26	14	9	4	5	3263	1791	1472	900	549	351	428	326	102
3. 20-24	65	35	30	16	5	11	10	9	1	3329	1811	1518	435	253	182	582	486	96
4. 25-29	248	187	61	14	13	1	5	5	-	14344	8261	6083	274	170	104	166	138	28
5. 30-34	217	168	49	4	-	-	-	-	-	12177	7104	5093	150	89	61	36	28	8
6. 35-39	244	191	53	10	8	2	-	-	-	11877	6959	4918	143	89	54	19	11	8
7. 40-44	189	142	47	16	11	5	1	1	-	7857	4187	3670	136	87	49	8	7	1
8. 45-49	187	144	43	24	19	5	1	-	-	6992	3519	3473	141	86	55	5	4	1
9. 50-54	141	95	46	18	17	1	-	-	-	4693	2389	2304	144	75	69	3	3	-
10. 55-59	120	75	45	20	17	3	1	1	-	2601	1182	1419	106	55	51	3	3	-
11. 60 & over	80	51	29	16	11	5	-	-	-	1162	582	580	73	47	26	7	7	-
12. Not stated	2	1	1	-	-	-	-	-	-	2526	1062	1464	114	82	32	68	55	13
Totals	1611	1130	481	194	164	50	27	20	7	73337	40187	33150	2990	1832	1158	1736	1078	258

B. DIRECTIONAL ANALYSIS An accident consisting of a series of collisions, overturning, etc., is classified according to the first event on the road.

A. TWO MOTOR VEHICLE ACC.	Total	First Accidents	Other Accidents	Property Damage Acc.
1. Front-end impact	32686	177	9682	22825
2. Rear-end impact	3384	-	518	2866
3. Side-impact	6112	13	1705	6394
4. Other impact	17213	12	3711	13490
5. Other impact	1183	1	89	1093
6. Front-end impact - right side impact	561	1	164	396
7. Other - rear-end impact	6612	29	2238	4345
8. Other - all others	289	-	24	265
9. Not stated	2	-	1	1
Totals	70042	235	18132	51675

B. TWO MOTOR VEHICLE ACC.	Total	First Accidents	Other Accidents	Property Damage Acc.
1. Front-end impact - right side impact	7134	227	2257	4650
2. Other - rear-end impact	14133	68	3771	10994
3. Other - side impact	22114	17	1918	20179
4. Other - rear-end impact	13746	11	3811	9924
5. Other - side impact	399	-	21	378
6. Other - rear-end impact	4148	-	195	3953
7. Other - side impact	7472	16	1981	5475
8. Other - rear-end impact	2820	13	1446	8761
9. Not stated	827	1	66	760
10. Not stated	1	-	-	1
Totals	79794	353	14766	64675

C. PEDESTRIAN ACCIDENTS	All Pedestrian Accidents	Total	First Accidents	Other Accidents	Property Damage Acc.
1. Car going straight	2518	177	21	156	2341
2. Car turning right	51	1	1	-	50
3. Car turning left	204	-	-	-	204
4. Car backing	56	3	-	3	53
5. Not stated	11	-	-	-	11
Totals	2840	181	22	159	2659

D. ALL OTHER ACCIDENTS	Total	First Accidents	Other Accidents	Property Damage Acc.
1. Front-end impact - right side impact	580	3	542	35
2. Front-end impact	3246	-	893	2353
3. Other - rear-end impact	129	-	69	60
4. Other - side impact	866	2	351	533
5. Other - rear-end impact	2595	104	1276	1215
6. Other - side impact	15701	127	5161	10413
7. Other - rear-end impact	801	4	419	378
8. Other - side impact	4706	133	1912	2661
9. Other - rear-end impact	11150	201	3874	7075
10. Other - side impact	110	8	98	4
11. Not stated	2027	2	218	1807
Totals	41931	584	14813	26534

E. PEDESTRIAN ACTIONS BY AGE	Age of Pedestrian	Total	First Accidents	Other Accidents	Property Damage Acc.
1. Crossing in crossing	27	571	26	153	79
2. Crossing in crossing	74	1059	208	439	150
3. Crossing in crossing	28	114	2	6	18
4. Crossing in crossing	4	46	4	8	7
5. Crossing in crossing	11	78	3	8	5
6. Crossing in crossing	3	36	2	5	2
7. Crossing in crossing	-	36	-	3	-
8. Crossing in crossing	1	11	-	-	1
9. Crossing in crossing	8	86	31	33	12
10. Crossing in crossing	20	337	34	101	62
11. Crossing in crossing	4	85	3	8	17
12. Crossing in crossing	14	725	77	176	98
Totals	174	3184	740	260	451

F. AGE OF DRIVER	All Accidents	First Accidents	Other Accidents
1. 14 & under	767	6	305
2. 15-19	10844	64	2849
3. 20-24	14832	70	4944
4. 25-29	29170	171	8103
5. 30-34	94764	324	15771
6. 35-39	60338	482	17345
7. 40-44	43129	329	12221
8. 45-49	37870	260	10520
9. 50-54	25224	162	6400
10. 55-59	12466	102	3373
11. 60 & over	4633	57	1220
12. Not stated	35448	26	2028
Totals	329485	2053	85479

G. SEX OF DRIVER	All Accidents	First Accidents	Other Accidents
1. Male	227699	1676	5416
2. Female	90797	355	25114
3. Not stated	10989	22	349
Totals	329485	2053	85479

H. RESIDENCE OF DRIVER	All Accidents	First Accidents	Other Accidents
1. Local resident	294761	1179	63450
2. Resident of state	50135	554	14461
3. Resident of state	22651	296	6550
4. Not stated	11338	24	1018
Totals	329485	2053	85479

I. TYPE OF VEHICLE	All Accidents	First Accidents	Other Accidents
1. Passenger car	303983	1584	75624
2. Passenger car and truck	267	1	54
3. Truck and truck	33811	263	8051
4. Truck and truck	5872	167	1608
5. Other - all others	372	1	79
6. Other - all others	348	12	124
7. Other - all others	371	-	74
8. Other - all others	775	4	166
9. Other - all others	545	4	112
10. Other - all others	2905	56	2219
11. Other - all others	93	1	76
12. Other - all others	7873	16	521
Totals	357215	2109	88908

J. ROAD SURFACE CONDITION	All Accidents	First Accidents	Other Accidents
1. Dry	128724	1067	35771
2. Wet	37013	206	3841
3. Other - all others	18302	62	3664
4. Other - all others	668	11	184
5. Not stated	9400	7	910
Totals	176607	1353	50320

K. KIND OF LOCATION	All Accidents	First Accidents	Other Accidents
1. Street	138480	504	33783
2. Not stated	44555	640	15329
3. Not stated	11572	9	1258
Totals	194607	1353	50370

L. LIGHT CONDITION	All Accidents	First Accidents	Other Accidents
1. Daylight	121653	622	30705
2. Other - all others	7760	65	2045
3. Other - all others	57526	661	16856
4. Not stated	7668	5	764
Totals	194607	1353	50370

M. CONTRIBUTING CIRCUMSTANCES INDICATED	All Accidents	First Accidents	Other Accidents
1. Speed too fast	13464	266	5219
2. Failed to yield right of way	25213	177	7774
3. Other - all others	7075	167	2382
4. Other - all others	4836	28	1453
5. Other - all others	2126	21	921
6. Other - all others	3544	34	1506
7. Other - all others	10338	9	3449
8. Other - all others	5638	19	1204
9. Other - all others	28072	111	6937
10. Other - all others	1966	1	643
11. Other - all others	777	7	120
12. Not stated	7648	243	3221
Totals	110497	1085	34829

Appendix B

Driving Regulations

This Appendix includes excerpts from the Indiana Driver's Manual defining chauffeur's and public passenger chauffeur's licenses. The violation point system is also explained in this Appendix.

CHAUFFEURS AND PUBLIC PASSENGER CHAUFFEURS

Every person who is employed for hire by another for the principal purpose of operating a motor vehicle, and every person who drives any motor vehicle upon a public highway, when in use for the transportation of property, for hire, must have a Chauffeur's License.

The applicant for a chauffeur's license must be eighteen (18) years of age with one (1) year's licensed driving experience. He must pass the vision test and written examination every four (4) years.

Every person who operates a motor vehicle while in use as a school bus for the transportation of pupils to or from school, or to or from school athletic games or contests, or any person who operates a motor vehicle while in use as a public passenger-carrying vehicle must have a Public Passenger Chauffeur's License.

The applicant for a public passenger chauffeur's license must be twenty-one (21) years of age, except that a public passenger chauffeur's license may be issued to any person eighteen (18) years of age or older for the purpose of driving a taxi cab only. The applicant must have two (2) years' licensed driving experience and must be physically and mentally fit. He must pass the vision test and written examination and submit a medical examination report each year. The report forms are available at any license branch.

A chauffeur's responsibility is greater—much greater—than that of other drivers. The written examination for this license contains special questions based on facts included in the VEHICLES AND EQUIPMENT section and in other parts of this Manual.

VIOLATION POINT SYSTEM

The Driver Improvement Program is based on a ten-point two-year erasure Point System for those drivers over 21 years of age and an eight-point two-year erasure Point System for a Probationary Licensee (those under 21 years of age) as illustrated.

Driver Improvement Action	Point Level	
	Under 21	21 & Over
Administrative	5 or	10 or
Hearing	more	more

Point values reflect the seriousness of the offense in relation to hazardous moving violations and based, as nearly as possible, on accident statistics indicating the major cause of accidents.

The license or permit of a driver convicted of driving while under the influence is suspended for a determinate period of time AND UNTIL he files and maintains for a period of three (3) years proof of his financial responsibility (Form SR-22) with the Bureau of Motor Vehicles.

Failure to appear in court at the required time and place will result in suspension of your driving privilege until you appear in court, and a final determination of the charges against you is made.

POINTS ASSESSED FOR CONVICTION OF:
 Reckless driving 8 points
 Speed Contest (DRAG Racing) 8 points

Exceeding Speed Limit	
1-15 mph over	2 points
16-25 mph over	3 points
26 and over	6 points
Other Hazardous Moving Violations	3-4.5 points
Other Traffic Violations	1-2.3 points
City Ordinance Moving Violations	2 points
Failure to Report an Accident	Hearing
Misrepresentation to Department	Hearing

MANDATORY SUSPENSION ON CONVICTION OF:

1st Offense of Driving While under the influence	2 Mos. to 1 Year*
2nd and Subsequent Offense of Driving while under the influence	1 Year to 2 Years*
Manslaughter or Reckless Homicide	6 Mos.*
Perjury or False Affidavit to Department	6 Mos.*
Felony involving use of a Motor Vehicle	6 Mos.*
3 Convictions of Reckless Driving in 12 Month Period	6 Mos.*
Leaving Scene of Accident (Over \$100.00 property damage, injury or death)	6 Mos.*
Driving while Suspended	Additional Like Period of Suspension.
Out-of-State Conviction carrying a Mandatory Suspension in Indiana	Hearing

*Under the influence of intoxicating liquor, narcotics, or other dangerous, depressant or stimulant drugs.

*And until proof of Financial Responsibility (Form SR-22) is filed and maintained for a period of three (3) years with the Bureau of Motor Vehicles.

FIGURE 5 EXCERPTS FROM INDIANA DRIVER'S MANUAL

Appendix CData Collection Forms
and Related Information

The forms in this Appendix are sample copies of those used to collect driver and accident records. Included in this appendix is a brief explanation of the "Soundex Code".

Name: _____						Date of Birth _____
Last		First	Middle Initial			
Soundex Code: _____		Case Number: _____				
Residence	Age	Accident County	Location City	Date of Accident	Type of Accident	I.D. Code
<p>(The portion of the report to the top and right of the dashed line was removed from form at State Police Accident Record Department)</p>						
CASE NUMBER: _____						

FIGURE 6 ACCIDENT RECORD

INDIANAPOLIS, IND.		4736-23.5		02/15/72		OPERATOR	
BRN 138	BRN 5 08	M	06/27/43	06/08/70	1974	06/74

263

STATE OF INDIANA
BUREAU OF MOTOR VEHICLES
SUMMARY OF DRIVING RECORD

DATE OF ACTION	POINTS	DESCRIPTION OF ACTION	COUNT OF TRANSFERS	REMARKS
		GLASSES OR CONTACT LENSES		
06/10/66	04	SPEED 62/40		
09/23/66		OPERATOR LICENSE ISSUED		
12/22/66	02	SIGNALS L-O		
02/24/70	02*	SIGNALS L-O		
08/14/70		OPERATOR LICENSE ISSUED		
09/14/70		PRIOR STATUS- CLEAR		
02/15/72	02*	CURRENT STATUS- CLEAR		
01015				
<p>Note: All identifying information removed.</p>				

01015

Note: All identifying information removed.

▲ 9119354

FIGURE 7 DRIVER RECORD

HOW TO FIND A NAME IN YOUR SOUNDEX FILE

Go to the file section containing the letter of the alphabet in which you are interested; for example, B for Bayer; K for Kauffmann; S for Schneider. Code the remaining letters in the name in accordance with the following Soundex code. Never attempt to code the first letter of the surname.

Key letters, codes and equivalents are as follows:

CODE	KEY LETTER	EQUIVALENTS
1	b	p f v
2	c	s k g j q x z
3	d	t
4	l	
5	m	n
6	r	

The letters a, e, i, o, u, y, w and h are not coded.

The following examples show how Soundex controls the filing of different spellings of the same surname:

Bird, Burd, Byrd, Berd	"B" file section—guide	rd 630
Siegal, Siegel, Segal, Siegle	"S" file section—guide	cl 240
Headley, Hedley, Hudley, Hutley	"H" file section—guide	dl 340
Bunson, Benson, Bunsan	"B" file section—guide	mcm 525
Datson, Dadson, Detsen, Dudson	"D" file section—guide	dcm 325
Rex, Raks	"R" file section—guide	c 200
Marshall, Marchall, Marschal	"M" file section—guide	rcf 624
Schlockermann, Slockerman	"S" file section—guide	lcr 426

THERE ARE FIVE SIMPLE RULES TO KEEP IN MIND

RULE NO. 1—When two or more key letters or equivalents occur together treat them as one letter. Example: "Schmittman" is coded r-4, d-3, m-5. The "d" and "m" are treated as one letter. Example: "Lloyd" is coded L-300. The second "l" being equal to the first letter, it is not coded. "Schneider" is coded S-536, as the "c" is the equivalent of the vowel letter "s".

RULE NO. 2—If a name contains less than three key letters, add zeros to arrive at the code number. Example: "Shaw" is filed S-000.

RULE NO. 3—If two of the same key letters, or a key letter and its equivalent, are separated by "h" or "w" then code one key letter. Example: "Ashcraft"—"s" and "c" are equivalents and are separated by "h"; therefore, code "Ashcraft" 261.

RULE NO. 4—When a repeated key letter or its equivalent is separated by a, e, i, o, u, y, the key letters or their equivalents are considered separately.

RULE NO. 5—After the coding of the surname, arrangement between the key letter guides should be alphabetic according to given name.

When you get to the "B" 630 section or the "S" 240 section or whatever section of the file you are referring to, you will find the names in that section arranged according to the first name of the individual, or by the second name of the firm if you are looking for a company's name. Thus, first names of individuals or second names of company names should be in strict alphabetical sequence, within the section (such as "B" 630, or "S" 240) in which you are looking. In this respect, Soundex is the same as any other name filing system.

LBV 886.1

FIGURE 8 SOUNDEX CODE

Appendix D

Driver Characteristics

The tables in this Appendix identify characteristics of different accident groups studied in this report.

Table 18. Age and Sex Related to Total Accident Involvement

AGE IS CROSS TABULATED WITH SEX ON
VARIABLE 2 IS CROSS TABULATED WITH VARIABLE 1

VARIABLE MAXIMUM MINIMUM
2 85 15
1 2 1

SEX: 1 = MALE, 2 = FEMALE

CONTROL DRIVER GROUP			5 ACCIDENT GROUP		
NUMBER OF REPLICATIONS= 326			NUMBER OF REPLICATIONS= 361		
AGE	SEX	ROW TOTAL	AGE	SEX	ROW TOTAL
85	1	0	85	1	0
84	1	0	84	1	0
83	1	0	83	1	0
82	1	0	82	1	1
81	1	0	81	1	1
80	1	0	80	1	0
79	1	1	79	1	0
78	1	1	78	1	0
77	1	1	77	1	0
76	1	1	76	1	1
75	1	1	75	1	0
74	1	1	74	1	0
73	1	1	73	1	1
72	1	1	72	1	0
71	1	1	71	1	0
70	1	1	70	1	1
69	1	1	69	1	1
68	1	1	68	1	0
67	1	1	67	1	0
66	1	1	66	1	1
65	1	1	65	1	1
64	1	1	64	1	0
63	1	1	63	1	0
62	1	1	62	1	1
61	1	1	61	1	0
60	1	1	60	1	3
59	1	1	59	1	2
58	1	1	58	1	2
57	1	1	57	1	2
56	1	1	56	1	0
55	1	1	55	1	3
54	1	1	54	1	1
53	1	1	53	1	0
52	1	1	52	1	2
51	1	1	51	1	3
50	1	1	50	1	3
49	1	1	49	1	1
48	1	1	48	1	4
47	1	1	47	1	3
46	1	1	46	1	3
45	1	1	45	1	6
44	1	1	44	1	4
43	1	1	43	1	3
42	1	1	42	1	4
41	1	1	41	1	5
40	1	1	40	1	4
39	1	1	39	1	4
38	1	1	38	1	4
37	1	1	37	1	5
36	1	1	36	1	7
35	1	1	35	1	9
34	1	1	34	1	4
33	1	1	33	1	6
32	1	1	32	1	5
31	1	1	31	1	6
30	1	1	30	1	5
29	1	1	29	1	7
28	1	1	28	1	7
27	1	1	27	1	11
26	1	1	26	1	11
25	1	1	25	1	12
24	1	1	24	1	15
23	1	1	23	1	15
22	1	1	22	1	10
21	1	1	21	1	17
20	1	1	20	1	14
19	1	1	19	1	23
18	1	1	18	1	33
17	1	1	17	1	22
16	1	1	16	1	23
15	1	1	15	1	3
*****			*****		
1 15	1	2	1 15	1	2
SEX			SEX		
COLUMN 155			COLUMN 155		
TOTAL 155			TOTAL 155		
GRAND TOTAL= 326			GRAND TOTAL= 361		
CORRELATION COEFFICIENT .1433			CORRELATION COEFFICIENT .1433		
MEAN 1 15 1.40796 SD 1 15 1.18771			MEAN 1 15 1.40796 SD 1 15 1.18771		
MEAN 2 15 1.40796 SD 2 15 1.18771			MEAN 2 15 1.40796 SD 2 15 1.18771		

Table 18. (Continued)

AGE IS CROSS TABULATED WITH SEX ON
VARIABLE 2 IS CROSS TABULATED WITH VARIABLE 1

VARIABLE MAXIMUM MINIMUM
2 85 19
1 2 1

SEX: 1 = MALE, 2 = FEMALE

6-7 ACCIDENT GROUP

NUMBER OF REPLICATIONS= 288

6-8 ACCIDENT GROUP

NUMBER OF REPLICATIONS= 127

(2) AGE	ROW TOTAL
85 *	0
84 *	0
83 *	0
82 *	0
81 *	0
80 *	0
79 *	0
78 *	0
77 *	0
76 *	0
75 *	1
74 *	0
73 *	0
72 *	1
71 *	1
70 *	0
69 *	1
68 *	1
67 *	0
66 *	1 1
65 *	0
64 *	0
63 *	2
62 *	0
61 *	0
60 *	1
59 *	2
58 *	1
57 *	3
56 *	1
55 *	3
54 *	4
53 *	0
52 *	2
51 *	1
50 *	1 1
49 *	1
48 *	4
47 *	5
46 *	1
45 *	4
44 *	6
43 *	3
42 *	7
41 *	3
40 *	4 1
39 *	4
38 *	4
37 *	2 1
36 *	5 1
35 *	3 1
34 *	4 1
33 *	3
32 *	8
31 *	3
30 *	3 1
29 *	7
28 *	7
27 *	5
26 *	10
25 *	6
24 *	11
23 *	12 2
22 *	10
21 *	10 1
20 *	12
19 *	20
18 *	23
17 *	24
16 *	13 2
15 *	1

(1) 1
SEX 2

COLUMN 273
TOTAL 15

GRAND TOTAL= 288

CORRELATION COEFFICIENT .1273

MEAN: 11* 1.05208 SU: 11*
MEAN: 21* 24.91216 SU: 21*

(2) AGE	ROW TOTAL
85 *	0
84 *	0
83 *	0
82 *	0
81 *	0
80 *	0
79 *	0
78 *	0
77 *	0
76 *	0
75 *	0
74 *	1
73 *	0
72 *	0
71 *	0
70 *	0
69 *	1
68 *	0
67 *	0
66 *	0
65 *	2
64 *	0
63 *	0
62 *	0
61 *	0
60 *	1
59 *	2
58 *	0
57 *	1
56 *	2
55 *	4
54 *	0
53 *	3
52 *	1
51 *	2
50 *	1
49 *	3
48 *	2
47 *	2
46 *	1
45 *	0
44 *	0
43 *	3
42 *	0
41 *	2
40 *	3
39 *	2
38 *	2 1
37 *	0
36 *	2
35 *	1
34 *	3
33 *	1 1
32 *	3
31 *	2
30 *	2
29 *	6
28 *	2
27 *	3
26 *	1
25 *	5
24 *	2
23 *	5
22 *	7
21 *	6
20 *	5
19 *	8
18 *	7
17 *	8
16 *	5
15 *	0

(1) 1
SEX 2

COLUMN 126
TOTAL 3

GRAND TOTAL= 127

CORRELATION COEFFICIENT .1223

MEAN: 11* 1.92462 SU: 11* .15247
MEAN: 21* 32.24134 SU: 21* 14.40404

Table 19. License Restrictions Related to Total Accident Involvement.

LICENSE RESTRICTIONS IS CROSS TABULATED WITH SEX OR,
VARIABLE 5 IS CROSS TABULATED WITH VARIABLE 2

SEX: 1 = MALE, 2 = FEMALE
RESTRICTIONS: 1 = GLASSES
2 = OUTSIDE REARVIEW MIRROR
3 = AUTOMATIC TRANSMISSION
4 = DAYLIGHT DRIVING ONLY
5 = AUTOMATIC TURN SIGNALS
6 = GLASSES + OUTSIDE REARVIEW MIRROR
7 = GLASSES + OUTSIDE REARVIEW MIRROR
+ DAYLIGHT DRIVING ONLY
8 = GLASSES + AUTOMATIC TRANSMISSION
9 = GLASSES + OUTSIDE REARVIEW MIRROR
+ AUTOMATIC TRANSMISSION

CONTROL DRIVER GROUP
NUMBER OF REPLICATIONS = 326

RESTNS	ROW TOTAL
1	0
2	0
3	0
4	17
5	1
6	3
7	0
8	6
9	93
TOTAL	133

SEX: 1 2
TOTAL 133
GRAND TOTAL = 326
CORRELATION COEFFICIENT .042
MEAN 718 1.48798 SD 218
MEAN 518 .57362 SD 518

5 ACCIDENT GROUP
NUMBER OF REPLICATIONS = 361

RESTNS	ROW TOTAL
1	0
2	0
3	1
4	10
5	0
6	0
7	0
8	12
9	59
TOTAL	279

SEX: 1 2
TOTAL 18
GRAND TOTAL = 361
CORRELATION COEFFICIENT .0883
MEAN 718 1.68832 SD 218
MEAN 518 .41551 SD 518

Table 19. (Continued)

WEIGHT/HEIGHT IS CROSS TABULATED WITH SEX OR,
VARIABLE 1 IS CROSS TABULATED WITH VARIABLE 2

VARIABLE MAXIMUM MINIMUM
1 46 14
2 2 1

SEX: 1 = MALE, 2 = FEMALE

6-7 ACCIDENT GROUP

NUMBER OF REPLICATIONS 200

1 11 ROW TOTAL

WT/HT	
40 *	0
45 *	0
44 *	0
43 *	0
42 *	0
41 *	0
40 *	0
39 *	0
38 *	0
37 *	3
36 *	2
35 *	2
34 *	0
33 *	0
32 *	2
31 *	1
30 *	6
29 *	4
28 *	11
27 *	24
26 *	13
25 *	32
24 *	24
23 *	29
22 *	40
21 *	24
20 *	26
19 *	19
18 *	6
17 *	0
16 *	1
15 *	0
14 *	0

1 21 1

SEX 2

COLUMN 273

TOTAL 19

GRAND TOTAL 200

CORRELATION COEFFICIENT = .1252

MEAN: 21* 1.05208 SD: 21*

MEAN: 11* 23.64236 SD: 11*

.22257

5.70534

26 ACCIDENT GROUP

NUMBER OF REPLICATIONS 127

1 11 ROW TOTAL

WT/HT	
40 *	0
45 *	0
44 *	0
43 *	0
42 *	0
41 *	0
40 *	0
39 *	0
38 *	0
37 *	0
36 *	1
35 *	2
34 *	0
33 *	1
32 *	2
31 *	0
30 *	2
29 *	0
28 *	2
27 *	0
26 *	1
25 *	10
24 *	0
23 *	19
22 *	13
21 *	7
20 *	0
19 *	3
18 *	0
17 *	1
16 *	0
15 *	0
14 *	0

1 21 1

SEX 2

COLUMN 126

TOTAL 2

GRAND TOTAL 127

CORRELATION COEFFICIENT = .1010

MEAN: 21* 1.02342 SD: 21*

MEAN: 11* 24.66667 SD: 11*

.15247

2.61056

Table 20. Weight/Height Index in Relation to Total Accident Involvement.

WEIGHT/HEIGHT IS CROSS TABULATED WITH SEX OR,
VARIABLE 1 IS CROSS TABULATED WITH VARIABLE 2

VARIABLE MAXIMUM MINIMUM
1 46 14
2 2 1

SEX: 1 = MALE, 2 = FEMALE

CONTROL DRIVER GROUP
NUMBER OF APPLICATIONS= 126

1 11 Wt/Ht	ROW TOTAL
46 *	0
45 * 1	1
44 *	0
43 *	0
42 *	0
41 *	0
40 *	0
39 *	0
38 *	0
37 * 1	1
36 * 1	1
35 *	0
34 * 1	1
33 *	0
32 * 3	3
31 * 3	3
30 * 6 3	9
29 * 1	1
28 * 4 2	6
27 * 19 6	25
26 * 19 7	26
25 * 22 5	27
24 * 13 6	19
23 * 25 4	29
22 * 26 5	31
21 * 24 19	43
20 * 14 27	38
19 * 4 14	18
18 * 7 29	36
17 * 1 14	15
16 * 2 4	6
15 *	0
14 *	2

1 21 1	
SEX 2	
COLUMN 117	
TOTAL 126	
GRAND TOTAL= 126	
CORRELATION COEFFICIENT = -.4587	
MEAN 21= 1.45794 126 21*	
MEAN 11= 22.74666 126 11*	

5 ACCIDENT GROUP
NUMBER OF APPLICATIONS= 341

1 11 Wt/Ht	ROW TOTAL
46 *	0
45 *	0
44 *	0
43 *	0
42 *	0
41 *	0
40 *	0
39 * 1	1
38 *	0
37 *	0
36 * 2	2
35 * 1	1
34 * 2	2
33 * 2	2
32 * 1	1
31 * 0	0
30 * 0	0
29 * 0	0
28 * 15 1	16
27 * 29 1	30
26 * 28 1	29
25 * 39 3	42
24 * 36	36
23 * 39	39
22 * 51 2	53
21 * 35 1	36
20 * 24 1	25
19 * 0 1	1
18 * 0 3	3
17 * 3	3
16 * 1 2	3
15 *	0
14 *	0

1 21 1	
SEX 2	
COLUMN 345	
TOTAL 341	
GRAND TOTAL= 341	
CORRELATION COEFFICIENT = -.1349	
MEAN 31= 1.24432 341 31*	
MEAN 11= 21.44310 341 11*	

-200-
34448-

Table 20. (Continued)

LICENSE RESTRICTIONS IS CROSS TABULATED WITH SEX OR,
VARIABLE 5 IS CROSS TABULATED WITH VARIABLE 2

SEX: 1 = MALE, 2 = FEMALE
RESTRICTIONS: 1 = GLASSES
2 = OUTSIDE REARVIEW MIRROR
3 = AUTOMATIC TRANSMISSION
4 = DAYLIGHT DRIVING ONLY
5 = AUTOMATIC TURN SIGNALS
6 = GLASSES + OUTSIDE REARVIEW MIRROR
7 = GLASSES + OUTSIDE REARVIEW MIRROR
+ DAYLIGHT DRIVING ONLY
8 = GLASSES + AUTOMATIC TRANSMISSION
9 = GLASSES + OUTSIDE REARVIEW MIRROR
+ AUTOMATIC TRANSMISSION

E-7 ACCIDENT GROUP

NUMBER OF REPRESENTATIONS 200

RESTRICT	ROW TOTAL
0	0
1	2
2	0
3	4
4	0
5	0
6	0
7	1
8	17
9	50
10	10
11	200

1	1
2	2
3	4
4	0
5	0
6	0
7	1
8	17
9	50
10	10
11	200

1	1
2	2

COLUMN TOTAL	15
--------------	----

GRAND TOTAL 200

CORRELATION COEFFICIENT = .0200

MEAN: 200	1.00000	500	200	1.00000
MEAN: 100	1.00000	500	100	1.00000

E ACCIDENT GROUP

NUMBER OF REPRESENTATIONS 100

RESTRICT	ROW TOTAL
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	100

1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	100

1	0
2	0

COLUMN TOTAL	0
--------------	---

GRAND TOTAL 100

CORRELATION COEFFICIENT = .0000

MEAN: 100	1.00000	500	100	1.00000
MEAN: 100	1.00000	500	100	1.00000

Table 21. Residence of Drivers.

City	Percent of Drivers Residing in Cities Listed					
	Control Group (326)	3 Accident Group (728)	4 Accident Group (560)	5 Accident Group (361)	6-7 Accident Group (288)	> 8 Accident Group (127)
Anderson	1.8 (6)	3.0 (22)	2.9 (16)	1.4 (5)	2.8 (8)	0 (0)
Bedford	0 (0)	0.1 (1)	0 (0)	0.3 (1)	0.7 (2)	1.6 (2)
Bloomington	0.3 (1)	1.6 (12)	1.8 (10)	1.7 (6)	0.3 (1)	1.6 (2)
Columbus	1.2 (4)	1.0 (7)	0.7 (4)	0.3 (1)	1.0 (3)	0 (0)
Connersville	0.9 (3)	0.1 (1)	0.4 (2)	0.3 (1)	0 (0)	0.8 (1)
East Chicago	0.6 (2)	0.8 (6)	0.7 (4)	1.1 (4)	0 (0)	0 (0)
Elkhart	1.2 (4)	1.1 (8)	1.4 (8)	1.4 (5)	3.1 (9)	0.8 (1)
Evansville	4.6 (15)	3.3 (24)	2.9 (16)	2.2 (8)	2.1 (6)	2.4 (3)
Fort Wayne	7.1 (23)	10.3 (75)	9.8 (55)	10.2 (37)	14.9 (43)	15.0 (19)
Gary	6.7 (22)	5.1 (37)	6.1 (34)	6.4 (23)	6.3 (18)	7.9 (10)
Goshen	0 (0)	0.1 (1)	0 (0)	0.8 (3)	0 (0)	0.8 (1)

Table 21. (Continued)

City	Percent of Drivers Residing in Cities Listed					
	Control Group (326)	3 Accident Group (728)	4 Accident Group (560)	5 Accident Group (361)	6-7 Accident Group (288)	> 8 Accident Group (127)
Hammond	2.8 (9)	3.3 (24)	2.1 (12)	2.8 (10)	2.1 (6)	0.8 (1)
Highland	0.3 (1)	0.4 (3)	0.5 (3)	0.6 (2)	0.3 (1)	0 (0)
Indianapolis	13.2 (43)	15.2 (111)	19.3 (108)	21.9 (79)	22.6 (65)	29.1 (37)
Kokomo	1.5 (5)	2.2 (16)	1.1 (6)	1.7 (6)	2.1 (6)	3.9 (5)
Lafayette	0.6 (2)	2.3 (17)	1.6 (9)	2.2 (8)	2.1 (6)	1.6 (2)
Logansport	0.9 (3)	0.3 (2)	0.7 (4)	1.7 (6)	1.4 (4)	0.8 (1)
Marion	0.9 (3)	1.1 (8)	1.1 (6)	0.6 (2)	1.0 (3)	0 (0)
Michigan City	0.9 (3)	2.1 (15)	3.4 (19)	1.1 (4)	1.7 (5)	0.8 (1)
Mishawaka	1.2 (4)	0.7 (5)	1.2 (7)	1.9 (7)	0.3 (1)	0 (0)
Muncie	2.1 (7)	2.6 (19)	3.6 (20)	2.2 (8)	2.8 (8)	1.6 (2)
New Albany	0.3 (1)	0.5 (4)	0.5 (3)	0.8 (3)	1.0 (3)	0 (0)

Table 21. (Continued)

City	Percent of Drivers Residing in Cities Listed					
	Control Group (326)	3 Accident Group (728)	4 Accident Group (560)	5 Accident Group (361)	6-7 Accident Group (288)	> 8 Accident Group (127)
New Castle	0.9 (3)	0.5 (4)	0.9 (5)	0.6 (2)	0 (0)	0 (0)
Portage	0.3 (1)	0.3 (2)	1.1 (6)	0.8 (3)	1.0 (3)	0.8 (1)
South Bend	1.5 (5)	4.7 (34)	5.4 (30)	4.2 (15)	7.3 (21)	2.4 (3)
Terre Haute	2.5 (8)	1.2 (9)	2.0 (11)	0.8 (3)	1.4 (4)	1.6 (2)
Valparaiso	0.9 (3)	0.4 (3)	1.8 (10)	0.3 (1)	1.4 (4)	0.8 (1)
West Lafayette	0.3 (1)	0.3 (2)	0.2 (1)	0.3 (1)	0 (0)	0.8 (1)

Figures in parentheses are number of drivers.

Table 22. Accident Involvement by City.

City	Percent of Group Accidents Occurring in Cities Listed					
	Control Group (148)	3 Accident Group (2184)	4 Accident Group (2240)	5 Accident Group (1805)	6-7 Accident Group (1821)	> 8 Accident Group (1219)
Anderson	2.0 (3)	2.5 (55)	1.7 (39)	1.4 (26)	2.1 (38)	0.7 (8)
Bedford	0 (0)	0 (0)	0.4 (10)	0.3 (6)	0.5 (9)	0.2 (3)
Bloomington	1.4 (2)	1.6 (34)	1.5 (34)	1.6 (29)	2.1 (39)	1.8 (22)
Columbus	0.7 (1)	0.1 (3)	0.5 (11)	0.2 (3)	0.8 (14)	0.1 (1)
Connersville	0 (0)	0.1 (2)	0.2 (4)	0.2 (3)	0.2 (3)	0.7 (9)
East Chicago	0.7 (1)	1.3 (28)	0.8 (19)	1.6 (29)	1.0 (18)	0.5 (6)
Elkhart	2.7 (4)	1.3 (28)	1.3 (28)	0.8 (14)	1.3 (24)	0.7 (8)
Evansville	2.0 (3)	3.1 (68)	2.7 (61)	2.0 (37)	1.9 (35)	2.5 (30)
Fort Wayne	7.4 (11)	8.8 (192)	9.5 (212)	10.6 (191)	14.3 (261)	14.0 (171)
Gary	8.1 (12)	3.7 (81)	5.1 (115)	6.0 (109)	5.6 (102)	8.0 (97)
Goshen	0 (0)	0.3 (7)	0.4 (10)	0.5 (9)	0.2 (3)	0.7 (8)

Table 22. (Continued)

Percent of Group Accidents Occurring in Cities Listed						
City	Control Group (148)	3 Accident Group (2184)	4 Accident Group (2240)	5 Accident Group (1805)	6-7 Accident Group (1821)	> 8 Accident Group (1219)
Hammond	2.7 (4)	3.9 (86)	2.0 (45)	2.5 (45)	2.9 (53)	1.1 (14)
Highland	1.4 (2)	0.2 (4)	0.8 (19)	1.9 (34)	0.5 (10)	0.9 (11)
Indianapolis	14.2 (21)	15.0 (328)	15.8 (354)	20.3 (367)	19.5 (356)	32.2 (392)
Kokomo	4.7 (7)	1.2 (26)	0.9 (21)	1.6 (29)	1.8 (32)	2.7 (33)
Lafayette	0 (0)	1.3 (29)	1.5 (34)	1.4 (25)	1.1 (20)	1.1 (13)
Logansport	0.7 (1)	0.2 (4)	0.2 (5)	1.0 (18)	0.7 (13)	1.1 (14)
Marion	0 (0)	0.8 (17)	0.7 (16)	0.7 (13)	0.4 (8)	0.2 (2)
Michigan City	0 (0)	1.6 (34)	2.3 (52)	1.3 (24)	1.4 (26)	1.7 (21)
Mishawka	2.7 (4)	0.7 (16)	1.5 (33)	1.2 (21)	0.7 (12)	0.3 (4)
Muncie	3.4 (5)	2.1 (46)	2.4 (53)	1.3 (23)	2.3 (42)	1.6 (20)
New Albany	0 (0)	0.4 (8)	0.1 (2)	0.7 (13)	0.9 (16)	0 (0)

Table 22. (Continued)

City	Percent of Group Accidents Occurring in Cities Listed					
	Control Group (148)	3 Accident Group (2184)	4 Accident Group (2240)	5 Accident Group (1805)	6-7 Accident Group (1821)	> 8 Accident Group (1219)
New Castle	0 (0)	0.2 (4)	0.3 (7)	0.6 (10)	0 (0)	0.5 (6)
Portage	0 (0)	0.1 (2)	0.4 (8)	0.7 (13)	0.4 (8)	0.2 (2)
South Bend	4.1 (6)	3.9 (85)	4.3 (96)	3.7 (66)	7.0 (128)	1.5 (18)
Terre Haute	0.7 (1)	1.2 (27)	1.2 (26)	0.6 (10)	0.8 (14)	1.6 (20)
Valparaiso	0.7 (1)	0.7 (15)	1.1 (25)	0.2 (3)	1.2 (21)	0.1 (1)
West Lafayette	0 (0)	0.5 (10)	0.5 (11)	0.6 (10)	0.3 (5)	0.5 (6)

Figures in parentheses are number of accidents.