

ABSTRACT

A RATIONALE AND COMPREHENSIVE TRAFFIC SAFETY EDUCATION PROGRAM FOR SAUDI ARABIA

By

Suliman Bakur Sindi

Statement of the Problem

The traffic problems that are facing Saudi Arabia are more severe and serious than the traffic problems that are facing most of the nations of the world. The huge annual loss of human lives deserves a great effort to study, analyze, and find a solution to the tragic problem.

The purpose of this study is to research the various points pertaining to the development of a rationale and a comprehensive traffic safety education program for Saudi Arabia. The research covers the tabulation and analysis of traffic records and statistics in Saudi Arabia and various countries, a comparison of the severity index, and a calculation of fatality rates. In addition, a content analysis of Islamic, educational and traffic

safety philosophies were undertaken. Interviews with high ranking officials and policy makers in Saudi Arabia were conducted. A review of the past and present driver education and traffic safety education programs was undertaken in order to develop a comprehensive traffic safety education program for Saudi Arabia.

Methods, Techniques, and
Data Used

The following is a brief summary of the methods, as well as techniques, that were used in collecting and analyzing the data pertaining to this research:

1. The national traffic records and statistics were gathered, tabulated, and analyzed.
2. The traffic accident statistics of various countries were tabulated, graphed, and analyzed.
3. A comparison in percentage increase in accident and fatality rates between the various countries was undertaken.

4. The severity index of casualties in Saudi Arabia and randomly selected developed and developing countries was calculated and determined.
5. Islamic philosophy regarding traffic safety education was analyzed.
6. The educational philosophies and traffic educational philosophies were reviewed and compared.
7. Personal interviews with religious leaders, traffic officers, and policy makers in Saudi Arabia were conducted.
8. Driver and traffic safety education programs in the United States were reviewed.
9. A comprehensive program in Traffic Safety Education for Saudi Arabia was developed.

Major Findings

Islamic and educational philosophies advocated traffic safety education in the schools. It is one of the most needed programs for the survival of the

individual which is what religion and education are striving to attain.

The policy makers in Saudi Arabia (whose support is essential) indicated their approval for a traffic safety education program. The rate of traffic accidents in Saudi Arabia is proportionately one of the highest in the world. The average annual increase in traffic fatalities is approximately 130 percent. Over 90 percent of all traffic accidents in Saudi Arabia were caused by human errors. The severity and the astronomical increase in traffic accidents and casualties in Saudi Arabia justified the development of a comprehensive traffic education program in Saudi Arabia.

Due to the fact that Saudi Arabia had never had any traffic safety education program, it was essential to review all programs in the United States and develop a comprehensive teacher preparation program.

This program will be a resource and a guideline for future programs in all Saudi Arabia schools. The teacher preparation program in traffic safety education in Saudi Arabia will not place its priorities on the quantity of teachers, but the quality of teachers. It

Suliman Bakur Sindi

is hoped that the program will produce competent and efficient traffic safety education teachers, who will live up to the objectives of teaching students how to drive safely, efficiently, and economically.

A RATIONALE AND COMPREHENSIVE TRAFFIC
SAFETY EDUCATION PROGRAM FOR
SAUDI ARABIA

By

Suliman Bakur Sindi

A DISSERTATION

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SULIMAN BAKUR SINDI

1975

Dedicated to My Mother and to the
Memory of My Father

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TABLE OF CONTENTS

	Page
LIST OF TABLES	xii
LIST OF CHARTS	xiii
LIST OF FIGURES.	xiv
LIST OF APPENDICES	xvi

Chapter

I. THE NATURE OF THE PROBLEM.	1
Introduction	1
Statement of the Problem	6
The Need for the Study	9
Definition of Terms.	13
Hypotheses	19
Sub-Hypotheses	20
Delimitations of Study	20
Organization of the Dissertation	22
II. REVIEW OF LITERATURE	23
Traffic Accidents--Cause and Effect.	23
Effects of Driver Education on Traffic Accidents.	26

TABLE OF CONTENTS--cont.

Chapter	Page
Traffic Accident Statistics in Some Selected Countries of the World. . . .	35
Rate of Percentage Increase in Traffic Fatalities in Developed Countries. . .	38
Rate of Percentage Increase in Traffic Fatalities in Developing Countries . .	47
Comparison between Fatality Rates in Developed and Developing Countries . .	55
Increase in the Number of Vehicles in Various Countries Over a Ten Year Period	59
Severity Index for Various Countries of the World	65
Islamic Religion Philosophies on Safety Education	71
Islam and Safety	78
Philosophy of Education and Traffic Safety Education	81
Importance of Research and Statistics. .	87
Summary.	92
III. DESIGN OF THE STUDY.	94
Purpose of the Chapter	94
Traffic Records and Statistics in Saudi Arabia	95
Selection of the City.	97

TABLE OF CONTENTS.--cont.

Chapter	Page
Summary of Statistics	98
Traffic Fatality Rates	98
Severity Index	99
Accident Causation	99
Islamic Religion Philosophies on Safety Education	101
Philosophy of Education and Traffic Safety Education as it Relates to Saudi Arabia	102
Policy Makers' Views on the Inclusion of a Traffic Safety Education Program in Saudi Arabia	103
Developing a Comprehensive Traffic Safety Education Program for Saudi Arabia	107
Micro Program	107
Macro Program	108
IV. ANALYSIS OF DATA	109
Highway Traffic Safety Records and Statistics in Saudi Arabia	111
Analysis of National Traffic Accidents in Saudi Arabia	113
Analysis of National Traffic Fatalities and Severity Index in Saudi Arabia . .	119
Analysis of Driver Licenses Issued in Saudi Arabia	123

TABLE OF CONTENTS.--cont.

Chapter	Page
Analysis of License Plates Issued in Saudi Arabia	129
Analysis of Local Traffic Accidents in Saudi Arabia.	132
Analysis of Local Traffic Casualties in Saudi Arabia.	137
Interviews with Traffic Accident Investigation Officers in Saudi Arabia	142
Islamic Religion Philosophy on Safety Education.	150
Philosophy of Education and Traffic Safety Education	153
Policy Makers' Support for the Inclusion of Traffic Safety Education in Saudi Arabia	154
Interviews with Policy Makers in the Ministry of Interior	156
Interviews with Policy Makers in the Ministry of Education.	160
The Development of a Comprehensive Traffic Safety Education Program in Saudi Arabia.	163
Micro Plan for Teacher Preparation in Traffic Safety Education in Saudi Arabia	164
Location of Program Implementation	165
Student Selection.	165

TABLE OF CONTENTS.--cont.

Chapter	Page
Teacher Qualifications	166
Goal of Traffic Safety Education	167
Objectives of Traffic Safety Education	167
Effectiveness of Traffic Safety Education.	172
Requirements of Teacher's Qualifications	173
Financing the Program.	197
Model to be Used	197
Macro Plan for Traffic Safety Education in Saudi Arabia.	205
Public High Schools.	206
Public Elementary and Middle Schools	211
Summary.	212
V. SUMMARY, CONCLUSION, AND RECOMMENDATIONS	214
Summary.	214
Introduction	214
Statement of the Problem	215
Methods, Techniques and Data Used.	216
Major Findings	220
Conclusion	226
Recommendations.	229

TABLE OF CONTENTS.--cont.

Chapter	Page
Simulator Usage.	229
Training School Bus Drivers.	229
Pedestrian Safety.	230
Curriculum Planning.	230
Traffic Safety Education for College Students	230
Workshops in Traffic Safety.	231
College Research in Traffic Safety .	231
Traffic Library.	231
Bicycle Safety	232
Laws and Ordinances.	232
Traffic Enforcement and Supervision.	233
Highway Traffic Safety Department. .	234
Driver Examination and Licensing . .	235
Driver Improvement Programs.	236
Traffic Engineering.	236
Public Information	238
Motor Vehicle Inspection	238
Recommendations for Further Research	239
APPENDICES	241
BIBLIOGRAPHY	324

LIST OF TABLES

Table	Page
1. Rate of increase in motor vehicles in selected developed and developing countries.	60
2. Severity index for selected developing countries.	66
3. Severity index for selected developed countries.	67
4. Summary of statistics of traffic accidents in Saudi Arabia.	115
5. Number and type of driver's licenses issued in Saudi Arabia between 1969 and 1973. . . .	126
6. Number of license plates issued in Saudi Arabia from 1967-1973.	131
7. Summary of monthly car accidents in Taif, Saudi Arabia, 1973	134
8. Summary of monthly car accidents in Taif, Saudi Arabia, 1972-1973.	138
9. Secondary schools in Saudi Arabia, 1970-1971 .	208

LIST OF CHARTS

Chart	Page
1. Program Evaluation and Review Techniques, PERT Networking Process--Management.	202
2. PERT Networking Operation.	204

LIST OF FIGURES

Figure	Page
1. Fatality Rate of Car Accidents in the United States Over the 10 Year Period 1958-1968	40
2. Fatality Rate of Car Accidents in Great Britain Over the 10 Year Period 1958-1968	41
3. Fatality Rate of Car Accidents in Japan Over the 10 Year Period 1958-1968	42
4. Fatality Rate of Car Accidents in Australia Over the 10 Year Period 1958-1968	43
5. Fatality Rate of Car Accidents in Cyprus Over the 10 Year Period 1958-1968	44
6. Fatality Rate of Car Accidents in Jamaica Over the 10 Year Period 1955-1965	49
7. Fatality Rate of Car Accidents in Kenya Over the 10 Year Period 1955-1965	50
8. Fatality Rate of Car Accidents in Uganda Over the 10 Year Period 1955-1965	51
9. Fatality Rate of Car Accidents in Zambia Over the 10 Year Period 1958-1968	52
10. Fatality Rate of Car Accidents in Saudi Arabia Over the 6 Year Period 1967-1972	53
11. Comparison of Percentage Increase in Fatality Rates in Randomly Selected Developed and Developing Countries Over a 10 Year Period	56

LIST OF FIGURES.--cont.

Figure	Page
12. Comparison of Percentage Increase in Fatality Rate and the Number of Cars in Selected Countries in a 10 Year Period (Except Saudi Arabia, Fatalities Are for 6 Years, Car Figures Are for 9 Years . .	62
13. Severity Index for Car Accidents in Developed and Developing Countries in 1968.	69
14. Severity Index for Car Accidents for Saudi Arabia for 1971-1972	121
15. Increase in Fatality Rates of Car Accidents for Saudi Arabia for 1967-1971 and 1972. . .	122
16. Percentage Increase in Fatality Rates in Developed and Developing Countries	124
17. Increase of Driver's Licenses Issued in Saudi Arabia 1969-1971	128
18. Increase of Traffic Injuries in Taif, Saudi Arabia 1972-1973	140
19. Traffic Fatalities in Taif, Saudi Arabia . . .	141

LIST OF APPENDICES

Appendix	Page
A. LETTERS OF CORRESPONDENCE AND SAMPLE OF FORMS USED TO REQUEST TRAFFIC STATISTICS AND INFORMATION FROM SAUDI ARABIA.	241
B. LETTERS OF REFERRAL FROM THE MINISTRY OF INTERIOR AND MINISTRY OF EDUCATION IN SAUDI ARABIA	247
C. ACCIDENT STATISTICS IN THE VARIOUS CITIES AND REGIONS OF SAUDI ARABIA FOR THE YEAR 1971.	253
D. STATISTICAL INFORMATION ON THE NUMBER OF CARS AND DRIVERS IN THE VARIOUS CITIES AND REGIONS OF SAUDI ARABIA.	275
E. SUMMARY STATISTICS OF TRAFFIC ACCIDENTS AND CASUALTIES IN TAIF, SAUDI ARABIA	291
F. GENERAL OUTLINE OF HIGHWAY TRAFFIC SAFETY EDUCATION PROGRAM AT MICHIGAN STATE UNIVERSITY	293

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2001
2002
2003
2004
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CHAPTER I

THE NATURE OF THE PROBLEM

Introduction

The people of the world have been suffering greater and greater social and economic losses as a result of traffic accidents. Thousands of people are being killed or injured every day and property losses are in the billions. Losses due to traffic accidents are inflicting more deaths and personal injuries than wars. In the United States alone, the number of deaths and injuries caused by traffic accidents during World War II was more than three times greater than the number of war casualties. The traffic deaths and injuries totaled 3.4 million, while the total number of World War II casualties was 0.95 million.¹ More recently, the number of deaths during the entire eight years of the

¹Sauli Häkkinen, Traffic Accidents and Driver Characteristics, A Statistical and Psychological Study (Helsinki, Finland: Finland's Institute of Technology, 1958), p. 7.

Vietnam War was much less than the number of deaths resulting from traffic accidents in one year. The number of deaths and injuries and the economic losses continue to increase. In the United States in 1967, about 53,000 people were killed due to car accidents. In 1968 there were approximately 55,000 deaths from motor vehicle accidents, a five percent increase over 1967.² There was a decrease in the number of fatalities in 1970; the number increased in 1971 and climbed to a three percent increase in 1972.³ In 1973 the number of traffic fatalities decreased by one percent; however, the number of injuries remained very high, over 2,000,000.⁴

Due to the fact that the United States government and many state and local governments have been advocating new safety rules and regulations and improving traffic safety education and information, the percentage of increase in traffic fatalities has been very slight and fluctuates from one to three percent. However, the

² National Safety Council, Accident Facts, 1969 Edition (Chicago, Illinois: 1969), p. 24.

³ National Safety Council, Accident Facts, 1973 Edition (Chicago, Illinois: 1973), p. 34.

⁴ National Safety Council, Accident Facts, 1974 Edition (Chicago, Illinois: 1974), p. 3.

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economic losses continue to increase very rapidly. In 1969 the economic losses due to accidents, including wage loss, medical expenses, property damage, etc., were 11.6 billion dollars.⁵ In 1973 the costs rose to 20.8 billion dollars, almost doubling in four years.⁶

The previous figures may appear very high and shocking; however, they are mild if compared to accident figures in some of the developing countries, especially those countries whose economy is rising rapidly. In a recent study of accident rates in developing countries, the number of deaths due to car accidents in Kenya jumped from 282 in 1958 to 670 in 1968, an increase of 188 percent over ten years, while the rate of deaths only increased 44 percent in the United States and only 14 percent in Great Britain during the same period.⁷ In Saudi Arabia the situation looks even worse. The number of deaths resulting from car accidents has risen from 99 in

⁵ National Safety Council, Accident Facts, 1970 Edition (Chicago, Illinois: 1970), p. 27.

⁶ National Safety Council, Accident Facts, 1974 Edition, op. cit., p. 3.

⁷ G. D. Jacobs and P. Hutchinson, A Study of Accident Rates in Developing Countries (Berkshire, England: Transport and Road Research Laboratory, Department of the Environment, Crownthorne, 1973), p. 13.

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1967 to 570 in 1971, an increase of 475.75 percent in only five years.⁸

The traffic problems that are facing the developing countries are more severe and serious than the previous figures tend to indicate. This is due to the fact that most of the fatalities that occur are claiming the lives of the people coming from the small minority, the educated elites of the country. Most of the victims are statesmen, doctors, teachers, and engineers. These accidents are very costly to the developing countries because they lack educated people. Since the number of persons owning vehicles is also increasing very rapidly in developing countries such as Kuwait and Saudi Arabia, the number of casualties will continue to rise at an alarming rate unless some drastic measures are taken to force the rate of car accidents to decline.

From the humanitarian aspect, we are all concerned about traffic accidents; however, we tend to forget our concern as soon as we finish hearing or reading the news, because we are not trained to remember safety every time we are riding, driving, or walking in the street.

⁸ Traffic Safety and Rescue Department, Summary of Statistics of Traffic Accidents and Fatalities (Riyadh, Saudi Arabia: 1972), p. 7.

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The loss of human and economic resources as well as the consequences resulting from such tragedies are a very serious social problem that is facing the world as a whole, and not one particular country. The United States alone has suffered some six million deaths and more than 800 million injuries in the last seventy years, as a result of traffic accidents.⁹

In the United States more than 30 percent of all traffic deaths are young people between the ages of 15 and 24. About 140,000 young American adults died between the ages of 15 to 24 in the last 8 years.¹⁰ In Taif, Saudi Arabia, the number of traffic deaths in 1972 among young educated adults between 16 and 27 is estimated to have accounted for 70 percent of the total traffic accidents.¹¹

It is difficult, if not impossible, to measure with complete accuracy the severe impact of traffic accidents on Saudi Arabia or on the world. The number of

⁹Marland K. Strasser, Ed. D.; James E. Aaron, Ed. D.; Ralph C. Bohn, Ed. D.; and John R. Eales, Ed. D., Fundamentals of Safety Education (New York, New York: The Macmillan Company, 1964), p. 3.

¹⁰Summarized from Accident Facts, 1967-1974, op. cit.

¹¹Traffic Safety and Rescue Department, Official Death Records (Taif, Saudi Arabia: 1972).

accidents is so great that it is becoming meaningless to measure them in terms of the great suffering they inflict on the family and on the nation as a whole. It is the duty of traffic safety departments, the schools, the police, the car manufacturers, and all the citizens of the world to join hands and work together to alleviate the problem and reduce the ever-increasing tragedy of car accidents.

Statement of the Problem

The purpose of this study is to present applicable information pertaining to the development of a clear rationale and a comprehensive traffic safety education program in Saudi Arabia. Therefore, the purpose of the study is fivefold:

1. To examine and analyze Saudi Arabian traffic accident records and statistics and draw a rationale for accident causation; and to collect and compile further statistics and information relevant to the analysis which are not to be found in official records.

2. To conduct personal interviews and surveys of the attitudes of high ranking officials and the policy makers in Saudi Arabia regarding the necessity, advantage, and feasibility of traffic safety education in Saudi Arabia.
3. To review the Islamic religion and examine its relationship to safety.
4. To study and conduct content analysis of the philosophy of education and traffic safety education and determine its implication for traffic safety education in Saudi Arabia.
5. To plan and develop a pilot project for the Traffic Safety Education Program in Saudi Arabia, based on the urgent needs of the country.

These major purposes are intended to clearly diagnose and analyze traffic accidents and statistics in Saudi Arabia, review the philosophy of education and safety education and to develop a relevant traffic safety education program for Saudi Arabia. Furthermore, they are intended to seek an answer to the following questions:

1. What are the current traffic accident trends in Saudi Arabia? Are they increasing? If so, to what percentage?
2. What are the major causes of traffic accidents in Saudi Arabia? Are they due to human or mechanical errors?
3. What are the trends in driving in Saudi Arabia? Are the numbers of drivers increasing or decreasing?
4. What are the ages and the educational levels of drivers and traffic victims in Saudi Arabia?
5. What is the percentage of increase in the number of cars in Saudi Arabia?
6. How do Saudi Arabian traffic fatalities compare with those in other developed and developing countries?
7. What are the goals and objectives of education and safety education? Do they justify the development of a traffic safety education program for Saudi Arabia?

8. Does Islamic religion advocate safety?
9. How do local, official, and national policy makers in Saudi Arabia feel about traffic accidents? Do they realize the problem? Are they willing to support a remedial program?
10. What type of traffic safety education program is needed for Saudi Arabia?

The Need for the Study

The huge annual loss of human and economic resources due to car accidents has become one of the most serious social problems to plague the nations of the world. Any condition that inflicts more deaths, personal injuries and destruction upon nations than all the wars in its history, must be accepted as a prime social problem.¹²

Traffic accidents are one of the leading problems that are facing Saudi Arabia today, not only from the increase in the number of accidents, but also in the

¹²M. K. Strasser, op. cit., pp. 4-5.

severity of accidents. In a head-on collision between a bus and a truck, 37 people were killed. In another incident involving a jeep on a cliff road, 13 persons lost their lives. These are but two examples of many similar accidents involving costly fatalities in Saudi Arabia.

Despite the great achievements gained by Saudi Arabia in many socio-economic fields, traffic safety continues to decline. Of course, this is not due to total neglect by the government. As a matter of fact, the Saudi Arabian government has been concerned about traffic accidents and, consequently, continues to increase its budget allocation to the national Traffic Safety Department. However, the budget has been allocated for more traffic police personnel, new licensing equipment, and other office equipment. There has been very little, if any, money allocated to develop an educational program for the police and the general public.

Even though the traffic problem has been recognized by many Saudi officials and scholars, traffic safety education per se remains an unknown to most of them. They all tend to place a high value on traffic law enforcement and hope that a "magic" formula will be devised to cope with traffic accident problems. However,

their hope is diminishing. The situation continues to deteriorate each day, and human tragedy and suffering continues to plague the nation.

There are many things which could be done to improve the traffic situation in Saudi Arabia. Careful planning, programming, and budgeting should accompany every effort in this field. Expert advice is needed in any planning in order to avoid wasting money, and above all, human lives. Even though traffic safety education has not been fully recognized, nor understood in Saudi Arabia, it has been recognized and implemented in other countries of the world. In the United States, for example, it was recognized as early as 1936 by Mr. Albert W. Whitney, who said:

If we are seriously to attack traffic problems this condition can not be allowed to continue. Somewhere in our social or educational system, a place must be found where responsibility can be definitely established for teaching young people how to use the automobile. The natural place for giving such an instruction is the high school, and during the last year hundreds of high schools have accepted this responsibility and are now giving courses.¹³

¹³ Albert W. Whitney, Man and the Motor Car (New York, New York: J. J. Little and Ives Company, 1936), pp. XI, XII.

The importance and value of traffic safety education in Saudi Arabia will be realized and recognized as it was realized and recognized in the United States. There are signs and indications that the government intends to adopt a traffic safety education program in the future. It is for this reason that this research was undertaken. A traffic safety education program will be developed for Saudi Arabia. It will be the first of its kind in the country, and perhaps the first in the entire Arab world. It is hoped that this will be the beginning of much future research in the field and will lead to a saving of many lives in that part of the world.

The help of experts from many countries is needed in solving the problem. Global cooperation, sharing of information, and exchange of professionals is as essential in solving traffic problems as it is in solving many socioeconomic problems. Saudi Arabia, as a developing country, will need such cooperation in the future.

Definition of Terms

Accident

In common usage, the word "accident" implies an event over which we have no control. A number of more precise definitions for the word "accident" have been developed, including, "An unpremeditated or unplanned event resulting in injury, death or property damage."¹⁴

J. S. Baker defined "accident" as an event, occurrence, or happening which is unexpected or undesigned, which has an element of chance or probability and which has undesirable or unfortunate results.¹⁵

Traffic Accident

Any accident involving a traffic unit in motion on a traffic way that results in death, injury, or property damage. A traffic accident may involve more than one traffic unit if each unit comes in contact with some

¹⁴A. D. Little, Inc., The State of the Art of Traffic Safety (New York, New York: Praeger Publisher, 1970), pp. 3-4.

¹⁵J. Stannard Baker and W. R. Stebbins, Jr., Dictionary of Highway Traffic (Evanston, Illinois: Northwestern University Traffic Institute, 1964), p. 2.

other unit involved while part of either is in contact with the road or sidewalk.¹⁶

Traffic Accident Reporting

Collecting information for, preparing and submitting to a designated agency an official report of a traffic accident by some person involved in or connected with the accident or by the police who learn about it.¹⁷

Traffic Accident Summary

A routine, periodic series of tabulations of the number of traffic accidents by types, severity, time of occurrence and other circumstances, prepared from official reports of accidents by an official administrative agency.¹⁸

General Security Department

The National Police Department in Saudi Arabia which has the authority over law enforcement departments, traffic and rescue departments, civil defense departments (fire departments) and correction departments (prisons).¹⁹

¹⁶ Ibid., p. 241.

¹⁷ Ibid., p. 242.

¹⁸ Ibid., p. 242.

¹⁹ Kamal Sirage Al-Dien and M. M. Addas, General Duties of the Interior Security Forces in Saudi Arabia

Traffic Safety Education

A comprehensive education program which covers all traffic safety aspects including driver education, bicycle safety and pedestrian safety and which is aimed at developing effective and responsible citizens.

Driver Education Program

Organized system of instruction including classroom and laboratory experiences, designed primarily to enable individuals to drive a motorized vehicle safely on public streets, roads and highways. It is intended to meet the needs of various target groups including beginning drivers and problem drivers--both young and adult.²⁰

Driver education programs would include those programs presented by high school driver education courses, commercial driver education schools, and driver improvement programs which includes the remedial training of traffic violators and accident prone drivers.²¹

(Beirut, Lebanon: Dar Al-Arabia for Printing and Publications, 1959), p. 41.

²⁰ Michigan Department of Education, Driver Education Programming, January, 1970, p. 4.

²¹ A. D. Little, op. cit., pp. 106-107.

Driver License Examination

Physical, mental, intellectual, and manual examination given to individuals applying for a new or a renewal of driver license, to insure good physical health, knowledge of traffic laws and regulations, and competency in handling a motor vehicle.

Motor Vehicle Accident

Any accident involving a motor vehicle in motion, that results in death, injury or property damage.²²

Motor Vehicle Accident Death

Any fatality resulting from a motor vehicle accident.²³

Motor Vehicle Accident Injury

Any non-fatal bodily harm received in a motor vehicle accident, which can be included in any one of the following groups.

- A) Bleeding wound, distorted member or any condition that requires that the victim be carried from the scene of the accident.

²²Ibid., p. 134.

²³Ibid., p. 134.

- B) Any other visible injuries such as bruises, abrasions, swelling, limping, or other painful movement, or
- C) Complaint of pain, without visible signs of injury, or momentary unconsciousness.²⁴

Vehicle

Every device in, upon, or by which a person or property is, or may be, transported or drawn upon a highway. Excepting devices moved by human power or used exclusively upon stationary rails or tracks.²⁵

Bicycle

Every device propelled by human power upon which any person may ride, having two tandem wheels either of which is more than 20 inches in diameter.²⁶

Bus

Every motor vehicle designed for carrying more than ten passengers, and every motor vehicle, other than

²⁴Ibid., p. 134.

²⁵Ibid., p. 268.

²⁶Ibid., p. 16.

a taxicab, designed and used for transportation of persons for compensations.²⁷

Car

Every motor vehicle designed for carrying less than ten persons and used for transportation of goods and persons.

Truck

Every motor vehicle designed and used or maintained primarily for transportation of property.²⁸

Driver

Any person who drives or is in actual physical control of a vehicle.²⁹

Kilometer

A unit of length or distance equal to 1,000 meters, or 3,289 feet. One kilometer is equal to 5/8 of a mile.

²⁷ Ibid., p. 20.

²⁸ Ibid., p. 257.

²⁹ Ibid., p. 58.

Hypotheses

This research has five hypotheses which are related to the development of an analysis of the present and future traffic situation in Saudi Arabia and the future outlook for the development of a traffic safety education program in Saudi Arabia. These hypotheses are:

Hypothesis 1. Traffic accidents in Saudi Arabia are closely related to human causal factors, i.e., accidents are caused largely by human errors.

Hypothesis 2. Accidents in Saudi Arabia are increasing by more than 20 percent each year. The severity index figures would show a comparable increase in fatalities and injuries for the past eight to ten years.

Hypothesis 3. The philosophy, goals, and objectives of general education and safety education are similar and interrelated.

Hypothesis 4. A specific group, mainly policy makers, in Saudi Arabia will indicate total support for the inclusion of a traffic safety education program in Saudi Arabia.

Hypothesis 5. Islamic religion and laws clearly advocate safety.

Sub-Hypotheses

1. Human errors will account for 80 percent or more of all traffic accidents in Saudi Arabia.
2. Over 60 percent of all traffic fatalities would be among the small minority constituting the educated people of Saudi Arabia.
3. All policy makers interviewed would recognize the severity of the traffic accident problem in Saudi Arabia.
4. Fatalities and personal injuries occurring in traffic accidents are higher in Saudi Arabia than in the United States when total accidents are considered.

Delimitations of Study

Even though accident statistics and traffic safety education programs in various countries were discussed and analyzed in developing a comparison, this study was limited to Saudi Arabia in the following manner:

1. The policy makers in the Ministry of Interior (Internal Security Department), the Highway Traffic Safety and Rescue Department, and the Ministry of Education were interviewed.
2. National traffic statistics were gathered personally and by the authorities.
3. Personal examination of local highway traffic safety departments, official records and statistics was carried out.
4. Observed seventeen actual accident investigations, i.e., accompanied the investigators to the scene of the accidents.
5. Due to the lack of accurate and complete traffic records, traffic statistics and trained personnel in various traffic safety and rescue departments, the author had to collect the data personally and tabulate the results.

Organization of the Dissertation

In Chapter II the literature relating to Islamic and educational philosophies, the effect of driver education on traffic accidents, and the traffic accident records in Saudi Arabia, the United States, and other countries will be reviewed and analyzed.

The design of the study will be presented in Chapter III.

The analysis of data and the development of a rationale and a comprehensive traffic safety education program for Saudi Arabia will be introduced in Chapter IV.

Chapter V contains the summary and conclusions of the study and the recommendations for further research and future improvements of traffic safety in Saudi Arabia.

CHAPTER II
REVIEW OF LITERATURE

There has been no research or major work done which examined or analyzed the traffic situation in the Arab world. Even though the Arab League has conducted some seminars and group discussions on traffic accidents, its study was limited to emphasizing the problem, rather than diagnosing and giving direction to the solutions.

There are a few statistics on traffic accidents in Saudi Arabia and other Arab countries, but they are limited in scope and comprehension. The traffic accident records in the United States and other countries were reviewed for direction and comparison.

Traffic Accidents--Cause and Effect

An accident, as popularly conceived, has long been regarded as an unfortuitous event--something that just happens or a chance occurrence. Usually, although not

always, the outcome is harmful or unfortunate.³⁰ Such a concept implies that an accident is outside human control. On the contrary, accidents, like many other events, are caused by humans, and consequently, like many other events, they could be controlled and managed by humans as long as their causes are clearly defined and identified. A careless mother who leaves dangerous medicines within her children's reach will run the risk of her children taking the drugs and medicines and having an accident. Likewise, a careless driver who speeds on icy roads is taking the risk of skidding and may kill himself. Accidents can be controlled if the causes are identified. Since the driver is the one in control of the car, a great emphasis should be placed on him.

The behavioral scientist's concern is centered around the social and psychological characteristics of the driver, the events leading up to the accident, the accident itself, and the driver's reactions to these occurrences. To investigate these concerns a close observation, analysis, and evaluation is necessary.³¹

³⁰William Hadden, Edward A. Suchman, and David Klein, Accident Research (New York, New York: Harper and Row, Publishers, 1964), p. 262.

³¹Ibid., p. 262.

Despite the fact that there are many factors which contribute to accidents and which are uncontrollable, we should still try to pinpoint the major causal factors and try to control them. Knowing that, the various local, state, and national agencies should begin to tackle the problem.

Shaw and Sichel in their research on "Accident Proneness" discovered that drinking and driving was a major factor in car accidents in the United States. In their analysis of the problem they said:

If every driver were to know that a blood reading below .04 or .05 percent is relatively harmless, we might have as many people drinking, but fewer people exceeding the critical level when driving. In this way we would accomplish our goal. We are not after the drinking driver per se, we are after the driver who drinks too much, and in this way increases his likelihood of becoming involved in an accident.³²

The main goal in accident research is the direct study of accident situations in order to establish cause-and-effect relationships. The major factors in the success of research in this area is the reduction of the

³²Lynette Shaw and Herbert Sichel, Accident Proneness (New York, New York: Pergamen Press, 1971), p. 407.

problem to manageable size, as it is well known that there is no one cause of traffic accidents. The influences acting at any instant are innumerable and probably are more or less important in certain combinations. A clear knowledge of the problems and causes would help us in developing a solution to the problem.

Effects of Driver Education on Traffic Accidents

In the early days of driver education, the argument regarding the effect of the program on traffic accidents was philosophical and based on "common sense." During the sixties a number of studies were undertaken which reinforced the earlier philosophy and documented the results. A number of those studies which were summarized in Traffic Safety Research Review, and which involved 1,226 accidents, indicated that the accident rates of trained drivers were about half as high as those of untrained drivers, at least during the first few years of driving. Similar ratios held true for both males and females. Many of these reports also show fewer violations of traffic regulations by trained drivers and indicated

that classroom instruction supplemented by behind the wheel training is more effective than classroom instruction alone.³³

The Denver High School Study (Conger, Miller) shows that the students who took driver training were found to have significantly fewer violations over a one year period, than students who did not take it, either through choice, or lack of opportunity. This study tends to support an earlier study by Coppen, Fardun and Peck in 1965.³⁴

An eight year study of the effect of driver improvement clinics in the state of New Jersey, which involved 9,476 accidents and 5,793 subjects, showed that the subjects who attended the clinics had significantly better records after clinic processing than the subjects who did not attend the clinics. The investigation verified the value of driver improvement clinics as an important procedure for accident and violation reduction.³⁵

³³ John J. Conger, William C. Miller, and Robert V. Rainey, "Effects of Driver Education," Traffic Safety Research Review, Vol. 10, No. 3 (September 1966), p. 67.

³⁴ Ibid., p. 69.

³⁵ Harold L. Henderson, Abstracts, Traffic Safety Research Review, Vol. 11, No. 4 (December 1967), pp. 103-105.

The Oregon Department of Motor Vehicles conducted a study to determine the effects of Driver Improvement Interviews. Their data show that the subjects who had been interviewed have significantly fewer serious moving violations and fewer chargeable accidents than the control group.³⁶ In the research study conducted in Olympia, Washington by the Washington State Motor Vehicle Department it was found that drivers with high school or commercial driver training have fewer accidents and lower violation rates than those with no driver training. It also showed that drivers under 21 years of age with high school driver training have lower rates than those with commercial driver training of the same ages.³⁷ The National Education Association and other organizations who have conducted extensive studies support the fact that driver education has a great effect on violations and accidents. J. W. Asher, who undertook a similar research on 797 high school students who were selected randomly, fully agrees that driver training

³⁶ John J. Conger, William C. Miller, and Robert C. Rainey, op. cit., pp. 99-127.

³⁷ A. Cromer, Abstract, Motor Vehicle Research Review, Vol. 11, No. 4 (December 1967), pp. 124-125.

courses produce better drivers.³⁸ The Australian government, recognizing the great loss of life and property among its citizens, organized a special council to examine and analyze traffic problems and introduce remedies to deal with them. The council unanimously suggested strengthening of traffic education programs and the inclusion of Defensive Driving Courses (DDC).³⁹ Since 1969 the government has been increasing the number of courses which have had over 20,000 graduates in three years. The council came to the conclusion that the only thing which would have a positive effect on accident reduction was a comprehensive traffic safety education program. The rigorous program stimulated public awareness and consequently helped in reducing accidents.

The support for driver education is not new nor is it an innovation of the seventies. In 1925, during the Third General Meeting of the International Chamber at Brussels, Belgium, the American delegation strongly

³⁸J. William Asher, "Does Driver Training Produce Better Drivers?," Motor Vehicle Research Review, Vol. 12, No. 1 (March, 1968).

³⁹Chriss Imhoff, Australians Give New Twist to D. D. C. Traffic Safety (National Safety Council Publication, November, 1973), pp. 22-25.

recommended traffic safety education which already had been adopted by the United States. The delegation said:

In the furtherance of a safer traffic movement in the United States the question of traffic rules and regulations is being made a part of the curricula of the various schools, and campaigns are under way to educate the operators of motor vehicles to safe practice Safety education and accident prevention are being included in the program of various organizations and every effort is being made to secure uniform legislation, regulation, statistics and practices on the highways of the United States.⁴⁰

The American Association of School Administrators recognized the accident problems and in 1940 put forth many recommendations, among which were:

1. Experience shows that many accidents are preventable through a program of education.
2. Instruction in safety education is an essential part of the modern school's program of producing good citizenship.
3. The determination of the character and the extent of the school's safety program and the selecting of teaching methods to be used are professional responsibilities of educators.
4. Safety education of adults is a primary responsibility of the community and the state.

⁴⁰ Report of the American Committee on Highway Transport, American Section of the International Chamber of Commerce, Washington, D.C.: 1925, p. 25.

5. Teaching youth to be safe and intelligent operators of motor cars is a responsibility of the community.
6. The time has come for educators to prepare themselves for leadership in safety education.⁴¹

The efforts and trends to emphasize safety education including traffic safety education were and still are the main goal of many national and international organizations. The National Safety Council in 1955 analyzed safety education and presented many suggestions and recommendations among which are the following:

Safety instruction should be an integral part of the school program and should further develop understanding, attitudes, values, skills, habits and appreciations which would assist the learner in meeting the responsibilities of safe living in today's world.

Safety instruction should seek to develop fully the potentials of the "whole child" as a happy, well-integrated personality who can contribute to a better way of life for all. The school should carefully select and plan safety experiences, the methods of instruction, and the use of materials to meet the needs of each individual. The learning environment, therefore, should provide experiences that continually challenge the individual to think clearly and to act wisely in terms of safe living for himself and others.

⁴¹American Association of School Administrators, Safety Education, Eighteenth Yearbook (Washington, D.C.: National Educational Association, 1940), p. 356.

The school should utilize community resources to implement its program and to further supplement its efforts in safety education.

Safety education should be a vital part of the community life.

Safety education should develop a continuous awareness of the value of human life and the physical well being of individuals, and at the same time recognize the achievement of others in meeting these requirements.

Life and human well being are priceless and can be conserved only to the extent that we are aware of and can appreciate their value.

Safety and education should be continuous and contribute to the enrichment of all areas of living.

Education is the ongoing process of life and safety education is the continuous process of conserving it. The safety experiences in the school should be continuous and consistent with those out of school.

Safety education should help each individual not only to avoid accidents but also to free him to live life more abundantly.⁴²

In 1959 George Silverwood recommended to the Conference on Teacher Preparation that teachers should be fully prepared in safety education. He said:

⁴²National Safety Council, Basic Principles for Safety Education (Safety Education, Vol. 35, December, 1955), pp. 12-13.

First of all, the teacher must have a clear understanding of the accident problem as it confronts society-at-large. She must become familiar with the history of accident prevention from its birth in industry back in the early 1920's through its expansion onto our highways and into our homes. She must be made aware of the magnitude of the accident problem and of its impact upon the individuals.⁴³

At the same conference various speakers talked about the importance of Driver Education. Among them was M. E. Engelhards who said:

Driver education teachers should work with the attitudes, knowledge and skill of individuals and groups in order to create a safer traffic environment.

Attitudes are not developed in a vacuum, but result from activity. To be effective in shaping individual and group attitudes, it is essential that each instructor be skillful in using a variety of selected teaching methods and techniques.⁴⁴

In a recent article, Dr. Robert A. Ulrich stated that most driver education programs lack qualified teachers. He said that most of the teachers are part-time and had little or no driver education training. He

⁴³George P. Silverwood, Teacher Preparation in Safety Education (Malesu, Wisconsin: Wisconsin Conference for College Instructors of Safety Education, 1957), p. 2.

⁴⁴Ibid., p. 76.

also pointed out that the curriculum is old, traditional and out of date. He concluded that most of the studies lack sound appraisal of the teachers' qualifications and program comprehensiveness. He is convinced that driver education programs can be effective in improving traffic situations today, if we properly prepare teachers for that performance.⁴⁵

Dr. Richard Kaywood reemphasized the need for Traffic Safety Education when he said:

The broader approach of Traffic Safety Education encompasses pedestrian, passenger, bicycle, motorcycle and school bus driver safety education, as well as beginning and advanced driver education and driver improvement programs. This instructional activity is concerned with the task of teaching survival on the streets and highways of our nations.

Each of the many public and private agencies and organizations has a contribution to make in the total traffic safety education effort.

Teachers of traffic survival can not be reserved for public schools alone. It is a responsibility of many groups and each can support the others. We have operated alone for too long, and the job is too long for one agency. Make traffic safety

⁴⁵Robert A. Ulrich, "Preparation for Successful Performance," Journal of Traffic Safety Education, Vol. XX, No. 2 (January, 1973), p. 7.

education a cooperative effort, and everyone including the schools will reap untold benefits.⁴⁶

Traffic Accident Statistics in Some
Selected Countries of the World

Traffic problems are not restricted to certain countries nor to a certain geographical area. They are confronting all the countries of the world. Traffic accidents are on the increase in Africa, Asia, and Europe as well as North and South America. Even though traffic accidents and fatalities are increasing annually in most of the countries of the world, the rate of increase varies from one country to another. The variance is dependent upon many variables which contribute to the rate of increase.

The literature and research indicate that the most frequent variables contributing to increases in traffic accidents and fatalities can be summarized in the following:

⁴⁶Richard Kaywood, Editor, "Traffic Safety Education--A Cooperative Enterprise," Journal of Traffic Safety Education, Vol. XX, No. 3 (April, 1973), p. 5.

1. An increase in the number of vehicles per person may increase the accident rate.
2. An increase in mileage driven per car could have a direct relation to an increase in car accidents and fatalities.
3. Drinking and driving can contribute to the increase of car accident rates, especially if the blood level is high.
4. Speeding has a direct relationship to the severity index of car accidents.

Those are the most frequently mentioned variables in the studies conducted in the field. There are some other variables, but they were classified as having only a minor effect on the traffic accident rate of increase.

It is really surprising to discover that the level of education and the socio-economic situation were not considered except by one study (Transport and Road Research Laboratory) which examined traffic accidents in developing countries.⁴⁷ Even this study did not examine

⁴⁷G. D. Jacobs and P. Hutchinson, A Study of Accident Rates in Developing Countries, op. cit., p. 15.

those variables thoroughly nor did it develop a cohesive relationship.

Of great importance to this study are the level of education and socio-economic factors of the whole country, and not just the levels of minority groups or certain regions of a country. Driving a motor vehicle, riding a bicycle, or walking on the street is a function which involves all social classes and races of a particular country. The socio-economic and educational levels of the country reflect the total social life of all individuals, especially in this era of sophisticated communication systems. Many studies show that television, newspapers, radios, and motion picture films have a great influence on individual behavior. Any message, good or bad, will reach the receiver and will have its effect on him.

Recognizing these facts, it then becomes necessary to study and review traffic accident statistics and traffic records in various selected countries of the world. These countries were selected at random from developed and developing countries. It is well known that the socio-economic and educational levels in developed countries are higher than they are in developing

countries. Consequently, an overall comparison of traffic accidents and their severity is pertinent in determining the impact of socio-economic and educational levels on them. The percentage increases in fatality rates are calculated for ten year periods for the various selected countries of the world. Each percentage increase is represented by a graph. The statistics were gathered from the Transportation and Road Research Laboratory.⁴⁸ The countries selected for the study are classified in two groups, developed countries and developing countries. Cyprus, which is a transitional country, is counted among the developed countries, due to the high level of education and its close ties with the Western World.

Rate of Percentage Increase in Traffic
Fatalities in Developed Countries

The percentage increase in fatalities due to traffic accidents in developed countries was calculated. The following developed countries were selected at random: United States, Great Britain, Japan, Australia, and Cyprus.

⁴⁸ Ibid., pp. 13-25.

The percentage increase in traffic fatalities represent a ten year period (1958-1968). The graphs on the following pages represent those increases.

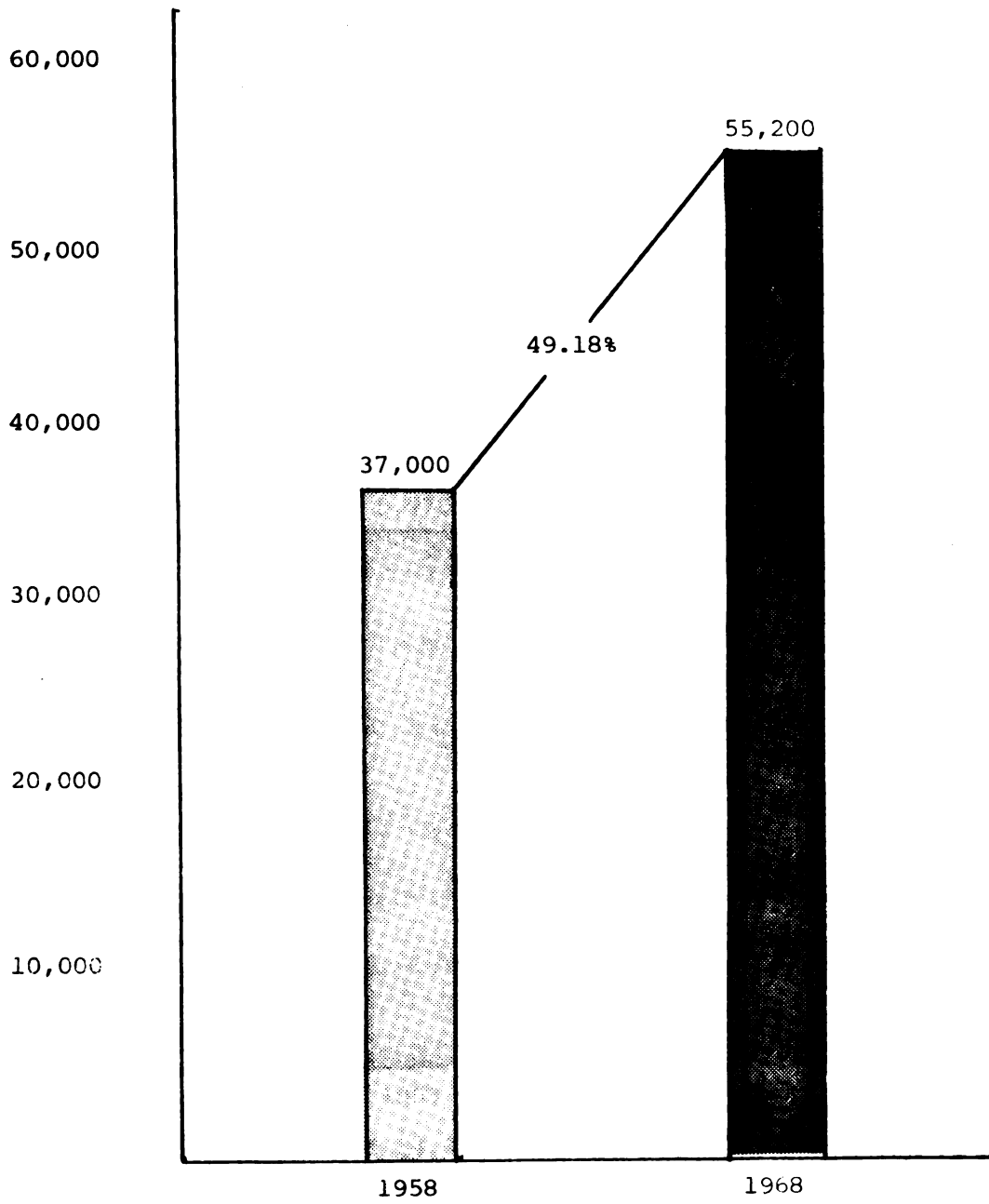
The figures show that the percentage increase in the fatality rate during the ten year period (1958-1968) varies from 4.46 percent to 94.5 percent in the developed countries selected for the survey.

In the United States (Figure 1) the percentage increase was 49.18 percent, which is quite similar to the percentage increase in Australia (Figure 4). The average increase in both countries was about five percent a year.

The percentage increase in traffic fatalities in Japan (Figure 3) during the same period was higher than all the developed countries included in the study.

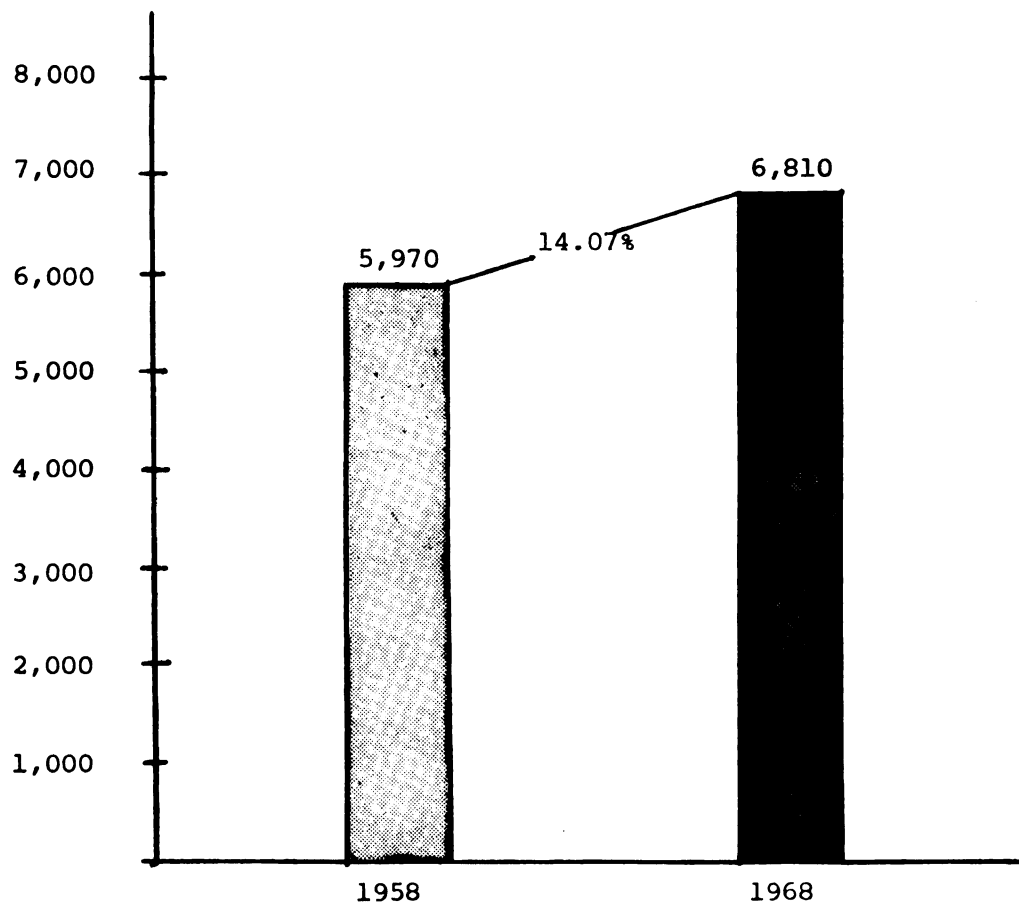
Cyprus (Figure 5) has the lowest percentage rate of increase and Great Britain (Figure 2) was the second lowest.

The socio-economic growth in any country is estimated by many procedures among which is the calculation of the average annual rate of growth of gross domestic products, which has been widely used by the United Nations. It is computed as average annual geometric rates of growth expressed in percentage form for the period indicated.



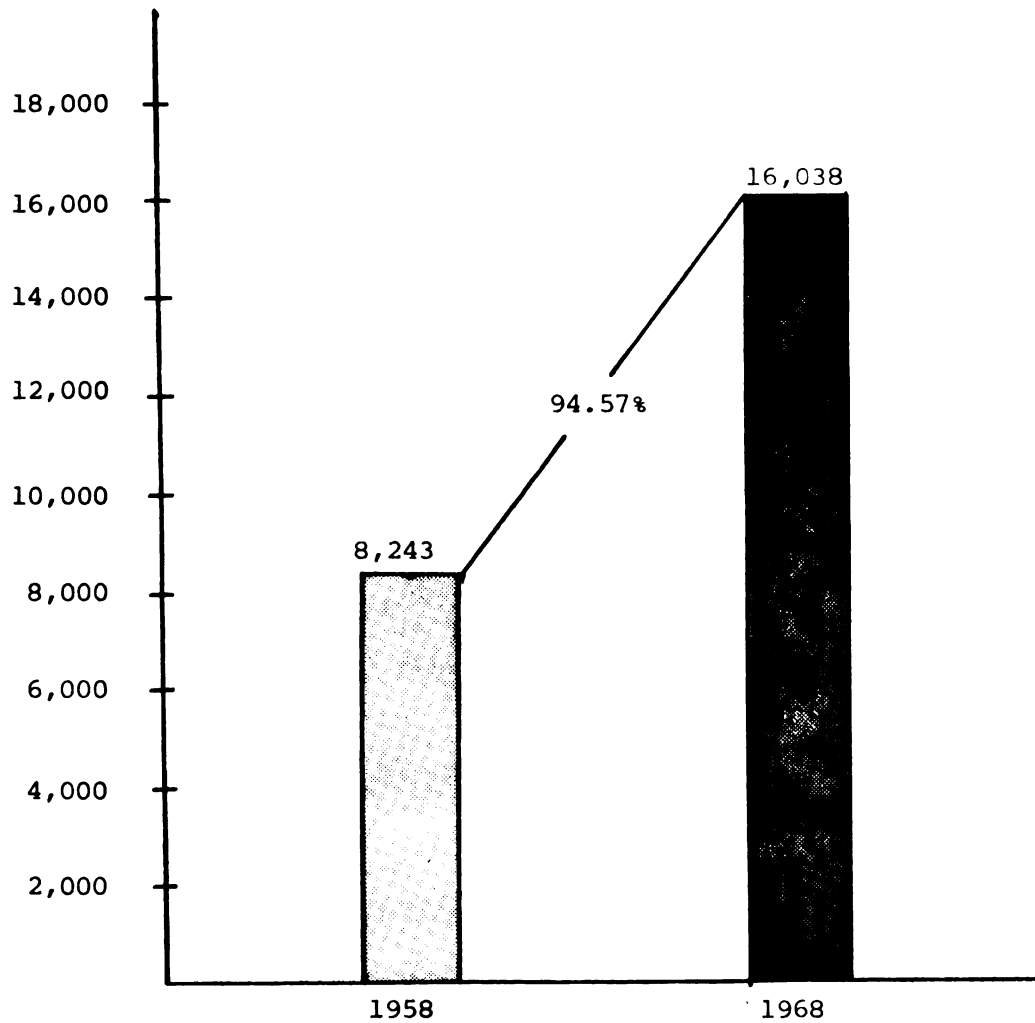
Increase of 49.18% in fatalities over the 10 year period 1958-1968

Fig. 1.--Fatality Rates of Car Accidents in the U.S.A. Over the 10 Year Period 1958-1968.



Increase of 14.07% in fatalities in 10 years
due to car accidents

Fig. 2.--Fatality Rates of Car Accidents in Great Britain
Over the 10 Year Period 1958-1968.



Increase of 94.57% in fatalities in 10 years
due to car accidents.

Fig. 3.--Fatality Rates of Car Accidents in Japan
Over the 10 Year Period 1958-1968.

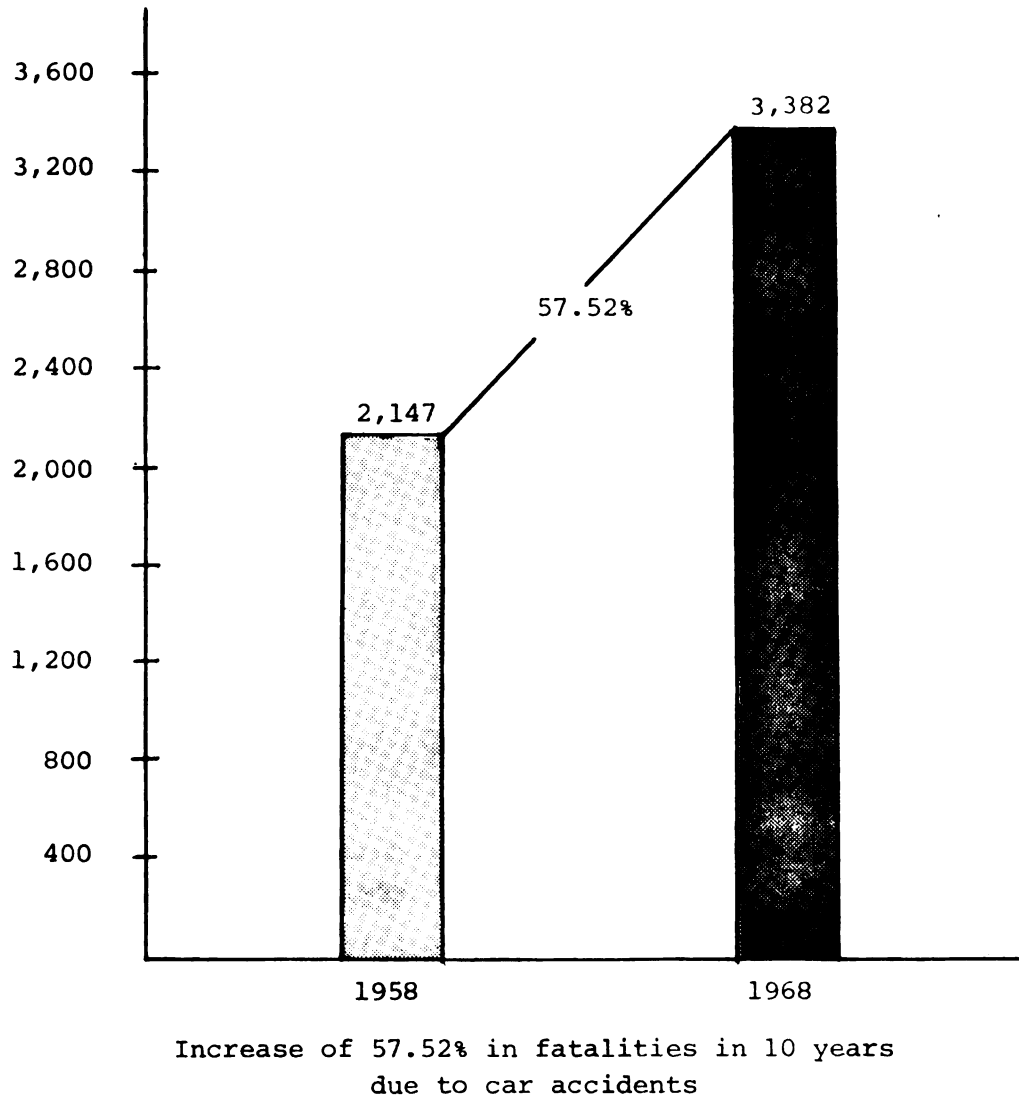
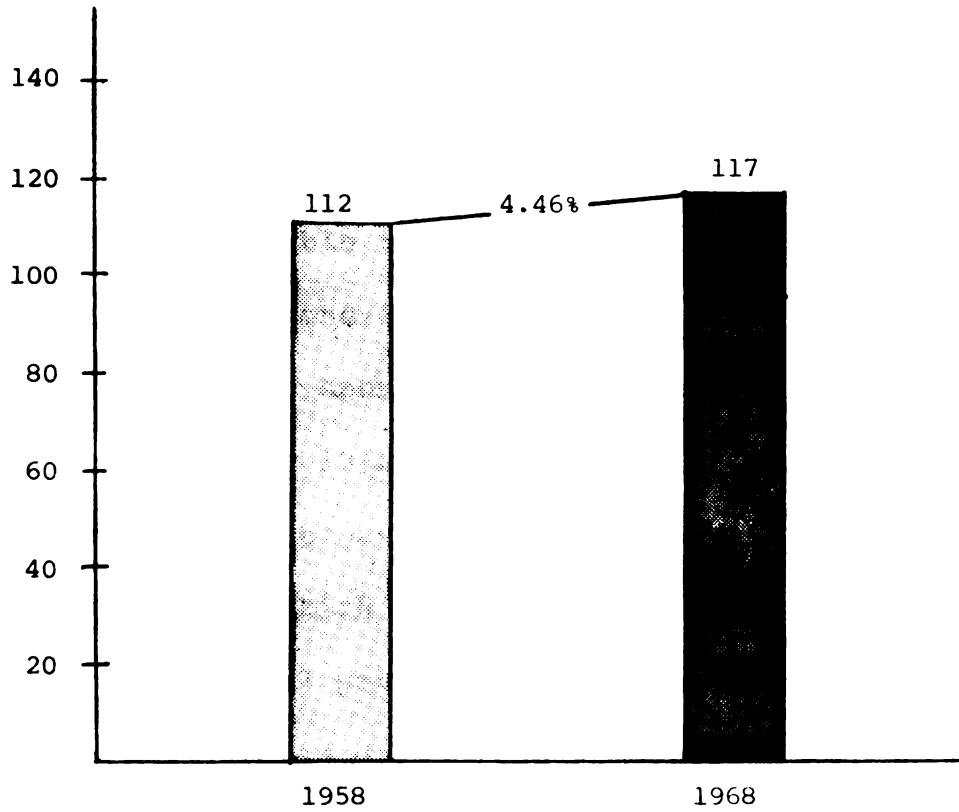


Fig. 4.--Fatality Rates of Car Accidents in Australia Over the 10 Year Period 1958-1968.



Increase of 4.46% in fatalities in 10 years
due to car accidents

Fig. 5.--Fatality Rates of Car Accidents in Cyprus
Over the 10 Year Period 1958-1968.

In the following discussion, the socio-economic growth of each country will be indicated by the average annual rate of growth of domestic products. The total gross domestic products of the country and the per capita gross products are also included.

Japan had the highest percentage increase in traffic fatalities (94.57 percent). This high percentage was in part attributable to the rapid socio-economic growth that Japan had undergone in the late fifties and the sixties. The Average Annual Rate of Growth of Domestic Products in Japan for 1960 was 10.1 percent for the total gross domestic products and 9.1 percent for the per capita gross products. This high figure climbed to 12.14 percent for the total and 11.2 percent per capita during 1969-1965, while the United States during the same period had only 4.9 percent for total and 3.4 percent per capita.⁴⁹ In the ten year period (1958-1968) the number of cars in Japan increased by over 800 percent. This indicates the rapid growth Japan had undergone during these periods. The socio-economic developments were very rapid which, in turn, undoubtedly contributed to the high increase in

⁴⁹United Nations, International Tables Yearbook of National Accounts Statistics, Vol. III, 1972, pp. 90-93.

traffic fatalities. Even though the rate of traffic fatalities was higher than most of the developed countries, Japan's increase was not totally unexpected when the rapid rate of growth of the nation was considered.

Great Britain and Cyprus had the lowest percentage of increase in traffic fatalities during the ten year period, 14.07 percent and 4.46 percent respectively. This low increase may have been attributable to the slow change in the socio-economic growth of the two countries. Great Britain's overall annual rate of growth of gross products was 3.3 percent for the total and 2.6 percent per capita for the year 1960. This figure actually declined to 2.9 percent for the total and 2.3 percent per capita during the years 1960-1970. The figures for Cyprus were 3.4 percent for the total growth and 2.7 percent for the per capita growth.⁵⁰ In the United States the average annual rate of growth of gross domestic products for the total country was 4.9 percent during 1960-1965 and decreased to 4.3 percent from 1960-1971. Australia's average annual rate of growth of gross domestic products for the total country was 5.3 percent for the period between 1960-1965.

⁵⁰ Ibid., pp. 90-98.

Both the United States and Australia encountered a moderate change in socio-economic growth during 1960-1971 and showed an increase in traffic fatalities of about 50 percent (see Figures 1 and 4).

Those figures indicate that the socio-economic level (which is directly related to the educational level) has a great influence on the rate of increase in traffic fatalities.

Rate of Percentage Increase in Traffic Fatalities in Developing Countries

The developing countries of the world are also suffering from traffic accidents, and the rate of increase of these accidents varies from one country to another.

The increase in traffic fatalities was calculated for the following randomly selected countries: Jamaica, Kenya, Uganda, Zambia, and Saudi Arabia.

The rate of increase represents a ten year period for all the countries except Saudi Arabia. The increase for Saudi Arabia represents only a six year period (no data on traffic accidents and fatalities were available prior to 1967).

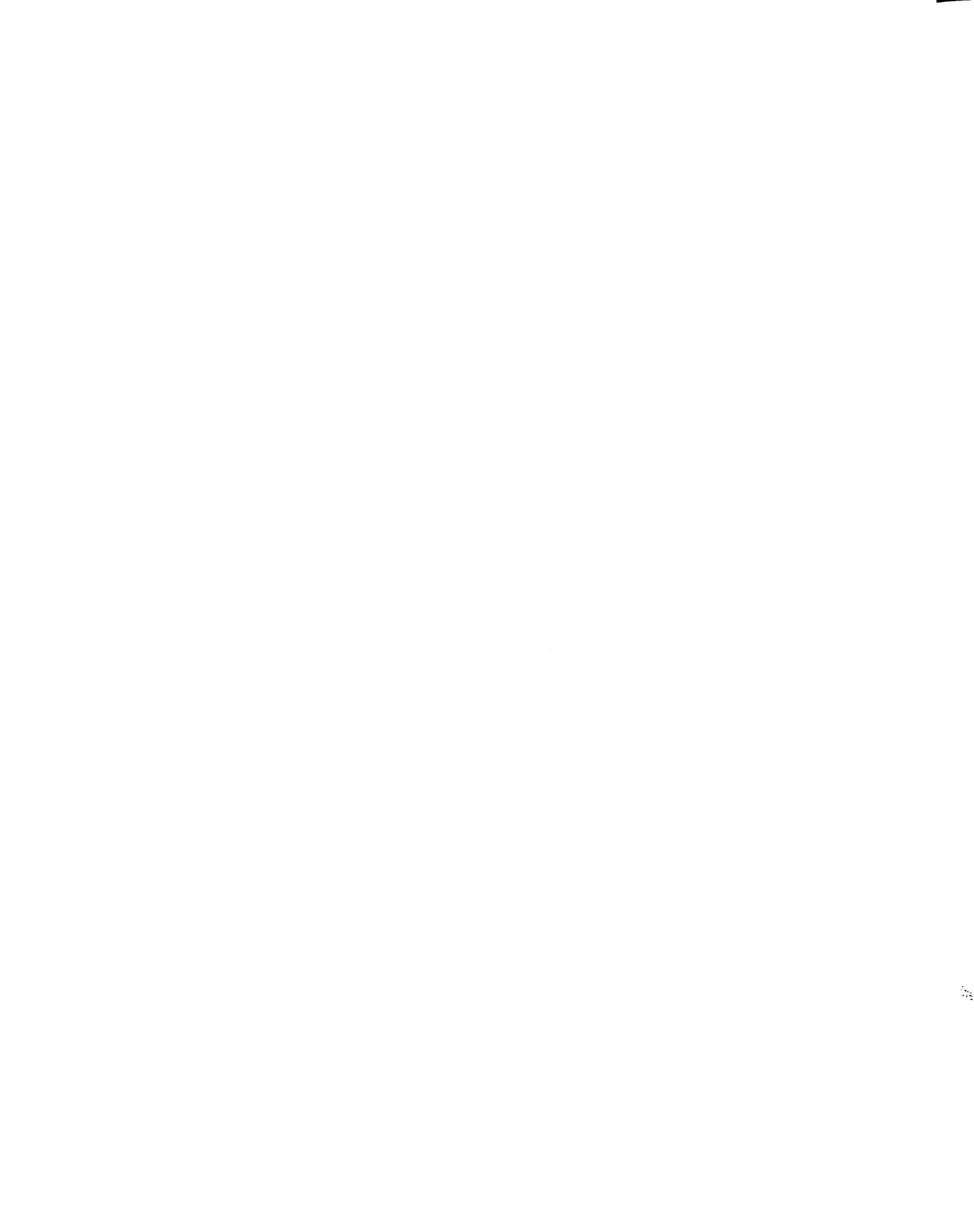
The following graphs (Figures 6-10) represent the rate of increase in traffic fatalities in the selected developing countries.

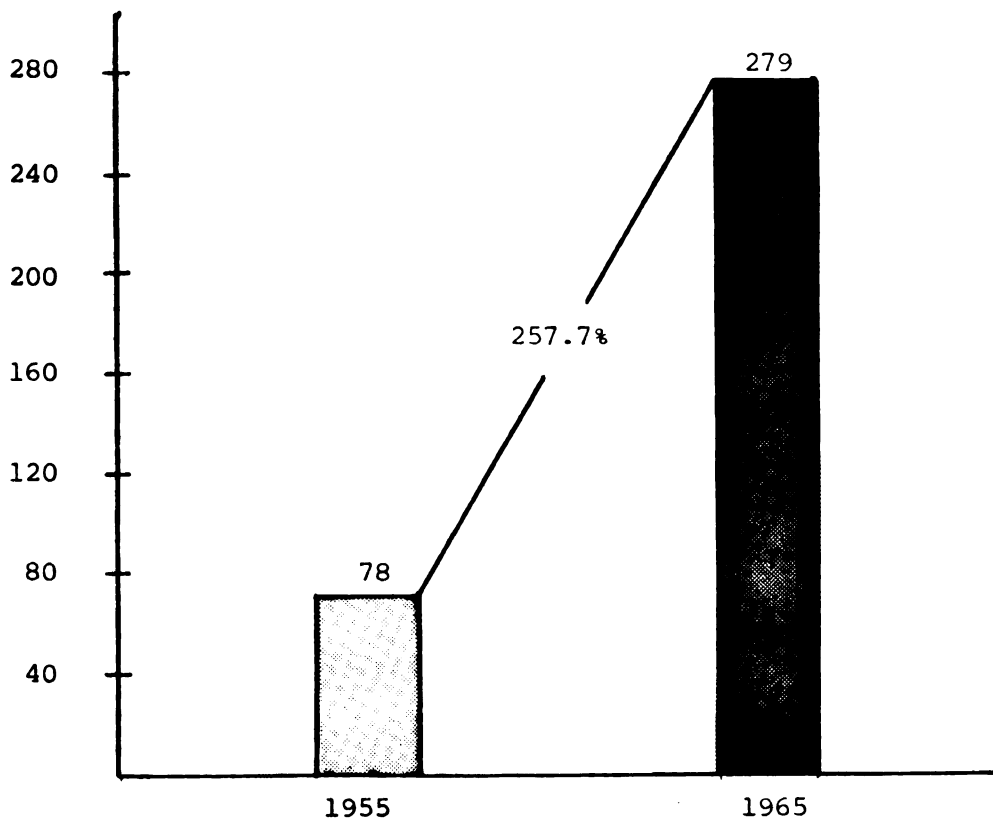
The graphs show the rate of increase in fatalities due to car accidents to vary from 65.81 percent to 749.5 percent.

Even among the developing countries there was a difference in the rate of increase. Uganda had an exceptionally low rate of increase in traffic fatalities. It was only 65.81 percent (Figure 8). The accuracy of the statistics provided by Uganda is doubtful. Uganda's per capita gross national product rate for the year 1973 was only \$130, and the death rate was 18 per 1,000 population. These figures are very low if compared to Jamaica which had \$670 per capita gross national product rate and a death rate of 7 per 1,000 during the same period.⁵¹

Kenya had the second lowest rate of increase in traffic fatalities of the developing countries selected. It was 137.6 percent during the ten year period (Figure 7). Kenya's annual rate of growth was very low in the fifties and early sixties. The average annual rate of growth of

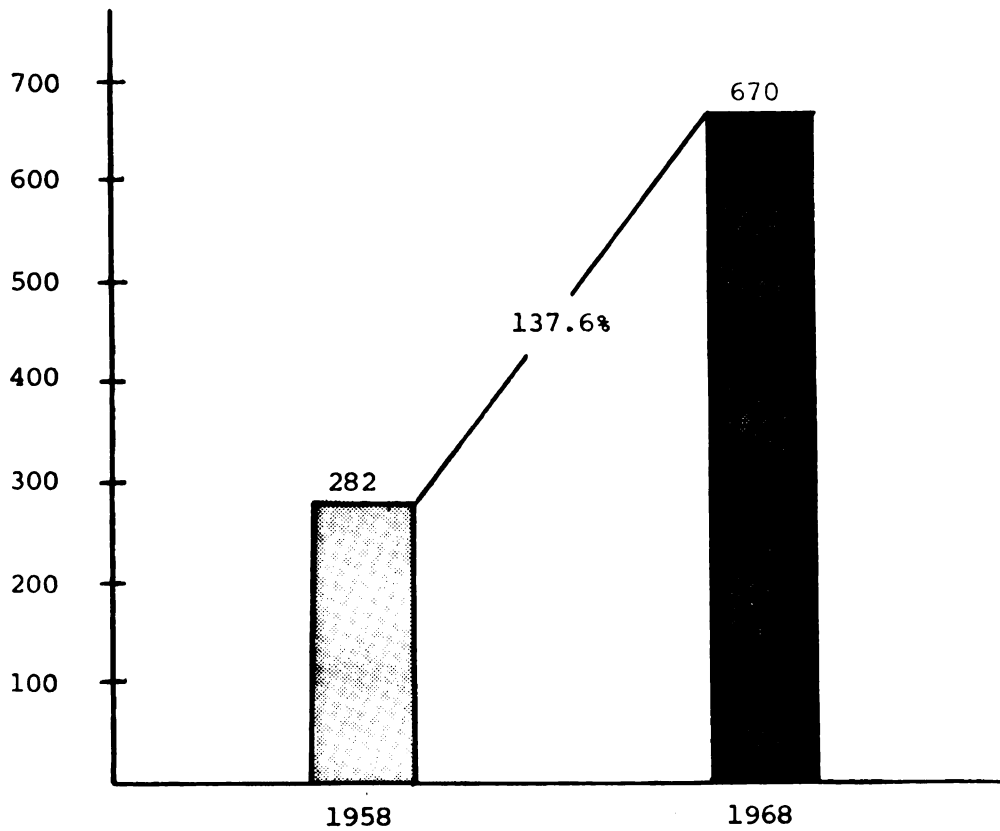
⁵¹Population Reference Bureau, Inc., World Population Sheet (Washington, D.C.: 1973).





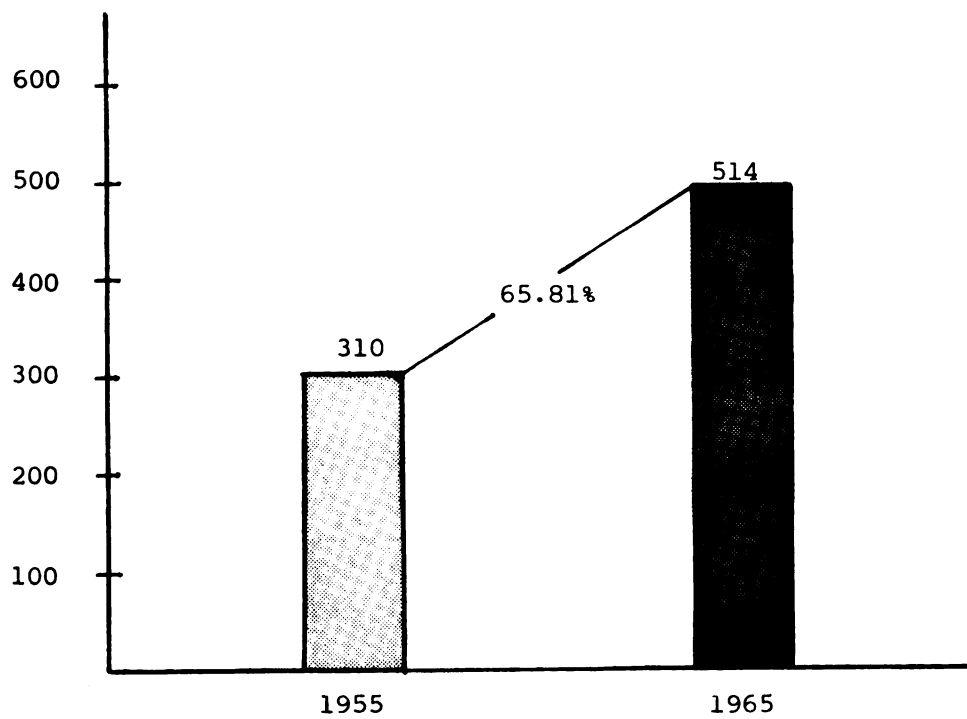
Increase of 257.7% in fatalities in 10 years due to car accidents

Fig. 6.--Fatality Rates of Car Accidents in Jamaica Over the 10 Year Period 1955-1965.



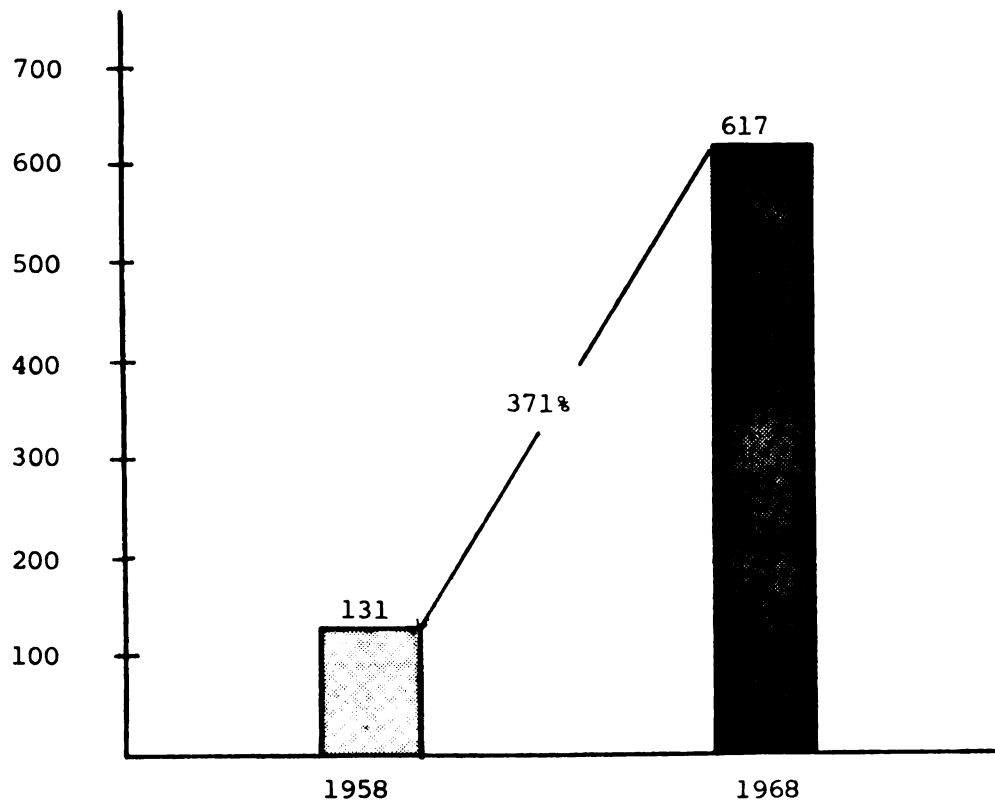
Increase of 137.6% in fatalities in 10 years due to car accidents

Fig. 7.--Fatality Rates of Car Accidents in Kenya Over the 10 Year Period 1958-1968.



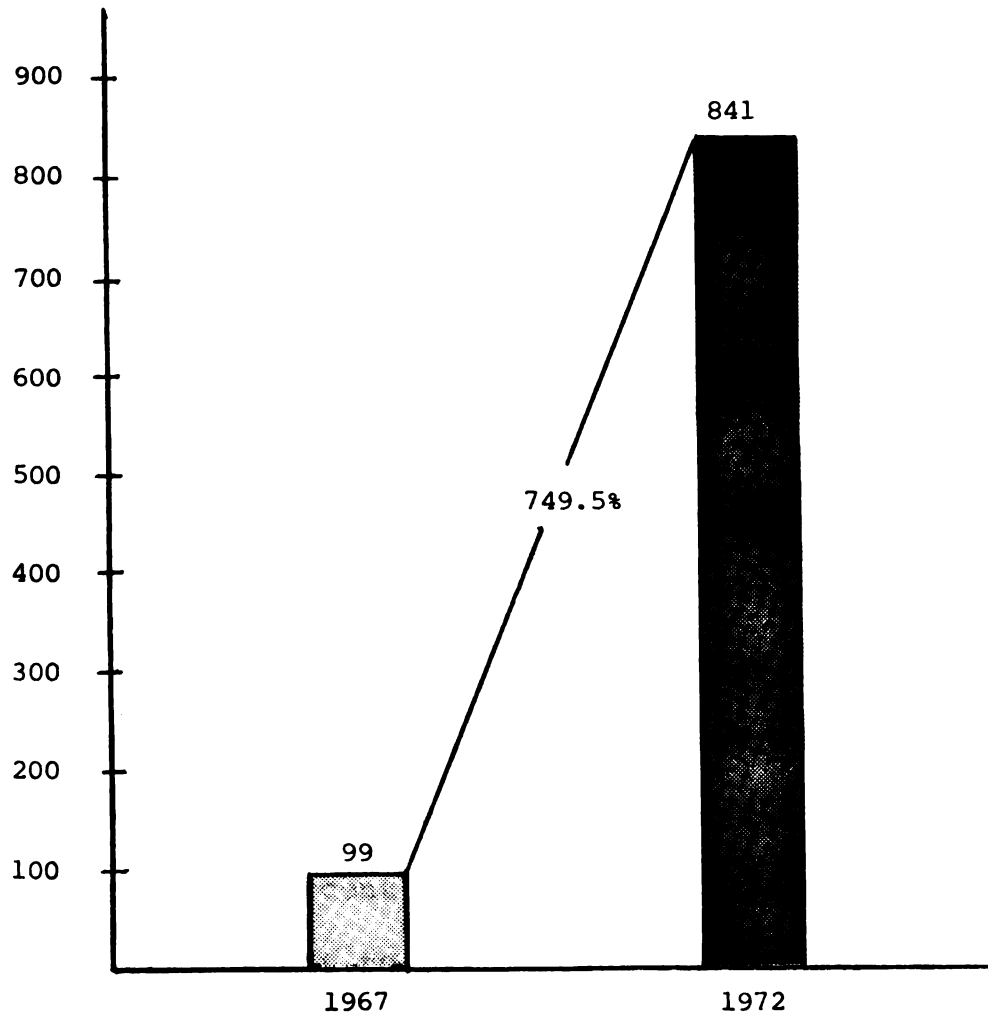
Increase of 65.81% in fatalities in 10 years
due to car accidents

Fig. 8.--Fatality Rates of Car Accidents in Uganda
Over the 10 Year Period 1955-1965.



Increase of 371% in fatalities in 10 years
due to car accidents

Fig. 9.--Fatality Rates of Car Accidents in Zambia
Over the 10 Year Period 1958-1968.



Increase of 749.5% in fatalities in only 6 years
due to car accidents

Fig. 10.--Fatality Rates of Car Accidents in Saudi Arabia
Over the 6 Year Period 1967-1972*

*No records for car accidents were kept in Saudi Arabia prior
to 1967.

gross products was .2 percent for the total country during the period 1964-1965. Despite the low growth, the low increase in traffic fatalities is actually very high if compared with developed countries.

The percentage annual rate in domestic gross products in Jamaica increased from 3.0 percent for the total country and 1.3 percent for per capita to 4.6 percent for the total country and 3.2 percent per capita (1960-1970). This growth is reflected in the very high increase in traffic fatalities of 257.7 percent during this period (Figure 6).

Zambia went through a great change during the sixties. The rate of growth in gross domestic products increased from 5.7 percent to 8.2 percent for the total country and 2.7 percent to 5.1 percent for per capita (1960-1970). Likewise, the rate of increase in traffic fatalities was 371 percent (Figure 9).

In only six years the rate of increase in traffic fatalities in Saudi Arabia was 749.5 percent (Figure 10). This figure is very high, and higher than all the figures of the countries included in this study and all the countries surveyed. This high amount of fatalities represents the extreme traffic problem that is currently

facing Saudi Arabia. This figure also corresponds with the high rate of growth of gross products during 1962-1970 which was 9.7 percent for the total country and 6.9 percent for per capita.

In all cases, there is a great increase in traffic fatalities in all the developing countries over the ten year period. The rate of increase in traffic fatalities varies from 13.8 percent to 37.10 percent annually for all the countries except Saudi Arabia. The average annual rate of increase for traffic fatalities in Saudi Arabia was approximately 130 percent. This figure was twice the rate of Zambia, three times the rate of Jamaica, and about six times the rate of Kenya.

Comparison Between Fatality Rates in Developed and Developing Countries

Among all the countries selected for the study, we see that the rate of increase in traffic fatalities varies from 4.46 percent in Cyprus (Figure 5), to 749.5 percent in Saudi Arabia (Figure 10). The difference between the two is very great. To study the differences and develop a rationale for them needs careful examination. Figure 11

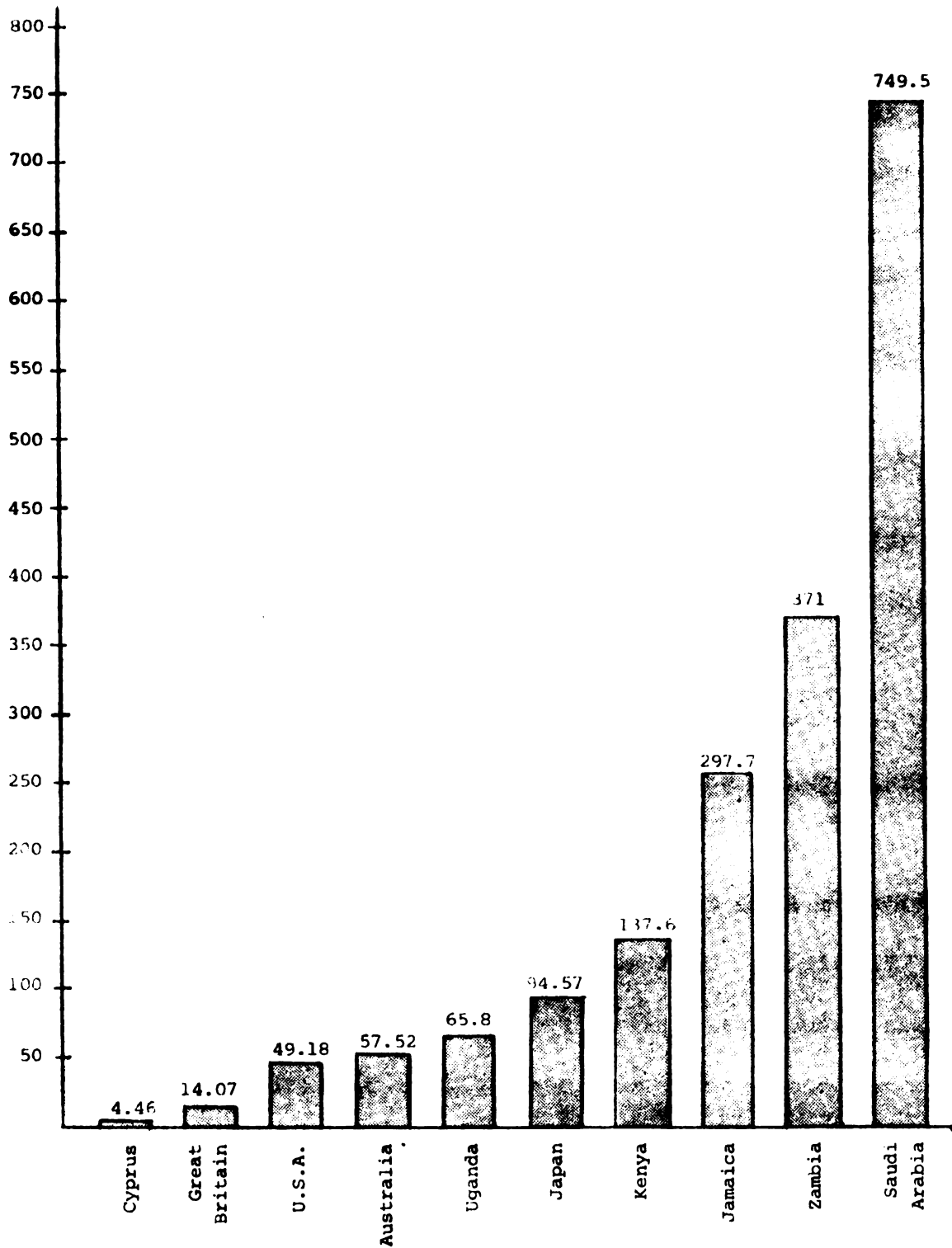
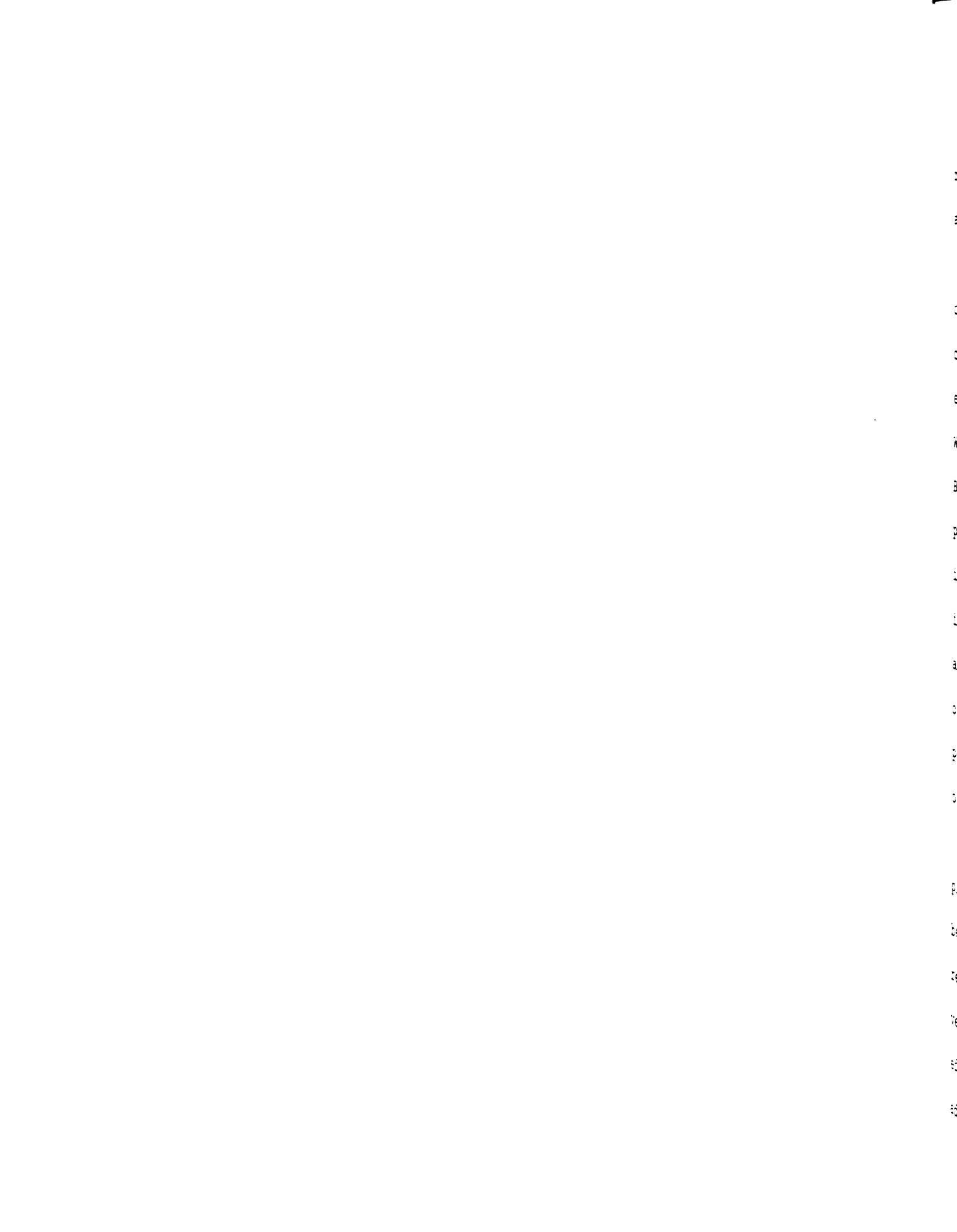


Fig. 11.--Comparison of Percentage Increases in Fatality Rates in Various Countries in the 10 Year Period (Except Saudi Arabia which is for a 6 Year Period).



represents the rate of increase of traffic fatalities in all countries selected for the study.

From this graph, it is very clear that the rates of increase in traffic fatalities were higher in developing countries than they were in developed countries (with the exception of Japan and Uganda for reasons discussed earlier). While the rates in the developed countries such as Great Britain, United States, and Australia increased by 14.07 percent, 49.18 percent, and 57.52 percent, respectively, in ten years, the rates in Kenya, Jamaica, and Zambia during the same period jumped to 137.6 percent, 257.7 percent, and 317 percent, respectively. In Saudi Arabia during only six years the rate of fatalities increased by 749.5 percent. This is an astronomical increase and a huge loss of lives.

Socio-economic and educational levels of a country play a great role in the total development of individual behavior and attitudes. These behaviors and attitudes are reflected in the driving task. Total socio-economic development plays a great role in the growth of a country's educational level. Rapid growth may disturb an individual's adjustment to quick change; however, the individual through

education can make the necessary adjustments to these changes.

The developing countries, as a result of lack of education and high levels of illiteracy, encounter a high increase in traffic accidents. The rate of increase in traffic fatalities in Saudi Arabia was more than 53 times greater than the rate in England and more than 25 times the rate in the United States. Saudi Arabia's rate was more than seven times greater than the rate of increase in Japan, which had gone through the same rapid growth. The reason is clear: Japan is a developed country with a developed educational system which includes traffic safety education programs; and Saudi Arabia, despite its economic growth, has the worst rate of increase in traffic fatalities. This, of course, is due to the lack of education, especially driver education. The illiteracy rate in Saudi Arabia was estimated to be between 85-95 percent in 1971. This figure is very high if compared to the two percent in Japan during the same year.⁵² Despite the fact that Saudi Arabia has a high illiteracy rate, most of the traffic

⁵²United States Department of Commerce, National Technical Information Service Agency for International Development, Data Book for Near East and South East Asia (Springfield, Va., December, 1973), p. 4.

fatalities are among the small minority of the educated elite who due to their economic situation and professional occupation are the majority of car owners. Since Saudi Arabia does not have any traffic safety education program, people drive without any previous professional training in safe driving. This fact, coupled with the high traffic severity rate in Saudi Arabia, could be a leading cause of the high rate of fatalities of educated people.

Increase in the Number of Vehicles in
Various Countries over a
Ten Year Period

The number of vehicles has been increasing in all the countries of the world. The rate of increase varies from one country to another. The variance is dependent on the economic growth of the country.

It was necessary to determine the increase in the number of cars in the ten countries studied during a ten year period in order to study and analyze the impact of the increase on traffic accidents. Also, the number of vehicles per person was estimated for the selected countries. Table 1 shows the rate of increase in the

TABLE 1.--Rate of increase in motor vehicles in selected developed and developing countries.

Country	Number of Vehicles		% of Increase	Population 1968	Vehicles per person 1968
	1958	1968			
Australia	2,256,692	4,463,000	97.76%	12,173,000	0.367
Cyprus	36,950	67,789	83.5%	633,000	.108
Great Britain	313,797	342,398	9.1%	55,283,000	0.261
Jamaica	29,029	65,300	124.95%	1,791,000	0.036
Japan	1,317,000	12,870,000	877.2%	100,510,000	0.123
Kenya	73,358	101,973	39%	10,209,000	0.010
Uganda	30,206	59,961	98.5%	995,000	0.060
U.S.A.	68,298,000	108,000,000	58.13%	201,152,000	0.53
Zambia	42,330	74,000	74.8%	4,144,000	0.018
Saudi Arabia*	77,853	154,111	97.95%	6,400,000	0.024

*These figures represent 1964 to 1973. No data are available as to the number of cars prior to 1964.

number of vehicles. This increase in the number of vehicles and the increase in the fatality rate for each country was graphed and is shown in Figure 12.

As indicated in Table 1, the number of vehicles increased in all of the countries. In the United States, the number of vehicles increased from 68,298,000 in 1958 to 108,000,000 in 1968. This represents an increase of 58.13 percent. In Saudi Arabia there are no records for car registration prior to 1964. The available data were found for the period 1964-1973. In 1964 there were 77,853 motor vehicles in Saudi Arabia; by 1973 that figure had soared to 154,111. This represents an increase of 97.95 percent in only nine years.

Japan had the highest increase in the number of cars (877.2 percent) which may reflect some light on the increase in the fatality rate for Japan. But the increase in the number of cars exceeded the increase in the traffic fatality rate by a ratio of 9:1 (i.e., the increase of 877.2 percent in the number of cars to the increase of 94.5 percent in the number of fatalities during this period).

Jamaica also had a large increase in the number of cars (Table 1), but the increase in the fatality rate

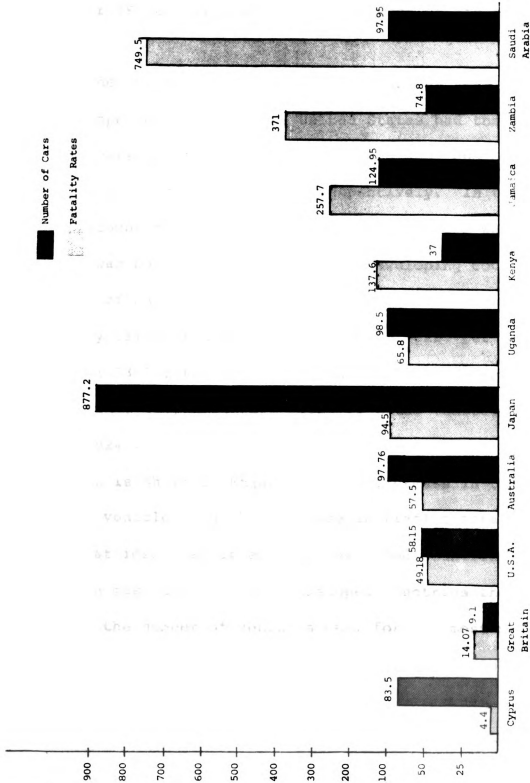


Fig. 12.--Comparison of Percentages of Increase in Fatality Rates and the Number of Cars in Various Countries in a 10 Year Period (Except Saudi Arabia--fatality figures are for 6 years; car figures are for 9 years).

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was higher (Figure 12), which is a reverse of the situation in Japan.

The number of vehicles per person was very high for the developed countries. The United States had the highest with .53 cars per person; Australia, England, and Japan were second, third, and fourth, respectively. In the developing countries the number of cars per person was very low. It was below .06 in all of the developing countries. The ratio of cars per person in the United States was more than fifty times greater than the rate of cars per person in Kenya (.53 for the United States; .010 for Kenya). Saudi Arabia, too, has a low ratio of motor vehicles per person (.024).

As is shown in Figure 12, the increase in the number of vehicles and the increase in traffic fatalities were almost identical in all the developed countries except Japan. In most cases in the developed countries the increase in the number of vehicles was, for the most part, greater than the fatality rate in the developed countries. In the developing countries the opposite was true. The increase in the number of cars was much below the increase in fatality rate (except Uganda). The increase in fatality rate was four times greater than the increase in the number

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of vehicles in Kenya, two times greater in Jamaica, five times greater in Zambia, and nine times greater in Saudi Arabia.

The difference between the developed and developing countries is more apparent and clear if we are to compare Japan and Saudi Arabia. In Japan the number of cars increased by 877.2 percent, while the increase in fatality rate was only 94.59 percent for that period. This represents a ratio of 9:1. In Saudi Arabia the opposite is true. While the number of vehicles increased by 97.5 percent in nine years, the traffic fatality rate soared to 749.5 percent in only six years, a ratio of 1:8, despite the fact that the percentage of vehicle increase was for nine years and the percentage of traffic fatalities was only over a six year base.

In the developing countries, the high increase in traffic fatalities, the low ratio of vehicle distribution and the low percentage in car increases clearly indicate that they are faced with a very serious problem. The problem is much greater than for the developed countries.

Despite the economic gains which some of the developing countries have attained, the problem remains very grave. A total effort in education, especially traffic

safety education, coupled with the development of all social aspects, will help in reducing and minimizing the problem. It has been done in many of the developed countries and it could be done in the developing countries.

Severity Index for Various Countries
of the World

The severity index is a measure of the proportion of all casualties that are fatal. The country with a high severity index has a high proportion of fatal injuries. Casualties mean all fatalities plus all injuries (serious and slight injuries). The severity index is estimated by dividing the number of fatalities by the number of casualties and multiplying it by 100 to present it in percent.

In Table 2 the severity index of 25 developing countries is calculated and presented. Also, the number of vehicles per 10,000 population is calculated and presented.

In Table 3 the severity index for different developed countries is calculated and presented with the number of vehicles per 10,000 population.

TABLE 2.--Severity index for selected developing countries, 1968.

Country	Fatalities	Total Casualties	Severity Index	Vehicles/ 10,000 Persons
1. Botswana	20	229	8.73	77
2. Cameroon	90	2,247	4.01	99
3. Ceylon	589	8,337	7.17	118
4. Chile	1,448	25,485	5.68	303
5. Cyprus	117	3,148	3.72	1,090
6. Gambia, The	27	317	8.52	95
7. Guyana	125	2,080	6.01	452
8. India*	9,734	61,111	15.93	23
9. Ivory Coast	362	4,688	7.72	204
10. Jordan	197	2,267	8.69	123
11. Kenya	670	5,599	11.97	100
12. Kuwait	206	2,829	7.28	1,917
13. Madagascar	148	2,778	5.33	111
14. Malawi	152	1,699	8.95	40
15. Malaysia (W)	719	8,553	8.41	591
16. Mauritius	80	1,928	4.15	257
17. Morocco	1,305	21,775	5.99	187
18. Portugal	1,183	24,716	4.79	830
19. Saudi Arabia** ²	570	5,153	11.06	240
20. Singapore	312	9,576	3.26	1,241
21. Tunisia	214	3,687	5.80	212
22. Yugoslavia	2,703	41,427	6.52	443
23. Zambia	617	5,660	10.90	178

*Figures for 1967

**Figures for 1971

¹ Calculated from the Report by the Transport and Research Laboratory, op. cit., pp. 7-8.

² Calculated from Summary Statistics Report of Car Accidents in Saudi Arabia.

TABLE 3.--Severity index for selected developed countries, 1968¹

Country	Fatalities	Total Casualties	Severity Index	Vehicles/ 10,000 persons
1. Australia	3,382	85,592	3.95	3666.3
2. Great Britain	6,816	349,208	1.95	2613.02
3. Japan	16,038	844,109	1.9	1280
4. New Zealand	522	18,220	2.86	3962.54
5. U.S.A.	55,200	2,055,200	2.686	5369.07

¹Calculated from Summary Table on Fatality and Injury Rates in Various Countries, Transport and Road Research Report, op. cit., p. 13.

The severity index in selected Arab countries (developing) and selected developed countries is graphed and presented in Figure 13, in order to make a comparison of the two groups.

In Table 2 the severity index of developing countries was between 3.26 and 15.93. India had the highest severity rate, despite the fact that it had the lowest ratio of vehicles per 10,000 population. Singapore, which had the second highest car ratio per 10,000, had the lowest severity rate. Saudi Arabia had the second highest severity rate of the twenty-five countries studied.

Despite the fact that India is one of the developed countries, insofar as industrial production is concerned, it has one of the worst traffic severity rates. This, of course, is due to the lack of education, especially traffic safety education. The rate of illiteracy in India is about 90 percent.⁵³ The educational system of India does not include any traffic safety education.⁵⁴ India is a developed country, but it is very poor. It can not feed its population, nor can it educate them properly.

⁵³ Ibid., p. 5.

⁵⁴ United Nations, World Survey of Education, U.N.E.S.C.O., Belgium, 1973, pp. 595-599.

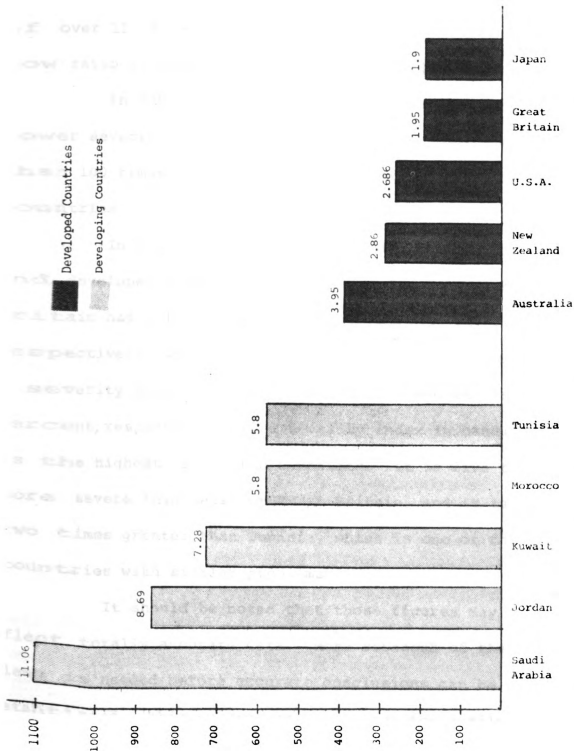


Fig. 13.--Severity Index for Car Accidents in Developed and Developing Countries in 1968.

Kenya and Saudi Arabia both had a severity index of over 11 percent, which is very high considering the low ratio of vehicles per 10,000 population.

In Table 3 the developed countries show a much lower severity rate, even though the car ratio was more than 100 times greater than in most of the developing countries.

In Figure 13 the severity index in selected Arab and developed countries is represented. Japan and Great Britain had a 1.90 percent and 1.95 percent severity index, respectively, while Jordan, Saudi Arabia, and Kuwait had a severity index of 8.6 percent, 11.06 percent, and 7.28 percent, respectively. The severity index in Saudi Arabia is the highest of all the countries. It is five times more severe than Japan or Great Britain, and it is about two times greater than Tunisia, which is one of the Arab countries with similar problems.

It should be noted that those figures may not reflect totally accurate data. More research of these problems is needed before accurate conclusions can be substantiated. This survey was based upon the available literature. Each point in this chapter is worthy of comprehensive research in the future.

Islamic Religion Philosophies
on Safety Education

In order to understand any system, it would be appropriate to study the culture, customs, religion, and the political structure of that system. Due to the fact that Saudi Arabia has only one religion, Islam, its culture and political system is a direct by-product of this religion.

The constitution of the country and all of the laws and regulations are derived from religious doctrines. King Faisal stressed this point in one of his speeches when he said:

In all our actions, we have ever been guided by our religion, and the laws it has laid down. In this country we preach one religion of the one God and we apply the will of God sincerely and faithfully Our religion covers all of mankind's needs in terms of justice, equality, security, safety and teaching of personal behavior.⁵⁵

The King's statement asserts the great influence that religion has on the country's social, economic, and political policies. George A. Lipsky, a leading authority

⁵⁵Ministry of Information, "Voyage for Peace, King Faisal Speaks" (Jiddah, Saudi Arabia: 1969), p. 11.

on Islam and Saudi Arabia, described the influence of religion in the following:

It is the official claim that the public law, which applies in Saudi Arabia, is derived from the Koran. The book, in this view, is sufficient as a source of law deepening public authority and its prerogatives, as well as deepening relations among men; it is a major normative form of reference within which laws are made and applied. Law is made in the light and spirit of Koran and its interpretation, especially that of the Hanbali School. The assertion of the adequacy of the Koran as a constitution and even as the source of Lesser Laws governing special situations is specially reinforced in Saudi Arabia by Wahabism, which demands the most orthodox return to "unspoiled" Islam and the message of the prophet.⁵⁶

A brief review of Islamic philosophies as a law and as a constitution would explain the importance, power, and influence of Islam in Saudi Arabia.

"Islam as a Law and as a Social System"

Most religions teach that God is both power and mercy. It is notoriously difficult to synthesize these two concepts, and one or the other tends to predominate. It is quite true to say that, according to the orthodox

⁵⁶George A. Lipsky, Saudi Arabia, its people, its society, its culture (New Haven, Conn.: Human Relations Area Files, Inc., 1959), p. 112.

theology of Islam, the notion of God as a power is pre-
dominant. Wilfred C. Smith explained this notion by
saying:

Year one of the Islamic era, the year
 1 A.H., is not the year in which Mohammed
 was born, nor even the year in which the
 revelations began to come to him, but the
 year in which he went to Medina and
 founded a state. Islam begins in history
 when Islam came to power as a community
 with its own laws and its own sovereignty.⁵⁷

Such power and doctrines are not expressed in
theology, but directly applied to the culture and to the
social system:

Christians have tried to express their
 faith in theology; Muslims, it seems
 to me, have expressed it chiefly in a
social system.⁵⁸

The word usually translated "orthodox," Sunni,
 actually means "orthoprox," followers of the Sunna which
 means the Koran, the customs and the way to life of Prophet
 Mohammed. Islamic religion, unlike any other religion, is
 a **social gospel**. Its main goal and objectives are centered
 around giving directions as to the social life of the

⁵⁷ Wilfred Cantwell Smith, "Islam Confronted by
 Western Secularism" in Islam in the Modern World, ed.
 Dortha Seeyle Frank (Washington: The Middle East Insti-
 tute, 1951), pp. 22-23.

⁵⁸ Ibid., p. 22.

individual, the family, and the community and all Muslem people as a group. The Koran, the "Holy Book," is a revelation from God. It tells people how to live in relation to God and how their relation toward each other must be. W. Smith summarized this principle in the following:

To be Muslim means to accept a revelation as to how life should be organized. All this is what I call the standard theological interpretation of Islam. Any religion that has lasted for fourteen centuries must have something fundamentally significant and meaningful to say to every man, whether he is a millionaire or a pauper, prince or a slave. And Islam undoubtedly does. Yet the central message of Islam, as understood by its standard exponent, has been about society and the organization of political, social and moral power. Islam is a religion of ethics, inducing social ethics.⁵⁹

J. N. D. Anderson explains the concepts of the Islamic religion in the following:

To Muslim concepts, the closest ties exist between religion and law. Islam is a complete way of life, a religion, an ethic, and a legal system all in one.⁶⁰

It is very clear that Islamic religion has a tremendous influence on the Moslem countries. Its impact

⁵⁹ Ibid., p. 24.

⁶⁰ J. N. D. Anderson, "Islamic Law in the Modern World" (New York: New York University Press, 1959), p. ix.

will determine the form of the political, social, and cultural system the country is to adopt.

Islamic laws and regulations are essentially regarded as divine laws, and as such, they are immutable. To the Muslim there is indeed an ethical quality in every human action, characterized by "qubh" (ugliness, unsuitability) on the one hand and "husn" (beauty, suitability) on the other. This ethical quality is not such as can be perceived by the human reason; instead, man is completely dependent in his affairs on revelation. Thus, all human actions are subsumed, according to a widely accepted classification, under five categories:

1. As commanded
2. Recommended
3. Left legally indifferent
4. Reprehended
5. Or else, prohibited by Almighty God.

It is only in regard to the middle category (i.e., those things which are left legally indifferent), that there is in theory any scope for human legislation.⁶¹

Islamic law deals with the whole field of human conduct. If you consult any of the classical compendiums of Islamic law, you will find that they deal first in the

⁶¹Ibid., pp. 3-4.

vast majority of cases with such questions as ritual purity, prayer, fasting, alms-giving, etc.; next, they may deal with family law (i.e., marriage, divorce, paternity, guardianship); then, with the law of contract, of civil wrongs, and what we call crimes; they also deal with the laws of peace and war, the laws of evidence and procedure. It thus covers every field, public and private, national and international. Islamic law has aptly been described as a "Doctrine of duties."⁶²

The Muslim community is based on personal faith. It is the product of a magnificent ideal; it is held together by the common loyalties and traditions and by a very careful, thorough system of values and doctrines. W. Smith explained the success of Islam in this regard by noting:

It pulsates with the vitality of a profoundly religious, deeply held personal conviction, . . . a conviction which is so warm and meaningful to each individual member that many would quite gladly part with life itself, than to let it go. This society, this community, is the expression of a religious ideal. So far as this world is concerned, it is, if I have grasped matters correctly, for the Muslim the chief expression. Within the

⁶² Ibid., p. 4.

realm of historical development, the preservation of the community, the saving of life is for Islam the prime issue.⁶³

M. N. Ray attributed the glory and success of Islam to its ability to reach the people and lead them to a better and more ideal life. He said:

The phenomenal success of Islam was primarily due to its significance and its ability to lead the masses out of the hopeless situation created by the decay of the antique civilization not only of Greece and Rome, but of Persia and China and of India.⁶⁴

The Muslim world has expressed its faith in the social system and not in theology. Islamic religion is directed toward maintaining a cohesive community, free of all social and psychological ills. It governs the Muslim people and determines their norms and their responsibility. Islam has a great influence on the daily life of the individual, the group and the nation as a whole. The Muslim people have to obey the religious laws and regulations.

⁶³W. C. Smith, Islam in the Modern World, op. cit., p. 24.

⁶⁴M. N. Ray, The Historical Role of Islam (B. N. Bose and Brojo, Calcutta, India Mithe Lane), p. 16.

Islam and Safety

Islam is not only a faith, but also a way of life and a way to life itself. Professor Philip Hitti, one of the authorities on Islam, and an author of hundreds of books and articles on Islam, titled one of his latest books, Islam--A Way of Life. He said that the first revelation in Islam ordered Mohammed to read or recite, "Recite, in the name of thy Lord, who created, created man from a clot of blood, Recite, for thy Lord is the most bounteous Who teacheth by the pen, Teacheth man what he did not know."⁶⁵

The first revelation recommended reading and recommended education for the knowledge of the unknown. Prophet Mohammed during his life encouraged people to seek education. In the earlier years of Islam, Prophet Mohammed said:

Seeking education and knowledge is the duty, the most duty of every Muslim man and woman.⁶⁶

⁶⁵ Philip K. Hitti, Islam, A Way of Life (Minneapolis: University of Minnesota Press, 1970), p. 5.

⁶⁶ Asadula Kazimi, Islam, the Modern Age Journal (Vol. 1, No. 1, New Delhi, India, 1971), p. 89.

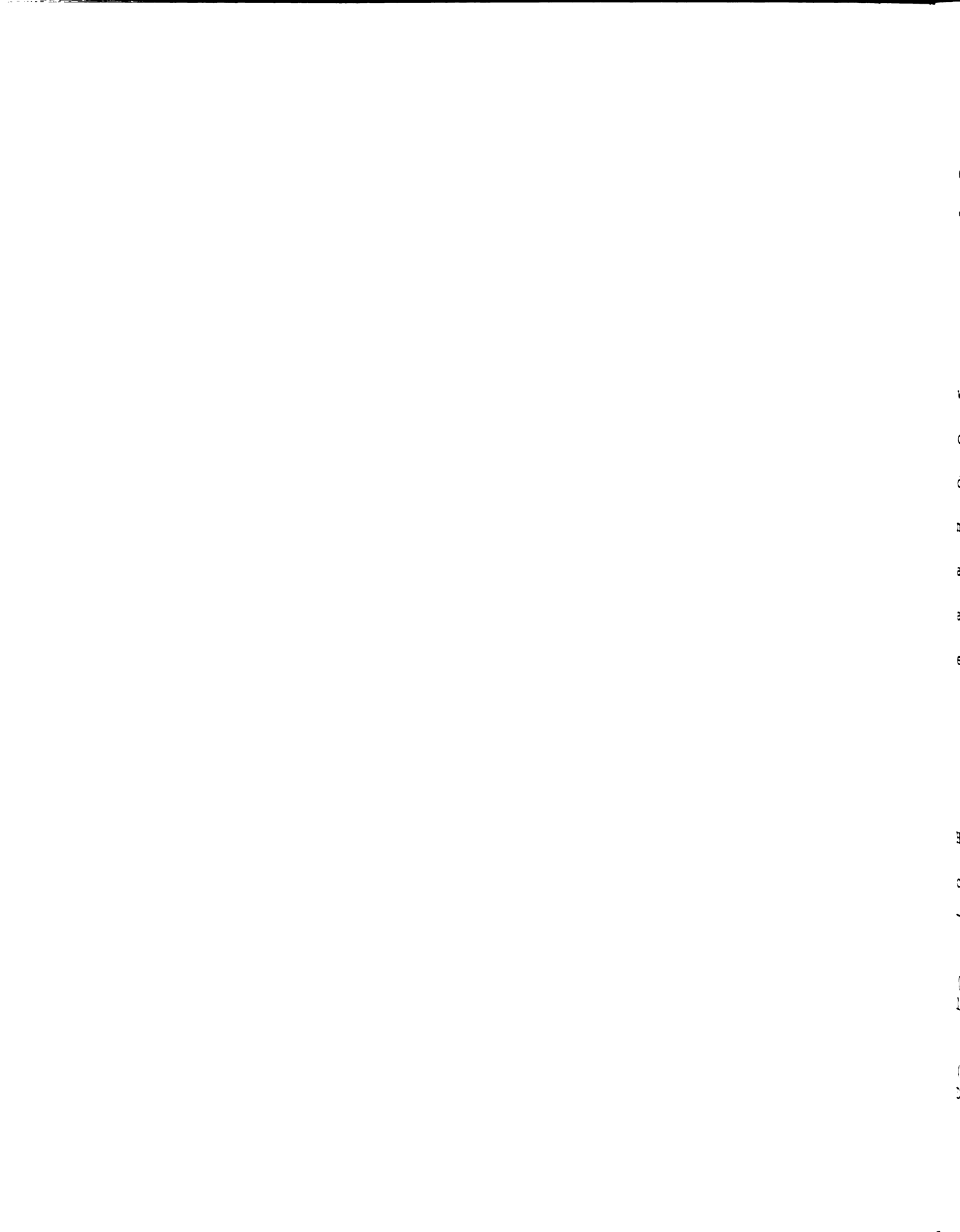
Prophet Mohammed also asked people to seek education anywhere in the world, even in China, which was considered the farthest place in the world at that time.

The aim of education in Islam is to provide the best education for its children. In a recent article on education in Islam, A. Kazimi wrote:

Islam never made any distinction between religion and life. Islam is not only a system of beliefs, but a system of life in its entirety, and seeks to organize society on that system. To a Muslim, his efforts to make a living, to rear a family, to regulate his relations with his fellow beings, in short, all the activities of his life are part of his faith. The acquisition of knowledge is, therefore, a sacred duty enjoined upon all Muslims. All knowledge is considered to be their birthright and their heritage and they are exhorted to pursue it wherever it is found and gain it whatever the cost It may be mentioned here that real education does not consist in the ability to read or write. Such an ability is just the beginning of education. The end of it is an integrated and well-balanced personality, a Momin as Muslims call it.⁶⁷

According to Islamic law, which is the law of Saudi Arabia, the individual is responsible for any killing, whether it is intended or unintended. In a traffic fatality, the driver is held responsible for any deaths which

⁶⁷ Ibid., pp. 63-64.



occurred (if he lives) and may face life imprisonment.

The Koran said:

Never should a believer kill any person,
and if it happens by mistake, compensation
is due.⁶⁸

There are no insurance companies in Saudi Arabia, which would normally pay the compensations in other countries. In many instances the driver who had an accident which resulted in a fatality will spend at least six months in jail if he was partially responsible for the accident and up to life imprisonment if he was entirely at fault. Islamic religion places a very high value on education and knowledge for the survival of man.

Dr. Ahmed Shalaby explained it this way:

The year of 59 A. H. (1066-1067 A.D.) should be remembered as making an epoch in the history of Muslim education.⁶⁹

He was referring to the new concepts of education as a way of life in Islamic philosophy.

⁶⁸ Bayard Dodge, Muslim Education in Medieval Times (Baltimore: The Middle East Institute, Garamond Press, 1972), p. 61.

⁶⁹ Ahmed Shalaby, History of Muslim Education (Beirut, Lebanon: Dar Al-Khoshaf Publishing, Printing, Distributing House, 1954), p. 15.

The Koran and Hadyths (Prophet Mohammed's teachings) are full of warnings against danger. In the Koran God said, "Do not throw yourself into danger." In another verse God said, "Be aware of danger and avoid them."⁷⁰ According to Islamic teachings, the person who kills himself deliberately or carelessly is responsible for his act and will face judgment at the day of judgment.

Today, during the Friday prayers, some of the Immams (Religious leaders) preach safety. They keep reminding people of their responsibility for preserving life.

Philosophy of Education and Traffic Safety Education

The goals and objectives of education have been and will continue to be the center of discussion and disagreement among philosophers and educators. It is an endless process because there are many controversial points and disagreements regarding such goals and objectives. Despite the controversy, most, if not all, of the philosophers basically agree that the end result of education is

⁷⁰ Koran Holy Book, Sora IV (Nisaa).

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to better the self, the environment, and the way one lives. To attain such goals some philosophers say that the aim of education is geared toward the attainment of knowledge, while others say that the aim of education is geared toward the development of the intellectual skills. In either situation, the idea is focused on the development of the mind or the mental training of the individual.

What should be taught and what kind of experience is needed are also controversial questions. Many philosophers have devoted a great amount of time and effort to clarify the issues involved in the controversy. J. Welton is among many early scholars who conducted studies on the problem. His philosophy on the aim of education was:

Education should really take into account all of the present and probable needs of life; it will contain material, the real assimilation of which will call for the exercise of the powers of mind, and will thus give the mental exercise upon which the other doctrine so rightly insists The end of education is the development of full and effective human personality, that is, a life in full and admirable relations to the universe.⁷¹

⁷¹J. Welton, What Do We Mean by Education (London, England: Macmillan & Co., Ltd., 1914), pp. 75-85.

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Jean Jacques Rousseau said:

The practice of the social virtues roots the love of humanity in the bottom of our hearts. By doing good actions, we become good ourselves; I know of no method more certain. Employ your pupil in every good action within his power; teach him to consider the interest of the indigent as his own; let him not only assist them but protect them and dedicate his person and time to their service.⁷²

Rousseau and Welton were simply saying that education is geared toward humanity and toward the social life of the individual. Driving a car is a necessity in today's world. To teach an individual how to drive safely and effectively is to fulfill one of the needs of social life. To preserve life is the goal of all humanitarian society. It is very easy to logically deduce that most of the educational philosophers would place traffic safety education among the priorities of any curricula activities in the school.

Reginald Archambault, in his book on Dewey's philosophies on education, wrote:

Humanism for him meant a social humanism that would teach young people to take an intelligent interest in such problems as poverty, insanity, city planning, and

⁷²Tadasu Misawa, Modern Educators and Their Ideals (New York: D. Appleton & Co., March 1909), p. 89.

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conservation and preservation of human and natural resources. He regards those experiences to which the individual reacts with an informed awareness of the problem and challenge of his environment as truly educational.⁷³

John Dewey, in his definition of school, said:

I believe that the school is primarily a social institution. Education being a social process, the school is simply that form of community life in which all those agencies are concentrated that will be most effective in bringing the child to share in the inherited resources of the race, and to use his own powers for social ends. Education therefore is a process of living. The school must represent life, life as real and vital to the child as that which he carries on in the home, in the neighborhood, or on the playground.⁷⁴

John Dewey expressed his philosophy very clearly. His emphasis was on teaching the young people to "take intelligent interest" in the social problems, and to develop awareness of those problems clearly would include traffic problems, which are among the most serious problems facing the world today. In most of his theories on education, Dewey asserted that the true center of correlation on the

⁷³Reginald E. Archambault, Dewey on Education (New York: Random House, Inc., 1966), pp. 28-132.

⁷⁴Edited and translated by Dr. Ahmed F. Al-Ahwany, The Philosophy of John Dewey (Dar Al Maarif, Egypt, 1959), pp. 161-162.

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school subjects is the child's own "social needs" and not history or geography. This is because the child needs to know and understand his immediate social needs. Dr. George Ferree, in his class discussion on educational philosophy argues that, to John Dewey, driver education is more important than history, geography or even science. His arguments were stated implicitly in John Dewey's philosophy on education.

In a recent paper, presented to the faculty of the College of Education at Michigan State University, Dr. George Ferree presented his philosophy on education. His presentation centered around the question, "What ought schools to be doing?" His answer was:

My answer to the question, in brief, is that schools are, or should be, in the business of helping individuals to live lives of considerable, if not optimal, personal well-being. My answer to the question grows out of my own personal attempt to work out my own life . . . and what most persons, if not all, are seeking.⁷⁵

In his paper he discussed the human desire to attain the good life which he derives from the title of his paper, "Education is for the good life." Those desires have to

⁷⁵George Ferree, "Education and the Good Life, an Aesthetic View," unpublished paper (Michigan State University, Spring, 1974), pp. 1-2.

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be the individual's own desire provided he is accurately well informed about them. Those desires are the best possible life he could live which is the good life.

Dr. Ferree, Dewey, Rousseau, Rowls, Wolf, Wittgenstein, and many other philosophers share the belief that education should deal with the social life of the individual and fulfill his immediate needs. Without any doubt, traffic safety education is amongst the most immediate needs of the individual. A car is not a luxury anymore, but a necessity in the world today. Accident prevention, injuries and fatality control require a comprehensive traffic safety education program, a program which would deal with the individual's behavior, the car, and the environment.

Driving is a skill which requires strategy in performing a manipulative and mechanical skill as well as executing a well thought out decision. The driver is a fundamental factor in operating and controlling the car. Consequently, he is of great importance to the traffic safety system. Having such importance would necessitate the need to direct a great effort to the education of the driver in all traffic related matters, with great emphasis on developing good attitudes toward safety.

Importance of Research and Statistics

At no time in man's history has the need and necessity for more reliable knowledge concerning the world we live in been as keenly felt as it is today. We live in a fast changing world which is very complicated and in a way very uncertain. We are faced with many intricate and serious problems which require extensive study and analysis and intelligent decisions. Our so-called modern world is faced with hunger, crimes, traffic fatalities, drugs, and many other problems which are causing social and economic problems in our society today. Local, state, national, and international organizations are devoting a great deal of time and substantial amounts of money to seek solutions to alleviate those problems. Extensive scientific research by experts in the various fields is needed to reduce human suffering and misery and to eliminate the shocking tragedies. The world today has a great demand for an increase in food productivity per acre, birth control, family planning, drug control, energy conservation, safety education, pollution control, and the like.

It is important to emphasize at this point that in any research and in any study, it is essential to maintain

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reliable records and statistics. Records and statistics will provide tremendous knowledge about the past, the present trends, and the outlook for the future.

In the field of traffic safety, the world is facing very serious and grave problems. Traffic accidents are claiming more lives and injuries than wars. Every community and almost every family has been or will be affected by traffic accidents. It is becoming a very costly problem. A great deal of energy and effort should be devoted to the research and study of this dangerous problem. As a prerequisite to any research, it is vital to maintain accurate records and statistics. Accident data and statistics would be of great importance to the researcher. They would supply information and facts concerning the multi-variables contributing to traffic accidents. The use of records of past accidents would help in planning for future accident prevention.

The Committee on Accident Records for the President's Highway Safety Conference selected the following key statement as the highlight of its report:

Every administrator--from governors and mayors down--must recognize that records are not merely a by-product of the traffic safety program, and must at every

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opportunity emphasize records as an effective aid to the determination of policies and to the economical expenditure of public funds to produce maximum results--preventing accidents.⁷⁶

Accidents have long been regarded as a fortuitous event, something that just happens. Such a concept, by implication, characterized an accident as being something outside the possibility of control. But the realistic approach to accident data clearly shows that such a fatalistic attitude toward accidents and the inevitability of their occurrence is simply not in accord with the evidence. Accidents, like other events, are caused and, like other events, they can be controlled when their causes are identified and their nature understood.⁷⁷

Accidents involve complex interrelationships between people, objects, and the environment they live in. In order to deal with accidents, it is essential to know all the variables contributing to them. Dr. A. Chapman defined an accident as "a phenomenon of diverse and often

⁷⁶ National Conference on Uniform Traffic Accident Statistics, Use of Traffic Accident Records (Saugatuck, Conn.: Enco Foundation for Highway Traffic Control, Inc., 1947), p. 1.

⁷⁷ Clara G. Statemeyer, Accident Research for Better Safety Teaching, op. cit., p. 6.

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multiple etiology. An accident is the result of an occurrence, or series of occurrences, chronologically remote from the accident itself."⁷⁸ These characteristics make the search for true causative factors of accidents more pertinent to finding the most efficient and suitable solution to the problem. Dr. M. S. Schulzinger indicated that the ability to diagnose the accident syndrome depends on an intimate knowledge of predisposing factors, environmental hazards, known trigger mechanisms and a past history of the behavior pattern of the individual.⁷⁹ Dr. Schulzinger was emphasizing past knowledge, which is to be recorded, tabulated, and kept available for any diagnosis and remedial prescription and prevention. The National Conference on Uniform Traffic Accident Statistics clarified this point in their manual by saying:

The use of records of past accidents to guide future accident prevention work is based upon the generally accepted premise that accidents are caused by specific conditions and acts and that, unless altered by safety activities, these same conditions

⁷⁸Maxwell N. Halsey, Editor, Accident Prevention (New York, New York: American Public Health Association, Inc., McGraw-Hill Book Company, Inc., 1961), p. V.

⁷⁹Morris S. Schulzinger, M.A., M.D., The Accident Syndrome (Springfield, Ill.: Charles C. Thomas Publisher, 1956), p. 17.

and acts will continue to cause traffic accidents it is vital that the strongest effort be directed at the conditions and persons most in need of corrections . . . a growing number of industrial and other organizations have brought the statisticians into the policy-making group, at least as the fact providers.⁸⁰

The statistician is basically concerned with the chance outcomes that occur in scientific investigation. He may be interested in the number of accidents occurring at a specific intersection, the accident prone individual, or the causes of accidents. The science of statistics deals with the various methods used in the collection, analysis, and interpretation of data. Today the research worker considers statistics one of his most useful aids in diagnosing and solving problems.⁸¹

A great effort should be devoted to maintaining accurate records and statistics on traffic accidents. As it was mentioned earlier, they would be of great value to the researcher in planning future safety programs and the prevention of accidents.

⁸⁰ National Conference on Uniform Traffic Accident Statistics, op. cit., pp. 1-3.

⁸¹ Ronald E. Walpale, Introduction to Statistics (New York, New York: The Macmillan Company, 1968), pp. 1-4.

Summary

This chapter dealt with the review of literature relating to this research. Accident problems, the value of statistics, the effect of driver education on accidents, the impact of accidents on developed and developing countries, the philosophy of education and traffic safety education, and the Islamic religion's philosophy on safety education were reviewed. The following represents a condensed summary:

1. Driver and Traffic Safety Education is of great value in developing competencies in driving. (It will also have a positive effect on the reduction of accidents and violations provided that the teachers are well prepared and the program and curriculum is comprehensive.) This fact has been indicated by the many studies which were discussed earlier in the chapter.
2. Safety education, including traffic safety education, should be an integral part of the curriculum.

3. Traffic fatality rates were increasing at a much higher rate in developing countries than in developed countries.
4. Developing countries had fewer cars per 10,000 population than developed countries.
5. The severity index of traffic accidents was higher in developing countries than in developed countries.
6. Saudi Arabia, despite the low increase in the number of cars, had proportionately the highest increase in traffic fatalities of all the countries surveyed.
7. Islamic and educational philosophies advocated the inclusion of traffic safety education in the school system.

CHAPTER III
DESIGN OF THE STUDY

Purpose of the Chapter

The purpose of this chapter is to develop a clear methodology for collecting and analyzing the data for this study. This study, for the most part, is a content analysis which is a research technique for making inferences by objectively identifying specified characteristics within texts.⁸² This chapter will focus on the methodology for developing an analysis of the following areas:

1. Traffic records and statistics in Saudi Arabia;
2. Philosophy of Islamic religion on safety education;

⁸²Philip J. Stone, Dexter C. Dunphy, Marshall S. Smith, and David M. Ogilvia, The General Inquirer (Cambridge, Massachusetts: Massachusetts Institute of Technology Press, 1966), p. 5.

3. Philosophy of Traffic Safety Education, and its implications in Saudi Arabia;
4. Interviews with policy makers in Saudi Arabia;
5. Plan and develop a pilot project for a traffic safety education program in Saudi Arabia (Micro Plan).

Traffic Records and Statistics in Saudi Arabia

The data used in this study were obtained from the National Highway Traffic Safety and Rescue Department in Saudi Arabia, and from the local Highway Traffic Safety Department in Taif, Saudi Arabia. The author personally visited both departments and spent over three months collecting the data.

A detailed table which seeks information on traffic accident causation, knowledge about the drivers, weather conditions, etc., was made by the author and was given to the National Traffic Safety Department in Riyadh, Saudi Arabia, along with a letter explaining the information needed (See Appendix A). The National Traffic Safety

Department duplicated the table and the letter and mailed them to all the local Highway Traffic Safety Departments in Saudi Arabia urging them to fill out the forms and return them to the national office as soon as possible. Most of the local departments wrote and said that the information was not available. A second letter was sent by the National Highway Traffic Safety Department to all the local departments asking them to fill in the table with the available information and to return it as soon as possible. However, due to the deficiency in the amount of information being recorded, the response was nil. It then became necessary to collect the "limited" available data from the National Highway Traffic Safety Department in Riyadh, Saudi Arabia. A period of 47 days was spent in Riyadh collecting some of the data for this research.

Due to the fact that the information gathered from the National Highway Traffic Safety Department in Riyadh was very limited in scope and comprehension, it was very essential to visit a local traffic safety department and spend some time collecting data and statistics on traffic accidents.

Selection of the City

The city of Taif was selected because of its medium size and its homogeneous population. The population of Taif is representative of all the regions and all the parts of the country. Taif is also a summer resort due to its topography and its fair temperature during the summer months. It is a city surrounded by many farms and rural areas. Its population varies from 50,000 in fall and winter to 200,000 in the spring and summer. To many planners it is the ideal city for research and experimentation.

Prior to the undertaking of this study, the author had sent a form in June of 1972 to the Highway Traffic Safety Department in Taif requesting varied information on traffic accidents (See Appendix A). Some of the requested information was recorded. However, no classification nor tabulation of the information was made. The author, with the assistance of some of the traffic officers in Taif, reviewed all the accident reports for the years 1972 and 1973. A period of 33 days was spent in Taif collecting the data used in this study. The procedures that

were used in gathering and analyzing the traffic data follow.

1. Summary of statistics.--Tables summarizing the traffic accidents in Saudi Arabia were made. The information gathered from national and local traffic safety department records in Saudi Arabia was summarized by months and was tabulated. The tables included all the information that was available. Also the number of license plates and licenses issued in Saudi Arabia was summarized and tabulated in order to determine the improvements made in this field, and to determine the ratio of cars per person in the country. A comparison of the increase in number of cars in Saudi Arabia and various developed and developing countries was also composed.

2. Traffic Fatality Rates.--Even though the Saudi Arabian Highway Traffic Safety Departments did not keep complete records and statistics on traffic accidents, a record of total traffic fatalities and total traffic injuries in the country has been maintained since 1966. The rate of increase in traffic fatalities in Saudi Arabia was calculated. The rate of increase of traffic fatalities in Saudi Arabia was compared with the rate of increase of fatalities in the United States, Great Britain,

and other developed and developing countries in order to determine the gravity of the problem. Histograms were drawn to present a true picture of the traffic problem in Saudi Arabia. Monthly traffic fatalities and injuries in Taif were calculated for two years (1972-1973). The rate of increase of traffic fatalities and injuries for the city of Taif was established.

3. Severity Index.--The severity index is a very useful measure of all casualties that are fatal. It shows that the country with a high severity index has a high proportion of fatal accidents (See Chapter II for methods of calculation). The severity index of traffic accidents in Saudi Arabia was measured and determined, on the national and local levels. The rate of increase in the severity index was graphed and compared with the severity index levels of various developed European countries and some randomly selected Arabian countries. This was done in order to measure the degree of severity of traffic casualties in Saudi Arabia.

4. Accident Causation.--In order to avoid any preconceived opinions on the part of the author regarding the causes of traffic accidents, it was requested that the Highway Traffic Safety Department in Taif include in their

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investigation the major causes of accidents. The reports were written by many traffic investigation officers whose names are not included on the reports. A great effort was made to know some of them, but the efforts were fruitless. The chief investigation officer, Lieutenant Ali Al-Issaimy, who attends most of the accident investigations and who signs all the reports, was interviewed. In addition, inasmuch as possible, interviews of various traffic investigation officers in various cities of the country were made during the author's visit. The following officers were interviewed:

- Major Abdulaziz Andergeri, Director of the Traffic and Car Statistical Division, National Highway Traffic Safety Department, Riyadh, Saudi Arabia.
- Lt. Ali Al-Issamy, Chief Traffic Accident Investigation Officer, Highway Traffic Safety Department, Taif, Saudi Arabia.
- Major Abdulla Al-Ghamedi, Chief Traffic Accident Investigation Officer, Highway Traffic Safety Department, Damman, Saudi Arabia.

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--Lt. Mohamed Al-Yami, Traffic Accident Investigation Officer, Highway Traffic Safety Department, Mecca, Saudi Arabia.

The questioning was conducted orally and was very brief. The goal was to know their expert opinions on the causes of car accidents in their cities and in the country. It is important to note here that most of the traffic officers in Saudi Arabia are mobile. Every two or three years the government transfers the officers to different towns and cities in the country. Therefore, their experience and views are very valuable and applicable to the total traffic situation in the country.

Islamic Religion Philosophies on Safety Education

In Chapter II, the Islamic religion philosophies were reviewed. A summary statement of the overall philosophy will be abstracted. The opinion of the religious leaders of the country having immense knowledge and experience in Islamic theology was sought. The following people were interviewed:

--Shiekh Abdullah Al-Wahibi, General Director of the Department of Justice, Taif, Saudi Arabia.

--Sheikh Wahbi Al-Sindi, Assistant Director, Department of Justice, Taif, Saudi Arabia.

--Sheikh Abdulrahim Al-Sedeghi, Religious Teacher, Thakief Secondary School, Taif, Saudi Arabia. (He is also the author of many Islamic books.)

The interviews were undertaken while the author was in Taif, during November of 1973. The interviews were conducted orally. Their Islamic views on safety education (including Traffic Safety Education) were briefly summarized.

Philosophy of Education and Traffic Safety
Education as it Relates to Saudi Arabia

The philosophy of education, including traffic safety education, is not reserved to any particular country. Its application and adaptation is universal.

The philosophy of education and traffic safety education were reviewed in Chapter II. A summary of the

major points will be made in developing a rationale for traffic safety education programs in Saudi Arabia. There will be a brief abstract of the literature reviewed.

Policy Makers' Views on the Inclusion of a
Traffic Safety Education Program
in Saudi Arabia

The administrative system in Saudi Arabia is centralized. The secular chief of state, King Faisal, is also the Immam, or spiritual leader of the country. As a ruler and Immam, he upholds the Sharia, which is still the official law of the land. The King is at the center of all political activity. He incorporates all legislative and executive functions, and may, on occasion, exercise judicial authority.⁸³ He has delegated some of his authority to the various ministries in order to cope with modern times, but he remains the supreme ruler of the country.

Due to the fact that Saudi Arabia is a religious state with a central power, any change or any program must

⁸³Area Handbook for Saudi Arabia (Washington, D.C.: The American University, 1971), p. 116.

come from the central power and central authority. Any ministry could prepare programs and new ideas, but the adaptation of such a program must be approved by the Council of Ministries. The Central Department has a great influence on initiating any program, providing that the new innovation is in accord with the Islamic law.

The King does not make every decision. In certain cases the Minister or his deputy will have the final say. Likewise, the various ministers delegate certain authority to the heads of departments in the central government and on the local levels. Most of the planning responsibility remains in the hands of the Central Department. Since the acceptance and implementation of any program remains the responsibility of the Central Government, the only rationale needed for the adoption of traffic safety education is dependent upon the acceptance or rejection of the idea by the central authority. It was for this purpose that it was essential to conduct personal interviews with the various policy makers in Saudi Arabia to see whether or not they would support a traffic safety education program in the country. The policy makers who have, or will have any direct relation to traffic safety were working in two ministries:

1. The Ministry of Interior, which has the responsibility over all police and traffic safety matters.

Policy makers interviewed from this department were:

--Prince Nayef Bin-Abdulaziz, Deputy Minister of the Interior.

--Lieutenant General Tayeb Al-Tunisi, General Director of the Interior Security Forces Department.

--Colonel Hashim Abdulrahman, General Director of the National Traffic Safety and Rescue Department.

2. The Ministry of Education which has total authority over educational matters.

The policy makers interviewed from this department were:

--Prince Khalid Al-Fahad, Deputy Minister of Education.

--Prince Faisal Al-Faisal, General Director of the
Foreign Educational Mission and Director of
Higher Education.

The interviews were intended to explore the policy
makers' attitudes and feelings toward traffic safety and
measure their support or lack of it regarding the inclusion
of traffic safety education in Saudi Arabia. Each party
interviewed was asked the following questions:

1. What is your assessment of the traffic situation
in the country today? How bad or severe do you
think traffic accidents are in the country?
2. In your opinion, what are the major causes of
accidents?
3. What should be done to reduce traffic accidents
in Saudi Arabia?
4. What are the chances of introducing traffic
safety education in the country?

Developing a Comprehensive Traffic Safety
Education Program for Saudi Arabia

Saudi Arabia has no public nor private traffic safety education program at the present time. Driver education has never been taught in the country, except on a limited basis in the army and there it was restricted to basic manipulative skills required of drivers. It then becomes essential for this research to undertake the development of a general traffic safety education program for Saudi Arabia, especially since the government is considering the idea very seriously. Dr. Mohammed Al-Rasheid, Assistant Dean of the College of Education at Riyadh University in Saudi Arabia, who visited Michigan State University in February, 1975, indicated that the University of Riyadh is seriously planning for the inclusion of a Traffic Safety Education Program in the College of Education. The Traffic Safety Education Program for Saudi Arabia will be a tremendous help in providing guidelines for future implementation. The program will be in two parts.

1. Micro Program.--Since Saudi Arabia does not have any traffic safety education program, it is essential to develop a teacher preparation program in traffic safety

for implementation in the near future. The program will be a pilot project and will serve in planning future programs.

2. Macro Program.--The experiences that will be outlined from the Micro plan will be utilized in planning the Macro plan. The Macro plan will be designed to include all the public schools in the future. General guidelines and broad ideas will be provided for the Macro plan.

CHAPTER IV
ANALYSIS OF DATA

The purpose of this study is to develop a rationale for a comprehensive traffic safety education program in Saudi Arabia. This chapter is designed to analyze the data and present the results pertaining to the development of the rationale. A comprehensive traffic safety education program for Saudi Arabia is presented at the end of this chapter. The analysis of the data and the results of the analysis are presented under the following twelve headings:

1. Highway and Traffic Safety Records and Statistics in Saudi Arabia (General Background).
2. Analysis of National Traffic Accidents in Saudi Arabia.
3. Analysis of National Traffic Fatalities and Severity Index in Saudi Arabia.
4. Analysis of Driver Licenses Issued in Saudi Arabia.

5. Analysis of License Plates Issued in Saudi Arabia.
6. Analysis of Local Traffic Accidents in Saudi Arabia.
7. Analysis of Local Traffic Casualties in Saudi Arabia.
8. Interviews with Accident Investigation Officers in Saudi Arabia.
9. Islamic Religion Philosophies on Traffic Safety Education.
10. Philosophy of Education and Traffic Safety Education.
11. Policy Makers' Support for the Inclusion of Traffic Safety Education Program in Saudi Arabia.
12. The Development of Comprehensive Traffic Safety Education in Saudi Arabia.

In Chapter II the Islamic philosophy, educational philosophy and the traffic safety education philosophy were presented and analyzed. In this chapter only a brief abstract of those philosophies will be presented in order to

avoid repetition. The abstract that will be presented in this chapter is essential to the development of a clear rationale for a traffic safety education program in Saudi Arabia.

Highway Traffic Safety Records and Statistics in Saudi Arabia

The Saudi Arabian government has long recognized the importance of record keeping and statistics. The Central Planning Agency, which coordinates the overall social and economic planning in the country, has emphasized and encouraged the various ministries to maintain accurate records and statistics in order to plan for the future efficiently and economically. Despite the recognition of such importance, keeping of records and statistics remained inefficient due to the lack of qualified personnel. This problem not only prevails in Saudi Arabia, but in all of the developing countries of the world.

The National Highway Traffic Safety and Rescue Department in Saudi Arabia has a division which is called "Statistics and Car Accident Division." Its duty is to collect, tabulate, and maintain records and statistics

regarding traffic matters in the country. Even though this division has been understaffed, especially in qualified personnel, it was able to maintain some basic data and statistics on traffic accidents, car registrations, and driver licenses. Its quality is far below comparable departments at the state or local levels in the United States. The department provides no information on drivers, causes of accidents, or any detailed diagnosis of the problem.

For the purpose of this research, the most relevant and essential data were collected by the author in Saudi Arabia through personal interviews, visitation to some of the local departments, and tabulations of official records. Detailed tables were mailed to all of the local traffic safety departments in the country, seeking information on accident causation, knowledge about the drivers and general knowledge regarding the environment. Due to the deficiency in the amount of information being recorded, the response was nil. It then became necessary to conduct field work and to review past individual accident reports and tabulate the pertinent data from those reports.

Analysis of National Traffic Accidents
in Saudi Arabia

A brief look at the traffic accident statistics in Saudi Arabia is sufficient indication of the gravity and severity of the situation. It is known that traffic accidents throughout the world are increasing every year. However, the degree of increase varies from one country to another. The variance is dependent upon many factors; however, there are two factors which are universally assumed accountable and relevant to such increases. Those "assumed" factors which affect the rate of traffic accidents are:

- 1) Traffic accident exposure varies directly with the population (number of licensed drivers).
- 2) Traffic accident exposure varies directly with the number of registered vehicle miles of travel (vehicle miles driven).⁸⁴

These assumptions obviously are not entirely correct, because there are many other factors such as road conditions, levels of traffic safety knowledge, traffic

⁸⁴National Conference, op. cit., p. 34.

laws and enforcement, etc., which may contribute to the increase or decrease of traffic accidents. However, the universal factors mentioned above remain very relative in comparative analysis world wide.

Traffic accidents in Saudi Arabia are increasing at an alarming rate in comparison to other countries around the world. In 1967 there were 99 fatalities reported in car accidents. In 1971 the number increased to 570, an increase of 475.76 percent in only five years. This represents an average increase of 95.2 percent per year which is extremely high if compared to an increase annually of two to three percent in the United States and 1.4 percent in Great Britain.

An analysis of the traffic accidents occurring monthly in Saudi Arabia during 1971 and summarized in Table 4 will help in clarifying the gravity of the problem.

Table 4 shows that:

1. There were 4,147 reported accidents in Saudi Arabia. The numbers of unreported accidents are not known, but from all indications they are very high, especially if no fatality was involved. Due to the culture and the social life of Saudi Arabian

TABLE 4.--Summary Statistics of Accidents in Saudi Arabia, 1971.

Month	No. of Accidents	Run Over	Turned Over	Head-On Collision	Collision Other Obj.	Minor Injury	Serious Injury	Fatality	Driver	Passenger	Pedestrian	Other	Male	Female	Saudi Arabian	Non-Saudi	Clear	Cloudy	Rain	Wind
January	226	45	35	106	40	140	124	32	334	210	66	-	573	41	485	129	211	3	7	-
February	266	62	50	113	40	190	125	32	379	256	79	2	643	77	615	105	247	10	6	-
March	251	62	52	112	25	159	94	36	366	169	69	-	541	63	505	99	245	2	1	-
April	309	76	62	137	29	202	95	38	449	252	88	1	728	63	617	174	302	1	-	2
May	397	81	74	167	75	318	198	45	562	382	104	2	970	77	852	195	384	2	1	1
June	365	76	63	177	51	273	131	58	540	472	104	2	1019	107	889	232	362	1	-	-
July	381	91	65	179	46	263	103	54	555	275	109	3	839	53	725	182	364	7	5	-
August	404	94	55	197	54	253	104	46	601	227	116	3	873	74	828	119	401	-	-	3
September	363	95	72	240	56	344	149	65	709	398	114	1	1104	121	1048	177	447	5	-	4
October	415	104	64	192	55	290	162	33	617	367	127	3	1034	71	916	189	399	5	-	-
November	403	76	58	224	46	287	141	41	640	388	109	16	1030	117	837	307	382	5	14	-
December	265	59	45	74	87	331	107	90	345	775	116	-	1042	194	717	519	261	1	2	-
Total	4147	921	695	1918	604	3050	1533	570	6097	4171	1201	33	10446	1058	9034	2427	4005	42	36	10

people, many accidents are solved between the parties involved, and reporting to the authorities is omitted.

2. Reported accidents resulted in 3,050 minor injuries, 1,533 serious injuries, and 570 deaths.
3. These accidents involved 6,097 drivers and 4,171 passengers. The high figures of the numbers of drivers indicate that in many instances there was more than one car involved in each accident.
4. Of all casualties (injuries and deaths), 1,201 involved pedestrians; 921 pedestrians were run over by cars.
5. Of all cars involved in accidents, 695 involved roll over as a result of excessive speed, running off of pavement, cliffs, etc.
6. About one half of all the accidents that occurred involved head-on collisions. This is a common problem in Saudi Arabia.

7. Six hundred and four accidents were involved in collision with other objects such as rocks, telephone and electric poles, etc.
8. The weather condition in Saudi Arabia is generally clear. Only 42 days of cloudy weather and 36 days of rain were reported in Saudi Arabia during the entire year.

As is shown in Table 4, the 4,147 accidents resulted in 570 deaths, 1,533 serious injuries, and 3,050 minor injuries, for a total of 5,153 casualties. This is a ratio of 1.24 casualties to each accident.

The number of pedestrians involved in traffic accidents is extremely high, considering the light volume of traffic in Saudi Arabia. It is regrettable that the drivers in Saudi Arabia ran over nearly 1,000 persons in one year. This problem requires immediate attention. The driver and the pedestrian must be taught to watch for each other.

The number of accidents and the number of casualties are very high in Saudi Arabia, considering the following points:

1. Saudi Arabia is a religious country. Alcohol consumption, sale, or production is severely prohibited by precise laws. Consequently, drinking and driving is not a problem or a cause of traffic accidents in Saudi Arabia. This eliminates one of the major factors contributing to traffic accidents in many countries. Saudi Arabia does not have alcoholics nor drinking drivers.
2. Women are not allowed to drive in Saudi Arabia. This eliminates one half of the potential drivers from driving. Therefore, Saudi Arabia does not have as many potential or eligible drivers as do many countries of the world.
3. Table 4 further indicates that the weather in Saudi Arabia is usually sunny and most often clear. There was only a negligible number of rainy and cloudy days. In this case, adverse weather conditions can not be considered a major contributing factor to car accidents.
4. The mass transportation system in Saudi Arabia, especially in large cities and metropolitan areas,

is very effective and efficient. Small buses and taxis are well organized to cover all sections of each metropolitan area. They run seven days a week and about 19 hours a day. This helps reduce heavy traffic congestion in major metropolitan areas. Traffic congestion such as in Detroit or New York is not yet found in Saudi Arabia.

5. There are fewer cars in Saudi Arabia than in most of the countries of the world. As was shown earlier in Chapter II, there are only 240 cars per 10,000 persons. This is very low considering that the United States has 5,300 cars per 10,000 population and Kuwait has over 1,200 cars for the same proportion of population.

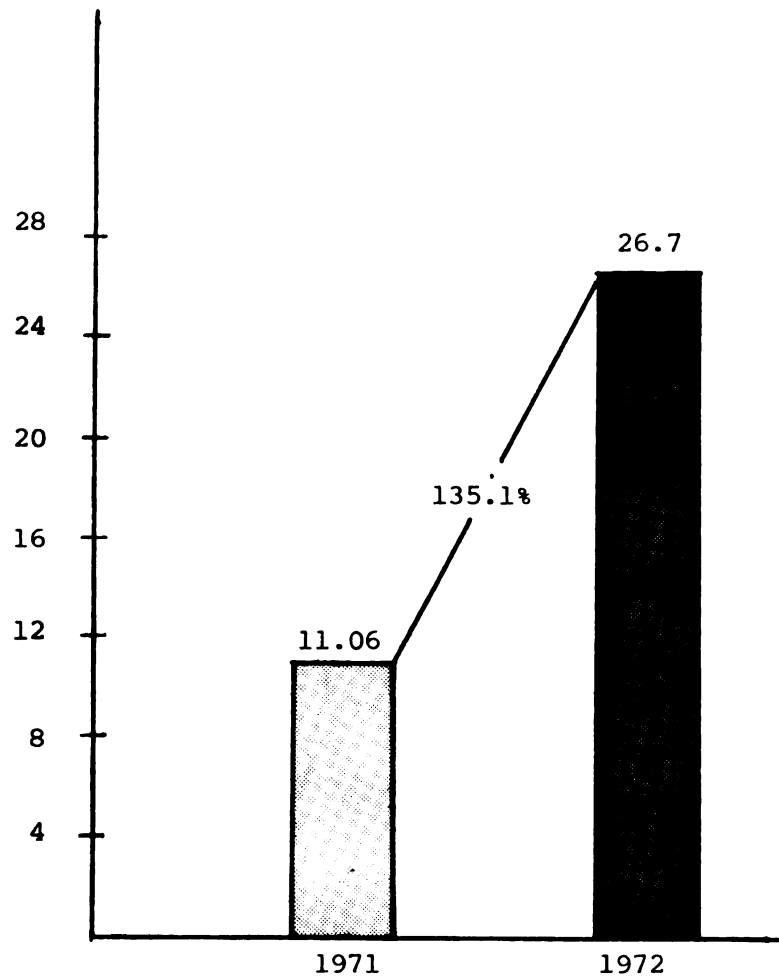
Analysis of National Traffic Fatalities and Severity Index in Saudi Arabia

Traffic accidents in Saudi Arabia continue to increase. In 1972 the number of reported accidents was 6,297. The number of injuries (minor and serious) was 2,309, and the number of fatalities was 841. The severity

index for 1972 was 11.6. This figure is very high if compared to 1.91 in Japan, 1.99 in Great Britain, and 2.68 in the United States. Traffic accidents in Saudi Arabia were very high, very severe, and claimed many lives.

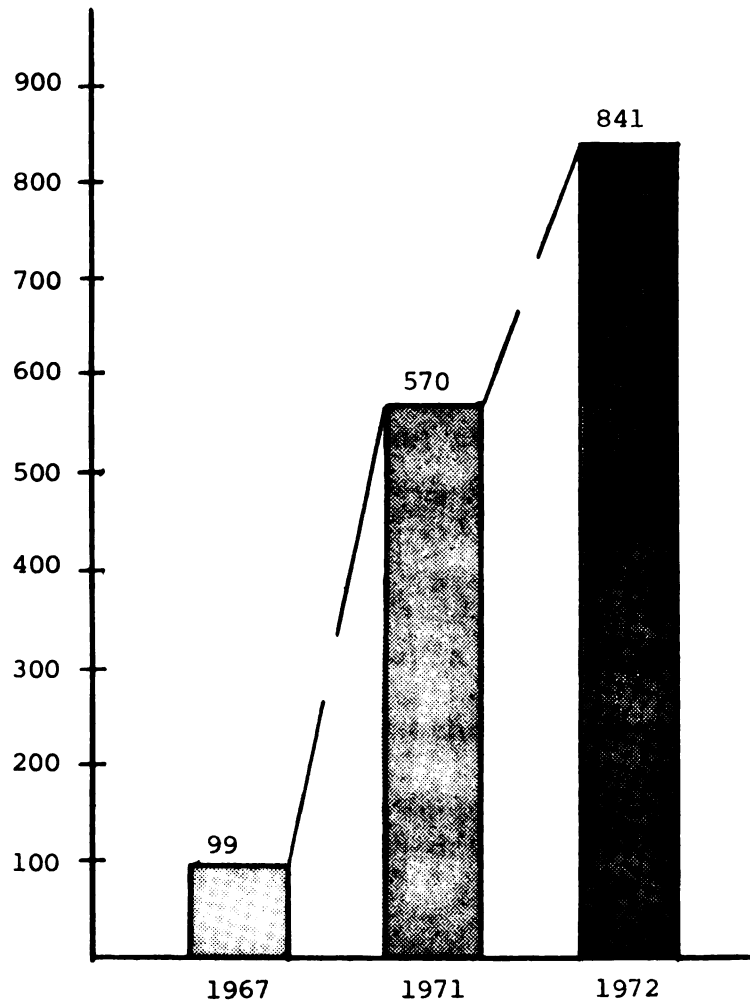
Figure 14 indicates that the severity index in traffic accidents in Saudi Arabia has increased from 11.06 in 1971 to 26.7 in 1972. This represents an increase of 135.1 percent in only one year. This is a very serious increase because it has more than doubled in one year. In most countries of the world, the severity index decreased rather than increased. In Saudi Arabia the opposite is true. This is due to the total absence of traffic safety education.

The gravity of traffic accidents is shown in Figure 15. The number of traffic fatalities increased from 99 in 1967 to 570 in 1970 and 841 in 1972. This represents an increase of 475.75 percent in five years or 749.5 percent in six years. Between 1971 and 1972 the number of traffic fatalities increased by 47.5 percent. This one year percentage increase is equivalent to the percentage increase in fatalities in the United States for a period of 10 years, or more than ten times the rate of increase in Cyprus. This increase is much higher than in



Increase of 135.1% in Severity Index of Car Accidents in Saudi Arabia Between 1971 and 1972

Fig. 14.--Severity Index of Car Accidents for Saudi Arabia for 1971 and 1972.



Increase of 475.75% in fatalities in Saudi Arabia between 1967 and 1971; increase of 47.5% between 1971 and 1972

Fig. 15.--Increase in Fatality Rates of Car Accidents in Saudi Arabia for 1967, 1971, and 1972.

most of the countries of the world. This point is illustrated in Figure 16 which is a graphic representation of the percentage of increase of fatality rates in some of the developed and developing countries in the world. The column representing the percentage increase in Saudi Arabia is drawn in the middle. On the right are the columns for the developing countries and the columns to the left are for the developed countries. From this it is easy to conclude that the percent of increase in fatalities in developed countries is much less than in developing countries. The column representing Saudi Arabia is much higher than all the columns representing the other countries included on this graph. Likewise, as was shown in Figure 13, the severity index of Saudi Arabia is also higher than all the countries included on this graph.

Analysis of Driver Licenses Issued
in Saudi Arabia

It was estimated that about fifty percent of the drivers in Taif, Saudi Arabia in 1973 were operating a motor vehicle without a driver license. (The city of Taif will be discussed later in this chapter.) The figure

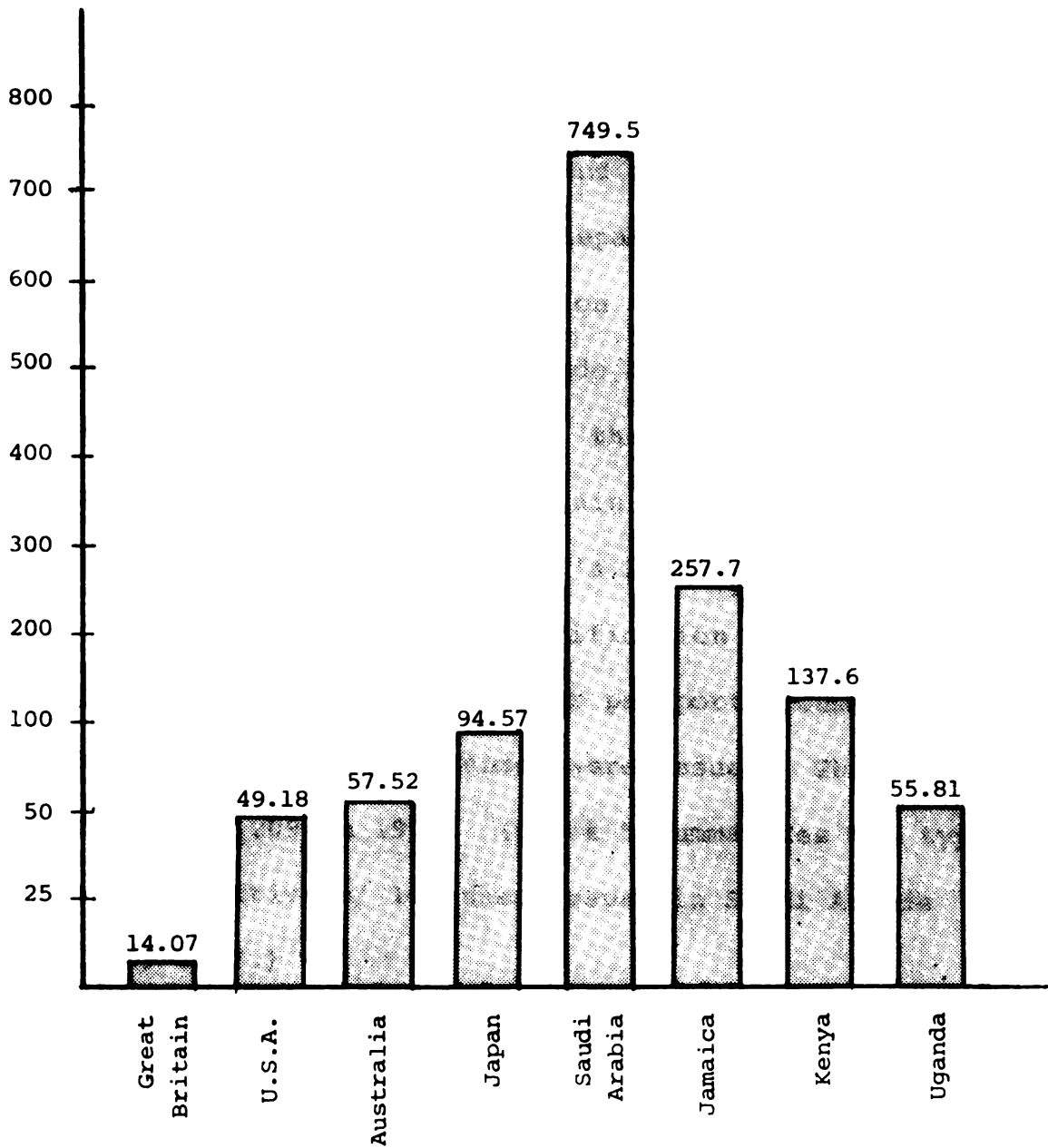


Fig. 16.--Percentage Increase in Fatality Rates in Developed and Developing Countries for a 10 Year Period 1958-1968.

for unlicensed drivers nationally in Saudi Arabia would be of the same proportion. The National Highway and Traffic Safety Department is aware of the problem and has begun to take drastic measures to correct and rectify the situation as well as find a solution. The department began in 1969 by keeping records and statistics on the number of licenses issued annually and on a nation-wide basis. Among many possible solutions to the problem, they make it mandatory that in order to buy, sell, or obtain license plates, a person must present a valid driver's license. Also, they made drivers' licenses valid identification cards which will equate with the citizenship or passport documents. In 1969, 22,044 drivers' licenses were issued. This number increased to 47,209 in 1973. (Table 5 summarizes the type and numbers of drivers' licenses issued in Saudi Arabia during 1969-1973.)

As can be seen in Table 5, the total number of drivers' licenses issued for the period 1969-1973 was 160,457. This shows a great increase since 1969. Despite the increase, many drivers still continue to operate without a driver's license, especially in small towns and villages without effective traffic law enforcement departments. According to many officials, the problem will be

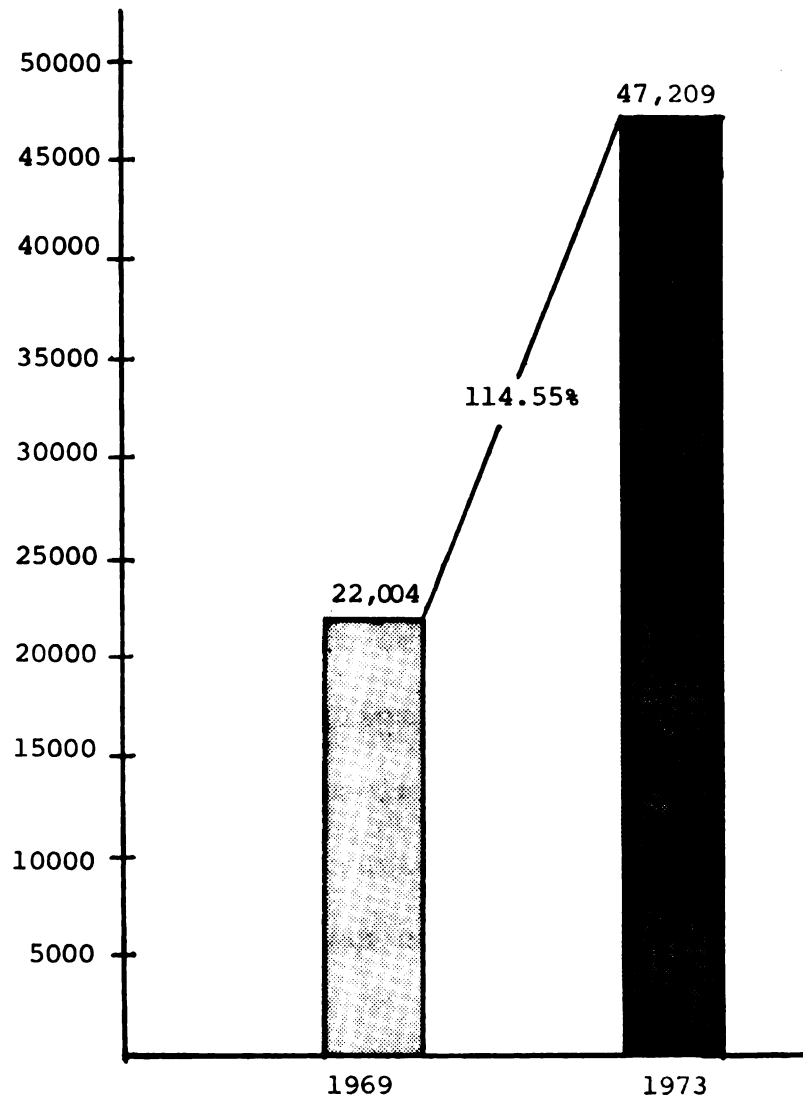
TABLE 5.--Number and Type of Drivers' Licenses Issued in Saudi Arabia between 1969 and 1973.

Year	Private	Chauffeur	Special	Total
1969	15,151	4,273	2,580	22,004
1970	20,125	4,326	1,903	26,354
1971	24,064	6,098	1,380	31,542
1972	26,203	5,617	1,538	33,358
1973	40,868	4,938	1,403	47,209
Total	126,411	25,252	8,804	160,467

solved in the near future because they are staffing all traffic safety departments with young educated officers who will be able to deal with the problem efficiently.

Despite all the problems facing traffic safety in Saudi Arabia, traffic safety departments have improved. As can be seen in Figure 17, the number of drivers' licenses issued has increased from 22,004 in 1969 to 47,209 in 1973. This represents an increase of 114.55 percent in five years. The total number of licensed drivers has reached 160,467 which is a decided improvement from earlier years.

Traffic law enforcement should continue on the upswing in the area and annual motor vehicle inspection should be employed. A beneficial side effect of this program would be the identification of all drivers who did not have a driver's license. Above all, good traffic safety education should teach people the value of having a license, and should teach them the importance of becoming good citizens who abide by the law.



Increase of 114.55% in drivers' licenses issued
in Saudi Arabia 1969-1973

Fig. 17.--Increase of Drivers' Licenses Issued in Saudi Arabia 1969-1973.

Analysis of License Plates Issued
in Saudi Arabia

The number of cars in Saudi Arabia has increased very rapidly. In 1969, 13,967 license plates were issued. In 1973 the number increased to 62,789, an increase of 349.6 percent. However, the increase does not represent all new license plates. It includes the new license plates and renewals. Prior to 1970, Saudi Arabia did not require the renewal of a license plate. Since 1970 it has become mandatory for license plates to be renewed every three years. In the sixties there were no regulations nor accurate records regarding license plates. Many people put old license plates on their new cars and drove with them for years. Car registration was unimportant, and the traffic safety department was understaffed and unqualified to enforce the laws.

During the last five years, the Highway Traffic Safety Department has undergone many changes and was staffed by some qualified personnel and equipped with modern machinery to upgrade traffic safety. Since 1969 they have been keeping records and statistics on motor vehicle registration and have been enforcing the laws in

that regard. (Table 6 summarizes the types of cars and the number of license plates issued since 1969.)

Table 6 shows that the number of cars has been increasing very rapidly. The number of license plates issued increased from 13,967 in 1969 to 62,789 in 1973. This represents an increase of 349.6 percent in all types of license plates in the country for the period 1969-1973. The number of license plates issued for taxis almost doubled during that same period. Most of the increases were in license plates for trucks, buses, and private passenger cars. The increase in the number of license plates for passenger cars was almost double that for 1972. This represents an increase of approximately 462 percent during the period 1969-1973. This increase surpasses the total increase of all license plates issued in the country during the same period.

Due to the fact that the Saudi Arabian economy is increasing more rapidly than any country in the world, the number of cars will continue to increase in the future. The greatest gain in economic wealth for Saudi Arabia came after 1973, when world oil prices increased rapidly. According to a special report in Time magazine, the number

TABLE 6.--Number of License Plates Issued in Saudi Arabia from 1969-1973.

Year	Private	Taxis	Trucks	Buses	Total
1969	4,073	2,969	6,599	326	13,967
1970	6,156	2,385	10,084	508	19,133
1971	9,689	2,249	10,324	543	22,805
1972	12,335	1,843	20,271	969	35,418
1973	22,890	5,951	32,639	1,309	62,789
Total	55,143	15,397	79,917	3,655	154,111

of cars has tripled in Saudi Arabia in 1974, especially since gasoline prices fell to 13 cents per gallon.⁸⁵

With the present level of increase in the number of cars, and the lack of traffic safety education, the traffic problem in Saudi Arabia will be increasing at an alarming rate.

Present traffic accident reports in Saudi Arabian newspapers indicate that the country is facing a serious problem. In almost every newspaper there is the daily regrettable news regarding accidents and deaths. A number of Saudi Arabian students at Michigan State University have received the unfortunate news regarding the loss of one or more members of their families. This is a tragedy which is affecting most, if not all, Saudi Arabian families.

Analysis of Local Traffic Accidents
in Saudi Arabia

Due to the fact that the information provided by the National Department of Highway Traffic Safety was

⁸⁵"A Desert King Faces the Modern World," Time January 6, 1975, p. 25.

incomplete and very limited, it became necessary to conduct field work and visit a local traffic safety department in one of the cities of Saudi Arabia. The city of Taif was selected because of its medium size and its population which is a representation of all the regions of the country.

The traffic safety department in Taif, like many other departments in towns and cities of Saudi Arabia, did not maintain accurate nor complete records. A great effort was made to review early accident reports (which had never been tabulated) and gather the information needed for the research. The information that was available had been requested by the author in 1972. This information was gathered and analyzed and tabulated in Table 7.

In Table 7, the following information regarding the drivers is found:

1. Of 331 drivers involved, about two-thirds of these were educated. However, the level of education was not recorded. About one-third of the drivers can not read nor write. This figure represents most of the rural areas surrounding Taif.
2. More than one half of the drivers do not have a driver's license. This also indicates that their

TABLE 7.--Summary of monthly car accidents in Taif, Saudi Arabia, for the year 1973.

Month	No. of Accid.	No. of Injured	No. of Deaths	Driver				Cause of Accident		
				Edu- cated	Illit- erate	Has License	No License	Drunk	Driver at Fault	Mechanical or Environmental Errors
January	29	10	9	18	11	8	4	0	28	1
February	28	16	11	16	13	17	11	1	28	0
March	29	22	14	19	12	20	13	2	29	0
April	24	24	11	24	8	23	6	2	25	0
May	33	20	17	12	14	12	13	1	15	0
June	37	38	21	24	14	19	17	3	20	2
July	48	23	17	30	13	30	25	1	29	4
August	45	55	31	32	10	19	21	2	32	1
September	39	12	11	13	0	2	13	0	11	0
October	24	16	10	15	1	11	5	0	16	0
November	24	15	2	19	3	9	7	0	19	2
December	35	10	21	7	3	9	13	0	13	1
Total	395	761	175	229	102	124	138	12	265	10

ability to drive is not known as they have not been subject to any driver licensing examination. Even though it is prohibited to drive without a license, this law is not strictly enforced, and many drivers go unpunished and continue to drive without a license.

3. Only 12 cases involved drinking and driving. The level of alcohol in the blood was not determined. It was immaterial since the law prohibits the consumption of any amount of alcohol.

4. In 265 cases the cause of the accident determined that the driver was at fault. In only 10 cases were mechanical or environmental errors cited. Most of the accidents investigated and traffic safety officers interviewed (to be discussed later in this chapter) cite human errors as the major cause of the accidents. They say that ignorance of the traffic laws and regulations as well as poor perception is the real problem in a car accident. In many cases involving sharp curves on a two-way traffic road, the driver would pass the slow vehicle and take the left lane and collide

with oncoming traffic. In some of the accidents observed by the author, three involved head-on collisions on a curve which claimed the lives of 27 persons. This is a tragedy which will not be forgotten. As was shown earlier in Table 4, the head-on collisions resulted in 1,919 accidents (nationally) or about one half of all the accidents in the nation. The National Traffic Safety Department, as well as many of the local departments visited, agree that human errors account for more than 90 percent of all car accidents in Saudi Arabia. They agree that the majority of drivers do not know how to drive properly and safely, and that they lack knowledge in traffic safety. These views will be discussed in greater detail later in this chapter.

5. The severity index for traffic accidents in Taif for 1973 was 40.14 percent. This figure is higher than the national severity index figure of 26.7 for the year 1972. Since the two severity index figures represent two different years, no documented comparison nor conclusion could be drawn.

However, since national traffic accidents and casualties are increasing rapidly, and since the national severity index for the period 1971-1972 increased by more than 135 percent (see Figure 14), the national severity index for the year 1973 could be comparable to the severity index in Taif for the same period.

Analysis of Local Traffic Casualties in Saudi Arabia

In order to further examine and study the traffic problems in Taif, the records and accident investigation reports for the year 1972 were reviewed. These reports did not offer any information on the driver, the weather, nor the road conditions. Due to this fact, only the monthly reported accidents, fatalities, and injuries were gathered and tabulated. The information gathered was compared with similar information for the year 1973. Table 8 shows the summary of monthly car accidents, rates and the casualties involved for the years 1972 and 1973 in Taif. The percent of increase in traffic fatalities and traffic injuries

TABLE 8.--Summary of monthly car accident rates in Taif,
Saudi Arabia for 1972-1973.

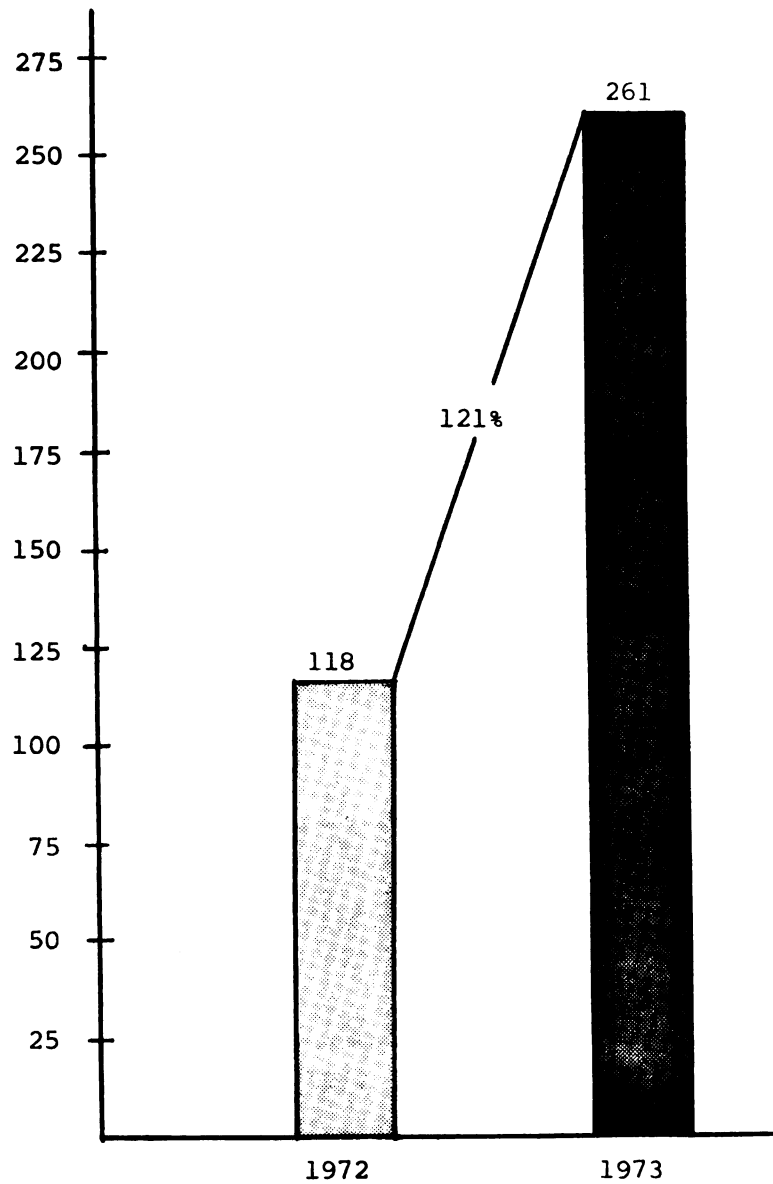
Month	No. of Accidents		No. Injured		Fatalities	
	1972	1973	1972	1973	1972	1973
January	5	29	4	10	0	9
February	18	28	10	16	1	11
March	27	29	7	22	4	14
April	30	24	8	24	4	11
May	13	33	12	20	2	17
June	51	37	18	38	14	21
July	37	48	9	23	8	17
August	18	45	5	55	1	31
September	37	39	18	12	9	11
October	29	24	11	16	8	10
November	21	24	11	15	1	2
December	16	35	5	10	10	21
Total	302	395	118	261	62	175

during 1972-1973 is graphed in Figures 18 and 19, respectively.

Table 8 shows that there was a continuous monthly increase in the rate of accidents, fatalities, and injuries. During many months the fatalities increased by more than 300 percent. This increase was attributable to an increase in the number of people killed in one accident. In the month of August and again during the month of December the author personally observed three accidents each of which claimed the lives of seven persons.

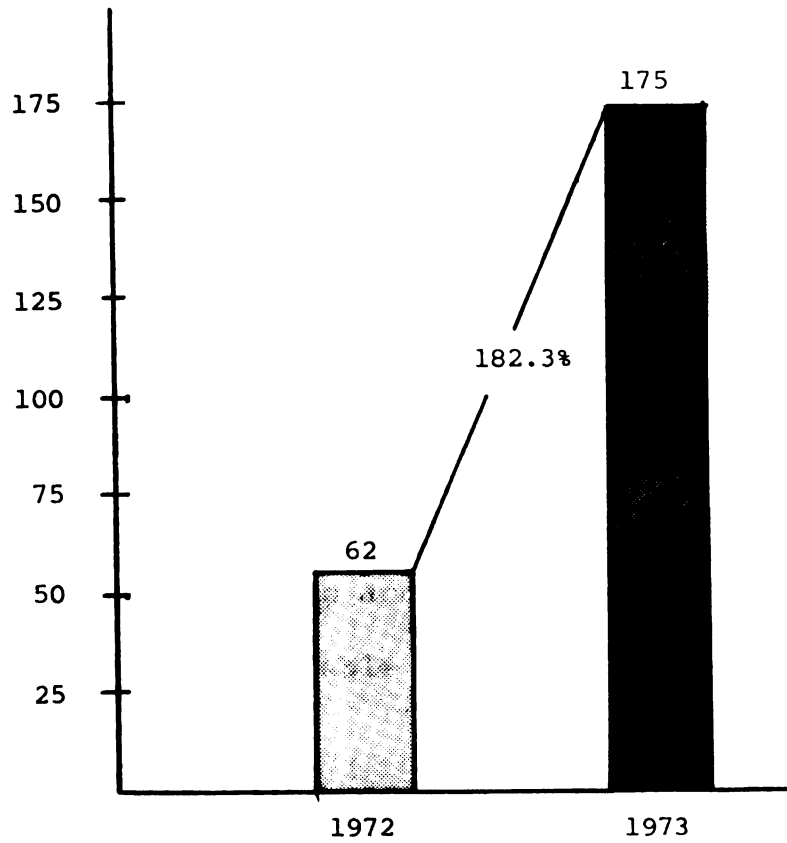
The total number of accidents increased from 302 in 1972 to 395 in 1973. This represents an increase of only 30.8 percent. However, as is shown in Figure 18, the number of injured persons increased from 118 in 1972 to 261 in 1973. This represents an increase of 121 percent. Also, as is shown in Figure 19, the traffic fatalities increased by 182.3 percent during the same period. These figures and graphs depict the critical nature of the situation which is facing Saudi Arabia.

The severity index for Taif was 34.4 percent and 40.5 percent for 1972 and 1973, respectively. These figures are very high and they increased rather than decreased which indicates that the severity and the gravity



The number of injuries increased by 121% in Taif, Saudi Arabia in 1972-1973

Fig. 18.--Increase in Traffic Injuries in Taif, Saudi Arabia, in 1972-1973.



Traffic fatalities in Taif, Saudi Arabia
increased by 182.3% in 1972-1973

Fig. 19. Traffic Fatalities in Taif, Saudi Arabia
1972-1973.

of traffic accidents in Saudi Arabia are continuously increasing. The problem is becoming more complex and only massive educational efforts in traffic safety education could help solve the problem.

Interviews with Traffic Accident
Investigation Officers
in Saudi Arabia

In order to determine the major causes of traffic accidents in Saudi Arabia, it was necessary to interview the accident investigation officers in the country, since they have vast experience in accident investigations and could provide the most reliable information regarding traffic accidents.

The interviews were conducted orally while the author was in Saudi Arabia. The discussions centered around the following points:

1. The traffic situation on the local and national level in Saudi Arabia.
2. The major causes of accidents in Saudi Arabia.
3. Types of accidents and their frequency.

4. The severity of accidents in Saudi Arabia.
5. The driver's knowledge of traffic rules and regulations.
6. The driver's attitudes toward safety.
7. The need for traffic safety education.

The following are the people who were interviewed, and a summary of their responses.

Major Abdulaziz Andergeri, Director of the Traffic and Car Statistical Division in the National Highway Traffic Safety Department, Riyadh, Saudi Arabia (Interviewed October 7, 1973).

Major Andergeri has worked in various traffic safety departments around the country. He has more than twelve years experience in the traffic field. He recognized the severity of the effect of traffic accidents in Saudi Arabia today. His analysis of the traffic problem in Saudi Arabia is summarized in the following.

Most drivers have one basic problem which is lack of traffic safety knowledge and inexperience. Since the early 1970's more and more people began to buy cars; the cars satisfied a need created in the society. The people

who bought the cars were taught to drive by someone who had very little knowledge of traffic safety. Many adopted the attitude that to get anywhere, faster is better, without being aware of the dangers involved in speeding.

Major Andergeri pointed out that accidents happen during any time of the day and in any area. He said that the present traffic accidents in Saudi Arabia are some of the worst in the world, and that proportionately more people are needlessly killed in Saudi Arabia than in most other countries.

It was his opinion that the major cause of the traffic accidents was the driver himself. Saudi Arabia has many unique situations. People from the rural areas and deserts come to towns and cities looking for jobs. Most of them will share in buying a taxi and will drive the car before they know how to properly start it.

Many young people drive without licenses. In most of the accidents Major Andergeri observed, the drivers were at fault. They did not know the law nor regulations for driving. They were speeding and ran red lights, and most seriously, they did not understand the limitations of the car, the road, or the environment. As an example, head-on collisions are causing half of the accidents in

this country, particularly around curves where the driver is in the wrong lane and collides with oncoming traffic. According to Major Andergeri, at least 95 percent of all the accidents are caused by human errors.

Major Andergeri predicted that the traffic problem will worsen in the coming years unless drastic measures are taken to reduce the severity of the problem. He currently is assisting in establishing the first commercial driver education school.

Lieutenant Ali Al-Issamy, Chief Traffic Accident Investigation Officer, Taif, Saudi Arabia (Interviewed several times in November, 1973).

The author was given the opportunity to work with Lieutenant Al-Issamy while conducting field work in Taif. Lieutenant Al-Issamy had been involved in most of the accident investigations which took place in Taif.

In his analysis of the problem he cited the "ignorance of the driver" as the main cause of accidents. He said that most of the drivers (any age) neither knew how to drive properly nor knew traffic rules or regulations. He said that many drivers would have the music in their cars so loud that they could not begin to hear any noises that might be indications of danger.

Lieutenant Al-Issamy supported the idea of traffic safety education, but said that it would have to be an intensive education and not on a minor scale. He felt that every effort should be made to reach as many people as quickly as is feasible to lessen the enormity of the loss in human lives. He was optimistic that if a comprehensive program were started, the next decade would show a definite improvement.

Major Abdulla Al-Ghamedi, Chief Traffic Accident Investigation Officer, Highway Traffic Safety Department, Damman, Saudi Arabia (Interviewed October 26, 1973).

During the discussion Major Al-Ghamedi discussed the problem of drivers not knowing the limitations of the car and driving too fast. He joked that drivers must think the car can "see" every danger and just take care of the whole situation by itself, because drivers, in general, were not looking out for all the possible dangers. He said that it was unfortunate that young children were not adequately instructed to look for all possible dangers before crossing the road.

Major Al-Ghamedi felt that cars are being used equally for pleasure and work, and that the major problem in the accidents he regularly investigated was that the

driver was at fault. He said that there are many accidents which are not reported to the police, especially if there are no serious injuries involved. He said that due to the culture and customs in Saudi Arabia, parties involved in non-fatal accidents resolve the problem among themselves.

Major Al-Ghamedi reaffirmed the seriousness of the total ignorance of laws and regulations on the part of drivers. He said that most drivers are careless and much too aggressive when they drive. They get behind the wheel and don't want to stop for anyone or anything because they assume under any condition that they are right and should have whatever amount of the road they want.

He also noted that drivers do not think ahead when they drive, and when faced with an emergency or dangerous situation, they are unable to form an alternative or decide what to do before it is too late. He said that it is tragic that drivers do not follow the basic guidelines of the law because accidents could be avoided. Major Al-Ghamedi estimated that at least 95 percent of all accidents are caused by a driver who is at fault.

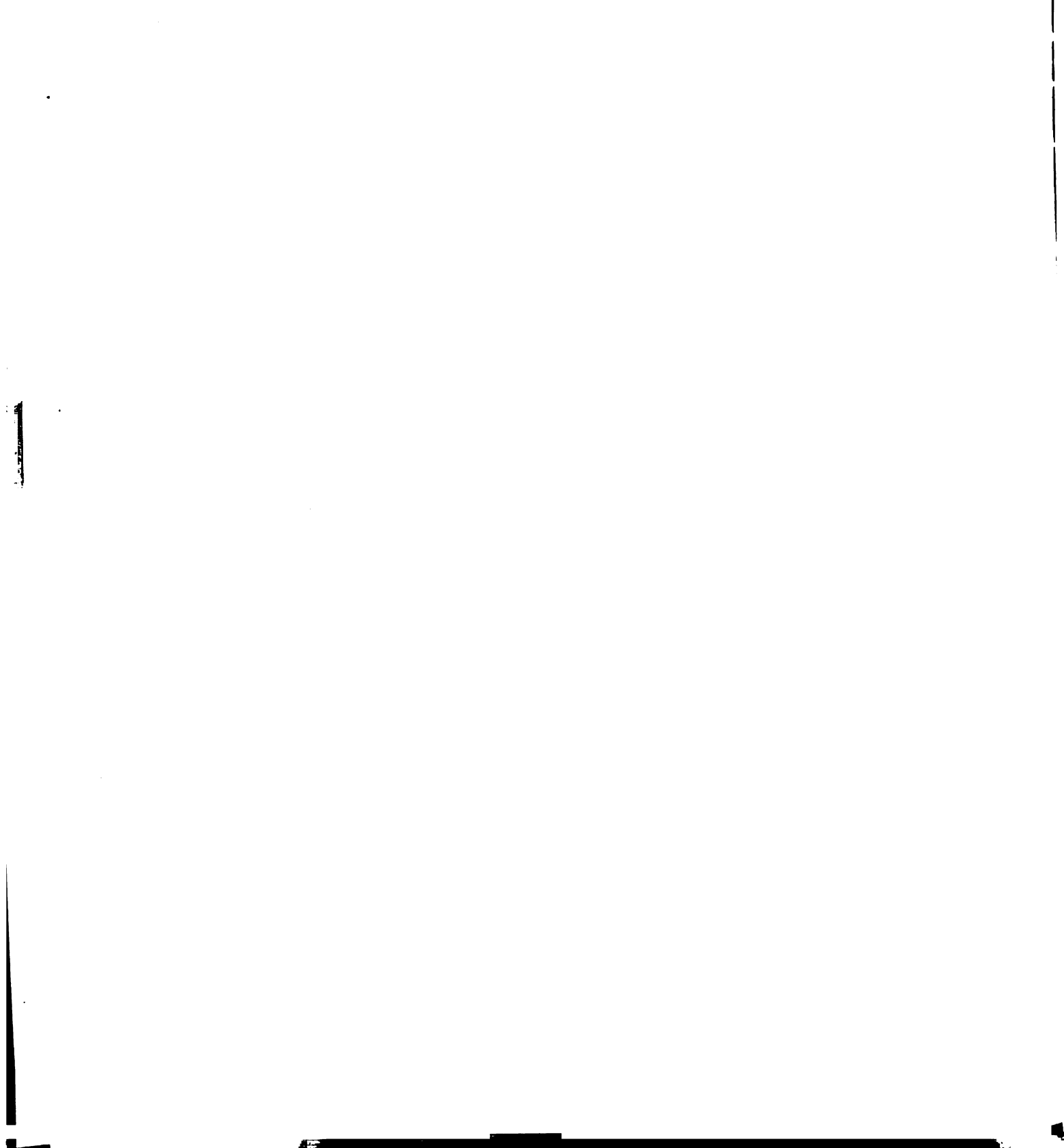
He felt that traffic safety education is essential in coping with traffic problems in Saudi Arabia.

Lieutenant Mohammed Al-Yami, Traffic Investigation Officer, Highway Traffic Safety Department, Mecca, Saudi Arabia (Interviewed, November 12, 1973).

Lieutenant Al-Yami analyzed the bulk of the problem as ignorance of laws and regulations, as well as carelessness. He said that when investigating accidents, he was sure that it was not the first time the driver had been involved in an accident. He further stated that most drivers have the same type of non-fatal accident more than once.

He did feel that most drivers do not have even minimal instruction. Lieutenant Al-Yami said that the use of cars is widespread for work and pleasure. He knew that at night many drivers will always use the high beam of their lights and create hazards for each other by doing so. He felt that traffic safety education was needed. He wanted the drivers to know the art of safe driving. He volunteered the statement that 95 percent or more of the accidents were caused because the driver was at fault.

He concluded that Saudi Arabia lacks any form of traffic safety education. People drive before they know how to drive safely, and, as a result, over 95 percent of all accidents are caused because the driver is at fault.



All of the traffic accident investigation officers blamed 95 percent or more of all car accidents on the driver. They cited the following reasons as the causes of bad driving:

1. Total ignorance of laws and regulations.
2. Carelessness.
3. Unawareness of car and environmental limitations.
4. Virility. The drivers want to show off their manhood by driving aggressively.
5. Inability to perceive other traffic and plan ahead.
6. Inability to choose and decide wisely in times of emergency or danger.
7. Driving without a driver's license.
8. Lack of traffic safety education and driver safety education.

Islamic Religion Philosophy
on Safety Education

Islam is not only a religion, but also a way of life, an ethic, and a legal system. Islamic religion will determine the form of the political, social, and cultural system the country is to adopt. Islamic philosophy is directed toward maintaining a cohesive community, free of all social and psychological ills. According to Islamic law, which is the law of Saudi Arabia, the individual is responsible for any killing, whether it is intentional or unintentional. In any traffic fatality, the driver is held responsible for any deaths which occurred. Islamic religion places a very high value on education and knowledge for the survival of man.⁸⁶

In order to seek the opinions of experts in the philosophy of Islamic religion, the author personally interviewed the following religious leaders in Saudi Arabia.

Sheikh Abdulla Al-Wahibi, General Director of the Department of Justice, Taif, Saudi Arabia (Interviewed September 13, 1973).

⁸⁶ Bayard Dodge, Muslim Education in Medieval Times, op. cit., p. 51.

Sheikh Al-Wahibi, when asked about Islam and safety, said, "Islam is for human safety--in all of the forms and shapes of safety. It is without a doubt that Islamic religion would be strongly for traffic safety education." "Prophet Mohammed devoted all of his life to establish Moslem communities which are secure and safe. God asked all of us to protect each other, and to safeguard human life." "In today's difficult and delicate situation, all avenues geared to safety and the preservation of life should be sought. It is the duty of all Moslems to preserve life."

Sheikh Wahbi Al-Sindi, Assistant Director of the Department of Justice, Taif, Saudi Arabia (Interviewed September 9, 1973).

Sheikh Al-Sindi is a former religious lawyer and one of the leading authorities on Islamic thought and philosophy in Saudi Arabia. When he was asked if Islamic philosophy advocates safety education, he responded in the following:

The sacred duty of fulfilling the obligation of saving human life is a cardinal feature of Muslim ethics. The question is what is to be done to save human lives. In my opinion, traffic and safety education is essential, especially in these times that we are

living in. The taking of a life in homicide, suicide, or in car accident is a major crime in Islam (except for just cause). It is the duty of all Moslems and human beings to preserve God's gift to humanity . . . that is life.

Sheikh Al-Sindi said that safety education is one of the major objectives of Islam.

Sheikh Abdurhaeim Al-Sadeghi, Religious Teacher--
Thakief Secondary School, Taif, Saudi Arabia (Interviewed
on November 3, 1973).

Sheikh Al-Sadeghi is one of the leading Islamic philosophers in the Arabian countries. When asked how Islamic philosophy advocates safety education, he answered:

The sovereignty of the Moslem state (or country) is vested in God Almighty. The state or national government shall be only an agent to execute the Sovereign's Will. God created all people to live in peace, security and safety. Consequently, safety education is not only recommended, but commanded by almighty God. This is the way I see it. To take a life, one's or another's, is a crime against humanity and against God (except in due justice). The first revelation from Almighty God to His Prophet Mohammed, Peace upon him, ordered Prophet Mohammed to read . . . to find about the unknown. Prophet Mohammed, throughout his life, asked his people to seek education. In Islam, seeking education is not only a popular thing, but a duty It is a must. Safety education, including traffic safety education, is a must because it will teach us how to drive properly and safely.

The previous interviews with the religious leaders in Saudi Arabia indicate that Islamic philosophy advocates safety education, including traffic safety education.

Philosophy of Education and Traffic Safety Education

The philosophy of education is very important in developing a rationale for any educational program. It is the backbone which augments the goal and objective of the program. The educational philosophy regarding what should be or ought to be taught and what kind of experience is needed in our educational system has been a major controversial question. Despite all the controversy, many philosophers including Dr. Ferree, Dewey, Rousseau, Rowls, Wolf, Wittgnestein (whose philosophies were discussed in Chapter II) share the idea that education should deal with the social life of the individual and fulfill his immediate needs. Without any doubt, traffic safety education is amongst the most immediate needs of the individual, especially in present times.

Driving is a skill which requires strategy in performing a manipulative and mechanical skill as well as

executing a well thought out decision. The driver must be taught to drive safely, efficiently, and economically. To achieve this, traffic safety education must be included in the educational system of all schools. The need for a comprehensive traffic safety education program as part of the school curriculum is urgent, especially in Saudi Arabia which is facing a serious traffic problem. Safety, including traffic safety, is the prime goal of educational philosophy world-wide.

Policy Makers' Support for the Inclusion
of Traffic Safety Education
in Saudi Arabia

Due to the fact that Saudi Arabia is a religious country with a central power, the initiation of any program has to come from the central authority. The views and opinions of the policy makers in Saudi Arabia are very essential and vital to the adoption or rejection of any program in the country. The only (true) rationale needed for the adoption of traffic safety education in Saudi Arabia is dependent on the acceptance or rejection of the idea by the central authority. For this reason, it was

essential to conduct personal interviews with various policy makers in Saudi Arabia to see whether or not they would support a traffic safety education program in Saudi Arabia.

The policy makers who have or will have any direct relation to traffic safety education were working in two ministries: 1) the Ministry of Interior, which has responsibility for all police and traffic safety matters; 2) the Ministry of Education which has total authority over educational matters.

The interviews were intended to explore the policy makers' attitudes and feelings toward traffic safety and to measure their support, or lack of it, regarding the inclusion of traffic safety education in Saudi Arabia.

Each party interviewed was asked the following questions:

1. What is your assessment of the traffic situation in the country today? How bad or severe do you think the traffic accidents are in the country?
2. In your opinion, what are the major causes of accidents?

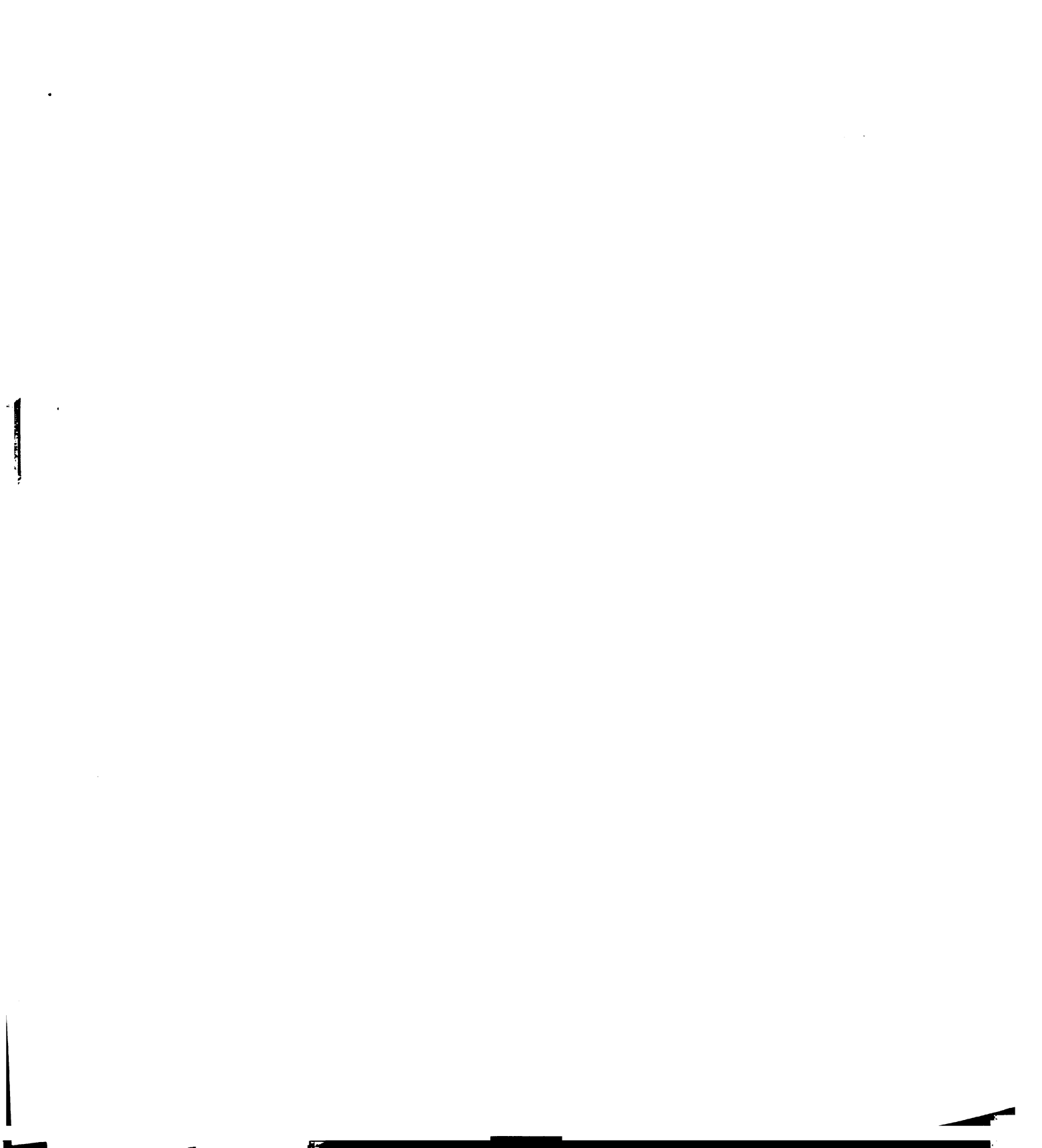
3. What should be done to reduce traffic accidents in Saudi Arabia?
4. What is the feasibility of introducing traffic safety education in the country?

The following are the responses of each policy maker according to the ministry by which he is employed.

Interviews with Policy Makers
in the Ministry of Interior

Prince Nayef Bin-Abdulaziz, Deputy Minister of the Interior. He has the same responsibility and authority as the Minister of Interior, since Prince Fahad Bin-Abdulaziz, the Minister of the Interior, is usually away from the Ministry (due to his duties as the Second Deputy Prime Minister and since he always heads the Council of Ministers); therefore, Prince Nayef is the actual Minister of Interior. He is one of the most influential men in the country. His ideas, programs, and views are rarely opposed.

The following is a summary of his responses to the previous questions, from an interview on October 4, 1973:



The traffic situation in Saudi Arabia is very gloomy today. We have many serious accidents resulting in mass fatalities. This is a situation which is getting worse. Last year about 900 persons lost their lives as a result of traffic accidents. This year the situation looks even worse.

In talking to the heads of traffic safety departments, they tell me that the major cause for traffic accidents is the driver himself. I fully agree with their analysis of the situation. But there are other causes such as the increase in the volume of traffic, improper road maintenance, lack of parking lots and many more. Still, the greatest blame should be placed on the "driver himself."

Prince Nayef said that we are at the beginning of the road. There are many things to be done. We have to develop a sound highway traffic system, establish a highway patrol, train and educate public officials and department personnel. We have to educate the public and make them safe drivers and conscious of the problem.

He also said that traffic safety education is a must for the country. We are working at the present time on developing a commercial driver school, and it should become a reality in the near future.

He said that he would strongly support comprehensive traffic safety education in the public and military schools. Information is being collected regarding this

matter, and the idea will be discussed more thoroughly in the future. At the present time a massive educational program is being conducted through the media, especially television, and it is hopeful that this will have an effect on the public.

Prince Nayef was very frank and sincere in his answers. He shows great enthusiasm for the traffic safety education program.

In addition to Prince Nayef, other leading policy makers were interviewed. A brief summary of several other interviews follows.

Lieutenant General Tayeb Al-Tunisi, General Director of the Interior Security Department, Riyadh, Saudi Arabia (Interviewed, October 11, 1973).

Lieutenant Al-Tunisi is in charge of police, traffic, and civil defense departments in the country. His responses were similar to Prince Nayef's. He expressed great hope for the inclusion of traffic safety education in the country. He is concerned about the enforcement of traffic laws and also changing some of the laws and regulations regarding traffic safety.

Colonel Hashim Abdulrahman, General Director of the Traffic Safety Department in Riyadh, Saudi Arabia (Interviewed on October 17 and 18, 1973).

Colonel Abdulrahman is the key man responsible for all traffic safety in the country. He has been working in traffic safety in his present post for the last three years. Prior to that, he was the Director of the Traffic Safety Department, Riyadh (the capital of Saudi Arabia). Colonel Abdulrahman's responses were very clear and direct. He realizes the traffic problem and knows the full implications of its seriousness. At the present, he is working very hard to establish the first commercial driver education school in the country. He is quite optimistic regarding the inclusion of traffic safety education in Saudi Arabia. He thinks that the police academy will adopt the idea much faster than the public schools, since the police academy has been considering a comprehensive traffic safety education program of its own.

Interviews with the Policy Makers
in the Ministry of Education

Two important officials in the Ministry of Education were interviewed. Each party interviewed was asked the following questions:

1. What is your assessment of the traffic situation in the country today? How bad or severe do you think traffic accidents are in the country?
2. In your opinion, what are the major causes of accidents?
3. What should be done to reduce traffic accidents in Saudi Arabia?
4. What is the feasibility of introducing traffic safety education in the country?

The officials interviewed were Prince Khalid Al Fahad, Deputy Minister of Education in Riyadh, Saudi Arabia on September 21, 1973. He is a Harvard graduate and very knowledgeable person. The other official was Prince Faisal Al Faisal, General Director of the Foreign Educational Mission and Director of Higher Education,

Riyadh, Saudi Arabia (Interviewed on September 16, 1973). He graduated with an M.S. from Michigan State University.

Both interviews were very open and thorough. The responses of both were almost identical. Since the interviews were lengthy, only a summary of their responses to the previous questions are given.

Prince Khalid and Prince Faisal have a very clear understanding of the traffic situation on the national and international level. They realize the severity of accidents in Saudi Arabia and show a great concern.

Being familiar with driver education in the United States, they both attributed the high fatality rate to the lack of traffic safety education in the country. Human errors were number one in listing the causes of traffic accidents. Lack of traffic law enforcement and road conditions were the second and third causes, respectively.

Regarding the inclusion of a traffic safety education program in the country, they both agreed that it would be beneficial. They stressed the need to develop a teacher education program in traffic safety first, then conduct a pilot project. Later the program would be implemented gradually into the public schools.

They both agree that the traffic safety education program should be an integral part of the regular curriculum. Since the educational system is for the entire year, the program should be for the whole year, too.

Prince Khalid asserted that 6 hours behind the wheel is not enough for practical training. Individual needs vary, and the program should allow for those needs. He also recommended an advanced course in driver education with some basic auto mechanic knowledge to be part of the curriculum.

The idea of traffic safety education was not new to either prince. It has been under discussion in the Planning and Curriculum Committee. They are very optimistic about the adoption of such a program in the future.

It could be easily concluded from the previous interviews that the adoption of a traffic safety education program in Saudi Arabia is very promising. The policy makers in Saudi Arabia not only realize the seriousness and the severity of traffic accidents in the country, but also have considered and are considering programs to cope with the problem. Traffic safety education is of great concern among those policy makers interviewed, and the expectation of future support is unquestionable.

The Development of a Comprehensive
Traffic Safety Education Program
in Saudi Arabia

Due to the fact that Saudi Arabia is considering the adoption of a traffic safety education program for the country, it became necessary to include such a program in this study. The program will be a broad guideline for any future planning in traffic safety education. The inclusion of a traffic safety education program in this study is very essential in order to focus on the real needs of the country, and avoid any misconceived ideas regarding Traffic Safety Education and what is meant by it. This would help save Saudi Arabia's time and avoid any waste in human and economic resources.

As was mentioned earlier in this research, Saudi Arabia has no public nor private traffic safety education program at the present time. Consequently, it is essential to plan a two stage program (Micro and Macro program) for immediate and future adoption.

Micro Plan for Teacher Preparation
in Traffic Safety Education
in Saudi Arabia

In order to develop any traffic safety education program for the country, the effort should be directed toward teacher preparation. The teacher preparation program will be a pilot project which will enable the government to observe and evaluate and, consequently, plan for the future.

The information and research studies conducted in the United States on teacher preparation, driver education, traffic safety education, and many related matters will be utilized in the development and planning of the pilot project.

It has been stated throughout this research that the program will be called Traffic Safety Education, and not driver education. This is done in order to eliminate the confusion regarding the objectives of the program. Driver education in the United States, Australia, England, and many other countries has been misunderstood to mean the teaching of manipulative skills. It has been called, and still is being called by laymen, driver training.

Calling the program traffic safety education, it is hoped, will eliminate such confusion in Saudi Arabia in the future.

Location of Program Implementation

The program will be implemented in the two teacher colleges of education in Saudi Arabia, which are:

- a) Teacher Education College, Riyadh University, Riyadh, Saudi Arabia.
- b) Teacher Education College, King Abdul Aziz University, Mecca, Saudi Arabia.

The two colleges are located in the Eastern and Western Sections of Saudi Arabia.

Student Selection

College students who are juniors and who are majoring in educational psychology will be given priorities. However, in case of lack of participants, students majoring in social studies will be accepted also. The

reason that the priority was given to students majoring in educational psychology is the fact that driving is primarily a mental task. It involves attitudes, feelings, and emotions as they affect the perceptual task. Human feelings and emotions need a careful analysis and understanding. The student who majors in educational psychology will be more knowledgeable in human behavior and attitudes.

Teacher Qualifications

Any traffic safety education teacher should at least have a minor in traffic safety. A major in traffic safety education will be offered also at a later stage of the program. In order to meet the immediate needs and demands of the country, the program will be designed to provide a minor in the field of traffic safety education. The program content will be discussed later in this chapter.

Goal of Traffic Safety Education

Traffic safety education will be the learning process offered by the school to assist and help people in developing life time patterns of intelligent thought, action, and attitudes that will manifest themselves in responsible citizenship in traffic and in the conservation of human life, through understanding of the traffic system and safe driving and walking.

Objectives of Traffic Safety Education

The ultimate objectives of traffic safety education are to enhance the effectiveness of the highway transportation system in fostering the safe, rapid, economical, and comfortable transportation of passengers and goods from one place to another. Those objectives are achieved by teaching the students how to meet the demands imposed upon them by the various components of the highway transportation system, that is, the vehicle they operate, the road they travel, the traffic they encounter, and the national environment in which the system (of which the driver is a part) operates. The knowledge of safety, the

effective performance, and the competence that a driver can achieve in dealing with the highway transportation system becomes the objective toward which traffic safety education is oriented.⁸⁷

Brody and Stock summarized the objectives of driver education which were outlined during the Jackson's Mill Conference. The general objectives and the specific learning products related to them would clearly cover all of the objectives related to traffic safety education. The objectives and the specific learning are summarized in the following:

- A) First objective: To develop in young people a strong sense of personal and social responsibility for the common welfare, particularly as it is affected by and involved in the operation of motor vehicles.

The specific learning products are:

- i) An awareness of man's social responsibility to the changes that have come with the power age.
- ii) An understanding and awareness of the historical, social and economic aspects of the highway traffic control problem.

⁸⁷ National Highway Traffic Safety Administration, Guide for Teacher Preparation in Driver Education, Secondary School Edition (Washington, D.C.: U.S. Department of Transportation, July, 1974), pp. 11-30.

- iii) An understanding of the present statutes of the highway traffic accident problem, as an example of man's failure in his social responsibility to control the power he has developed.
- iv) An understanding of the deterrents to adequate highway traffic control with emphasis on factors derived from human psychology.
- v) A dynamic, realistic philosophy to guide individual and group thinking in working toward a solution of the traffic control problem.

B) Second objective: To develop pride in maintaining high standards of performance, particularly in the operation of motor vehicles.

The specific learning products are:

- i) A recognition of the psychological factors affecting the performance and an understanding of the techniques of developing skills.
- ii) The formulation of a code of behavior which constitutes good sportsmanlike driving performance.

C) Third objective: To promote safe, efficient, and enjoyable use of the equipment and environment, especially of motor vehicles and highways.

The specific learning products are:

- i) An understanding of the capacities and limitations of the car and driver.

- ii) An appreciation of environmental factors affecting motor vehicle operation.
 - iii) The development of skills in driving, including the ability to successfully cope with emergency situations.
 - iv) The development of anticipatory techniques to keep out of emergencies when possible.
- D) Fourth objective: To promote effective habits of cooperation in meeting problems of common welfare, especially those concerned with the use of motor vehicles and highways.

The specific learning products are:

- i) To learn the laws and regulations that have been adopted to protect pedestrians and drivers on streets and highways.
- ii) To study the records of accidents on the streets and highways in an effort to discover how their number and seriousness can be reduced most effectively.
- iii) To formulate new laws and regulations which, if enacted, would help to reduce accidents. (This is critically needed in Saudi Arabia.)
- iv) To plan and participate in practical efforts that would lead to adoption of more effective regulations, more productive education of pedestrians and drivers using safe practices on the

streets and highways and greater competence in the enforcement of existing regulations.

- E) Fifth objective: To prepare young people for socially useful vocations suited to their individual ability, particularly those that involve the use of motor vehicles.

The specific learning products are:

- i) An understanding of the many job opportunities that result from more vehicle transportation.
- ii) An understanding of the nature and requirements of various types of job opportunities available.
- iii) An evaluation by the individual of his own interests, aptitudes, and abilities in terms of the requirements of the various job opportunities (especially taxi and truck drivers in Saudi Arabia).
- iv) Development of knowledge, skills and attitudes necessary to prepare students for suitable job opportunities.⁸⁸

These objectives and their products cover the field of traffic safety education very thoroughly. They were discussed in detail which is very important in order to fully understand what is really needed to be achieved.

⁸⁸ Leon Brody and Herbert J. Stock, Highway Safety and Driver Education (Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1954), pp. 66-69.

Clear and specific goals and objectives should be emphasized not only in this curriculum, but also in every curriculum. These goals will help direct the teacher in fulfilling the students' needs and help the students attain the maximum benefits of school learning. Even though some of these objectives are outdated as far as the United States is concerned, they are applicable in Saudi Arabia. This is due to the fact that Saudi Arabia is at the start as far as traffic safety education is concerned.

Effectiveness of Traffic Safety Education

Four factors--safety, speed (or traffic flow), economy, and comfort--are basic to an effective highway transportation system. They also appear to be the major criteria for judging the system and for measuring the effectiveness of traffic safety education and improvements in its curricula.

Traffic safety education curricula should be based on the assumption that first priority is to be given to the safety criterion. This is the criterion that has won

traffic safety education its support from public school systems in the United States.⁸⁹

Requirements for Teacher's Qualifications

The standard requirements for teacher qualification and certification in the United States are twelve to fifteen hours distributed in the following manner:

Phase 1:a--two or three semester-hour credits in general safety education.

b--a two or three hours credit course in driver education including laboratory work which provides supervised teaching experience for the classroom and practice driving phases of the work.

Phase 2:a--An advanced course in driver education.

b--Additional electives in related areas.

⁸⁹ National Highway Traffic Safety Administration, op. cit., pp. 11-13.

Phase 3: A minor in safety education comprised of 15 credit hours to be based on and to include Phase 1 and Phase 2.⁹⁰

Also, the 1974 research report from the National Highway Traffic Safety Administration described the qualifications as being:

- (A) Required courses in driver and traffic safety education, 12 hours.
- (B) Elective course in behavioral science: 3-6 hours.⁹¹

This shows that the minimum requirements for teacher certification in driver education are only 12 hours. Dr. William Mann, in an article published in the Journal of Traffic Safety Education, analyzed the development of Traffic Safety Education and presented the following views on the deficiency of today's programs:

⁹⁰ National Commission on Safety Education, Summary Report of Conference of Driver Education and Safety Education Association Leaders (Washington, D.C.: National Education Association, 1956), p. 3.

⁹¹ National Highway Traffic Safety Administration, op. cit., p. 11-15.

The present course is generally taught in the traditional manner with added personalized laboratory work. It is very short. It is being taught by instructors, some of whom are very committed and some of them who are just putting in their time. The preparations of some instructors consist of a single course unsupported by attendance at conferences, workshops, or additional reading. Three principles of learning appear to be particularly important, a) better learning occurs when the student is personally involved; b) learning, if it is to persist, must be reinforced; c) when emotions and intellect compete for attention, the emotions win out The short period available for driver education severely limits the reinforcement of learning. A one shot three to six week course would not carry over for an extended period of time.⁹²

Dr. Mann's views are shared by many traffic safety educators. Dr. Richard Kaywood, in one of his editorials discussing the driver education program today, said:

All over the country students and teachers are returning to classes from the traditional two week Christmas recess. For thousands of students, part of this period was spent in receiving a quick concentrated course in practice driving, usually scheduled for two-four hours daily in six consecutive days. For hundreds of driver education teachers, this period represented an opportunity to earn extra

⁹²William A. Mann, "Wider and Deeper," Journal of Traffic Safety Education, Vol. XIX, No. 3 (April, 1972), pp. 11-40.

money at a time of the year when expenses are usually high.⁹³

Dr. Robert Ulrich, in a recent article, discussed the entire issue very thoroughly and honestly. He said:

I believe the problem (in driver education) lies mainly with that person under whose direction the program falls--the instructor. The large number of poor driver education programs motivated me to leave the high school classroom and enter the profession of preparing teachers. The poor programs were due in large measure to: (1) a poorly prepared teacher; (2) a part time teacher with so many other assignments that he had no time to devote to driver education; (3) a teacher whose sole interest in driver education was the opportunity to earn extra money as an adult education teacher; (4) a person who was hired as a teacher, but who will be evaluated as a coach. This list could include other items, but it certainly points to a sad state of affairs and to a precarious future for driver education.⁹⁴

There is much evidence to support the fact that teacher preparation programs are inadequate. Dr. Mann, Dr. Ulrich, and Dr. Kaywood's views are shared by many traffic safety educators in the United States.

⁹³ Richard Kaywood, "Six Hour Wonders," Journal of Traffic Safety Education, Vol. XIX, No. 2 (January 1972), p. 25.

⁹⁴ Robert A. Ulrich, "The CMSU Teacher Preparation Program: Preparation for Successful Performance," Journal of Highway Traffic Safety Education, Vol. XX, No. 2 (January 1973), p. 27.

The United States' long experience in driver education should be utilized in planning a Traffic Safety Education program in Saudi Arabia. The United States has gone through many stages of development in the field of traffic safety and has developed enormous amounts of research studies regarding the matter. Those experiences will be of great importance to a beginner, such as Saudi Arabia will be in this field.

The objectives and goals of driver education and traffic safety education have been maximized, while the requirements for teacher qualifications and certification and the allotted time (36 hours) for licensing a new driver have been minimized. It is contradictory and sounds illogical. Six hours behind the wheel will not produce a safe, efficient traffic citizen and driver. Driving is a mental task as well as a mechanical task. It involves human beings in a complex world and needs better understanding of human emotions, feelings, and desires. Training the mind is not a mass production car factory. It is a delicate process which requires knowledge and compassion in fulfilling the individual's needs.

Keeping this in mind, teacher preparation in traffic safety education in Saudi Arabia will be geared

toward providing a learning environment which meets individual needs. Each student will progress according to his ability. The student who may require additional training in developing a certain skill will find the opportunity to do so.

During the last academic year, the Saudi Arabian colleges and universities have adopted the semester system, instead of the year system. The courses presented will be counted as semester-credit hours. The program will be the minimal requirements for teacher preparation in traffic safety education. The program will consist of the following courses:

1. Introduction to Traffic Safety (3 credits)

The objective of this course will be to introduce the students to the total picture of traffic safety and acquaint them with the real traffic problems.

The course will be very comprehensive and would include many traffic safety aspects, among which are the following:

- (A) Components of the highway transportation system which include the driver, the vehicle, the roadway and the environment.
- (B) Pedestrian safety--as a driver and as a pedestrian.
- (C) Bicycle safety.
- (D) School bus safety.
- (E) Effectiveness of helmets and seat belts.
- (F) Motorcycle safety.
- (G) Traffic engineering.

2. Driver and Traffic Safety Education I (4 credits)

This course will be similar to the introductory course which is being offered at Michigan State University (329 F). The course will be divided into four phases: classroom instruction, simulator or audio-visual center, driving range, and on the road driving. The objectives of the course will be:

- i) To develop the necessary competencies commensurate with safe and efficient operation of motor vehicles.
- ii) To promote safe and efficient use of motor vehicles.
- iii) To develop awareness and a sense of responsibility regarding the safety of others.

During the semester, 60 hours of instruction will be allotted to this course. The four phases of the program and the hours allotted to each phase will be:

i) Classroom instruction (25 hours)

The classroom instruction will be aimed at providing a clear picture of the traffic safety system. Stimulating class discussion will be the goal of this course. The students will actively participate in defining the goals and objectives of traffic safety education. They should know the requirements of each classroom and what is expected to be accomplished. The classroom will prepare the students for the driving task. Resources, material, and people will be made available to enhance their understanding. Group discussions and group projects will be included.

ii) Simulator Instruction (10 hours)

Due to the fact that Saudi Arabia does not have many qualified personnel to maintain

simulators, their use will be limited to the colleges in the early years of the program. However, a great effort will be made to include it in the future. The importance of simulators in improving perception is of great value to any traffic safety education program. The films and illustrations used in the simulators will be utilized in the audio-visual center. It will be used extensively to drill on points of importance.

iii) Audio-Visual Center

Film strips, motion pictures, maps and charts, video tapes, etc., will be in the center. The objectives are:

- 1) To present real and live situations and promote student participation and interaction with various traffic situations.
- 2) To develop awareness of the real traffic transportation system.
- 3) To enhance student participation.
- 4) To emphasize the factors influencing operator performance (identifying, predicting, deciding, and executing).

iv) Multiple Car Driving Range (10 hours)

The objective of the multiple car range is to allow each driver to progress at his own rate without affecting the progress of the other drivers. It also provides a controlled environment which would limit the risk involved. The instructor will be able to observe each driver and help him progress according to his ability. The student will be able to practice various skilled maneuvers (parking, turning, reversing, etc.).

v) On-street Instruction (15 hours)

The objectives of on-street instruction are to provide the student with actual driving experience (under the instructor's supervision) and to help prepare him for actual driving in real traffic situations independently. This course will help the student develop his motor skill as well as his perceptual skills which will enable him to experience the real driving situation and

prepare him to be a safe and efficient driver.

The course will provide an opportunity to experience various traffic areas which will include rural and urban areas, residential areas, business areas, and highway driving.

3. Psychological Factors in Traffic Safety Education
(3 credits)

The experience and the developmental effort employed by Dr. Mann in preparing his course at Michigan State University (429 J) will be the guideline in teaching this course. The course will focus on:

- (A) Human needs and understanding.
- (B) Behavior and attitudes of young drivers.
- (C) Changing attitudes and behavior.
- (D) Emotional factors affecting driving.

These and many other psychological factors will be focused on during the course.

4. Traffic Law, Rules and Regulations (3 credits)

Traffic law is often misunderstood, and in various places is not even known. Traffic rules and regulations are not known, especially in Saudi Arabia. The course will familiarize the students with traffic laws and regulations. The objectives of this course are:

- i) To develop an understanding of the philosophic foundation of the laws, especially the traffic laws.
- ii) To promote an understanding of traffic law administration and function.
- iii) To develop an understanding of the relations between the police, the court and the law.

Students will develop their own rationale regarding traffic laws and regulations. Accident records and statistics on the national and international level will be discussed and analyzed. The overall objective of the course is to develop correct attitudes and appreciation regarding traffic laws and regulations. The values of the law will be clearly defined.

The class will utilize local persons as resource experts in class supplementation. Judges, traffic

law officers, and lawyers will be invited to provide the information needed in class discussion.

5. Automotive System-Auto Mechanics (3 credits)

This course will provide general basic information on the automotive system and the auto mechanics.

The objectives of this course will be:

- i) To help the student develop a better understanding of the automotive system.
- ii) To gain knowledge and information regarding the automotive fuel and electronic system.
- iii) To develop basic knowledge and skills in auto mechanics.
- iv) To develop an understanding of car performance and maintenance.

The intention of the course is not to produce auto mechanics, but to provide students with basic knowledge in car maintenance, tune-ups, tire changes, and other vital information. Knowledge about the car and the automotive system will enable the students to understand the car's limitation and stimulate a healthy attitude regarding the maintenance of the car.

6. Emergency Maneuver and Driving Skills (3 credits)

Every driver will encounter an emergency situation in his life. Some people do not encounter those emergency situations until they have developed some skills and gained some experience in driving. Others will encounter these emergencies shortly after they have learned how to drive, and the results are shocking. Today with the increase in traffic volume and road congestion, the chances of facing an emergency situation are very high. Those situations that present an imminent danger to the driver are numerous.

The driver needs to practice driving and develop better skills in handling the car. Being able to manipulate the car skillfully would enable the driver to handle emergency situations effectively.

This course is not designed to develop only manipulative skills, but also to enhance the perception of the driver. The objectives of the class are:

- i) To develop and enhance the four human functions involved in safe driving (identification, prediction, decision, and execution) which make the driver a defensive driver.

- ii) To develop a good sense of perception and assessment of the highway traffic system.
- iii) To develop a good mental attitude toward driving.
- iv) To develop the ability and skill to cope with critical situations resulting from hazardous environmental conditions, mechanical malfunctions and/or unexpected actions by other highway users.
- v) To reinforce good habits in driving, stopping, starting, lane changes, use of seat belts, signals, etc. (to master good and appropriate evasive maneuvers).

General Motors' program on emergency driving will be utilized in teaching this course with some modification in course content. Some of the emergencies experienced in the United States are different than the ones in Saudi Arabia. There is no snow or ice in Saudi Arabia, and it rarely rains. For that reason, skid control will not be included in the course. The course will offer many emergency situations among which are:

- (A) Off-road Recovery. In Saudi Arabia most of the highways are poorly maintained. It is very common to encounter a roadway in which the shoulders are several inches below the level

of the pavement. Also, it is very common to find a road partially covered with sand dunes. The government has spent a great deal of money and effort on sand fixation, but the problem is very serious, and it will take time to attain the desired goals.

(B) Tire Blowouts. Even though tire blowout occurrence in the United States is infrequent, it is very common in Saudi Arabia due to the hot weather and the high prices of tire replacements. The road between Taif and Riyadh is almost 1000 kilometers. There are only four rest stations along the whole road. Driving 250 kilometers during the hot summer causes many tire blowouts.

(C) Power Steering Failure. Power steering failure and the malfunction of the idle arm in a stick shift causes loss of control of the car. Both situations occur frequently in Saudi Arabia.

- (D) Brake Failure. A few fatal accidents were caused due to brake failure. It is not frequent, but it does happen.
- (E) Blinding Lights. This is a very frequent problem. Drivers tend to challenge each other by using the high intensity beam lights in night driving.
- (F) Encountering Objects on the Highway. In the Western section of Saudi Arabia, due to the topography of the area, many rocks and large stones are encountered on the highways which fall from the surrounding mountains. Also, in the rural areas very frequently one sees animals crossing the highways, particularly in places where no one would ever expect them to be.

Dr. Bloomfield's research confirms that drivers do not have adequate knowledge concerning proper procedures for emergency situations.⁹⁵ This fact

⁹⁵ Journal of Traffic Safety Education, October 1971, op. cit.

is supported by numerous experts in the field. In emergency situations people usually panic and let go of the steering wheel which results in accidents. If sewing and dancing, which are performed privately in the home, require extensive training, then it is more important and more essential that emergency driving, which involves the multi-complex components of the traffic system, require extensive training. It is not a matter of good or bad performance; it is a matter of life or death. This is the education which is vitally needed. It is the education for the social life and for living that Rauss, Dewey, and Whitney talked about.

Herman Horne once said "living perilously is a part of the price civilized man pays for his inventions and his mores. Man can not surrender his inventions, but to reduce peril, he can learn to live with them."⁹⁶

7. Driver and Traffic Safety Education II (4 credits)

This course is designed to supplement and reinforce

⁹⁶ Herbert J. Stock and J. Duke Elkow, Education for Safe Living (Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1966), p. 16.

the knowledge gained in Driver and Traffic Safety Education I. In this class, the students will play the role of the instructor in a group or on an individual basis. This course will be similar (but not identical) to the laboratory program offered at Michigan State University (Ed 429 G). In this course the student will be involved in the four phases of the Traffic Safety Education Program. New drivers from the local high schools will be provided. The students will perform:

- (A) Actual classroom instruction.
- (B) Simulator or audio-visual instruction.
- (C) Multiple car driving range instruction.
- (D) On-street instruction.

The course objectives are:

- i) To understand and experience the profession of teaching.
- ii) To understand the philosophy of traffic safety education.
- iii) To develop skill and competency in teaching in the classroom environment and in simulators, ranges, and in the real traffic situations.

- iv) To develop a skill in planning a program with objectives and real learning activities.
- v) To develop an understanding of the value and the relationship of the various phases of the traffic safety program.
- vi) To develop an understanding of individual needs and to enhance the skill of meeting those needs.

This course will be aimed at providing the student with practical experience in program planning and in practical training. The professor will be only a supervisor during this course. He will aid when the necessity arises.

Before each class the students will present their lesson plans and discuss among themselves (under the supervision of the major professor). Following each class period, there will be an evaluation (personal and group) of the performance in the classroom. A check list of the goals and objectives and the learning experiences will be reviewed daily and will be kept for the entire course.

This course will be similar to the in-service training offered in other major areas.

In the future a similar course will be developed where the students will spend one term in a certain high school teaching traffic safety education with the cooperation of the high school instructor. The student will experience the school atmosphere and develop a better understanding of the total environment. He will have the opportunity to participate in all school activities. He will supervise and assist in publishing a news bulletin in the school covering all safety aspects including traffic safety.

The efforts to evaluate and upgrade the levels of education and improve curriculum is a continuous process. Changes and improvements will take place whenever it is found to be necessary to do so.

8. Senior Seminars in Traffic Safety Education

(4 credits)

Most of the courses that are offered in colleges and universities are scattered topics in various areas. The student is always receiving information without having a chance to express his talent or to share in the input of his ideas. The Senior Seminar

in Traffic Safety Education will stimulate the assimilation and synthesis of the total education the student has received (major, minor, and cognitive areas) during his college years. This knowledge and information and the intellectual skills that he attained during his college years will be organized in a systematic manner and developed for the future career.

The students will choose a topic in each class and develop a theory and philosophy regarding the topic and discuss it in an open and relaxed classroom environment. Each student will choose a topic and conduct research regarding his topic and present it to the classroom. For each presentation two students will be chosen. One of them will support the presentation and the other will contradict or oppose it. The rest of the class will participate by raising questions and presenting their views. The student will choose a safety course as his topic and critique it. Students' views and opinions will be carefully analyzed and seriously considered.

9. Independent Study in Traffic Safety Education

(3-6 credits)

This course will be offered as an optional choice for those who may have certain ideas or innovations and who may want to pursue them through further research. This course will not be offered as an aid to those students who may need a few credits for graduation.

The objectives of this course will be:

- i) To identify those students who may have great interest in Traffic Safety Education.
- ii) To identify relevant ideas and innovations which may contribute to the development of Traffic Safety Education.
- iii) To promote student interest and participation in the field of research and analysis regarding Traffic Safety Education.
- iv) To develop a better understanding of safety in general, and traffic safety in particular.

Teachers should recognize students' potential and their ability to make significant contributions in the field of study. This will help the students to develop leadership and concern for the immediate problems and determination to cope with the uncertain future.

The preceding courses will require the students to take between 26-32 semester credits. Those credits will be the minimal requirements for a minor or co-major in Traffic Safety Education. In addition to the preceding courses, the students will be encouraged to take additional courses in behavioral sciences. Students who are not majoring in educational psychology will be advised to take at least nine credits in educational psychology with emphasis on personality, social, and emotional behavior.

Today's problems are numerous and very complicated. A teacher in Traffic Safety Education will be dealing with more than just teaching his students how to start, turn, stop, or park a car. He is dealing with values and emotions and changing attitudes. He needs to have a keen insight and understanding to meet the individual needs and all the human qualities involved.

The interest is not to have Traffic Safety Education teachers, but to have competent, efficient, and well prepared teachers. The suggested program will not be fixed. It will be evaluated and improved as the need arises. It will be a dynamic program and not static.

Financing the Program

The Ministry of Education will have total responsibility regarding the financing of the program through a special budget or through the budgets allocated to the colleges and universities. Financing will not be a major problem due to the economic wealth of Saudi Arabia. Saudi Arabia's economic income far exceeds its expenditures. The government, as indicated by many policy makers, will support the financing of the project.

Model to be Used

The model to be used is called "PERT" which is an abbreviation for "Program Evaluation and Review Techniques."⁹⁷ PERT is a widely used technique which helps professionals to identify, coordinate, and control the many different elements of large programs such as research and development. It has also been used in capital and technical assistance in agriculture, education, public

⁹⁷The Agency for International Development, "PERT Project, Management System for Economic Development" (Washington, D.C.: n.d.), pp. 1-7.

safety, etc. It is a systematized way of planning, statistically estimating and monitoring the elements of complex programs against a common framework of time. It provides a basis for decision-making to quantify and integrate knowledge from various sources of a project into one common frame of reference for planning, programming, and scheduling purposes. PERT helps in establishing management priorities by highlighting certain series of activities which are deemed to be critical in terms of overall schedule. PERT is a very efficient model which could be adapted to many programs in various fields without much difficulty. It could be used without the need to use such sophisticated equipment as computers and data processing, especially in a small project. When using PERT, a network should be built which requires the following procedure:

1. Making a checklist of the project, detailing the major objectives and sub-objectives that are required to successfully accomplish the project goals. They should be identified in terms of what is required.

2. The checklist resembles an organization chart. It does not reflect the physical organization of people or functions within a project, but rather is a means of thinking about the project as a whole. It is, in effect, an organization chart of the project, and the elements essential to its attainment.
3. As a checklist, it is invaluable in coordinating with others. It ensures that someone is concerned about everything essential to the project as it can be used as a reference for assignment of responsibilities.
4. The checklist should be reviewed in consultations with experts in each area, and a special flow process chart should be developed of the significant activities that must be accomplished in order to attain the end items listed. The developed chart is called a network.
5. In building the network, it is necessary to establish what has been done before another activity can

start, and what results when an activity has been completed, as well as what activity can be carried on concurrently.

6. When completed, it should be audited, to ensure that nothing significant has been omitted.

In developing the PERT network, four stages are necessary in the management phase in order to ensure the effectiveness of the system. Those four stages are:

1. The first stage is the planning stage. These steps must take place: 1) establishing objectives; 2) organizing the program; 3) coordinating with various agencies and professionals who may be involved in the program; and 4) scheduling the operation of the program.
2. The second stage is the implementation stage where the following steps are to take place: 1) directing the operation; 2) coordinating the operation with others; and 3) getting feedback reports on the operation.

3. The third stage is the operation and evaluation.
At this time a careful review of data and analysis of information is to take place.
4. The fourth stage is the ex post facto evaluation.
This involves a total review of the entire project.
The information gathered is to be used as a guideline for the future.

The management structure (Chart 1) will be the observing eye and the thinking mind for the whole operation. It is involved from the initiation stage (ideas) to the completion of the program (goals). At different points of the chart, there could be an evaluation in order to stimulate a screening process if necessary.

Along with the management charts, there is another which is called the networking chart. This chart covers the activities and events which are to be taking place. In this chart the following procedure is to be followed (using the Traffic Safety Education Program in Saudi Arabia as an illustration):

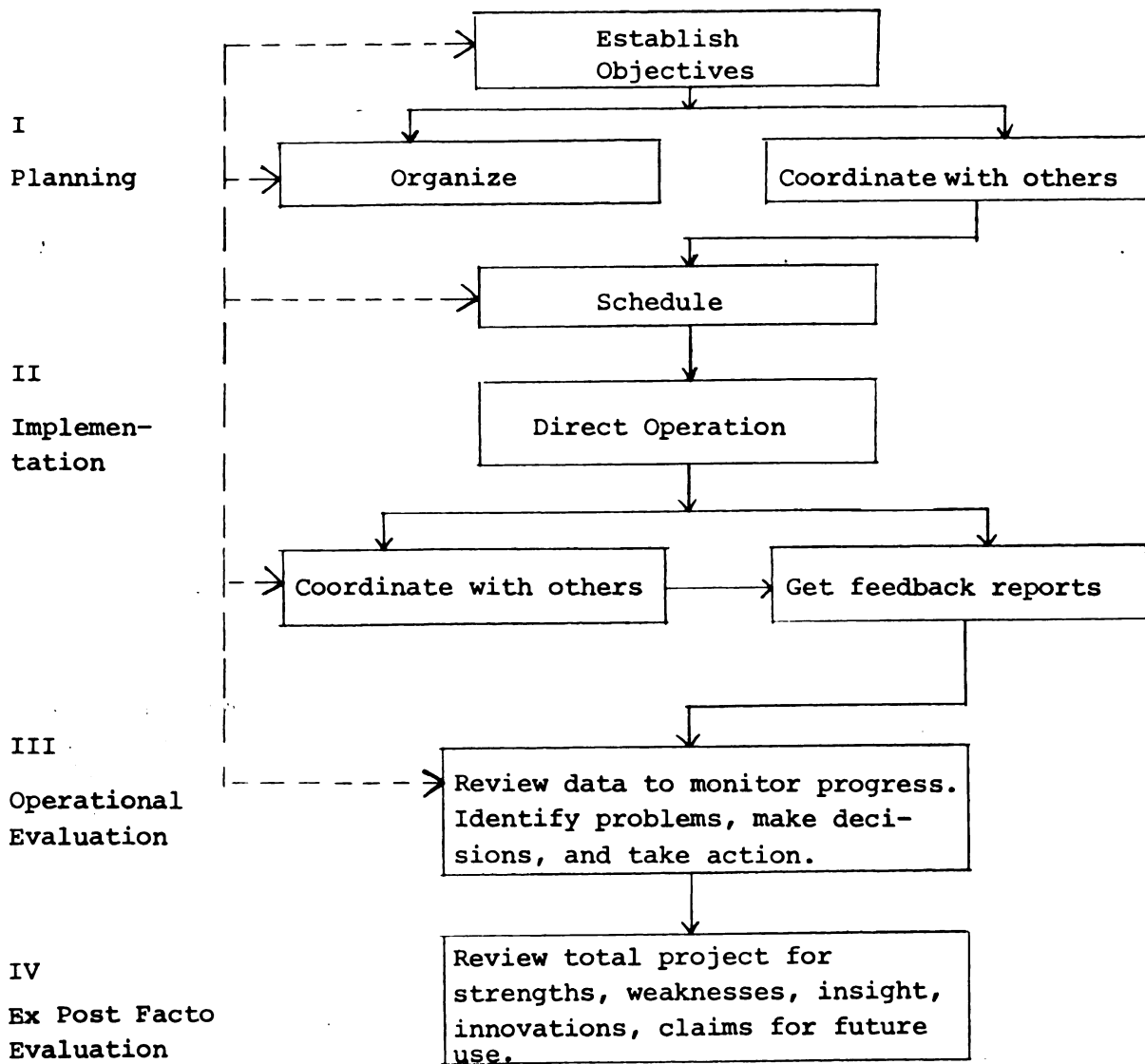


Chart 1.--Program Evaluation and Review Techniques, PERT Networking Process--Management.

1. Statement of the overall objectives. In this research it is teacher preparation in Traffic Safety Education in Saudi Arabia.
2. Events: Before the program begins, many events must take place. Some of the events will take precedence over others because the second event may be dependent on the first one. As an example, cars will not be purchased until the driving range is ready, etc. In order to simplify the operation, only the following events will be considered in

Chart 2:

- i) Establishing a range (land site selection, paving, marking, and installing equipment, etc.).
 - ii) Establishing an audio-visual center (building) or simulator.
 - iii) Purchasing cars for training.
 - iv) Purchasing materials for the audio-visual center.
 - v) Establishing a teacher center.
3. Beginning of the program.
 4. Attaining goal (producing teachers).

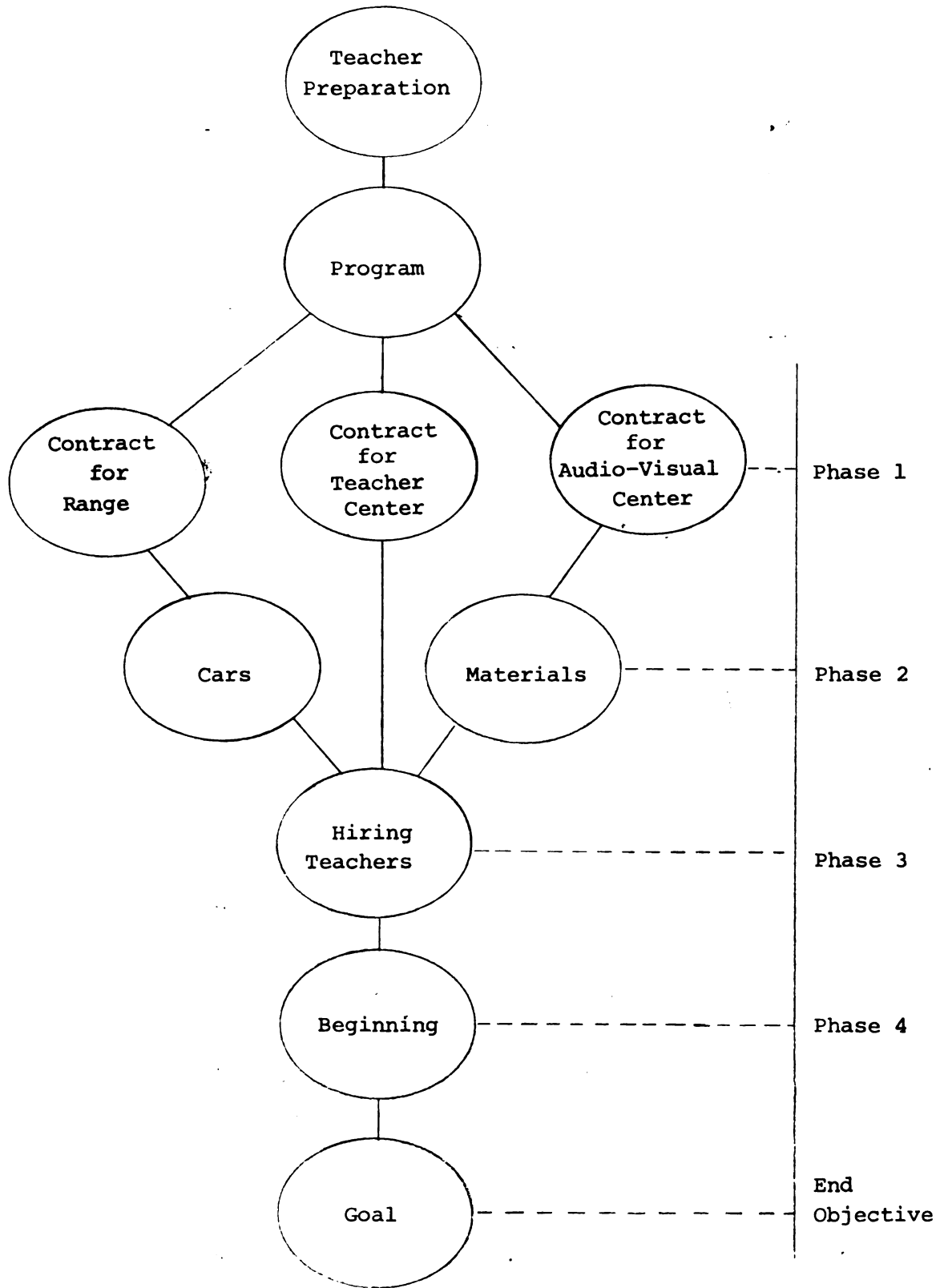


Chart 2.--PERT Networking Operation.

The networking operation (Chart 2) consists of four phases. Those four phases are very critical to the total success of the operation. The operation's efficiency is dependent on the timing of those phases. The lines connecting the various events are the indications of the timing involved for the completion of each event. The events of Phase 1 are to precede all events. The time needed for the completion of those events is to be plotted on the line of connection. Phase 2 is to follow Phase 1, and the time needed for Phase 2 is to be determined. The reason for dividing the networking operation into four phases is to eliminate waste in time and expenditure. If the materials are to arrive before the completion of the audio-visual center, an extra cost would be needed for storage and transportation in addition to the time needed to oversee the success of the storage operation.

Macro Plan for Traffic Safety Education
in Saudi Arabia

The intent of this study is to develop a traffic safety education program for teacher preparation in Saudi Arabia. This intention is not an end in itself, but a

means to further pursue the development of a macro program which will cover all the public and private schools (K-12) in Saudi Arabia. In order to deal with the immediate problems, it was necessary to establish priorities and divide the planning into two parts:

(A) The micro plan, which covers the teacher preparation program.

(B) The macro plan which will cover the future traffic safety education in the public schools.

It is too early to develop a comprehensive macro plan for the future. Such a plan will depend largely on the success of the micro plan. At this point, only a broad outline will be drawn concerning the macro program.

Public High Schools

The first step of the macro plan is to implement the traffic safety education program in the secondary schools.

The secondary schools in Saudi Arabia consist of three grades which are 10th, 11th, and 12th grades. They

are comparable to high schools in the United States. The only difference is the fact that the schools operate on a yearly basis (10 months a year), rather than on the semester or quarter system.

In 1971 there were only 45 secondary schools in Saudi Arabia (student population 11,566) which were scattered throughout the country. The largest school had an enrollment of 650 students (in Taif) and the smallest had only 13 students (Hutah-Hareeq).⁹⁸ The number of schools and students has been increasing since then, and it is estimated that there were 51 secondary schools in 1973 with a total enrollment of 12,638 students.⁹⁹ There are only six cities in Saudi Arabia in which there are more than 800 students. (See Table 9 for towns, number of schools, and number of students.) In most of the cities and towns the secondary school students number less than 300 students.

⁹⁸ Statistical Yearbook, Kingdom of Saudi Arabia, Ministry of Finance and National Economy, Central Department of Statistics, Seventh Issue, 1391 A.H./1971 A.D., pp. 36-41.

⁹⁹ Educational Statistics, Kingdom of Saudi Arabia, Ministry of Education, Statistical Research and Educational Documents Unit, Riyadh, Saudi Arabia, 1971-1972, p. 1.

TABLE 9.--Secondary schools in Saudi Arabia, 1970-1971.

School District	Number of Schools	Number of Students
Riyadh	7	2,885
Jeddeh	4	1,928
Eastern Province	4	1,278
Mecca	3	1,612
Taif	2	1,211
Medina	4	813
Unaizah	1	135
Al-Qaseem	2	156
Abha	2	224
Al-Baha	2	199
Al-Ahsa	1	331
Jizan	1	133
Ha'il	1	141
Sudair	3	70
Al-Washem	2	100
Tabouk	1	139
Al-Jauf	2	142
Bisha	1	28
Hutah-Hareeq	1	13
Najram	1	28
Total	45	11,566

Table 9 indicates that there were three towns where the secondary school population was below 30 students. Sudair province has three secondary schools, with a total population of only 70 students (equivalent to two classrooms in any major city in Saudi Arabia). There are 9,727 secondary school students in the six major cities of Saudi Arabia (which had 800 students or more). In the rest of the cities, towns, and villages, there were 1,838 students or about 15.9 percent of the total student population. This indicates that the majority of the students were concentrated in the major cities of the country.

The first major effort to establish Traffic Safety Education in the country will be directed toward the major cities, where the student population and major problems are concentrated.

Since there are only 21 secondary schools in the six major cities, it would take only a few years to incorporate the Traffic Safety Education program into the school curriculum. The experience and the knowledge gained from the teacher preparation program (micro program) will be utilized in developing the secondary school education program. The program will be developed and implemented in the following manner:

1. The program will be part of the school curriculum.
2. The program will be carried on during the school year.
3. The Traffic Safety Education teacher will be a full time teacher, teaching traffic safety and related subjects.
4. The program will be comprised of three courses and will cover all secondary school levels in the following manner:
 - i) Introduction to Traffic Safety. This will be a comprehensive program covering all Traffic Safety aspects.
 - ii) Driver and Traffic Safety Education for 11th Grade.
 - iii) Emergency Maneuvers and Driving Skill for 12th Grade. This course will be an advanced program in Traffic Safety Education. Its aim will be to help the students develop manual and mental skills in handling the car in emergency situations.

The secondary schools in the smaller cities and towns will not be neglected. A regional program (i.e., one which will encompass all the schools in the region) will be developed in the same manner as the secondary schools in the larger cities.

The previous secondary school program is not a complete and well developed program. The points mentioned earlier are only suggestions. More thorough planning, programming, and budgeting will be developed in the future. This pilot project will serve as the guiding light for all future programs which, it is hoped, will cover all the schools in the country.

Public Elementary and Middle Schools

The aim of traffic safety education in Saudi Arabia is to develop a comprehensive program for K-12 in the future. In the meantime, a general safety program is urgently needed, especially in pedestrian and bicycle safety. General recommendations will be suggested to the curriculum department of the Ministry of Education regarding the incorporation of safety instruction in reading and social studies. The problem can not be ignored, nor can it wait until a comprehensive program will be developed and implemented.

The schools, media, and local traffic police departments will assist in the instruction in the school.

It is hoped that the general safety instruction will take effect in the coming school years.

A special program for the school bus drivers will be established to teach school bus safety. This program will be supplemented by television and radio programs to seek public cooperation for the program.

Summary

In this chapter the analysis of the data and the results of the analysis were presented. Those results showed that the traffic situation in Saudi Arabia is very serious and deserves much attention. According to the statistical analysis in Taif, the major cause of the accidents was human errors. The fact is supported by all the traffic investigation officers (interviewed) on the local and the national level who attributed 95 percent of all accidents to human errors.

The traffic fatality rate and the severity index in Saudi Arabia were proportionately higher than in all the countries which were included in this study. The average annual increase in traffic fatalities in Saudi

Arabia was approximately 130 percent. This increase is proportionately more than thirty times the rate of increase in the United States or six times the rate of increase in Kenya.

The philosophy of education and Islamic philosophy indicate that education is aimed at fulfilling the present social life needs. Since one need among present social needs is driving safely, efficiently, and economically, it could be concluded that both philosophies advocate traffic safety education.

The policy makers in Saudi Arabia realized the seriousness of the severity of traffic accidents there and indicated their total support for the inclusion of traffic safety education in the country.

Recognizing the needs for traffic safety education in Saudi Arabia, a comprehensive traffic safety education program was developed. It includes the Micro and Macro stages for implementation and future planning.

CHAPTER V

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

In the preceding chapters a rationale for a traffic safety education program for Saudi Arabia was developed. Traffic accidents in Saudi Arabia and various countries were carefully analyzed. A content analysis of educational and Islamic philosophies of safety education was conducted. In addition, high ranking officials were interviewed to determine their support for a traffic safety education program in the country. A comprehensive traffic safety education program was developed.

Summary

Introduction

Thousands of people are being killed and millions are being injured around the world as a direct result of traffic accidents. Saudi Arabia has suffered more

severely in fatalities and injuries than the majority of the countries of the world. The severity of the traffic situation in Saudi Arabia and the human tragedy involved warranted the undertaking of this research.

Statement of the Problem

This study was designed to investigate the various major points relating to the development of a clear rationale and for a comprehensive traffic safety education program in Saudi Arabia. Traffic records and statistics in Saudi Arabia and in various countries were reviewed, tabulated, and analyzed in order to compare and determine the seriousness of the problem in Saudi Arabia. Content analysis and research of many educational philosophies, Islamic philosophies, and traffic safety education philosophies were thoroughly conducted to determine their implications for the teaching of traffic safety.

Personal interviews with some of the policy makers in Saudi Arabia were undertaken to assess their knowledge and to measure their support for a traffic safety education program in the country. The various teacher preparation programs, traffic safety education programs, and

many related programs in the United States were reviewed and analyzed in order to develop a comprehensive Traffic Safety Education Program for Saudi Arabia.

Methods, Techniques,
and Data Used

Since the research was directed toward Saudi Arabia and since all of the information needed was in Saudi Arabia, this research was conducted for the most part in Saudi Arabia. Most of the information, statistics, and records were collected, tabulated, and in most cases gathered by the author. One of the major points in developing a rationale for Traffic Safety Education in Saudi Arabia was to interview the policy makers there and to explore their views regarding the adoption of such a program in the country. Their views, opinions, and support are very essential because the political system in Saudi Arabia is centralized. The inclusion or exclusion of any program is the responsibility of the central government in Saudi Arabia. Prince Nayef Bin-Abdulaziz, Deputy Minister of the Interior; Prince Khalid Al-Fahad, Deputy Minister of Education; Prince Faisal Al-Faisal, General Director of the Foreign Educational Mission and Director of Higher

Education; Lieutenant General Tayeb Al-Tunisi, General Director of the Interior Security Department; and Colonel Hashim Abdulrehman, General Director of the Traffic Safety Department were interviewed by the author.

The interviews centered around the many areas regarding traffic safety with specific emphasis on assessment of the present traffic situation in the country, causes of accidents, solutions for the problems, and the opinions and support regarding the inclusion of a Traffic Safety Education program in the public schools in the future.

The traffic accident records and statistics in Saudi Arabia were gathered and tabulated. A form seeking information on the accidents, the driver, and the environment was made and sent to all of the traffic safety departments in the country. The response was nil because the information has never been recorded, or the records were inefficient. This necessitated the selection of a city which would be representative of all the segments of the country. The city of Taif was selected and over one month was spent in Taif. The information that was available had been requested by the author in 1972. With the cooperation of the local traffic safety department in Taif,

it was possible to collect the information regarding the driver, the cause of the accidents, the increase in accidents, etc. The statistics gathered were tabulated, calculated, and analyzed. The cause of accidents and the number of cars and drivers on the national level were determined. The number of accidents for six years was calculated and the percentage of increase was determined. The severity of accidents in Saudi Arabia and in various countries was compared. The ratio between the increase in the fatality rate and the increase in the number of vehicles in various countries and in Saudi Arabia was established and compared. Developed and developing countries were randomly selected for this study.

On the local level, the percentage of increase in car accidents and fatalities was found. The major cause of accidents was also determined. Traffic accident investigators' opinions and conclusions were tabulated. Type of accidents, information on the drivers, and weather conditions were collected and tabulated. An overall analysis of traffic fatalities and accidents in Saudi Arabia was developed.

Since Saudi Arabia has only one religion which is Islam, whose laws and doctrines are fully applied in the

country, it was necessary and relevant to examine the Islamic religion and doctrine regarding safety in general and traffic safety education in particular. A content analysis of the Islamic religion and its doctrines and philosophies was developed. A logical deduction was established.

The philosophies of education, safety education, and traffic safety education were reviewed. A content analysis to determine the rationale of education was conducted. A logical approach to the goals, objectives, and education was thoroughly developed.

The present and past programs of driver education, traffic safety education, and teacher preparation in the United States were reviewed in order to provide information for the development of a teacher education and preparation program in Traffic Safety Education in Saudi Arabia. The various college programs at Michigan State University, Central Missouri State College, University of Pittsburgh, and other universities were carefully reviewed. A teacher education and preparation program in Traffic Safety Education was developed. A model (PERT) was adopted for the management and planning of the program. The secondary schools of the country were analyzed for statistical

information in order to develop a macro plan for the future Traffic Safety Education in the public schools. Various suggestions and major points were developed for the Macro plan.

Major Findings

The following is a summary of the major findings of this research:

1. Human errors were the major contributing factor in traffic accidents in Saudi Arabia. Traffic accident investigators in Saudi Arabia found that over 90 percent of all accidents were caused by drivers' errors. Therefore, hypothesis one and sub-hypothesis one were accepted.
2. About fifty percent of all accidents in Saudi Arabia involved head-on collision. This indicates that the drivers were at fault.
3. More than fifty percent of all drivers who were involved in accidents in Saudi Arabia did not have a driver's license.

4. In most of the accidents that took place in Taif, the drivers did not know the rules, regulations, and laws regarding traffic safety.
5. Drinking and driving was not a major problem in Saudi Arabia, since the consumption of alcohol is prohibited in the country.
6. Weather conditions in Saudi Arabia are generally excellent. Weather conditions were not a factor in car accidents in the country.
7. Mechanical errors were not found in most accidents. They did not cause traffic accidents in Saudi Arabia.
8. The average annual increase of traffic fatalities in Saudi Arabia was more than one hundred percent. Also, the severity index increased by 135.1 percent from 1971 to 1972. Those facts tend to support hypothesis two; thus, hypothesis two was not rejected.

9. Traffic accident records and statistics in Saudi Arabia show a great increase in the number of accidents, fatalities, and injuries.
10. The increase in fatality rate in Saudi Arabia is proportionately much higher than the increase in all other countries surveyed, which included both developed and developing countries (including the U.S.A.). Thus, sub-hypothesis four is accepted.
11. The severity index of traffic casualties (dead and injured) in Saudi Arabia is more serious and much greater than the severity index in the other Arab countries. It is also greater than all the developed countries, and one of the worst of all countries surveyed.
12. Developing countries have a greater percentage increase in traffic accidents than developed countries.
13. The severity index is much higher in developing countries than in developed countries.
14. The number of motor vehicles has increase in all the countries of the world. This increase was

directly related to the increase in the fatality rate in all the countries surveyed except Saudi Arabia, Japan, and some of the underdeveloped countries.

15. In Saudi Arabia the fatality rate increased by 749.5 percent in six years, while the number of motor vehicles increased by 97.95 percent in nine years. In comparison with other countries, Saudi Arabia had the most disproportionate ratio. This indicates that Saudi Arabia had a high fatality rate despite the low percentage increase in the number of cars.
16. In Taif, Saudi Arabia the number of deaths in 1972 among young educated people between the ages of 16 and 27 is estimated to account for 70 percent of all the total traffic fatalities in the city. This fact justifies the acceptance of sub-hypothesis two.
17. Many educational philosophers, among them Rousseau, Welton, Dewey, Whitney, and Ferree, have indicated that the aim of education is to prepare the child

for his immediate social life. The goal of education, to them, is to meet the needs of the present social life and to deal with the problems threatening the social life. Since Traffic Safety is one of the most urgently needed solutions for the preservation of life today, it was logical to deduct that the philosophy of education supports a comprehensive program in traffic safety. Therefore, hypothesis three is accepted.

18. Policy makers in Saudi Arabia fully support the development and adoption of a Traffic Safety Education program in Saudi Arabia. They also agree that the priorities should be given to the development of a teacher preparation program. Therefore, hypothesis four is accepted.
19. Policy makers in Saudi Arabia suggest that the program should include all the military and police academies in the country.
20. High ranking officials and policy makers in Saudi Arabia have a great knowledge and awareness of the traffic accident problems in the country.

They are aware of the gravity of the problem.

This fact leads to the acceptance of sub-hypothesis three.

21. The Islamic religion places a great moral and legal responsibility on the individual to preserve his own life and the lives of others. In Saudi Arabia the individual is legally responsible for any death or injuries he may bring upon another individual, no matter what the causes are. He has to pay compensation and may go to jail for causing a death or injury in any traffic accident.

22. The Islamic religion favors and encourages the pursuit of knowledge and wisdom for the survival of the human race. It places a great emphasis on safety education which would include Traffic Safety Education. The religious leaders in Saudi Arabia who were interviewed indicated that Islamic religion supports safety education including traffic safety education. Those facts justify the acceptance of hypothesis five.

23. Many researchers have indicated that the present driver education program in the United States is not efficient in developing safe, competent, efficient, and economical drivers.
24. The teacher preparation program in Saudi Arabia in Traffic Safety Education will be comprehensive and will focus on preparing competent teachers. A minimum of 22-26 semester credit hours will be required for the program.

Conclusion

The traffic problems that are facing the developing nations of the world are more severe and serious than the problems facing the developed countries. Traffic accidents in these developing countries are claiming a great proportion of the lives of the elite class (who are the educated people of the country) who are needed very badly for the development of the country. Saudi Arabia fatality and injury rates are some of the highest in the world.

The seriousness of the problem necessitated the development of an action plan to deal with the problem.

As a result of this research, the following conclusions were reached:

1. Most of the drivers in Saudi Arabia are illiterate. Not only did they not know how to read and write, but drivers did not know the laws, rules, and regulations of traffic safety.
2. Most of the car accidents in Saudi Arabia are caused due to drivers' errors and mistakes. The drivers' mistakes accounted for over 90 percent of all car accidents.
3. Traffic casualty rates in Saudi Arabia proportionately are some of the highest in the world. The average annual increase in traffic fatalities is approximately 137 percent.
4. Islamic religion and philosophies as well as educational philosophies support the inclusion of a Traffic Safety Education program in the schools.
5. The policy makers (in the centralized political system of Saudi Arabia) support the inclusion of

a Traffic Safety Education program for Saudi Arabian schools.

6. Based on the preceding conclusions, coupled with the severity and seriousness of traffic accidents in Saudi Arabia, there is more than enough evidence and rationale to support the development of a comprehensive Traffic Safety Education program for Saudi Arabia.

Due to the fact that Saudi Arabia does not have any Traffic Safety Education program at the present time, it was necessary to first develop a teacher preparation program in traffic safety education.

The main interest was not only to prepare teachers, but to prepare competent, efficient, and well educated teachers. This program will be the micro plan for implementation in the immediate future.

The macro program is to follow the micro program and will cover all the public secondary schools in the country first, and all the schools (K-12) in the future. With the enthusiasm and support expressed by the high ranking officials and policy makers in Saudi Arabia, the program will be a reality in the near future.

Recommendations

Simulator Usage

Simulator training (education) should be given high priority. A great effort should be made to use simulators in future traffic safety education programs. The use of simulators is very valuable in developing perception, which is a key factor in safe driving.

Training School Bus Drivers

A training program for school bus drivers should be offered. This program will give the driver an opportunity to develop judgment skills and driving knowledge which will minimize his driving errors. The program should be designed and directed toward improving the performance of the school bus driver with the primary objective of providing safe transportation for the school children.¹⁰⁰

¹⁰⁰ Keith C. Allen, "Conducting Creative School Bus Driver Training Meetings" (Unpublished paper, Michigan State University, n.d.).

Pedestrian Safety

The Ministry of Education and the College of Education should cooperate in developing a program in pedestrian safety education for all schools. This program should be implemented in the near future. Pedestrian safety education is the main medium through which we can improve walking habits.

Curriculum Planning

The curriculum department in the Ministry of Education and the teacher colleges should cooperate in planning a comprehensive Traffic Safety Education program for all schools in the country--private, public, military, and police academies and adult education programs. This will cover all grades (K-12) and the colleges and universities.

Traffic Safety Education for College Students

The teacher colleges in Saudi Arabia should plan and develop a general safety course for all their students. The program should also be open for current school teachers.

Workshops in Traffic Safety

The Ministry of Education and the colleges and universities should plan and encourage seminars and workshops in Traffic Safety Education.

College Research in Traffic Safety

The teacher colleges in Saudi Arabia should encourage and assist their students to research the areas of Traffic Safety Education. The colleges and the traffic safety departments should provide all possible assistance to the students in their research.

Traffic Library

A library in safety and traffic safety education should be added to the main libraries in the colleges and universities in Saudi Arabia. Also, the police and military academies should supplement the library with traffic safety materials.

Bicycle Safety

A bicycle safety program should be developed for all the schools in the country. The Ministry of Education should take the initiative in developing and implementing the program for the schools and for the public.

The preceding are the recommendations for dealing with Traffic Safety Education in Saudi Arabia. The recommendations are directed toward the teacher colleges and the Ministry of Education for adoption and implementation. Traffic safety is the responsibility of many departments, ministries, and agencies. In order to cover and deal with some of the major problems in traffic safety, a task force type recommendation covering the major areas which have direct relation to the field of traffic safety is very essential. Since this research could not cover all the areas of traffic safety, only those areas which have a direct relation to traffic safety were presented. These areas are as follows.

Laws and Ordinances

The Ministry of Justice, the Interior Security Department, and the Highway Traffic Safety Department

should form a joint committee to study and review the present traffic laws, regulations, and ordinances. Upon the completion of the study, new laws and ordinances, capable of coping with the present situation in Saudi Arabia, should be written and put forward for recommendations. The committee's responsibilities should be extended to evaluation of the laws and regulations and their implementation. After the implementation of the new laws and ordinances, the committee should continue to meet on an annual basis to review and analyze the effectiveness of the laws and to make any necessary changes.

Traffic Enforcement and Supervision

The enforcement of traffic laws is very essential to safety. In the United States the President's Committee for Traffic Safety reported that better police enforcement and supervision of traffic flow could lead to fewer accidents and less congestion in peak times.¹⁰¹ The traffic

¹⁰¹The President's Committee for Traffic Safety (Action Program), The Master Plan to Prevent Accidents (Washington, D.C.: U.S. Government Printing Office, 1960).

law enforcement officer should be trained and educated in order to develop competent officers in traffic safety. They should know all the laws, rules, and regulations. The officers should know all the principles of safety. They should direct traffic, assist troubled motorists, enforce the laws, and above all, maintain safety. The government of Saudi Arabia should equip all traffic departments with a communication network to facilitate contact and cooperation.

Highway Traffic Safety Department

The traffic problems in Saudi Arabia necessitated the establishment of an independent Highway Traffic Safety Department under the Ministry of the Interior. The department's budget (about 1.2 million dollars in 1973) should be increased in order to equip the department with new and modern equipment, as well as staff it with qualified personnel. The statistical division should be staffed with persons who specialized in research and statistics. The Highway Traffic Safety Department should contact local universities to develop a training program for all its personnel in business and office administration. The

Traffic Safety Department should develop a comprehensive plan for the improvement of all divisions and departments on the national and local levels.

Driver Examination and Licensing

The objective of driver examination and licensing is to insure that the driver has developed a driving skill and knowledge of the traffic laws essential for safe, efficient, and economical driving. It is necessary to develop an examination for Saudi Arabia which would assure the attainment of the objectives. The Highway Traffic Safety Department should develop a driver licensing examination relevant to the laws and regulations as well as the road conditions and traffic situations in Saudi Arabia. Any adaptation of foreign licensing examinations will not be relevant for the country. A careful analysis of the traffic accidents in Saudi Arabia and the frequency of driver mistakes and faults should be investigated, and the information should be adopted in the examination.

Driver Improvement Programs

The Highway Traffic Safety Department, with the cooperation of the teacher colleges, should develop a driver improvement program. The program should be designed for licensed drivers who want to improve their driving performance. The educational program should be based on the needs of the problem driver. A careful analysis of his needs should be conducted before the planning and implementation of the program. Since all of the drivers in Saudi Arabia have never had any course in driver education, the program should be planned in order to cope with the problem effectively.

Traffic Engineering

Throughout this research, the major causes of traffic accidents were attributed to the driver. Despite the fact that all the available data supports this fact, there were many variables relating to traffic engineering which were neglected by accident investigators in Saudi Arabia. Road condition, highway design, traffic congestion, traffic signs, and other related traffic engineering components were not included in traffic accident

investigation reports in Saudi Arabia. The author while he was in Saudi Arabia observed many sharp curves on highways, many objects on the roads (rocks, animals, etc.) and many streets which did not have any traffic control signs. It is very essential for accuracy and for future safe planning to include traffic engineering in traffic accident investigation reports.

It is very fundamental to safety to maintain good, efficient, and safe roads. Traffic engineers should define the functions of the road, survey the surrounding environment, analyze the land condition, and determine the flow of traffic. The Highway Traffic Safety Department in Saudi Arabia should develop and maintain a highway engineering division. The responsibility of the division would be to plan for future safe roads, improve the present roads, and coordinate with the various ministries and departments in the planning of safe roads. The present planning in Saudi Arabia is directed toward beautification of cities and towns in the country. The traffic engineering department should supervise all operations in order to insure that the towns are not only "pretty," but that the streets and roads are safe. The traffic engineering department should strive for safety and conformity as well as efficiency.

Public Information

The basic responsibility for obtaining balanced accident prevention programs belongs to the public officials. At the same time, it is evident that the success of these programs rests upon the support of the public. Their understanding and cooperation assures the maintenance of safety. The Traffic Safety Department should seek the assistance and guidance of the Ministry of Information in developing a public safety information program designed to carry safety messages to all the people of the country, young and old. A special program should be organized during special occasions (pilgrimages and holidays). The Traffic Safety Department should issue special bulletins regarding road conditions and other environmental conditions. Traffic problems should be explained in "human" terms in order to effectively influence the receiver of the message.

Motor Vehicle Inspection

The Highway Traffic Safety Department should initiate a motor vehicle inspection. The periodic inspection method should be the objective of the operation; however,

due to the shortages of experts in this field, the spot check method should be applied for the immediate future. The inspection will serve two purposes; first, it will help in maintaining the condition of the cars for safe driving; secondly, it will help in apprehending unlicensed drivers and drivers with suspended licenses. Since the ticketing system for traffic violators is to be applied in the near future, it will also help in collecting unpaid fines.

Recommendations for Further Research

This research was the first to closely examine traffic accidents in Saudi Arabia. Despite the fact that a great effort was made to analyze all of the major contributing factors to traffic accidents in Saudi Arabia, there remained many factors which were impossible to include. The effect of road conditions and highway design in Saudi Arabia on traffic accidents was not extensively included in this research because of the lack of available data. It is recommended that future research should examine those areas.

Since the traffic safety system in Saudi Arabia has not been researched in the past, there are many areas which should yet be researched. Traffic engineering, traffic laws and regulations and traffic law enforcement are among those areas which should be examined and analyzed in the future. The implementation and adoption of future traffic safety programs in Saudi Arabia should carefully consider the specific needs of the country. The adaptation of foreign traffic safety programs should be carefully modified to satisfy the social and cultural traditions of Saudi Arabia. This could be achieved through careful planning, programming, and budgeting by utilizing scientific system analysis approach.

Saudi Arabia is facing many serious traffic safety problems. It is hoped that this critical social problem would attain a great consideration by the policy makers in the country. Human life is too precious and too valuable to waste.

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APPENDICES

APPENDIX A

**LETTERS OF CORRESPONDENCE AND SAMPLE FORMS
USED TO REQUEST TRAFFIC STATISTICS AND
INFORMATION FROM SAUDI ARABIA**

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

بصاغة مدير ادارة المروس والتجده بالطائف المحترم

بعد التمتية :
بداغ منه الايمان بالاهداف النبيلة التي من رتبها جميعاً لخدمه وطنه او مجتمعه
والانفعال به نحو الافضل ليسانر المبتغيات المتوخدهم - اذ يش لكم هذه
الرساله وبرفقها نموذجاً خاصاً يتطلب بعض المعلومات عن هواتك السياره
واسبابها وظروفها وعنه السائفيه بمدينه الطائف وهي تشمل جزواً منه
ولاسني لمرحلة الدكتوراه في الولديات المتخده الامريكيه - وانتم تدرون
تماماً ان الدوله صريره على ان تكون الدراسات العاليه مرتبطه بوطننا
وكله صالحه . وهي رغبتنا ايضاً ورغبتنا كل مخلص لهذا الوطن
انني آمل انه تعطو هذا الموضوع حل القما مام سيات فراغنا هذا النموذج
والذي يمثل معلومات عن هواتك السياره وظروفها بمدينه الطائف مع الشك
هتفاً بطل لديكم ليتسنى في بعد قدومك الى المملكة أخذ هذه المعلومات
وتحليلها ولإجراء المقارنات والدراسات اللاديه
وإله أمان لكبير بولما وثام . وتقام الله قدمته الوطنه الكفاي ٢

المخلص
سليمانه بكر صديقي
سليمانه بكر

٢٩ يونيو ١٩٧٤م

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

رسالة مدير عام المرور والقيود بالمملكة العربية السعودية المحترم

بعد التحية :
إيماناً بالرسالة السامية التي نتمثلها جميعاً فخورين وطبناً ومجتمعاتنا - وإيماناً
بني محرمكم لشديدهم الامتنان بخدمات المرور التي الكانته اللاتفة به. أعتك لكم هذه
الرسالة وأنا على يقينه أن الرجل الذي يمتخ المرور في المملكة جل باهتمامه سيكون
مرتتماً أيضاً بكل دراساته حديثه ليوم ابناؤكم المبتعثون الى الخارج بل فالهدف
واحد وله اغتلفت مهورم

أنتي اعلم الآن على رسالة كالتوراه وسيكون موضوعنا مرتباً بمشاكل المرور
في وطننا الغالي . وهوون تحتوي الرسالة على دراسة متاملة لأوضاع المرور
في المملكة ونحسب من السارة .. ولعل سعادتكم يدرك تماماً أن أي دراسة
حديثه تعتمد في المقام الأول على ما يتغير لاسمها أخصائياً ومعلوماتاً وثيقة
لصفت المسئلة التي تقابلنا وتبطلنا (كباحث من خلدنا أنه ليعقد المقارنات
والاستنتاجات ليعمل الى تحديد المسئلة وأسبابها وسه ثم دراسة
ووضع الحلول اللازمة لا على من هو ما أتبغته النظرية (كديته والتجارب المؤله
لذا أنتي آمل من سعادتكم لتعميد قسم الأخصاء والحوادث بالادارة العامة
للمرور والتجزم بالمملكة بمبدأ التنازع المرفقة والمنقلة لبعض المعلومات اللازمة
لعرفة حوادث السيارات وأسبابها وظروفها وكذا أوضاعها أيضاً وسلا
الضراعات الأرضية المنقلة برفصه سير وتعداد السيارات من التنازع م الى
م ١٩٧٤) كي يتسلي من خلدنا التحليل وإجراء الدراسات اللازمة ...
وقنالم الله فذمة (الوطه) الغالي

المخلص

سليمان بكر سدي
سليمان بكر سدي

صريح ٢٧ أغسطس ١٩٧٤م

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

سعادة مدير عام المرور والنجدة بالمملكة العربية السعودية المحترم

بعد التفتي :

بقيام سعادتكم بأني كنت قد سمت بعض الجداول والنماذج
 بطبع إحصائيات ومعلومات من حوادث السيارات بالمملكة وكذلك من سير وتعداد
 السيارات وذلك أثناء وجودي بالمملكة في العام الماضي .
 التي لا زال منتظراً وصول هذه المعلومات والجداول آمل المساعدة في تيسر
 مهامكم فيما يخص إنجاز البحث متوقفاً على جهود هذه الإحصائيات
 لكم تحياتي وشكري

الطوال

سماحة بكركندي

سكركندي

APPENDIX B

LETTERS OF REFERRAL FROM THE MINISTRY OF

INTERIOR AND MINISTRY OF EDUCATION

IN SAUDI ARABIA

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

الملك عبدالعزيز آل سعود

وزارة الداخلية

مكتب النائب

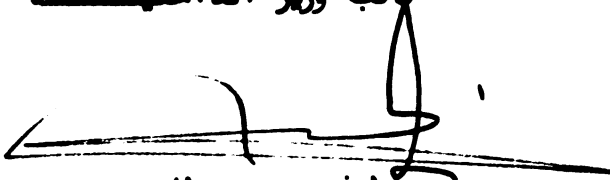
الرقم ١٢ / ٢٢٢١
التاريخ ١٤٢٠ / ١٢ / ٢٤

سعادة مدير الأمن العام

بعد التحية :

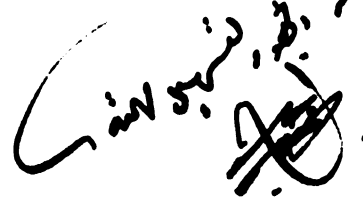
نود تكمين الدكتور سليمان سندی من الاطلاع على جميع الدراسات والمشاريع التي تتعلق باختصاصه العلمي في شئون المرور حيث تخرج حديثا وكان من ضمن المتعلمين على حساب وزارة الداخلية . تحياتنا ..

نائب وزير الداخلية



نایف بن عبدالعزيز

١٢ / ٩

ادان ازيد
نود بنو امان
١٤٢٠


رقم ٠٢٥٠٨ =

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

٢٠

الرقم ٢٤٨٠ / ٢٦ / ١ / ٢٤
 التاريخ ٢٤ / ٨ / ٤٨
 المشفوعات

المملكة العربية السعودية

وزارة المعارف

الادارة العامة للعلاقات والبعثات الخارجية

البعثات الخارجية

سعادة وكيل وزارة الداخلية لشؤون البلديات

السلام عليكم ورحمة الله وبركاته :-

لقد حضر الاستاذ سليمان بكر سندی لاجراء بحث ميداني
 يتعلق برسائله للدكتوراه في نقل تخصصه (سلامة المرور)

آمل الایعاز لمن يلزم لديكم لتسهيل مهمته وتمكينه من الحصول
 على المعلومات اللازمة لانجاز بحثه .

شاكرًا لكم تعاونكم . . ولكم تحياتنا

وكيل وزارة المعارف
 للشؤون التعليمية والادارية

٢٤٨

خالد بن فهد بن خالد

رقم ٠٢٥٠٧

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

المملكة العربية السعودية

وزارة المعارف

الإدارة العامة للعلاقات والبعثات الخارجية

البعثات الخارجية

٢٠
 الرقم ٢٧٥٦ / ٢٧١ / ٢٤
 التاريخ ٢٢ / ٨ / ٩٨
 المشروعات

سعادة وكيل وزارة المواصلات

السلام عليكم ورحمة الله وبركاته :-

لقد حضر الاستاذ سليمان بكر سندی لاجراء بحث ميداني
 يتعلق برسالته للدكتوراه في حقل تخصصه (سلامة المرور)

آمل الايعاز الي الجهة المختصة لديكم بتسهيل مهمته وتمكينه
 من الحصول علي المعلومات اللازمة لاكمال بحثه .

شاكرا لكم تعاونكم . . . ولكم تحياتنا

وكيل وزارة المعارف
 للشؤون التعليمية والادارية

خالد بن فهد بن خالد

رقم ٠١٥٠١

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

٢٠
 الرقم ٢٧٥٧/٢٦/١١٢٢
 التاريخ ١٢/٨/١٤٢٠
 الموضوعات

المملكة العربية السعودية

وزارة المعارف

الإدارة العامة للعلاقات والبعثات الخارجية

السيد /

سعادة نائب رئيس الهيئة المركزية للتخطيط

السلام عليكم ورحمة الله وبركاته :-

لقد حضر الاستاذ سليمان بكر سندی الى المملكة لاجراء بحث ميداني يتعلق برسالته للدكتوراه في حقل تخصصه (سلامة المرور) .

آمل الابعاز بهذا المساعدة الممكنة له للحصول على المعلومات

اللازمة لبحثه .

وتقبلو تحياتنا

ر/م

وكيل وزارة المعارف
 للشؤون التعليمية والادارية

١٢/٨/١٤٢٠
 خالد بن فهد بن خالد

رسم ٥٠٥٠٠٠

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

المملكة العربية السعودية

وزارة المعارف

الإدارة العامة للعلاقات والبعثات الخارجية

البعثات الخارجية

الرقم ٤٠١٢ / ٤٠١٢
التاريخ ١٥ / ٨ / ١٩٥٨
المشروعات

سعادة مدير جامعة الملك عبد العزيز

السلام عليكم ورحمة الله وبركاته :-

لقد حضر الاستاذ سليمان بكر سندی لاجراء بحث ميداني يتعلق برسائله للدكتوراه في حقل تخصصه (سلامة المرور) أمل اليعازر السني المحيية المختصه لديكم بتسهيل مهمته وتأمين سيارة له لاستخدامها في تنقلاته للمناطق التي يجري أبحاثه بها .

شاكرا لكم تعاونكم ولكم تحياتي

مدير
١٩٥٨

وكيل وزارة المعارف
للشؤون التعليمية والإدارية

خالد بن فهد بن خالد

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

المملكة العربية السعودية
وزارة الداخلية
الرياض



الرقم

التاريخ

الشفوعات

الموضوع

قائمة المولدات ولدت بلغائف

تقوم السيد الدكتور سليمان بن عبد الله بن عبد الرحمن بن محمد بن
البرقي بالعمارة لهذا اعتماداً لتقديم جميع المستندات التي يطرحها
وتتعلق فاعه معالمة مما ذكره السيد التي عرفت بالاعتماد على عداوت بطرقة
في حالة منتهى ان تتأكد في معالمة المولدات فلو مانع من تمكينه
بهذا -

من أقره بذلك بتقييم جميع المستندات وهذا هو

عبد

صالح بن محمد
مدير إدارة المولدات

APPENDIX C
ACCIDENT STATISTICS IN THE VARIOUS CITIES
AND REGIONS OF SAUDI ARABIA FOR
THE YEAR 1971

رقم ٠٢٥٠٧ =

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

المملكة العربية السعودية

وزارة المعارف

الإدارة العامة للعلاقات والبعثات الخارجية

البعثات الخارجية

٢٠
 الرقم ٢٧٥٦ / ٢٧١ / ٧٤
 التاريخ ٢٢ / ٨ / ٩٨
 الموضوع

سعادة وكيل وزارة المواصلا

السلام عليكم ورحمة الله وبركاته :-

لقد حضر الاستاذ سليمان بكر سندی لاجراء بحث ميداني
 يتعلق برسالته للدكتوراه في حقل تخصصه (سلامة المرور)

آمل الایماز الي الجهة المختصة لديكم بتسهيل مهمته وتمكينه
 من الحصول علي المعلومات اللازمة لكمال بحثه .

شاكر لكم تعاونكم . . . ولكم تحياتنا . . .

وكيل وزارة المعارف
 للشؤون التعليمية والادارية

خالد بن فهد بن خالد

رقم ٢٠١٥٠١

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

٢٠
 الرقم ٢٧٥٧/٢٦/١١٢٢
 التاريخ ٢٢/٨/٢٠٠٨
 المشفوعات

المملكة العربية السعودية

وزارة المعارف

الإدارة العامة للعلاقات والبعثات الخارجية

المعاشرة الخارجية

سمامة نائب رئيس الهيئة المركزية للتخطيط

السلام عليكم ورحمة الله وبركاته :-

لقد حضر الاستاذ سليمان بكر سندی الى المملكة لاجراء بحث ميداني يتعلق برسالته للدكتوراه في حقل تخصصه (سلامة المرور) .

آمل الابعاز ببذل المساعدة الممكنة له للحصول على المعلومات

اللازمة لبحثه .

وتقبلو تحياتنا

١٣

وكيل وزارة المعارف
 للشؤون التعليمية والادارية

٢٠١٥٠١
 خالد بن فهد بن خالد

رسم ٥٠٢٠٠ =

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

الجمهورية العربية السورية

وزارة المعارف

الإدارة العامة للعلاقات والبعثات الخارجية

البعثات الخارجية

الرقم ٤٤٠ / الإ / ٤٠٠
 التاريخ ١٠ / ٨ / ١٩٥٨
 المشفوعات

سعادة مدير جامعة الملك عبد العزيز

السلام عليكم ورحمة الله وبركاته :-

لقد حضر الاستاذ سليمان بكر سندی لاجراء بحث ميداني يتعلق برسائله للدكتوراه في حقل تخصصه (سلامة المرور) أمل اليعازر التي المحبة المختصة لديكم بتسهيل مهمته وتأمين سيارة له لاستخدامها في تنقلاته للمناطق التي يجري أبحاثه بها .

شاكرا لكم تعاونكم ولكم تحياتي

مدير
 ١٩٥٨

وكيل وزارة المعارف
 للشؤون التعليمية والإدارية

١٩٥٨
 خالد بن فهد بن خالد

بسمه الرحمن الرحيم

المملكة العربية السعودية
وزارة الداخلية
الرياض



الرقم
التاريخ
الشفوعات

الموضوع

قائد المرور والتمن بلطاف

يقوم السيد الدكتور سليمان بن عبد العزيز بن فهد
بالتقديم لهذا الترخيص لبيع الترخيصات التي يملكها
وتتعلق بخاصة معاملة مواطني المملكة العربية السعودية
في حالة غيابه ان شاء الله في معاملة الجوازات فبما ان
هذه الترخيصات -

من افره نذكره بتقديم صيغ الترخيصات وهذا هو

عبد

صالح بن عبد العزيز
مدير ادارة المرور والتمن

APPENDIX C
ACCIDENT STATISTICS IN THE VARIOUS CITIES
AND REGIONS OF SAUDI ARABIA FOR
THE YEAR 1971

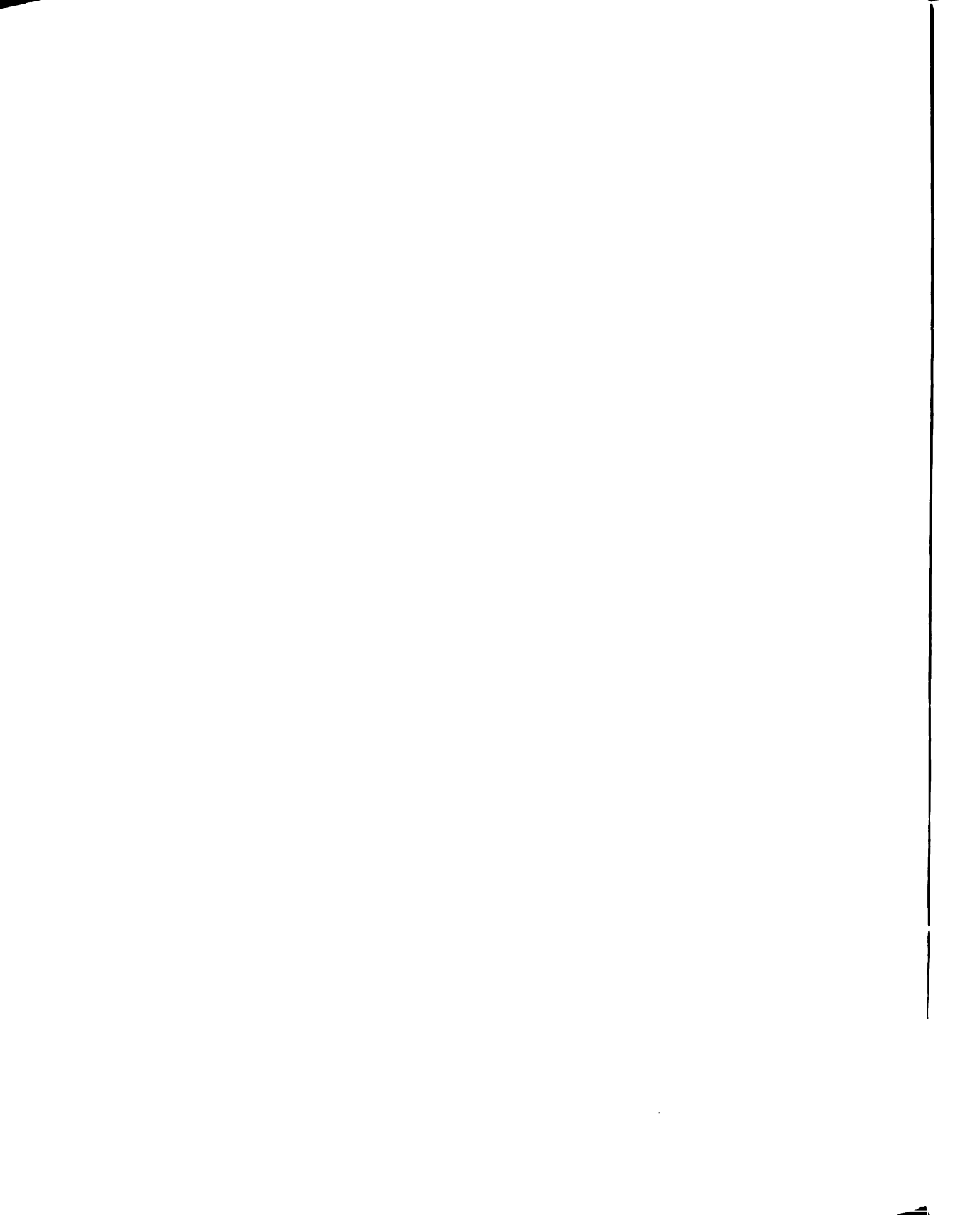
عدد الحدائق حسب النوع والامتداد وطائفة السفره والريس ونسبه بالمدينه الموعود بها
 ١٤٥١ هـ
 زاد في النسخ
 زيادة في النسخ
 زاد في النسخ

سنة	حاله المجد	الجنه		الجنه		الجنه		المجاور	المجاور	المجاور	المجاور	المجاور	المجاور	النوع الحداث				النوع الحداث	النوع الحداث
		الجنه	الجنه	الجنه	الجنه	النوع الحداث	النوع الحداث							النوع الحداث	النوع الحداث				
١١	٧١	١٧	١١	٦٨	-	٤	٤٥	٨	٤٤	٢٩	٥	٩	٥	١	٥	١	٥	١	٥
-	١٦	١٥	٥	٤٩	-	٧	٤٥	٥	١٦	٤٥	٤	٦	٤	٦	٤	٦	٤	٦	٤
-	٤٠	٩	٤	٤٦	-	٤	٤١	٦	١٥	٤١	٤	١١	٤	٧	٥	٧	٥	٧	٥
٤	٧١	١٧	٤	٥٤	-	٧	٤٤	٤	١٥	٤٤	١	٦	١	٦	٦	٧	٥	٦	٥
-	٢٤	٤١	١١	٧٩	-	١٠	٤٧	٤	٢٧	٥٥	٤	٩	٤	١١	١٤	١١	١٤	١١	١٤
-	٤٠	٦	٩	٦٠	-	٨	٤٢	-	٤	٤٦	٤	١	٨	٨	٤	٨	٤	٨	٤
٤	٤٩	٤٤	٦	١٠١	-	١٤	٤١	٥	٤٦	٥٧	٤	٤١	٤	١٤	٤	١٤	٤	١٤	٤
-	٤٣	١٥	١٢	٩٦	-	١٩	٤٤	١١	٤٥	٥٩	٢	١٠	١١	١٧	١١	١٧	١١	١٧	١٤
-	٤٤	٢٧	١٧	١٠٦	-	١٤	٥٦	٥	٤٨	٦٤	٥	١٨	١٧	١٤	١٤	١٤	١٤	١٤	١٤
٤	٤٠	٢٠	٤٤	١٠١	١	٧	٧٩	٢	٤١	٤٨	١١	١٧	١٧	٩	١٤	١٤	١٤	١٤	١٤
-	٤٧	٩٤	٤٣	١١٠	-	١٠	١٠٢	١١	٦٢	٦٢	١١	١١	١١	١٠	٦	١٠	١٠	١٠	١٠
-	٤٤	١٥٦	٨٤	١٥٤	-	٥	٤٠٥	٧	٥٤	١٥٩	٧	١٧	١٧	٥	١٠	٥	١٠	٥	٥
٨	٧٤٧	٤٤١	٤٢٤	١٠٤٦	١	١٠٩	٦٩٤	٦٥	١٤٤	٤٧٠	٦٥	١٠٦	٨٨	١٠٤	٨٨	١٠٤	٨٨	١٠٤	٨٨

الإمام أبو العباس
 إمام الأئمة الأربعة
 والأئمة الاثني عشر

عدد الحوادث حسب النوع والامامة والحالة السفره والقبس والقبسه تليقته جيزان لعامة
 ١٤٥٥ هـ

نوع الحادث	نوع الحادث			نوع الحادث	نوع الحادث			نوع الحادث	نوع الحادث			نوع الحادث	نوع الحادث	نوع الحادث	نوع الحادث	نوع الحادث	نوع الحادث	نوع الحادث
	نوع الحادث	نوع الحادث	نوع الحادث		نوع الحادث	نوع الحادث	نوع الحادث		نوع الحادث	نوع الحادث	نوع الحادث							
محمد	٩	٤	١	١٢	١٠	٨	١	١٤	١٦	٤	-	٥٥	٧	١٥	١٧	٩	١٤١	-
صفير	١٠	٦	١	١١	٦	٢	-	١١	٢	٦	-	١٩	١	١٧	٢	٩	١٤١	-
ذبيح اول	١٤	٤	٦	١٢	١١	٢	١	١٤	١١	٤	-	٥٦	٢	١٥	٨	١٤	١٤١	-
ذبيح ثاني	٨	٤	٤	٧	٦	١	١	١٠	٢	٣	-	٣١	١	١٠	٥	٨	١٤١	-
جماد اول	١٤	٤	٤	١٢	٧	٢	-	١٦	٢	٣	-	٥٠	٢	١٦	٦	١١	١٤١	-
جماد ثاني	١٥	٦	٤	١٥	١٤	٢	-	١٧	١٥	٦	-	٨٢	١	١٦	٥	١٤	١٤١	-
رجب	٥	١	٧	١١	١	١	-	٥	١٥	١	-	٥٠	-	١٢	٧	٥	١٤١	-
شعبان	١٤	٢	٥	١٩	١٩	٤	١	١٥	٥١	٥	-	٢٧	٤	١٢	٧	١٤	١٤١	-
رمضان	٧	٢	٤	١١	٢	-	-	٩	٤	٢	-	١٥	١	١٢	٢	٧	١٤١	-
شوال	١١	٢	٤	١٢	٥	١	-	١٥	٢	٢	-	١٥	-	١٩	٤	١٠	١٤١	-
ذو القعدة	١٠	٢	٤	١١	٧	٢	١	١١	٧	٤	-	٥٤	٣	١١	٧	١٠	١٤١	-
ذو الحجة	١٠	٥	١	٥٧	٦	-	٢	٤١	٤٧	٥	-	٦٥	١	١٦	٤	١٠	١٤١	-
شوال	١٥١	٤٤	٢٧	١١٥	٩٥	٧٦	٨	١٥١	١٣١	٨٣	-	١٥١	٤٤	١٦٦	١٧٦	١٥١	١٤١	-



الأمن (المعلم)
 وزارة الشؤون والإدارة
 والأمن
 عدد الحوادث حسب النوع والأصناف والمخاطر والجنسية
 ١٩٤٩م

حالة الحوادث	الجنسية		الجنسية		المخاطر		نوع الاصطدام		نوع الحوادث				نوع الحوادث	رقم الحوادث	العدد		
	أجنبية	إسرائيلية	أجنبية	إسرائيلية	عربي	غير عربي	إصابة	مقتول	مقتول	أصابه	أصابه	أصابه				أصابه	
٥	٧٨	٥٠٩	٥	٤٤٤	٥٤	٦٤	١٠١	١٦٨	٥٤	١٤١	٧	٦٤	٧	٤١	٩٨	محمدي	
٥	٤٦	١١٢	١٢	٤٤٧	٤٥	٥٥	١٥١	١٥١	٤٩	١٤٧	١	٦١	١١	٤٤	٩٥	مصري	
-	٥٠	٤١٤	١٧	٤١٦	٤٢	٤٧	١٦٦	١٦٦	٤٩	١٤٦	٢	٥٨	٨	٤٤	١٠٠	ديبع تافيت	
-	٤٧	١٩١	١١	٤١٦	٤٥	٤٣	١٥١	١٥١	٤٢	١٤٤	٥	٥٨	١٠	٤٤	٩٧	ديبع تافيت	
-	٤٠	٤٤٩	١١	٤٧٨	٤٥	٥٥	١٨٦	١٨٦	٤٧	١٤٦	١١	١٨	٧	٤٨	١١٧	جماد اول	
-	٤٠	٤٢٥	٦	٤٥٩	٤٤	٤٤	٤٤٢	٤٤٢	٤١	١٩٩	٢	٩١	١٤	٤٤	١٤٧	جماد تافيت	
-	٤٤	٤٥٥	١٢	٤٧٦	٤٤	٤٤	٤٤٥	٤٤٥	٤٥	٤٠٧	٦	٩٤	١٤	٤٩	١٤١	رجب	
-	٤١	٤٤٦	١١	٤٥٦	٤٧	٤٤	٤٠٦	٤٠٦	٤٣	٤٧٨	٨	١٤١	١٢	٤٧	١٧٩	شعبان	
-	٤٩	٤٤٤	٤٨	٤٢٢	٤٤	٤٧	٤٥٠	٤٥٠	٦٦	٤٤٩	١١	١٤١	١٠	٤١	٤٠٤	رمضان	
-	٤١	٤٦٢	٤٠	٤٢٤	٤١	٤١	٤٨٤	٤٨٤	٥٦	٤٥٦	٦	١١٤	١٧	٤٩	١٦٦	سبوتال	
١٤	٤٤	٤٢٨	١٨	٤٥٧	٤٨	٤٧	٤٧٤	٤٧٤	٥٠	٤٤١	٤	١٦٠	١٤	٤٧	٤٠١	ذوالقعدة	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ذوالحججة
٤٢	١٥٠٤	٣١٦	١٥٢	٤٤٥٦	٤٤٧	٥١١	٤٥٩٥	٤٥٩٥	٤٢٩	٤٦٤	٦٢	١٠٢٤	١٤١	٤٠٨	٣٥١		

لاطون العسل
 لارة لرون ولا لخنو
 الاطون العسل
 عدد الحوادث حسب النوع والاصاره وظاله لسفره وكنس النسبه بمنطقه بحسن بربل ١٤٩١هـ

نوع الحادث	نوع الحوادث	نوع الاصابات					الحالة لسفره		الجنسية		الجنسية		حاله الجرح	عدد الحوادث	شهر
		الاصابه	الاصابه	الاصابه	الاصابه	الاصابه	الموت	التعديله	الجنسيه	الجنسيه	الجنسيه	الجنسيه			
محرر	٤	-	٤	٣١	٢	٤	٤	١٧	-	١٥	١٥	٦	٤	٤	
صفر	٦	١	٦	٨	١	٧	٥	٥	-	١٤	١٤	٦	٦	٦	
ربيع اول	٦	-	٦	١٩	٢	١٠	١٤	-	-	٥٥	٥٥	٥	٥	٥	
ربيع ثاني	٥	٢	٥	٤	٢	٦	٥	٢	-	١١	١١	٢	٢	٢	
جماد اول	١	-	١	٧	-	١	٩	-	-	٩	١٠	١	١	١	
جماد ثاني	٤	-	٤	٨٤	١	٤	١٠٥	-	-	١٠٥	٧	٨٧	٤	٤	
رجب	٤	١	٤	٦	١	٥	٦	١	-	١٤	١١	١	١	١	
شعبان	٥	١	٥	٧	-	٧	٦	٧	-	١١	١٦	-	٥	٥	
رمضان	٦	١	٦	٨	٤	٨	٧	٦	-	١٦	١٦	-	١٥	١٥	
شوال	٥	١	٥	٥	٤	٦	٤	٤	-	١٤	١٤	-	٦	٦	
ذوالقعدة	٧	-	٧	٢	٤	٤	١٤	-	-	٥٠	١٦	-	١	١	
ذوالحجة	١	-	١	-	-	١	-	-	-	١	١	-	١	١	
الاجمالي	٥٢	٨	٤٦	١٥	٦	١٤٥	٨٤	٤٤	٤٤	٨	٦٧	١١٥	٩	١٥١	

العدد الحاصل
لرخصة الترخيص والعدد
الرقمي

عدد الحوادث حسب النوع والامانة والسفره والجنسية المانحة سنة ١٩٤١

النوع	الجنسية		الجنسية		الجنسية		الجنسية		الجنسية		الجنسية		الجنسية		النوع	العدد
	الجنسية	الجنسية	الجنسية	الجنسية	الجنسية	الجنسية	الجنسية	الجنسية	الجنسية	الجنسية	الجنسية	الجنسية	الجنسية			
مصري	٧٥	٧٥	٧٥	٧٥	٧٥	٧٥	٧٥	٧٥	٧٥	٧٥	٧٥	٧٥	٧٥	مصري	٥٨	
صغير	٥٥	٥٥	٥٥	٥٥	٥٥	٥٥	٥٥	٥٥	٥٥	٥٥	٥٥	٥٥	٥٥	صغير	٥٥	
ديبري اول	٥٨	٥٨	٥٨	٥٨	٥٨	٥٨	٥٨	٥٨	٥٨	٥٨	٥٨	٥٨	٥٨	ديبري اول	٥٨	
ديبري ثاني	٧١	٧١	٧١	٧١	٧١	٧١	٧١	٧١	٧١	٧١	٧١	٧١	٧١	ديبري ثاني	٧١	
جماد اول	٥٠	٥٠	٥٠	٥٠	٥٠	٥٠	٥٠	٥٠	٥٠	٥٠	٥٠	٥٠	٥٠	جماد اول	٥٠	
جماد ثاني	٥٨	٥٨	٥٨	٥٨	٥٨	٥٨	٥٨	٥٨	٥٨	٥٨	٥٨	٥٨	٥٨	جماد ثاني	٥٨	
رجيب	١٥	١٥	١٥	١٥	١٥	١٥	١٥	١٥	١٥	١٥	١٥	١٥	١٥	رجيب	١٥	
شعبان	١٤	١٤	١٤	١٤	١٤	١٤	١٤	١٤	١٤	١٤	١٤	١٤	١٤	شعبان	١٤	
رمضان	٢٤	٢٤	٢٤	٢٤	٢٤	٢٤	٢٤	٢٤	٢٤	٢٤	٢٤	٢٤	٢٤	رمضان	٢٤	
شوال	٢٨	٢٨	٢٨	٢٨	٢٨	٢٨	٢٨	٢٨	٢٨	٢٨	٢٨	٢٨	٢٨	شوال	٢٨	
ذو القعدة	١٤	١٤	١٤	١٤	١٤	١٤	١٤	١٤	١٤	١٤	١٤	١٤	١٤	ذو القعدة	١٤	
ذو الحجة	١٩	١٩	١٩	١٩	١٩	١٩	١٩	١٩	١٩	١٩	١٩	١٩	١٩	ذو الحجة	١٩	
العدد	٤٤٧	٤٤٧	٤٤٧	٤٤٧	٤٤٧	٤٤٧	٤٤٧	٤٤٧	٤٤٧	٤٤٧	٤٤٧	٤٤٧	٤٤٧	العدد	٤٤٧	

اللون والعلل
 وطرح الأروس والبيوت
 والأحرف

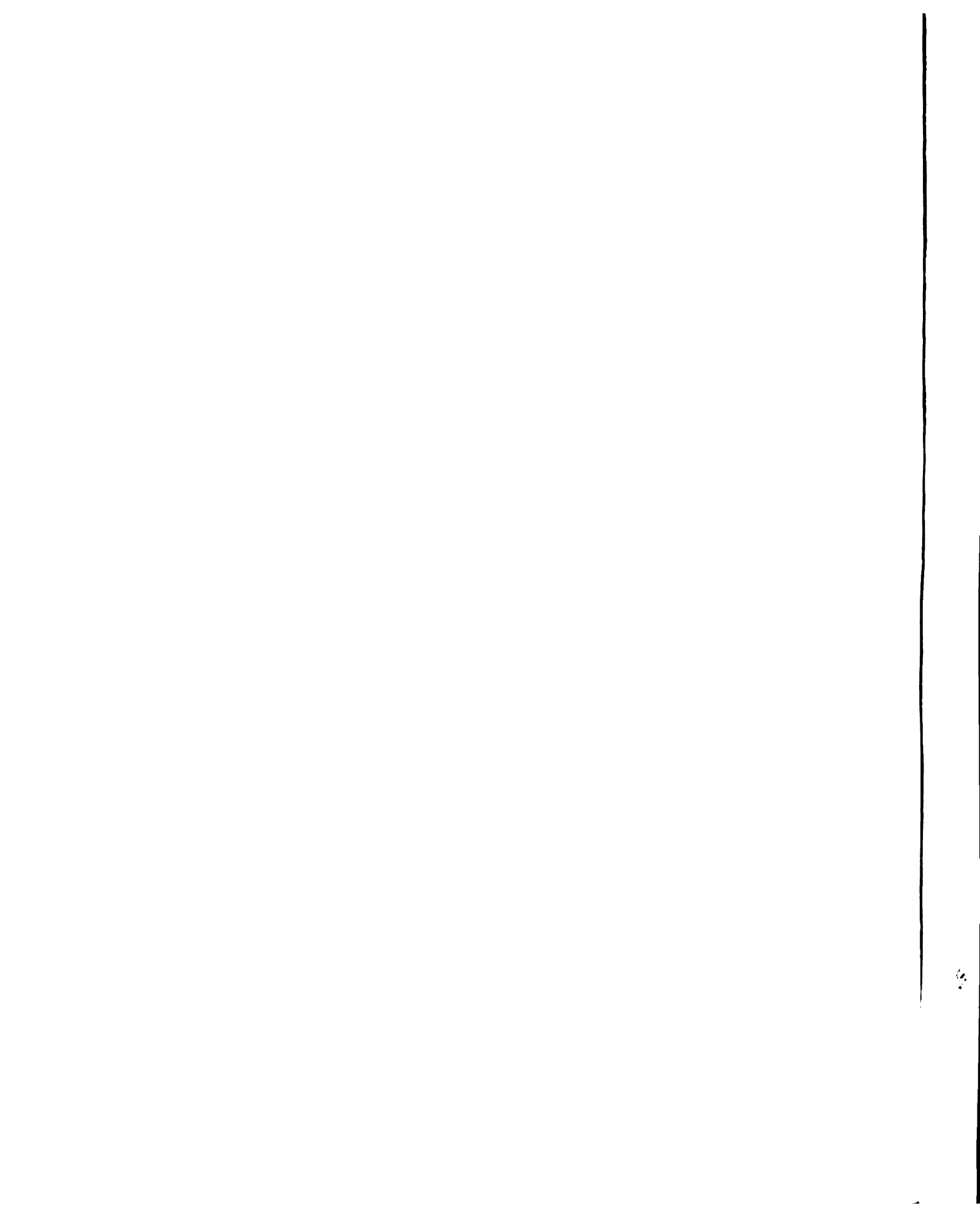
عدد الحروف حسب النوع والأما به والماله السفره والنس والجنسيه. بتطه القصبه لس ١٤٥٥

حاله الجوى	الجنسيه		الجنس		السفره فيه		الماله		الماله		نوع الارصا به		نوع المحاديات				نوع المحاديات	عدد الحروف
	الجنسيه	الجنس	الجنس	الجنس	السفره فيه	السفره فيه	الماله	الماله	نوع الارصا به	نوع الارصا به	نوع المحاديات	نوع المحاديات	نوع المحاديات	نوع المحاديات	نوع المحاديات			
١	٥	٢	٢	٢	٢	٢	٢	٢	٢	٢	٢	٢	١	١	١	١	٢	٢
١	٣	٥	١٠	٤٧	٢	٢	٢	٢	٢	٢	٢	٢	٢	٢	٢	٢	١٥	١٥
١	-	٥٤	٥٥	٢٢	٢	٢	٢	٢	٢	٢	٢	٢	٢	٢	٢	٢	١٨	١٨
-	٥	١٩	٥	٥٥	١	١	١	١	١	١	١	١	١	١	١	١	٩	٩
-	٢	٤٠	٤	٤٦	١	١	١	١	١	١	١	١	١	١	١	١	٥١	٥١
-	١	٥٩	٥	٥٥	١	١	١	١	١	١	١	١	١	١	١	١	١٨	١٨
-	٥	٤٩	٤	٤٦	١	١	١	١	١	١	١	١	١	١	١	١	٥٤	٥٤
-	٤	٣١	-	٣١	-	-	-	-	-	-	-	-	-	-	-	-	٦	٦
-	٢	٤٠	٥	٤٤	٢	٢	٢	٢	٢	٢	٢	٢	٢	٢	٢	٢	١٤	١٤
٢	٢	٥٥	٢	٥٥	١٤	١٤	١٤	١٤	١٤	١٤	١٤	١٤	١٤	١٤	١٤	١٤	٤٠	٤٠
-	٧	١٧	-	١٧	-	-	-	-	-	-	-	-	-	-	-	-	٨	٨
-	٣	١١	٢	١٠	٢	٢	٢	٢	٢	٢	٢	٢	٢	٢	٢	٢	٤	٤
٣	١٦٢	٤١٣	٦٧	٢٧٦	٤٥	١٨٢	١٧١	٤٥٢	٢٢	٦٩	١٢٩	١٠١	٤٢	٥٥	٥٥	٢٤	١٦٧	١٦٧

الأحاديث الواردة في فضل الحج والعمرة

عدد الحوادث حسب النوع والآداب والحالات المستفيدة والمنسوبة بالصفة المستفيدة له ما يلي:

رقم الحديث	حالة الحديث	المنسوبة إليه			الحالات المستفيدة			الآداب			نوع المنفعة			نوع الحديث	عدد الحوادث	نوع الحديث	عدد الحوادث	نوع الحديث	عدد الحوادث	نوع الحديث	عدد الحوادث
		المنسوبة إليه	المنسوبة إليه	المنسوبة إليه	الحالات المستفيدة	الآداب	نوع المنفعة	نوع المنفعة	نوع المنفعة	نوع المنفعة	نوع المنفعة	نوع المنفعة	نوع المنفعة								
١	١٩١	٥	٤٦	١	٤٠	٥٥	٢	٤	١١	٤٤	٤	٥	٤	١٠	٤٠	حج	٤٠	حج	٤٠	حج	
٢	٤٤	١١	٥٠	٥	٤٦	٤٦	٥	١٩	١٤	٤٤	٢	١٤	٢	٨	٤٥	صفر	٤٥	صفر	٤٥	صفر	
٣	١٥	١٥	٧٨	٤	٤٦	٤٦	٤	٧	١١	١٧	٢	٦	٦	٥	٤١	ربيع أول	٤١	ربيع أول	٤١	ربيع أول	
٤	١٢	١٢	١٧	٨	٤٦	٤٦	٤	٩	١٤	١٧	١	١٦	٨	٦	٤٤	ربيع ثاني	٤٤	ربيع ثاني	٤٤	ربيع ثاني	
٥	٢٧	٢٧	٩٠	١٠	٥٤	٥٤	٧	١٤	١٣	٥٠	٩	١٦	١٦	٤	٤٠	جماد أول	٤٠	جماد أول	٤٠	جماد أول	
٦	١٥	١٥	١٥٤	٤٦	٧٠	٧٠	١٠	٢٩	٤٢	٧٨	١٤	١٤	١٤	٥	٥٤	جماد ثاني	٥٤	جماد ثاني	٥٤	جماد ثاني	
٧	٤٤	٤٤	٩٧	٩	١٠٧	١٠٧	٢	١٩	٢٨	٢٩	١١	١٤	١٤	٨	٤٥	رجب	٤٥	رجب	٤٥	رجب	
٨	٥٦	٥٦	١٤٠	١٦	٧٦	٧٦	١٦	١٩	٥٤	٦٠	١٢	١٢	١٢	٦	٥٨	سبعمائة	٥٨	سبعمائة	٥٨	سبعمائة	
٩	٤٥	٤٥	٩٥	٢٢	٧٨	٧٨	٢	٧	٢٩	٥٨	٩	٩	٩	٩	٥٢	ربيعان	٥٢	ربيعان	٥٢	ربيعان	
١٠	٤٠	٤٠	١٢٢	٤	١٢٧	١٢٧	١	٩	٤٦	٨٥	٦	١٤	١٤	٥	٤١	سبعمائة	٤١	سبعمائة	٤١	سبعمائة	
١١	٤٤	٤٤	٦٧	١٤	٤٩	٤٩	١٠	٤٤	٣٤	٤٤	٤	١٤	١٤	٦	٤٦	ذوالقعدة	٤٦	ذوالقعدة	٤٦	ذوالقعدة	
١٢	٦٩	٦٩	١٠١	٧	١٤٨	١٤٨	٦	١٢	٤٤	٨٥	٩	٩	٩	١١	٤٤	ذوالحججة	٤٤	ذوالحججة	٤٤	ذوالحججة	
١٣	٤٤	٤٤	١٤٠	١٤٢	١١١	١١١	٧	١١١	١٧٨	٦٠١	٨٧	١٧٨	٦٠١	٨٧	٤٥٠	غير محدد	٤٥٠	غير محدد	٤٥٠	غير محدد	



الأرض والغسل
 زارة الهوس والبخير
 عدد الحوادث حسب النوع والاسباب والظواهر والسنن والجنس بمدينة المراكم لعام ١٩٩١ هـ

السنن	الظواهر	الجنس		الجنس		الجنس		الجنس		الجنس		الجنس		الجنس		النوع	الحوادث	النوع	الحوادث	النوع	الحوادث
		ذكر	أنثى	ذكر	أنثى	ذكر	أنثى	ذكر	أنثى	ذكر	أنثى	ذكر	أنثى	ذكر	أنثى						
١	١٨١	٩٧	٢٥٨	٢٠	٤٥٣	١	٢٢	١٥٥	٥٩٢	٤٧	٨٥	٧٦	١٨١	١٧٤	١٧	١٠٦	٤٢	٢٥	١٨٤	١٨٤	
-	١٨	٧	٢٥	٥	٥٨	-	٢	-	٤٧	١	٤	٤	٤٧	٩	٢	٥	٥	٤	١٨	١٨	
-	٦٠	١٩	٢٤	٧	٤٤	-	-	٢٢	١٨	٩	١٨	١٩	١٨	٥	١	٢	٢	-	٦٠	٦٠	
-	١٤	٥	٢٥	١	٤٧	-	٢	-	١٥	-	-	-	١٦	٨	٢	-	-	٤	١٤	١٤	
-	٥٥	٧٨	٢٧٨	١	٤٥٣	-	٢	٥	٢٩	١	١٤	٢	٤٤	١٩	٢	١٥	١	٢	٥٤	٥٤	
-	٥٢	١٠٠	٢٦٦	١	٤٥٣	-	٢	٦	٢٤	١	١٥	٥	٤٤	١٨	٦	١٠	-	٦	٤٢	٤٢	
-	٩٠	١٥	٢٧٨	٦	٤٧٧	١	٤	١٥	٢١	٧	١٤	٨	٥٥	١٢	١	١١	٢	٦	٤٠	٤٠	
-	١٧	٢	٤٠	٢	٤٠	-	٤	١٤	٤٧	٢	٢	٧	١٨	١٢	١	١٠	٢	٤	١٧	١٧	
-	١٦	١٠	٢٢	-	٤٢	-	١	١٥	٤٧	٢	٢	١٠	١١	١٩	-	١١	٢	٤	١٦	١٦	
-	١٥	١٢	٤٧	٢	٥٧	-	١	٤٤	٥٨	٢	١	٧	٤	٤٩	-	١٤	٥	٤	١٥	١٥	
-	٦	٢	١١	١	١٤	-	٢	٢	٨	١	١	٢	٦	٤	-	٢	٢	٢	٦	٦	
-	١٠	٦	١٧	٢	١٥	-	٢	-	١٧	٢	٢	٩	٥	٧	١	٦	١	٢	١١	١١	
-	٦	١٤	١	١٤	١٤	-	٤	-	٩	١	١	-	٤	٨	-	٢	-	٢	٦	٦	

الدهون والعضلات
 اذات الدهن والبروتين عدد الحدوات حسب النوع ظ الامابه والطاله السفره والنبس والمنسجه بمنطقه والاقتصاد لعام ١٩٤١

حاله الجوه	الجنس								الحاله الفرجه			الاصبات			نوع الاصل			نوع الحدوات			نوع الحدوات	الدهن والعضلات
	الذكور	الانثى	الذكور	الانثى	الذكور	الانثى	الذكور	الانثى	الذكور	الانثى	الذكور	الانثى	الذكور	الانثى	الذكور	الانثى	الذكور	الانثى	الذكور	الانثى		
١٥	٨٧	١٩	٢٤٦	٤٨	٢١٥	٤١٥	-	٢٤	١٨٧	١٥١	٢٤	٤٦	٩٠	١٦٨	٤٨	٤٤	٤٤	٣٥	٣٥	٤٨	١٠٢	الدهن والعضلات
١	٦	١	٤٥	-	٤٦	-	-	١	٢١	١٤	٢	٢	٨	٢٠	٦	٢	٢	١	١	١	٦٠	دوا الجوحس
-	٤	-	١١	١	١٠	-	-	٤	٤	٥	-	-	٦	٥	-	١	١	١	١	١	٤	ذو القدره
-	٧	١	٥٧	-	٥٧	-	-	٤	٤٧	٨	-	-	١٢	٥٥	١	١	١	٢	١	١	٧	دسوال
٨	٤	٢	٤١	٢	٤١	٤١	-	٢	٤١	١٦	٢	٤	٨	١٠	٢	٤	٤	٢	٢	٢	١٢	كفزان
٤	٥٠	٩	٤٥	١٠	٤٤	٤٤	-	٧	٤٤	٣٥	١٠	٩	٦١	٤٧	٥	٤	٤	٥	٥	٨	٤٢	مشعبان
-	١٠	-	٢٤	-	٢٤	٢٤	-	٦	٢١	١٠	٧	٨	٥	١٢	٨	-	-	١	١	١	٦٠	رجب
-	١٤	-	٥٢	١٠	٤٢	٤٢	-	٤	٢١	١٧	٦	١٥	٧	١٤	٥	٥	٥	١	١	١	١٤	محمد الثاني
٢	٧	-	٢٧	٥	٢٤	٢٤	-	١	٢١	١٤	٢	١	١٨	١٢	١	٢	١	٥	١	١	١٠	محمد الاول
١	٢	-	٥	١	٥	٥	-	٢	٢	٢	-	-	١	٢	-	-	-	-	-	-	٢	ديبع الثاني
-	٢	-	٤	-	٤	٤	-	١	-	٢	-	-	١	١	-	-	-	-	-	-	٢	ديبع الاول
١	٢	٢	٧	١	٨	٨	-	٢	-	٣	-	١	١	٣	-	-	-	-	-	-	٤	صفر
-	٥	٢	٥	-	١٤	١٤	-	٢	٤	٣	-	٢	٤	٥	-	١	١	٢	٢	٢	٥	محمد

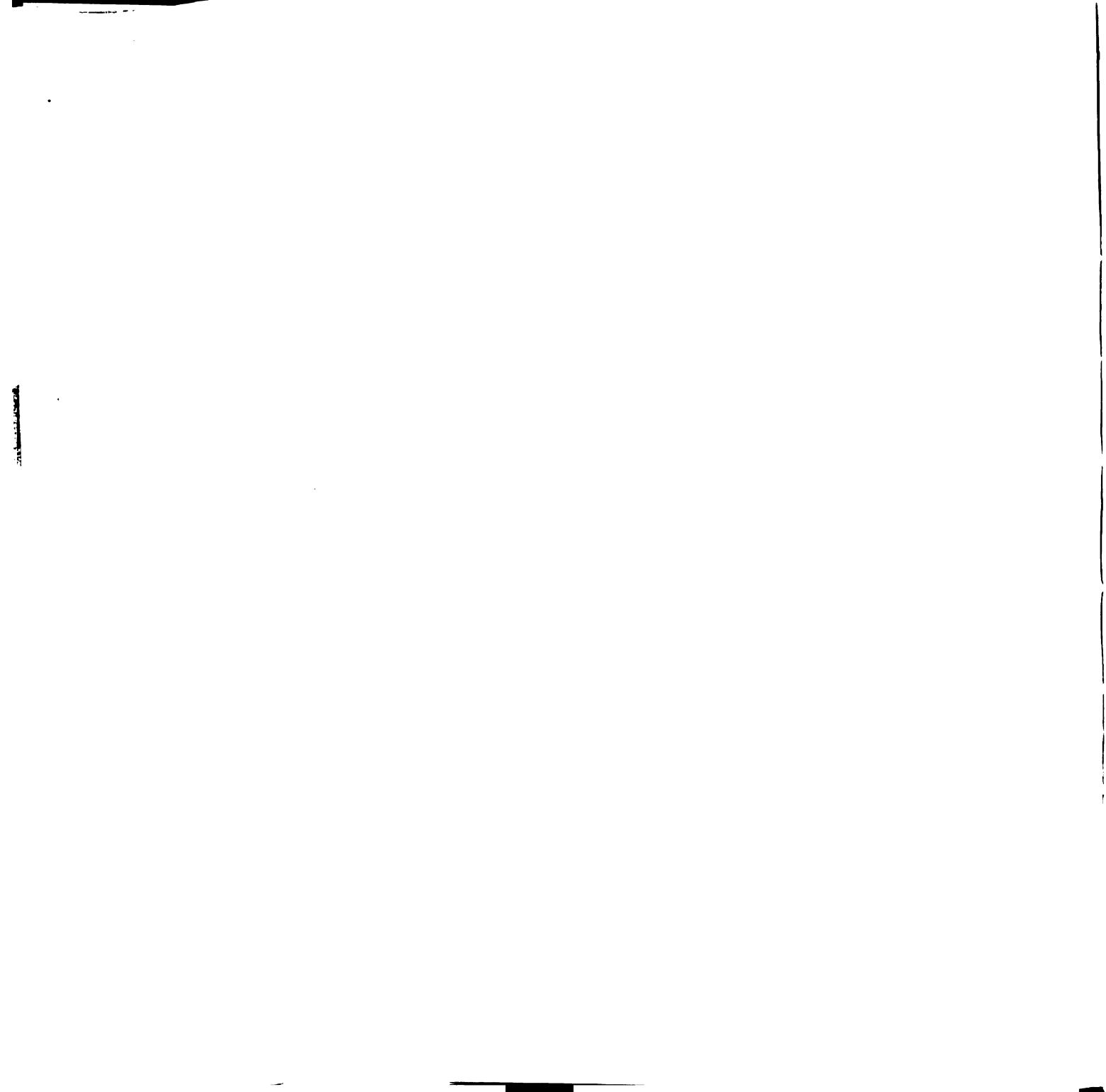
الأمانة العامة
وزارة الأوقاف والشؤون
الإسلامية

عدد الحوارات حسب النوع والأصالة وطالعه السفره والجيس والتمسيه بطلينه نبوي لعلي عليه السلام

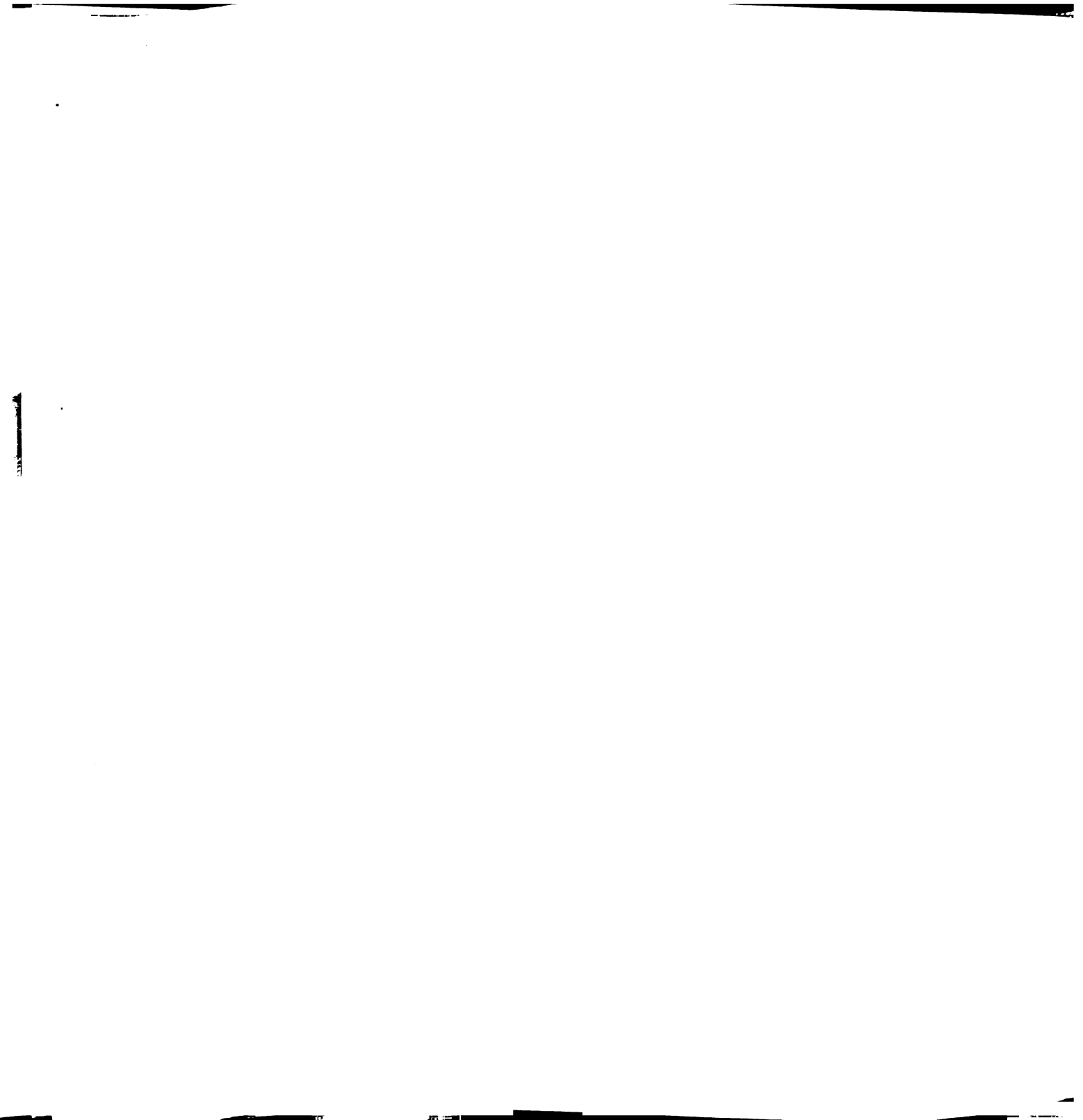
نوع الحوار	الجنسية		الجنس		الجنس	مفرد	المخالفة				البيانات	نوع الأحداث				نوع الحوار	عدد الحوارات	نوع الحوار	مجموع	مجموع
	عربي	أجنبي	عربي	أجنبي			عربي	أجنبي	عربي	أجنبي		عربي	أجنبي	عربي	أجنبي					
مجموع	٢	٠	٥	٠	٥	٠	٢	٢	٢	٢	٠	٢	٢	٢	٠	٠	٠	١	٢	٢
مفسر	٢	٠	١٠	٠	١٠	٠	٥	٥	٥	٥	٠	٤	٤	٤	٠	٠	٠	١	٤	٤
تبع أول	٠	٠	٢	٠	٢	٠	١	١	١	١	٠	٢	٢	٢	٠	٠	٠	٠	٢	٢
تبع ثاني	٠	٠	٩	٠	٩	٠	٦	٦	٦	٦	٠	٥	٥	٥	٠	٠	٠	٠	٥	٥
جماد أول	٣	٠	١٠	٠	١٠	٠	٤	٤	٤	٤	٠	٠	٩	٩	٠	٠	٠	٠	٩	٩
جماد ثاني	٣	٠	١٩	٠	١٩	٠	٧	٧	٧	٧	٠	٤	١٤	١٤	٠	٠	٠	٠	١٤	١٤
رجب	٠	٠	١٤	٠	١٤	٠	٦	٦	٦	٦	٠	٤	٨	٨	٠	٠	٠	٠	٨	٨
شعبان	٠	٠	١١	٠	١١	٠	٧	٧	٧	٧	٠	٢	٩	٩	٠	٠	٠	٠	٩	٩
رمضان	٠	٠	٩	٠	٩	٠	٥	٥	٥	٥	٠	٥	٥	٥	٠	٠	٠	٠	٥	٥
شوال	٣	٠	٨	٠	٨	٠	٧	٧	٧	٧	٠	٢	٤	٤	٠	٠	٠	٠	٤	٤
ذوالقعدة	٠	٠	٧	٠	٧	٠	٢	٢	٢	٢	٠	٢	٤	٤	٠	٠	٠	٠	٤	٤
ذوالحجة	٠	٠	١٠	٠	١٠	٠	٤	٤	٤	٤	٠	٥	٤	٤	٠	٠	٠	٠	٤	٤
مجموع	٤٠	١٠	١١٦	٠	١١٦	٠	٤٧	٤٧	٤٧	٤٧	٠	٢٩	٦٦	٦٦	٠	٠	٠	٤	١٥	٤٠

الالتهاب والعمل
 الادوية والادوية
 الادوية عدد الحدوات صلب النوع والاصليه طلاله السفره والبنس والبنسب بمخففه عكر لو اصلاح

حاله	الجنس		الجنس		الحالات السفره				الاصابات				نوع الاصله				نوع الحاد				نوع الحاد	الاشارة					
	الذكور	الانثى	الذكور	الانثى	الذكور	الانثى	الذكور	الانثى	الذكور	الانثى	الذكور	الانثى	الذكور	الانثى	الذكور	الانثى	الذكور	الانثى									
1								3							2				1		2	1	1				1
0								17							7				2		7	2					7
3								11							9				2		5	2					5
0								13							50				2		9	2					9
10								30							69				9		2	7					12
7								63							45				16		1	7					8
7								38							28				7		3	4					10
0								62							8				31		3	1					5
9								61							16				5		4	3					9
1								17							12				1		1	1					5
0								10							15				2		5	5					8
0								11							10				1		2	2					6
2								25							190				76		9	28					8



APPENDIX D
STATISTICAL INFORMATION ON THE NUMBER OF
CARS AND DRIVERS IN THE VARIOUS CITIES
AND REGIONS OF SAUDI ARABIA



الاجمالي
الاجمالي
الاجمالي

جدول احصائي بعد التصرف من اللوح والرخص بمدينة تات الدرة

١٥٦٥	٤٤٨	٤٦٦	٨٩٨	١٢٨٩	١٨٨٤	٤٤	١٠	٤٤٩	-	٢١٥	٢٨٢	١٨٥٧١	١٢٨٩	١٥٦٤	١٣٦٣	١٥٦٤	١٢٨٩	١٥٦٤	١٣٦٣
٢٢٥٩	٥٨٩	١٠٦٤	١٧٦	١٢٩٠	١٨٥٧	١٨	-	٥٥٠	-	٤٥٦	٢٤٢	١٨٥٧	١٢٨٩	١٥٦٤	١٣٦٣	١٥٦٤	١٢٨٩	١٥٦٤	١٣٦٣
٤٩٥٠	٢٤٥	١٥٥٩	١٢٧٦	١٤٢١	١٨٧٤	٤٤	٧	٦٦٤	-	٤٩٦	٤٥٤	١٨٧٤	١٢٨٩	١٥٦٤	١٣٦٣	١٥٦٤	١٢٨٩	١٥٦٤	١٣٦٣
٤٩٥٥	٢٢٩	١٢٧٦	١٢٦١	١٤٢١	١٦٨١	٧	-	-	١٢٩	١٠٠٠	١٠١	١٦٨١	١٢٨٩	١٥٦٤	١٣٦٣	١٥٦٤	١٢٨٩	١٥٦٤	١٣٦٣
٢١٢٥	٤٦٤	٨٢٢	٤٠٢٩	١٢٧٦	٤٩٨	٤١٥	-	-	-	١٢٨٦	٤٥٠	٤٩٨	١٢٨٩	١٥٦٤	١٣٦٣	١٥٦٤	١٢٨٩	١٥٦٤	١٣٦٣
١٢٨٦	٣٧١	٤٢٢	٧٦٧	١٢٧٦	١٠٧٤	٢٠٩	١٧	١٦٦	١٢٩	١٢٨٦	١٥٦٤	١٢٧٦	١٢٨٩	١٥٦٤	١٣٦٣	١٥٦٤	١٢٨٩	١٥٦٤	١٣٦٣

الاصول والنص
 زيادة الاصول وزيادة
 الزعميه
 جدول احصائي بعد التصرف من اللوحات والرخصك بمدينه جده

مجموع	٥٩٩٤	١٢٦٤	٣٣٤	٤٧٦	٤٩٥٤	١٦٧٩١	١١٩١٥	٤٨٢	-	-	-	-	٦٤٥	١٤١	-	-	١٥٨٥٤	١٠٨٤	٢١٤	-	١٢٨٠٤	١٤٤٨	١٤٧٤٥	١٦٢٩٢
الاصول	-	-	٦٦٠	٥٦٤	٤٦٤	١٦٧٩١	١٥١	٤٨٢	١١٩١٥	١٠٨٤	٢١٤	-	٦٤٥	١٤١	-	-	١٥٨٥٤	١٠٨٤	٢١٤	-	١٢٨٠٤	١٤٤٨	١٤٧٤٥	١٦٢٩٢
مجموع	٥٩٩٤	١٢٦٤	٣٣٤	٤٧٦	٤٩٥٤	١٦٧٩١	١١٩١٥	٤٨٢	-	-	-	-	٦٤٥	١٤١	-	-	١٥٨٥٤	١٠٨٤	٢١٤	-	١٢٨٠٤	١٤٤٨	١٤٧٤٥	١٦٢٩٢
الاصول	-	-	٦٦٠	٥٦٤	٤٦٤	١٦٧٩١	١٥١	٤٨٢	١١٩١٥	١٠٨٤	٢١٤	-	٦٤٥	١٤١	-	-	١٥٨٥٤	١٠٨٤	٢١٤	-	١٢٨٠٤	١٤٤٨	١٤٧٤٥	١٦٢٩٢
مجموع	٥٩٩٤	١٢٦٤	٣٣٤	٤٧٦	٤٩٥٤	١٦٧٩١	١١٩١٥	٤٨٢	-	-	-	-	٦٤٥	١٤١	-	-	١٥٨٥٤	١٠٨٤	٢١٤	-	١٢٨٠٤	١٤٤٨	١٤٧٤٥	١٦٢٩٢
الاصول	-	-	٦٦٠	٥٦٤	٤٦٤	١٦٧٩١	١٥١	٤٨٢	١١٩١٥	١٠٨٤	٢١٤	-	٦٤٥	١٤١	-	-	١٥٨٥٤	١٠٨٤	٢١٤	-	١٢٨٠٤	١٤٤٨	١٤٧٤٥	١٦٢٩٢
مجموع	٥٩٩٤	١٢٦٤	٣٣٤	٤٧٦	٤٩٥٤	١٦٧٩١	١١٩١٥	٤٨٢	-	-	-	-	٦٤٥	١٤١	-	-	١٥٨٥٤	١٠٨٤	٢١٤	-	١٢٨٠٤	١٤٤٨	١٤٧٤٥	١٦٢٩٢
الاصول	-	-	٦٦٠	٥٦٤	٤٦٤	١٦٧٩١	١٥١	٤٨٢	١١٩١٥	١٠٨٤	٢١٤	-	٦٤٥	١٤١	-	-	١٥٨٥٤	١٠٨٤	٢١٤	-	١٢٨٠٤	١٤٤٨	١٤٧٤٥	١٦٢٩٢
مجموع	٥٩٩٤	١٢٦٤	٣٣٤	٤٧٦	٤٩٥٤	١٦٧٩١	١١٩١٥	٤٨٢	-	-	-	-	٦٤٥	١٤١	-	-	١٥٨٥٤	١٠٨٤	٢١٤	-	١٢٨٠٤	١٤٤٨	١٤٧٤٥	١٦٢٩٢
الاصول	-	-	٦٦٠	٥٦٤	٤٦٤	١٦٧٩١	١٥١	٤٨٢	١١٩١٥	١٠٨٤	٢١٤	-	٦٤٥	١٤١	-	-	١٥٨٥٤	١٠٨٤	٢١٤	-	١٢٨٠٤	١٤٤٨	١٤٧٤٥	١٦٢٩٢
مجموع	٥٩٩٤	١٢٦٤	٣٣٤	٤٧٦	٤٩٥٤	١٦٧٩١	١١٩١٥	٤٨٢	-	-	-	-	٦٤٥	١٤١	-	-	١٥٨٥٤	١٠٨٤	٢١٤	-	١٢٨٠٤	١٤٤٨	١٤٧٤٥	١٦٢٩٢
الاصول	-	-	٦٦٠	٥٦٤	٤٦٤	١٦٧٩١	١٥١	٤٨٢	١١٩١٥	١٠٨٤	٢١٤	-	٦٤٥	١٤١	-	-	١٥٨٥٤	١٠٨٤	٢١٤	-	١٢٨٠٤	١٤٤٨	١٤٧٤٥	١٦٢٩٢
مجموع	٥٩٩٤	١٢٦٤	٣٣٤	٤٧٦	٤٩٥٤	١٦٧٩١	١١٩١٥	٤٨٢	-	-	-	-	٦٤٥	١٤١	-	-	١٥٨٥٤	١٠٨٤	٢١٤	-	١٢٨٠٤	١٤٤٨	١٤٧٤٥	١٦٢٩٢

العمل الفعلي
 لاداء العمل والبيوة
 جسطح احصائي بعد اداء المضمون من الموحا والخصم بالندففة الشرفية

٤٤٧٨	٤٢٧	٩٢٩	٢١١٧	١٢٨٩	٤٤٣٦	٥٢	٦٠	٩٠٢	٦٤٦	-	٧٩٤	٤٠٠	١٢٨٩
٤٤٤٤	٤٧٦	٢٢٥	٢٦١٢	١٢٩٠	٢٧٧٥	٢٢	٧٧	١٠٥٦	٤٤٣	-	٢١٧	١٨١٦	١٢٨٩
٥٠٤٦	١١٧	٧٥٥	٤١٥٤	١٢٩١	٢٦٠٠	١٧	٥٢	١١١٤	٤٦٦	-	٢١٧	١٨٢٢	١٢٨٩
٧٦١٤	١٥٤	١٤٥٤	٦١١٧	١٢٩٢	٥٥٥٥	٢٢	٤	٧٤	٣١٣	-	٢٥٨	٤٥٧٢	١٢٨٩
٦٤٤٧	٤٧٣	٤٠٢	٥٥٢٧	١٢٩٢	٨٧٠	٤٤٠	-	-	-	٢٧٥٥	٨٠	٢٩١٥	١٢٩٢
٤٧٧٦٧	١٥٢٨	٢٦٧١	٤٥٥٥٨	المرحلت ١٢٩٢	٤٦٨٦	٤٧٧	١٩٤	٢١٤٧	٢٧٦٩	٢٧٥٥	٤٦٠٩	١٢٦٧	المرحلت ١٢٩٢

واللهم العلى
 اذاهم واليه واليخوة
 والحمد لله

جدول احصاء ببسة الذنوع سلكى الموشخ والرخص بمنظفة القرىات

٨٨	٧٧	-	٤٨	٤٠	١٢٨٩	٨٤	-	-	-	٥٨	-	٤	٤٤	٦٧١٩	١٢٩٠	١٢٩١	١٢٩٤	١٢٩٧	الاجمالي ١٤٠
٦٤	٩١	-	١١	٥١	١٢٩٠	٥٨	-	-	-	٧١	-	٤	٤٧	١٢٩٠	١٢٩٠	١٢٩١	١٢٩٤	١٢٩٧	١٤٠
١٥٠	١٥٠	-	٤٧	١١٢	١٢٩٤	٤٧	-	-	-	٤٤	-	٥	٤٠	١٢٩٤	١٢٩٤	١٢٩٤	١٢٩٤	١٢٩٧	١٤٠
١٤٦	١٤٦	-	٧٤	٥٤	١٢٩٧	١١٩	-	-	-	٢٧	-	٧	٤٥	١٢٩٧	١٢٩٧	١٢٩٧	١٢٩٧	١٢٩٧	١٤٠
٥١٧	٥١٧	-	٤١٤	٢٠٢	الاجمالي ١٤٠	٧٦٥	-	-	-	٤١	-	٤٢	١٤٠	الاجمالي ١٤٠	١٤٠	١٤٠	١٤٠	١٤٠	١٤٠

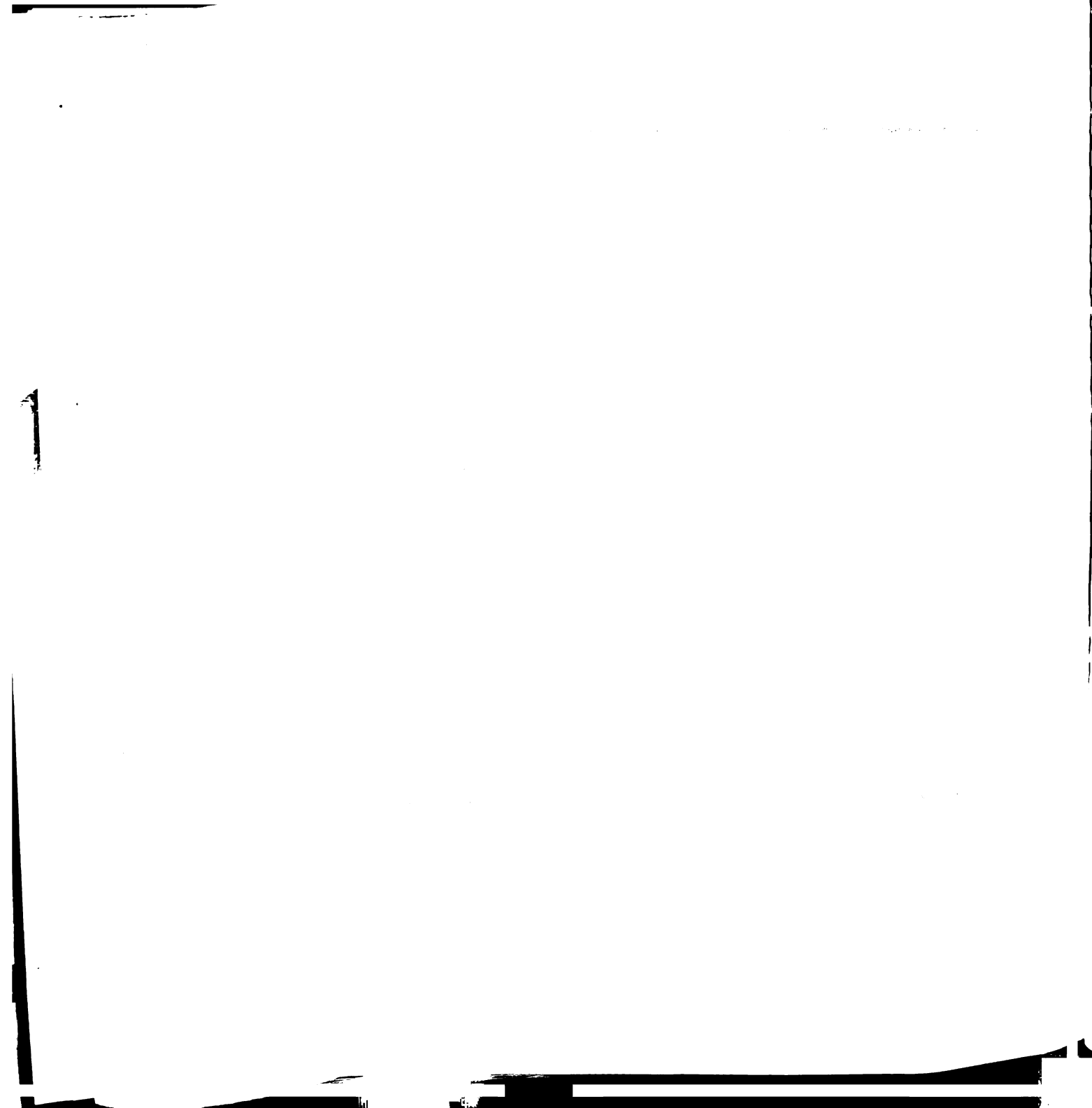
العلم والعمل
 زيادة الرسوم والضريبة
 الاصل

جدول احصائى بحدود المنصرف من الموقوفات والرضخ بمدينته نيولوك

٦٧٤	١٦٣	١٥٣	-	٦٧٤	٥٧	-	-	-	٨٠	-	٦٤	٦٤	٦٧٤
٥٦٩	٦٤٩	٥١٠	-	٦٤٩	٥٠	-	-	-	٩٦	-	٦٨	٦٨	١٢٩٠
٨٠٧	٧٢٣	٦٦٢	-	٧٢٣	٤٤٧	-	-	-	٤٦٣	-	٢٥٢	٢٥٢	١٦٩١
١٠٢١	٤٦٣	٥٥٥	-	١٦٩١	١٥١	-	-	-	١٤٦	-	٤٦٠	٤٦٠	١٢٩٥
٤٨٥٠	٤٦٢٥	٤٧٠٥	-	١٦٩١	١٦٦١	-	-	-	٤٦٠	-	٤٦٠	٤٦٠	١٢٩٤
				العلم	١٩٦١	-	-	-	٦٦٧	-	٧٥١	٧٥١	الاصناف
				الرضخ	١٦٦١	-	-	-	١٦٦	-	٤٢٤	٤٢٤	العلم

الأعمال والمواعيد
 زيادة الرسوم والضرائب
 والأوصاف
 جدول الأعمال بعد التصديق من الجهات المختصة بمختلف جيزانك

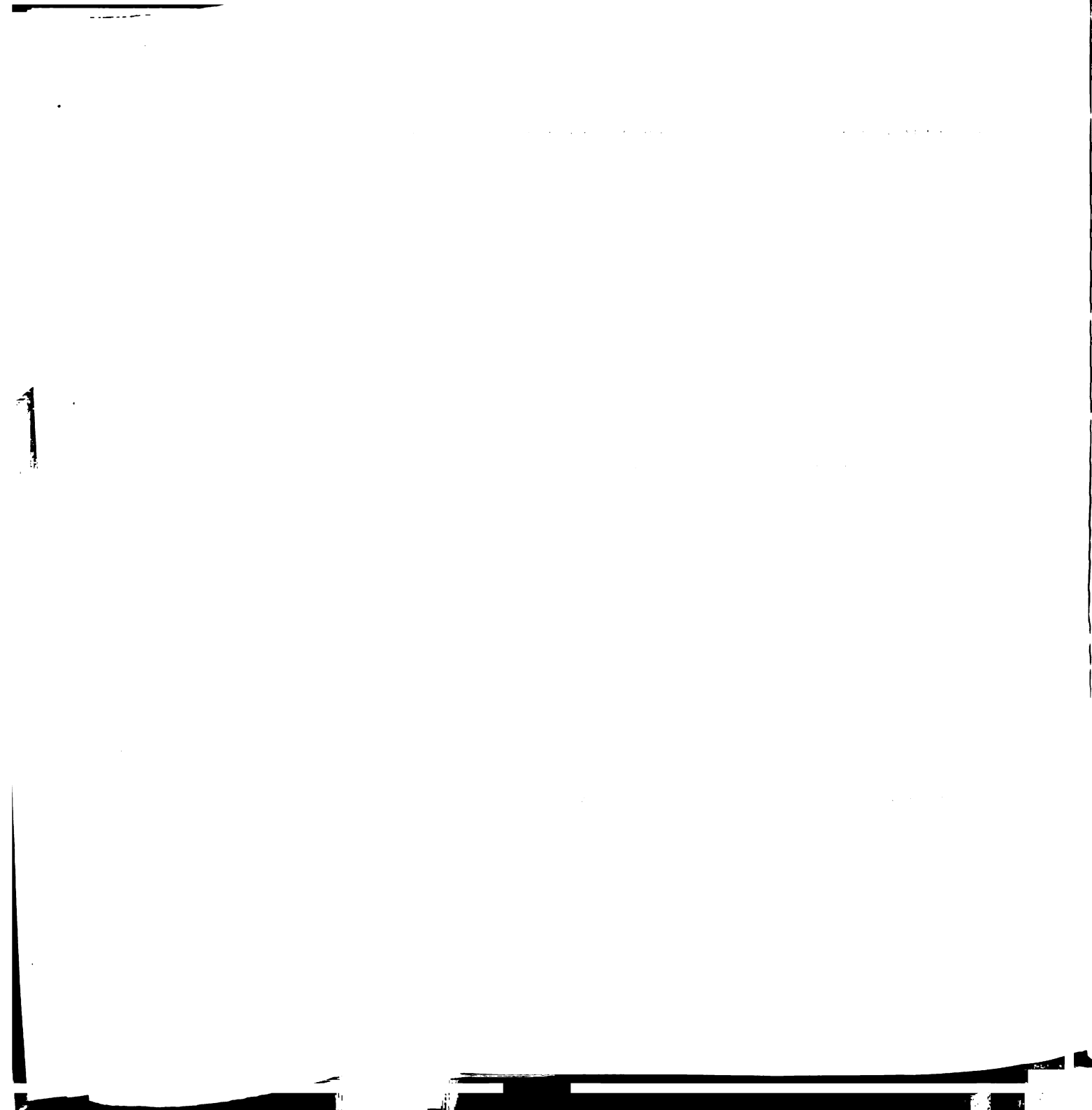
٥٦١	٢	٤٦	٢٢٥	١٢٨٩ هـ	٢٧	-	-	-	-	-	١٩	-	٢٧	١١	١٢٨٩ هـ	١٢
٢٨٧	٢	١٧٤	٤١٤	١٢٩٠ هـ	٥٧	-	-	-	-	-	٤٧	-	٤٦	٧	١٢٩٠ هـ	٢٢
٥١٢	٩	٤٧٠	٢٢٤	١٢٩١ هـ	١٨٢	-	-	-	-	-	٧٩	-	٧٤	٢٤	١٢٩١ هـ	٢٤
٥٧٥	٩	٤٧١	٢٨٥	١٢٩٢ هـ	٩٨	-	-	-	-	-	٤٠	-	١٧	٢١	١٢٩٢ هـ	٢١
٥٢٩	١٥	٤٧٥	٢٢٩	١٢٩٣ هـ	١٥٧	-	-	-	-	-	٥٦	-	٧٦	٢٨	١٢٩٣ هـ	٢٨
٢٢٧	٢٢	١٠٥٦	١١٩٤	الاصحاب لصالح	٥٦٤	-	-	-	-	-	١٤٥	-	٢٤٤	٩٩	الاصحاب لصالح	٩٩



الأول والثاني
الأول والثاني والثالث
الأول والثاني والثالث والرابع

جدول احصائي لعدد المتصرفين من الموحات والخرص بمنطقة عمر

٢٨٢	١	١١٩	١٦٤	٥٧٨٩	٥٧٧	١	-	-	-	٩٤	-	٤٥	٨٤	٦٧٨٩
٢٩٦	٢	١٥٩	٤٢٥	١٧٩٠	٥٥٥	٤	-	-	-	٤٧٣	-	٧٨	-	١٧٩٠
٤٥٣	٤	١٨٢	٤٦٤	١٦٧٩١	٢٦٥	١	-	-	-	٢٢٤	-	٢٠	-	١٧٩١
٤٠٩	-	٦٩	٢٤٠	١٧٩٥	٤٥٩	-	-	-	-	٤٠١	-	٤٨	-	١٧٩٥
٦٥٦	-	١٥١	٥٢٧	١٦٧٩٢	٦٩٤	١	-	-	-	٤٣٣	-	٦٠	١٨٩	١٧٩٢
٤١٥	٧	٦٥	١٥٢٨	الاصحاب	٩٤٤	٧	-	-	-	١٥٥٤	-	٤١٠	٤٧٢	الاصحاب
٤١٥	٧	٦٥	١٥٢٨	للمتصرفين	٩٤٤	٧	-	-	-	١٥٥٤	-	٤١٠	٤٧٢	للمتصرفين



الاطمن والعلك
 (ازاه الرهن والذخيرة
 والاصفاء)

جدول احصائيات لعدد المتصرفين من الموصيات والرضع بمدينة نجران

الاطمن والعلك	١١١	-	٤٧	٧٦	٦٧٨٩	١٣	-	-	-	-	-	-	١٤	٦٧٨٩	١٦٩٠	١٧٩١	١٨٩٢	١٩٩٣	٢٠٩٤	الاصفاء
الاطمن والعلك	٢٦٤	-	٢٢٥	١٢١	١٢٩٠	٩٧	-	-	-	-	-	-	٥٥	١٢٩٠	١٣٩١	١٤٩٢	١٥٩٣	١٦٩٤	١٧٩٥	الاصفاء
الاطمن والعلك	٥٥٥	-	١٥٠	١٠٥	١٢٩١	١٠١	-	-	-	-	-	-	١٥	١٢٩١	١٣٩٢	١٤٩٣	١٥٩٤	١٦٩٥	١٧٩٦	الاصفاء
الاطمن والعلك	١٧٩	-	١٠١	٧٧	١٢٩٤	١٢٦	-	-	-	-	-	-	٤٤	١٢٩٤	١٣٩٥	١٤٩٦	١٥٩٧	١٦٩٨	١٧٩٩	الاصفاء
الاطمن والعلك	٤٠	-	٧٢	٤	١٢٩٢	٤٩٧	٤	-	-	-	-	-	١١٠	١٢٩٢	١٣٩٣	١٤٩٤	١٥٩٥	١٦٩٦	١٧٩٧	الاصفاء
الاصفاء	٥٤٩	-	٥٧١	٢٧٢	الاصفاء	٦٧٢	٤	-	-	-	-	-	١٦٩	الاصفاء	١٧١	١٦٩	١٦٩	١٦٩	١٦٩	الاصفاء

الاعمال والاعمال
الادارة والادارة والادارة
والادارة والادارة

جدول احصائي لعدد المنصرف من الموحات و ارضين بمدينة حائل

٤٦٩	٥	٥	٥	٥٥٩	٥١٨٩	١٤٠	-	-	-	-	-	٤٤	١٦	٧٤	٥١٢٨٩
٥٦٠	١٤	١	٥٦٥	١٤٨٠	١٤٠	٤١٤	-	-	-	-	-	٦٨	٦	١٢٨	٥١٤٩٠
٤٤٠	-	-	٤٢٠	١٢٩١	١٤٠	١٤٠	-	-	-	-	-	١٦	١٨	٨٦	٥١٢٩١
٤٤٣	١١	-	٤١٦	١٢٩٤	٤٤٠	٤٤٠	-	-	-	-	-	٤٢٦	٢	٤	٥١٢٩٤
٦٢٨	١٩	٥	٦١٤	١٢٩٢	٤٩١	٤٩١	١	-	-	-	-	٢٥٤	٦	٢٤	٥١٢٩٢
٤٠٤٤	٦٩	١١	١٩٦٤	١٢٩٢	١٤٩٢	١٤٩٢	١	-	-	-	-	٩١٤	٤٩	٢٢١	٥١٢٩٢

APPENDIX E
SUMMARY STATISTICS OF TRAFFIC ACCIDENTS AND
CASUALTIES IN TAIF, SAUDI ARABIA

جدول خاص بالبحث

٢١٩٧٧
ملاحظت
عدد المجلات ونوع الأعداد ومعلومات عن المساق المبرمج المرفق لهذا

ملاحظة	عدد المجلات	ساعات البحث	معلومات عن المساق					مجموع	نوع الأعداد	نوع الأعداد	نوع الأعداد	نوع الأعداد
			معلومات عن المساق	معلومات عن المساق	معلومات عن المساق	معلومات عن المساق	معلومات عن المساق					
	٥٨	١	٤	٨	١١	١٦	١٨	٩	١١	٥٩	٥٩	٥٩
	٥٨	٠	١	١١	١٧	١٧	١٦	١١	١٦	٥٨	٥٨	٥٨
	٥٩	٠	٢	١٢	٢٠	٢٠	١٩	١٤	١٤	٥٩	٥٩	٥٩
	٥٥	٠	٢	٦	٢٨	٨	٢٤	١١	١٤	٥٤	٥٤	٥٤
	١٥	٠	١	١٢	١٤	١٤	١٤	١٧	١٠	٢٢	٢٢	٢٢
	٢٠	٢	١٧	١٩	١٤	١٤	١٤	١١	١٧	٤٧	٤٧	٤٧
	٢٩	٤	١	٢٥	٢٠	١٢	٢٠	١٧	١٧	٤٨	٤٨	٤٨
	٢٤	١	٢	١٩	١٠	١٠	١٠	١٠	١٠	٤٥	٤٥	٤٥
	١١	٠	٠	١٢	٢	٠	١٢	١١	١٤	٢٩	٢٩	٢٩
	١٦	٠	٠	٥	١١	١	١٥	١٠	١٦	٤٤	٤٤	٤٤
	١٩	٢	٠	٧	٩	٢	١٩	١٩	١٥	٤٤	٤٤	٤٤
	١٣	١	٠	٢	٥	٢	٧	٧	١٠	٢٥	٢٥	٢٥
	٢٦٥	١٠	١٤	١٤٨	١٤٤	١٥٤	٢٥٩	١٧٥	٢٦١	٢٩٥	٢٩٥	٢٩٥

جدول خاص بالبحث

عدد المحاولات ونوع الأخطاء في سنة ١٩٧٤م (تفصيل)

عدد التوقيعات		عدد المحاولات	عدد التوقيعات	عدد المحاولات	عدد التوقيعات	عدد المحاولات	نوع الخطأ
١٩٧٢م	١٩٧٤م	١٩٧٢م	١٩٧٤م	١٩٧٢م	١٩٧٤م	١٩٧٤م	نوع الخطأ
٩	-	١٠	٤	٥٩	٥	٥	يشاب
١١	١	٦	١٠	٥٨	١١	١١	غير يشاب
١٤	٤	٢٢	٧	٥٩	٢٧	٢٧	مكرر
١١	٤	٢٤	٨	٤٤	٢٠	٢٠	أبواب
١١	٢	٢٠	١٠	٢٢	١٢	١٢	مكرر
١٥	٤	٢٨	٨	٢٨	٥١	٥١	بوتير
١١	٧	٤٢	٩	٧٣	٢٧	٢٧	بوتير
١٢	١	٢٥	٥	٤٥	١١	١١	أبواب
١١	٨	٢١	١١	٤٧	٢٧	٢٧	مكرر
١١	١	٢١	١١	٣٥	٢٧	٢٧	مكرر
٢	١	١٥	١١	٣٤	٢٧	٢٧	مكرر
٢١	١١	١٠	٥	٢٥	٦١	٦١	مكرر
١١٥	٦٤	٤٦١	١١٨	٢٩٥	٢٠٤	٢٠٤	المجموع

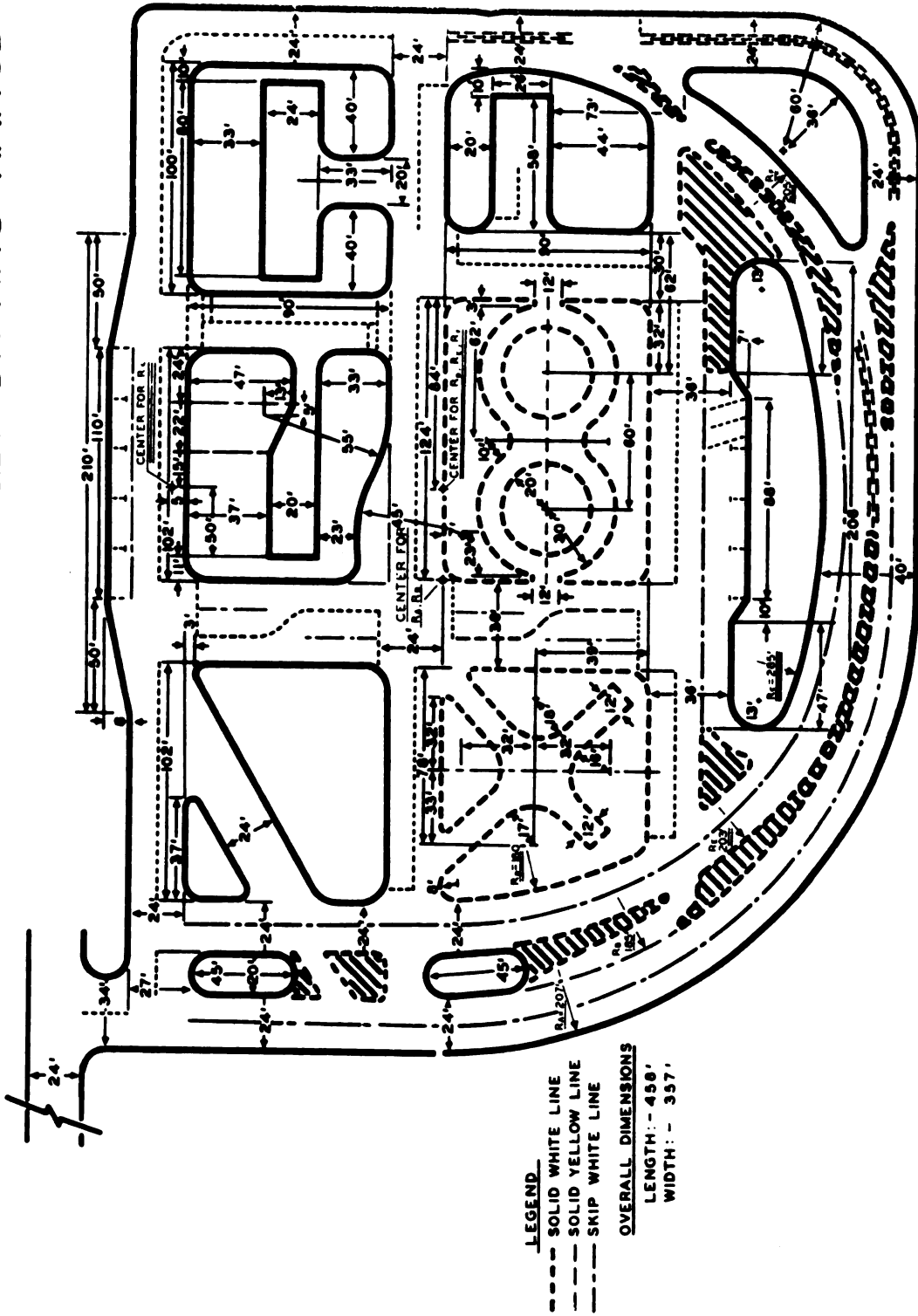
APPENDIX F

GENERAL OUTLINE OF HIGHWAY TRAFFIC SAFETY

EDUCATION PROGRAM AT MICHIGAN

STATE UNIVERSITY

MICHIGAN STATE UNIVERSITY -
MULTIPLE CAR OFF-STREET DRIVING RANGE



DEPARTMENT OF SECONDARY EDUCATION
AND CURRICULUM
College of Education
Michigan State University

BACHELOR'S DEGREE PROGRAM IN
SECONDARY EDUCATION
(Teaching Major in Driver and
Traffic Education)

University College Requirements--48 credits

- | | | |
|----|---|------------|
| 1. | American Thought and Language 111, 112, 113 (Taken during the freshman year--3 terms) | 9 credits |
| 2. | Natural Science 191, 192, 193 (Taken during the freshman year--3 terms) | 12 credits |
| 3. | Social Science 231, 232, 233 (Taken during the sophomore year--3 terms) | 12 credits |
| 4. | Humanities 241, 242, 243 (Taken during the sophomore year--3 terms) | 12 credits |
| 5. | Health, Physical Education and Recreation (Taken during the freshman year--3 terms) | 3 credits |

Professional Education Requirements--30 credits

- | | | |
|----|---|------------|
| 1. | ED 200 Individual and the School | 5 credits |
| 2. | ED 327W Methods of Teaching--Dr. & Tr. Educ.) | 5 credits |
| 3. | ED 436 Student Teaching (Dr. & Traf. Educ.) | 15 credits |
| 4. | ED 450 School and Society | 5 credits |

Teaching Major--Driver and Traffic
Education--64 credits

1.	ED	329F	Intro. to Driver & Traffic Educ.	4 credits
2.	ED	429G	Lab. Methods in Driver & Traffic Education	5 credits
3.	ED	429H	Org. & Admin. of Driver & Traffic Educ.	3 credits
4.	ED	429I	Psy. Factors in Driver & Traffic Education	3 credits
5.	ED	429J	Fundamentals of Traffic Law	3 credits
6.	AE	443	Internal Combustion Engines	3 credits
7.	CE	342	Survey of Transportation Systems	4 credits
8.	HPR	331	First Aid	3 credits
9.	HPR	407	Safety Education	3 credits
10.	PLA	245	Intro. to Highway Traffic Administration	5 credits
11.	PLA	246	Police & Court Traffic Administration	5 credits
12.	PLA	401	Alcohol A Social Dilemma	3 credits

Electives--20 credits

1.	ADV	427	Principles of Public Relations	3 credits
2.	COM	100	The Communication Process	3 credits
3.	ED	411	School Learning I	3 credits
4.	ED	431	Educational Media in Instruction	3 credits
5.	ED	465	Testing and Grading	3 credits

6.	PSY 200	Principles of Behavior	5 credits
7.	SOC 241	Introduction to Sociology	4 credits
8.	SOC 335	Criminology	3 credits
9.	SOC 432	Normal & Delinquent Behavior of Youth	3 credits

Teaching Minor

A teaching minor at the secondary level consists of a minimum of 30 term credits. Credit and course requirements for minors are listed in the College of Education section of the University catalog. Possible teaching minors in secondary education are as follows:

- | | |
|---|-----------------------------------|
| 1. Agriculture and
Natural Resources | 19. Journalism |
| 2. Art | 20. Latin |
| 3. Biology | 21. Mathematics |
| 4. Business Administration | 22. Music |
| 5. Chemistry | 23. Physical Education--
Women |
| 6. Coaching--Men | 24. Physical Science |
| 7. Dance | 25. Physics |
| 8. Earth Science | 26. Political Science |
| 9. Economics | 27. Psychology |
| 10. English | 28. Recreation |
| 11. Family Life | 29. Russian |
| 12. French | 30. Social Science |
| 13. Geography | 31. Sociology |
| 14. German | 32. Spanish |
| 15. Health Education | 33. Communication--
Speech |
| 16. History | 34. Theatre |
| 17. Home Economics | |
| 18. Industrial Arts | |

Electives

The number of elective term credits will vary depending upon the number of required credits in the various teaching minors. Sufficient credits shall be elected to complete

the 183 credit requirement for graduation. Selection of specific courses should be made in consultation with the student's academic advisor. The following are recommended to supplement the teaching major.

1.	COM 101	Public Speaking	3 credits
2.	COM 350	Language and Communication	4 credits
3.	COM 440	Information and Communication	4 credits
4.	COM 470	Communication and Change: The Diffusion of Ideas & Information	4 credits
5.	CPS 120	Elements of Computer Programming	3 credits
6.	ED 413	Mental Health of School Children	3 credits
7.	ED 464	Standardized Tests & Testing Programs	3 credits
8.	ENG 213	Expository Writing	3 credits
9.	PLA 110	Introduction to Criminal Justice	5 credits
10.	PLA 275	Criminal Law	5 credits
11.	PLA 471	Criminal Procedure	4 credits
12.	PSY 225	Psychology of Personality	3 credits
13.	PSY 310	Sensation and Perception	3 credits
14.	PSY 335	Principals of Social Psychology	4 credits
15.	PSY 348	Adolescent Psychology	3 credits
16.	PSY 425	Abnormal Psychology	4 credits
17.	PSY 427	Personality: Dynamic Theories	3 credits
18.	SOC 351	Social Psychology	5 credits
19.	SOC 423	The Family in Contemporary America	3 credits

20.	SOC 448	Small Group Interaction	3 credits
21.	SW 428	Dynamics of Marriage & Family Relations	3 credits
22.	SW 438	Social and Emotional Development	4 credits

DEPARTMENT OF SECONDARY EDUCATION
AND CURRICULUM
College of Education
Michigan State University

MASTER'S DEGREE PROGRAM
DRIVER AND TRAFFIC EDUCATION

Admission Requirements

1. Students wishing to become candidates for the master's degree must possess a bachelor's degree from an accredited institution.
2. At least a 3.0 grade-point average during the final two years of undergraduate study is required for regular admission. A grade-point average of 2.5 during the same period is necessary for admission on a provisional basis.

Program Requirements

1. The equivalent of one year's work, 45 credits after the bachelor's degree is the minimum required for the master's degree.
2. A tentative program of studies for the degree should be prepared prior to the completion of 15 term credits. No student will be accepted as a candidate for the master's degree unless such a program has been approved by the advisor.
3. The final 30 term credits of work toward the degree must be earned while the student is on regular master's degree status.
4. The 45 credit requirement may be achieved in two ways:
 - a. By the inclusion of a research thesis in the program for not more than 12 of the required credits.
 - b. By a program of course work.

5. As many as 12 graduate term credits with grades of B or better, may be transferred from other accredited institutions upon approval of the department chairman and dean.
6. Credit for courses taken at Michigan State University Off-Campus Centers is of equal value to credit for on-campus courses. However, at least 9 credits must be earned in residence on campus.
7. All students must satisfactorily complete 3 credits of coursework in research methodology. (ED 867 or its equivalent)
8. At least 23 credits of the total required for a master's degree must be taken in courses at the 800 and 900 levels except as specifically exempted by the dean of the college.
9. A 3.0 grade-point average, calculated as a total for all courses on the approved program taken for graduate credit, is required for successful completion of the master's degree.
10. The time limit for the completion of the requirements for the master's degree is five calendar years.

Prerequisite

The following undergraduate teacher preparation courses in driver and traffic education are prerequisites to the master's degree program.

- | | | | |
|----|---------|---|-----------|
| 1. | ED 329F | Intro. to Driver & Traffic Educ. | 4 credits |
| 2. | ED 429G | Lab. Programs in Driver & Traffic Educ. | 5 credits |

General Professional Area--15 credits

Courses to meet the general professional requirement shall be selected from the following:

1.	ED	410	Instructional Design & Technology	2-4 credits
2.	ED	411	School Learning I	3 credits
3.	ED	464	Standardized Tests & Testing Programs	3 credits
4.	ED	465	Testing and Grading	3 credits
5.	ED	800	Crucial Issues in Education	3 credits
6.	ED	801A	Philosophy of Education	3 credits
7.	ED	804A	History of American Education	3 credits
8.	ED	811	School Learning II	3 credits
9.	ED	812	Growth and Behavior	3 credits
10.	ED	813	Soc. & Emot. Behav. in the Classroom	3 credits
11.	ED	815B	Prin. of Guid. & Pers. Serv.	3 credits
12.	ED	816C	Practice in Group Guidance Techniques	3 credits
13.	ED	820	Principles of Curriculum Improvement	3 credits
14.	ED	823	Instructional Simulation	3 credits
15.	ED	831A	Education Media in Instruction	3 credits
16.	ED	851A	Found. of Admin.--Theory & Organ.	3 credits
17.	ED	865	Principles of Educational Measurement	3 credits
18.	ED	867	Educational Research Methods	3 credits
19.	ED	869	Quan. Methods in Educational Research	4 credits
20.	ED	882	Seminar in Education	3-6 credits

Specialized Professional Area--15 credits

Courses to meet the specialized professional requirements shall be selected from the following:

1. ED 429H Org. & Admin. of Driv. & Traf. Educ. 3 credits
2. ED 429J Pers. Factors in Driv. & Traf. Educ. 3 credits
3. ED 429K Fundamentals of Traffic Law 3 credits
4. ED 841A Innovations in Driv. & Traf. Educ. 3 credits
5. ED 841B The Highway Transportation System 3 credits
6. ED 841C Principles of Traffic Communications 3 credits
7. ED 841D Motor Vehicle Administration 3 credits
8. ED 882 Seminar in Educ.--Driv. & Traf. Educ. 3-6 credits
9. ED 883 Readings & Indep. Study in Educ. 3-6 credits
10. ED 884 Lab. & Field Experience in Educ. 3-6 credits

Cognate Area--15 credits

The student, with the advice of his academic advisor, will plan this area. The following are recommended, but do not preclude the election of other courses:

1. CJ 433 Alcohol & Drugs: A Social Dilemma 3 credits
2. CJ 440 Intro. to Highway Traffic Admin. 4 credits
3. CJ 441 Police & Court Traffic Admin. 4 credits
4. CJ 840 Highway Traffic Administration 4 credits

5.	COM 820	Communication Theory and Process	3 credits
6.	COM 870	Communication and Change: The Diffusion of Ideas and Information	4 credits
7.	GEO 409	Geography of Transportation	4 credits
8.	HPR 407	Safety Education	3 credits
9.	HPR 810	Organ. & Admin. of Safety Educ.	3 credits
10.	PSA 443	Machinery and Tractor Systems	4 credits
11.	PSY 425	Abnormal Psychology	4 credits
12.	PSY 427	Personality: Dynamic Theories	3 credits
13.	SOC 448	Small Group Interaction	4 credits
14.	SW 428	Dynamics of Marriage & Family Relations	3 credits
15.	UP 471	Ecological Basis for Planning	3 credits
16.	UP 802	Urban Planning Methods	4 credits
17.	UP 822	Urban Circulation	3 credits

NOTE: A master's degree thesis (ED 899) may be written in lieu of not more than 12 of the required credits.

DEPARTMENT OF SECONDARY EDUCATION
AND CURRICULUM
College of Education
Michigan State University

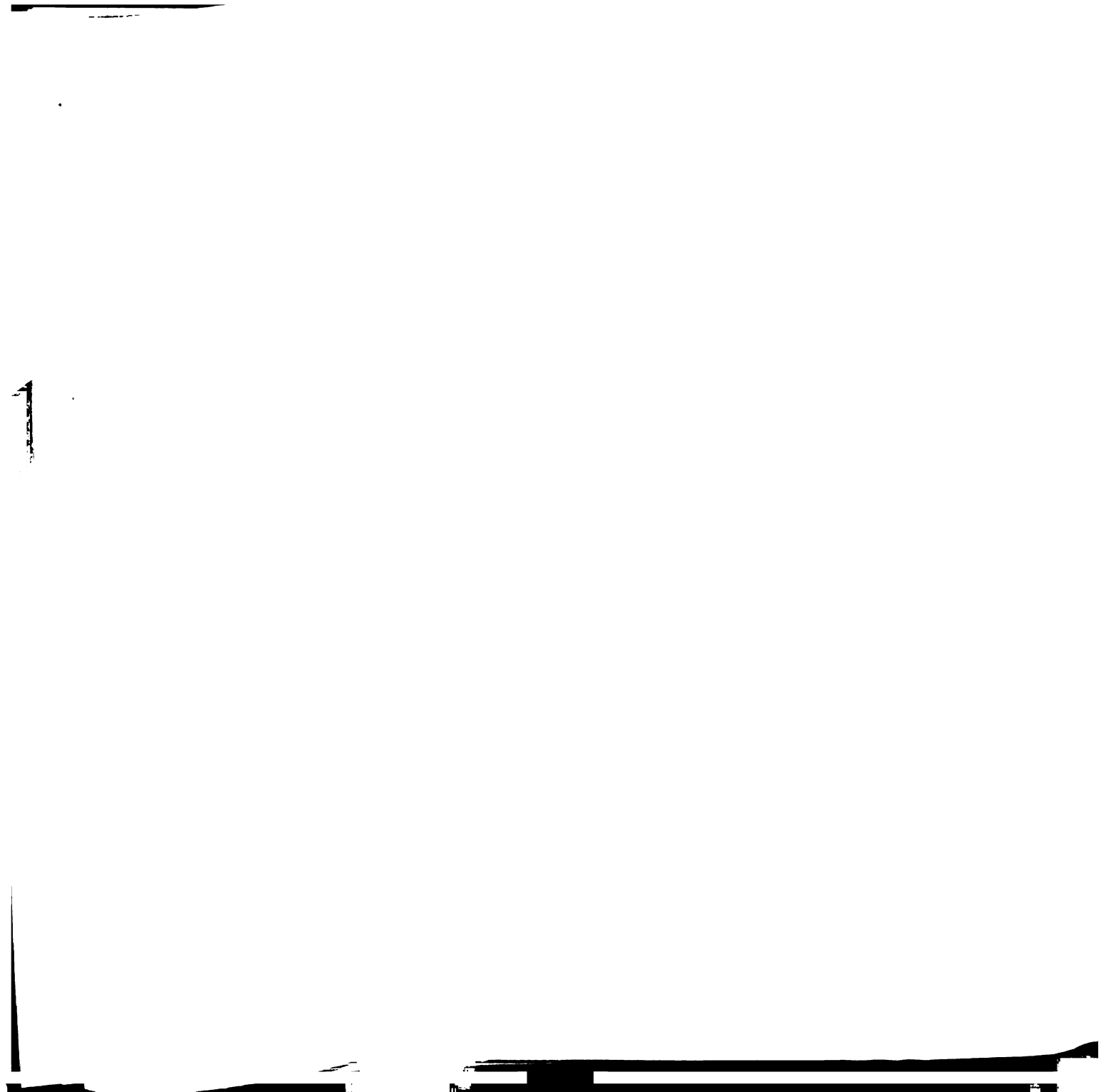
EDUCATIONAL SPECIALIST DEGREE PROGRAM
DRIVER AND TRAFFIC EDUCATION

Admission Requirements

1. Application may be made by those students who hold bachelor's degrees. However, admission to the program normally occurs after the completion of the master's degree.
2. A graduate grade-point average acceptable to the Chairman of the Department of Secondary Education and Curriculum.
3. Completion of the Graduate Record Examination, including the verbal and quantitative aptitude tests and the advanced test in education, or the Miller Analogies Test.
4. The candidate may be invited to meet personally with a faculty committee.

Program Requirements

1. A minimum of 90 term credits of graduate study beyond the bachelor's degree. When the master's degree is earned in an appropriate field and at an approved institution, a minimum of 45 additional term credits of study is required.
2. Up to 12 term credits beyond the master's degree may be transferred from an accredited institution upon approval of the guidance committee and the Dean of the College of Education.



3. At least 15 credits of the last 45 term credits must be completed on the East Lansing Campus.
4. The 90 term credits will include study in the major area, in other areas of professional education, and in related areas outside the College of Education. Field work, internship, externship, and similar laboratory-type experience constitutes at least 12 hours of the program.
5. All students must satisfactorily complete 3 credits of coursework in research methodology. (ED 867 or its equivalent)
6. Demonstrated competence in statistics or a reading knowledge of a foreign language will be required whenever such competence is judged appropriate to the program by the guidance committee.
7. Candidates for the Educational Specialist degree must achieve a grade-point average of not less than 3.2 during the last half of the program (the last 45 term credits) and must satisfactorily complete a terminal comprehensive examination in his specialized professional area.
8. All requirements must be completed within five calendar years from the time of the student's first enrollment after completing the master's degree. A student who does not take a master's degree is allowed seven years to complete the requirements.

Prerequisite

The following undergraduate teacher preparation courses in driver and traffic education are prerequisites to the educational specialist degree program:

- | | | | |
|----|---------|--------------------------------------|-----------|
| 1. | ED 329F | Intro. to Driv. & Traf. Educ. | 4 credits |
| 2. | ED 429G | Lab. Programs in Driv. & Traf. Educ. | 5 credits |

- | | | | | |
|----|----|------|--------------------------------------|-----------|
| 3. | ED | 429H | Org. & Admin. of Driv. & Traf. Educ. | 3 credits |
| 4. | ED | 429J | Pers. Factors in Driv. & Traf. Educ. | 3 credits |
| 5. | ED | 429K | Fundamentals of Traffic Law | 3 credits |

General Professional Area--18 credits*

Courses to meet the general professional requirements shall be selected from the following:

- | | | | | |
|-----|----|------|---------------------------------------|-----------|
| 1. | ED | 411 | School Learning I | 3 credits |
| 2. | ED | 464 | Standardized Tests & Testing Programs | 3 credits |
| 3. | ED | 465 | Testing and Grading | 3 credits |
| 4. | ED | 800 | Crucial Issues in Education | 3 credits |
| 5. | ED | 801A | Philosophy of Education | 3 credits |
| 6. | ED | 804A | History of American Education | 3 credits |
| 7. | ED | 811 | School Learning II | 3 credits |
| 8. | ED | 812 | Growth and Behavior | 3 credits |
| 9. | ED | 813 | Soc. & Emot. Behav. in the Classroom | 3 credits |
| 10. | ED | 815B | Prin. of Guid. and Pers. Serv. | 3 credits |
| 11. | ED | 816B | Procedures in Individual Analysis | 3 credits |
| 12. | ED | 816C | Group Procedures in Guidance | 3 credits |
| 13. | ED | 816D | Procedures in Counseling | 3 credits |

*Credit requirements include applicable credits earned on the master's degree program.

14.	ED	831A	Educational Media in Instruction	3 credits
15.	ED	851A	Found. of Admin.--Theory and Organ.	3 credits
16.	ED	865	Principles of Educational Measurement	3 credits
17.	ED	867	Educational Research Methods	3 credits
18.	ED	869	Quan. Methods in Educational Research	4 credits
19.	ED	871	The Secondary School: Role, Function & Structure	3 credits
20.	ED	872	The American Secondary School Student	3 credits

Specialized Professional Area--30 credits*

Courses to meet the specialized professional requirement shall be selected from the following:

1.	ED	820	Principles of Curriculum Improvement	3 credits
2.	ED	821A	Curriculum Construction	3 credits
3.	ED	841A	Innovations in Driv. and Traf. Educ.	3 credits
4.	ED	841B	The Highway Transportation System	3 credits
5.	ED	841C	Principles of Traffic Communications	3 credits
6.	ED	841D	Motor Vehicle Administration	3 credits

*Credit requirements include applicable credits earned on the master's degree program.

- | | | | | |
|-----|----|-----|--|--------------|
| 7. | ED | 883 | Readings and Indep. Study in
Educ. | 3-6 credits |
| 8. | ED | 982 | Seminar in Driv. and Traf. Educ. | 3 credits |
| 9. | ED | 982 | Seminar in Education. (Appropriate
seminars in ED 882 may also be
taken) | 3-12 credits |
| 10. | ED | 983 | Readings and Indep. Study in
Educ. | 3-6 credits |

Cognate Area--30 credits*

The student, with the advice of his academic advisor, will plan the cognate area. This area may be professional preparation in depth in a specific area, or a broad preparation comprising several areas. The following courses are recommended, but do not preclude the election of other courses.

- | | | | | |
|----|-----|-----|---|-------------|
| 1. | ADV | 427 | Principles of Public Relations | 3 credits |
| 2. | AE | 443 | Internal Combustion Engines | 3 credits |
| 3. | CE | 446 | Transportation | 4 credits |
| 4. | CJ | 409 | Special Issues in Criminal
Justice (Alcohol A Social
Dilemma) | 3 credits |
| 5. | CJ | 471 | Criminal Procedure | 4 credits |
| 6. | CJ | 801 | Directed Studies | 3-6 credits |
| 7. | CJ | 820 | Adv. Police Administration | 3-5 credits |
| 8. | CJ | 840 | Seminar in Highway Traffic
Admin. | 3-5 credits |

*Credit requirements include applicable credits earned on the master's degree program.

9.	COM 870	Communication and Change: The Diffusion of Ideas and Information	4 credits
10.	HPR 407	Safety Education	3 credits
11.	HPR 810	Organ. & Admin. of Safety Educ.	3 credits
12.	PSY 425	Abnormal Psychology	4 credits
13.	PSY 427	Personality: Dynamic Theories	3 credits
14.	SOC 423	The Family in Contemporary America	3 credits
15.	SOC 432	Behavior of Youth	3 credits
16.	SOC 448	Small Group Interaction	4 credits
17.	SW 428	Dynamics of Marriage & Family Relations	3 credits
18.	SW 438	Social and Emotional Development	4 credits
19.	UP 400	Urban Development and Planning	3 credits
20.	UP 801A	Urban Design	6 credits
21.	UP 801B	Metropolitan Regions	6 credits
22.	UP 801C	Urban Renewal and Development	6 credits
23.	UP 822	Urban Circulation	3 credits

Externship--12 credits*

1.	ED 884	Lab. & Field Experience in Educ.	3-6 credits
2.	ED 984	Lab. & Field Experience in Educ.	6-12 credits

*Credit requirements include applicable credits earned on the master's degree program.

DEPARTMENT OF SECONDARY EDUCATION
AND CURRICULUM
College of Education
Michigan State University

DOCTORAL DEGREE PROGRAM
DRIVER AND TRAFFIC EDUCATION

Admission Requirements

1. A minimum graduate grade-point average of 3.3 at the master's degree level.
2. Completion of the Graduate Record Examination, including the verbal and quantitative aptitude tests and the advanced test in education, or the Miller Analogies Test with a percentile ranking acceptable to the Department of Secondary Education and Curriculum.
3. An interview with a faculty screening committee.
4. Three letters of recommendation from persons familiar with the candidate's academic potential and professional experiences.

Program Requirements

1. A program encompassing approximately two full years of study beyond the master's degree is planned with and for each candidate.
2. It is the responsibility of each Guidance Committee to structure into every doctoral student's program those professional tools and competencies which are essential to adequate performance in the professional area.
3. All students must satisfactorily complete an acceptable sequence of courses in research methodology.

4. The doctoral program on file with the College of Education Graduate Student Affairs Office remains the required program of the student unless it is changed by action of the Guidance Committee.
5. The student must contact the committee chairman regarding the comprehensive examination in the major area when at least 80 percent of the coursework is complete.
6. The student must pass written comprehensive examinations in:
 - a. The major field chosen by the candidate.
 - b. A related field outside the College of Education.
7. The comprehensive examinations must be passed within five calendar years of the date of admission to the doctoral program.
8. Each student must conduct original research upon which a thesis is to be prepared and published. All students must register and pay for a total of 36 credits of doctoral thesis research.
9. The candidate will be orally examined upon presentation of his thesis.
10. A 3.0 grade-point average, calculated as an average of grades in all courses taken on the program as approved by the Guidance Committee and for graduate credit at Michigan State University, will be required for successful completion of the doctoral program.
11. The minimum residence requirement is one academic year of three consecutive terms involving completion of at least six credits of graduate work each term.
12. All work on the doctoral degree must be completed within three years from the time the comprehensive examinations are passed.

Prerequisites

The following undergraduate teacher preparation courses in driver and traffic education are prerequisites to the doctoral degree program.

- | | | | | |
|----|----|------|--------------------------------------|-----------|
| 1. | ED | 329F | Intro. to Driv. & Traf. Educ. | 4 credits |
| 2. | ED | 429G | Lab. Programs in Driv. & Traf. Educ. | 5 credits |
| 3. | ED | 429H | Org. & Admin. of Driv. & Traf. Educ. | 3 credits |
| 4. | ED | 429J | Pers. Factors in Driv. & Traf. Educ. | 3 credits |

General Professional Area--24 credits*

Courses to meet the general professional requirement shall be selected from the following:

- | | | | | |
|----|----|------|---------------------------------------|-------------|
| 1. | ED | 410 | Instructional Design and Technology | 2-4 credits |
| 2. | ED | 411 | School Learning I | 3 credits |
| 3. | ED | 464 | Standardized Tests & Testing Programs | 3 credits |
| 4. | ED | 465 | Testing and Grading | 3 credits |
| 5. | ED | 800 | Crucial Issues in Education | 3 credits |
| 6. | ED | 801A | Philosophy of Education | 3 credits |
| 7. | ED | 804A | History of American Education | 3 credits |
| 8. | ED | 811 | School Learning II | 3 credits |

*Credit requirements include applicable credits earned on the master's degree program.

9.	ED	812	Growth and Behavior	3 credits
10.	ED	813	Soc. & Emot. Behav. in the Classroom	3 credits
11.	ED	815B	Prin. of Guid. & Pers. Serv.	3 credits
12.	ED	816B	Guidance Techniques in the Classroom	3 credits
13.	ED	816C	Practice in Group Guidance Techniques	3 credits
14.	ED	816D	Practice in Individual Guid. Techniques	3 credits
15.	ED	823	Instructional Simulation	3 credits
16.	ED	831A	Educational Media in Instruction	3 credits
17.	ED	851A	Found. of Admin.--Theory & Organ.	3 credits
18.	ED	865	Principles of Educ. Measurement	3 credits
19.	ED	950	Theory & Practice of Adminis- tration	3 credits
20.	ED	982	Seminar in Education (Appro- priate ED 882 seminars may also be taken)	3-12 credits

Specialized Professional Area--42 credits*

Courses to meet the specialized professional requirement shall be selected from the following:

1.	ED	429K	Fundamentals of Traffic Law	3 credits
2.	ED	820	Principles of Curriculum Improvement	3 credits

*Credit requirements include applicable credits earned on the master's degree program.

3.	ED	821A	Curriculum Construction	3 credits
4.	ED	841A	Innovations in Driv. & Traf. Educ.	3 credits
5.	ED	841B	The Highway Transportation System	3 credits
6.	ED	841C	Principles of Traffic Communi- cations	3 credits
7.	ED	841D	Motor Vehicle Administration	3 credits
8.	ED	881	Workshop in Driver and Traffic Education	3-6 credits
9.	ED	882	Seminar in Educ.--Driv. & Traf. Education	3-6 credits
10.	ED	883	Readings and Indep. Study in Education	3-6 credits
11.	ED	884	Lab. and Field Experience in Education	3-6 credits
12.	ED	982	Seminar in Driv. & Traf. Educ.	3 credits
13.	ED	982	Seminar in Education--Curriculum (Appropriate ED 882 seminars in curriculum may also be taken)	3-12 credits
14.	ED	983	Readings & Indep. Study in Educ.	3-6 credits
15.	ED	984	Lab. and Field Experience in Education	9-12 credits

Cognate Area--24 credits*

The cognate area may be professional preparation in depth in a specific area, or a broad preparation comprising several areas. The following courses are recommended, but do not preclude the election of other courses:

*Credit requirements include applicable credits earned on the master's degree program.

1.	CJ	433	Alcohol and Drugs: A Social Dilemma	3 credits
2.	CJ	435	Analysis of Police Operations	4 credits
3.	CJ	440	Intro. to Highway Traffic Admin.	4 credits
4.	CJ	441	Police & Court Traffic Admin.	4 credits
5.	CJ	455	Analysis of Delinquency Programs	4 credits
6.	CJ	472	Criminal Law	4 credits
7.	CJ	818	Social Control, CJ and Community Relations	4 credits
8.	CJ	840	Highway Traffic Administration	4 credits
9.	COM	820	Communication Theory and Process	3 credits
10.	COM	822	Interpersonal Communication	4 credits
11.	COM	870	Communication & Change: The Diffusion of Ideas & Information	4 credits
12.	GEO	409	Geography of Transportation	4 credits
13.	HPR	407	Safety Education	3 credits
14.	HPR	810	Organ. & Admin. of Safety Educ.	3 credits
15.	HPR	850	Individual Study--Safety Educ.	3-6 credits
16.	MGT	413	Occupational Safety and Health Administration	4 credits
17.	PSA	443	Machinery and Tractor Systems	4 credits
18.	PSY	425	Abnormal Psychology	4 credits
19.	PSY	427	Personality: Dynamic Theories	3 credits
20.	SOC	448	Small Group Interaction	4 credits

21.	SOC 853	Social Attitudes	4 credits
22.	SW 428	Dynamics of Marriage & Family Relations	3 credits
23.	UP 471	Ecological Basis for Planning	3 credits
24.	UP 802	Urban Planning Methods	4 credits
25.	UP 822	Urban Circulation	3 credits

Research Methodology Area--17 credits*

An appropriate sequence of research methodology courses shall be selected from the following:

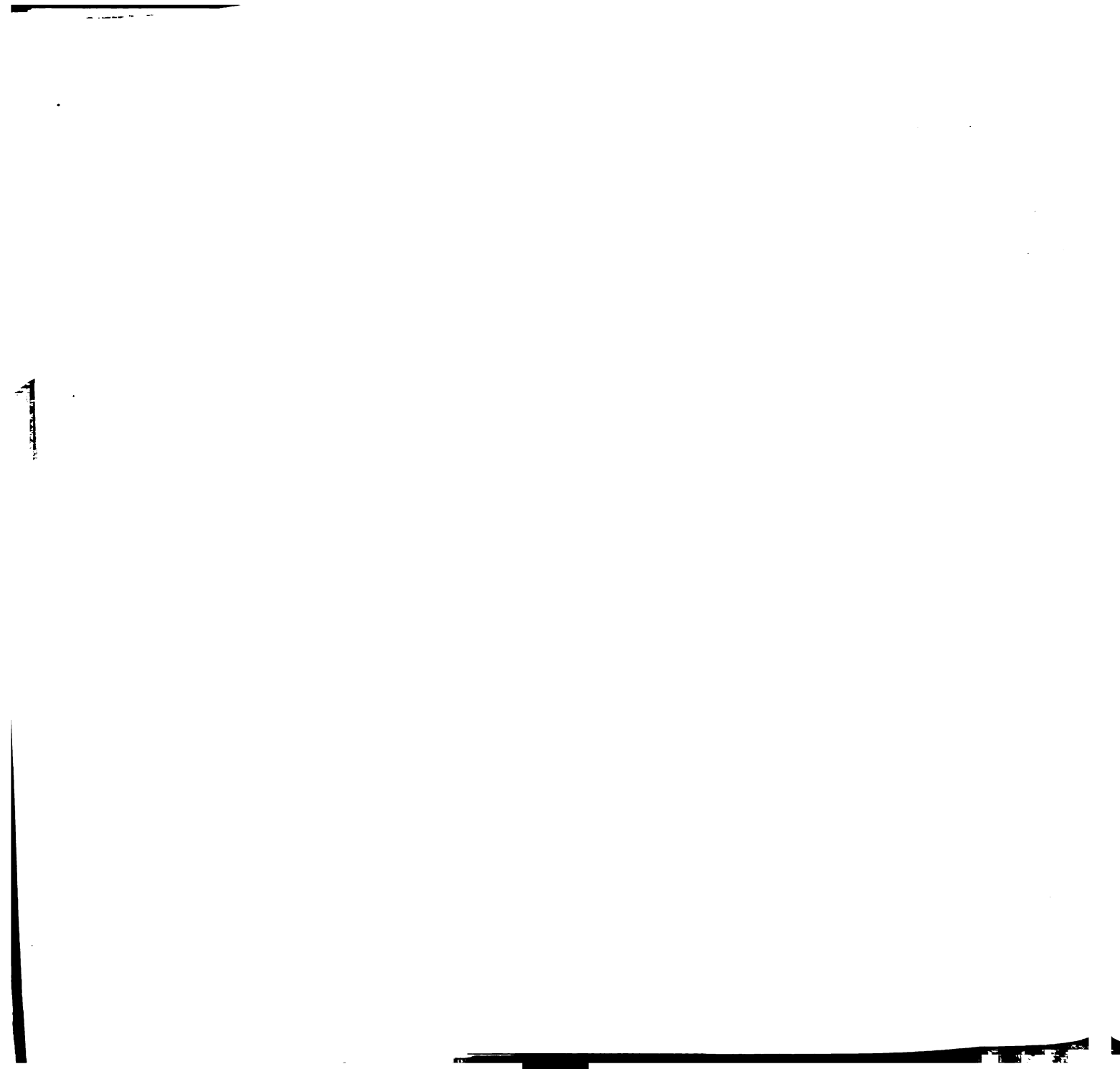
1.	ED 867	Educational Research Methods	3 credits
2.	ED 869	Quan. Methods in Educ. Research	4 credits
3.	ED 882	Seminar in Education--Computer Simulation in Educ. Research	3 credits
4.	ED 967	Advanced Research Methods in Education	4 credits
5.	ED 969B	Adv. Quan. Methods in Educ. Research	4 credits
6.	ED 969C	Experimental Design in Education	4 credits
7.	ED 999	Research (Section 1)	3 credits

*Credit requirements include applicable credits earned on the master's degree program.

DEPARTMENT OF SECONDARY EDUCATION
AND CURRICULUM
College of Education
Michigan State University

TEACHING MINOR
DRIVER AND TRAFFIC EDUCATION

<u>REQUIRED COURSES</u>			<u>29 CREDITS</u>
1.	ED 329F	Introduction to Driver and Traffic Education	4 credits
2.	ED 429G	Laboratory Programs in Driver and Traffic Education	5 credits
3.	ED 429H	Organization and Administration of Driver and Traffic Education	3 credits
4.	ED 429J	Personality Factors in Driver and Traffic Education	3 credits
5.	ED 429K	Fundamentals of Traffic Law	3 credits
6.	CJ 440	Introduction to Highway Traffic Administration	4 credits
7.	CJ 441	Police and Court Traffic Administration	4 credits
8.	CJ 433	Alcohol and Drugs: A Social Dilemma	3 credits
 <u>ELECTIVES FROM</u>			 <u>7 CREDITS</u>
1.	AE 243	Automotive and Recreational Engines	3 credits
2.	ED 411	School Learning I	3 credits
3.	ED 431	Educational Media in Instruction	3 credits



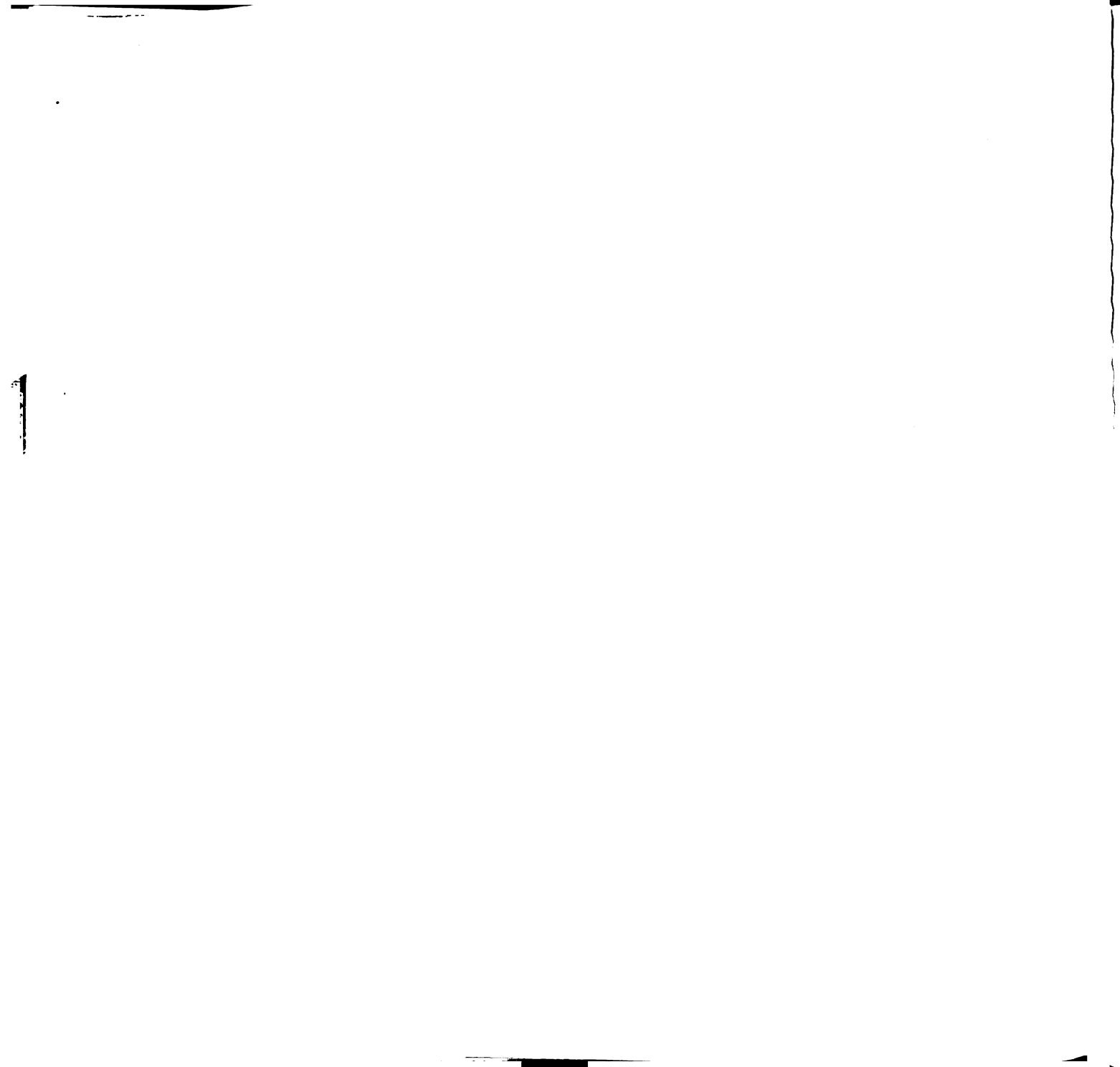
4.	HPR 331	First Aid	3 credits
5.	HPR 407	Safety Education	3 credits
6.	PSY 225	Psychology of Personality	3 credits
7.	PSY 348	Adolescent Psychology	3 credits
8.	SOC 235	Criminology	4 credits
9.	SOC 332	Behavior of Youth	4 credits

HIGHWAY TRAFFIC SAFETY CENTER
Continuing Education Service
Michigan State University

COURSE DESCRIPTIONS

- ED 329F INTRODUCTION TO DRIVER AND TRAFFIC EDUCATION 4 credits
Introduction to and an analysis of the driving task. Theory and practical application will be provided. Prerequisite: Valid driver's license.
- ED 429G LABORATORY PROGRAMS IN DRIVER AND TRAFFIC EDUCATION 5 credits
Examination of the aims, objectives and role of laboratory programs in driver and traffic education. Directed laboratory experiences with new drivers will be provided. Prerequisite: ED 329F or its equivalent and a valid driver's license.
- ED 429H ORGANIZATION AND ADMINISTRATION OF DRIVER AND TRAFFIC EDUCATION 3 credits
Organizational and administrative aspects of driver and traffic education as they relate to the total school and other specialized programs. Historical and philosophical aspects, evaluation, related professional organizations, and occupational opportunities.

- ED 429J PERSONALITY FACTORS IN DRIVER AND TRAFFIC EDUCATION 3 credits
Study of behavior with emphasis on attitudes, motivation, and adjustment and their relationship to unsafe driving. Investigation of principles, and methods appropriate in identifying, understanding, and modifying unsatisfactory behavior.
- ED 429K FUNDAMENTALS OF TRAFFIC LAW 3 credits
Nature, function and application of traffic law as it applies to the safe and efficient movement of people and goods in a broadly conceived traffic accident prevention program.
- ED 841A INNOVATIONS IN DRIVER AND TRAFFIC EDUCATION 3 credits
Explanation of the broad spectrum of innovations in driver and traffic education. Particular emphasis will be placed on their adoption and application for improving classroom and laboratory instructions.
- ED 841B THE HIGHWAY TRANSPORTATION SYSTEM 3 credits
Overview of the development, management and operation of the highway transportation system and its implications for the traffic safety educator.
- ED 841C PRINCIPLES OF TRAFFIC COMMUNICATIONS 3 credits
Specialized problems involved in traffic safety communications in a transportation centered society. Design and manipulation of the communication process to better understand and influence driver behavior. Planning public information and community support programs.

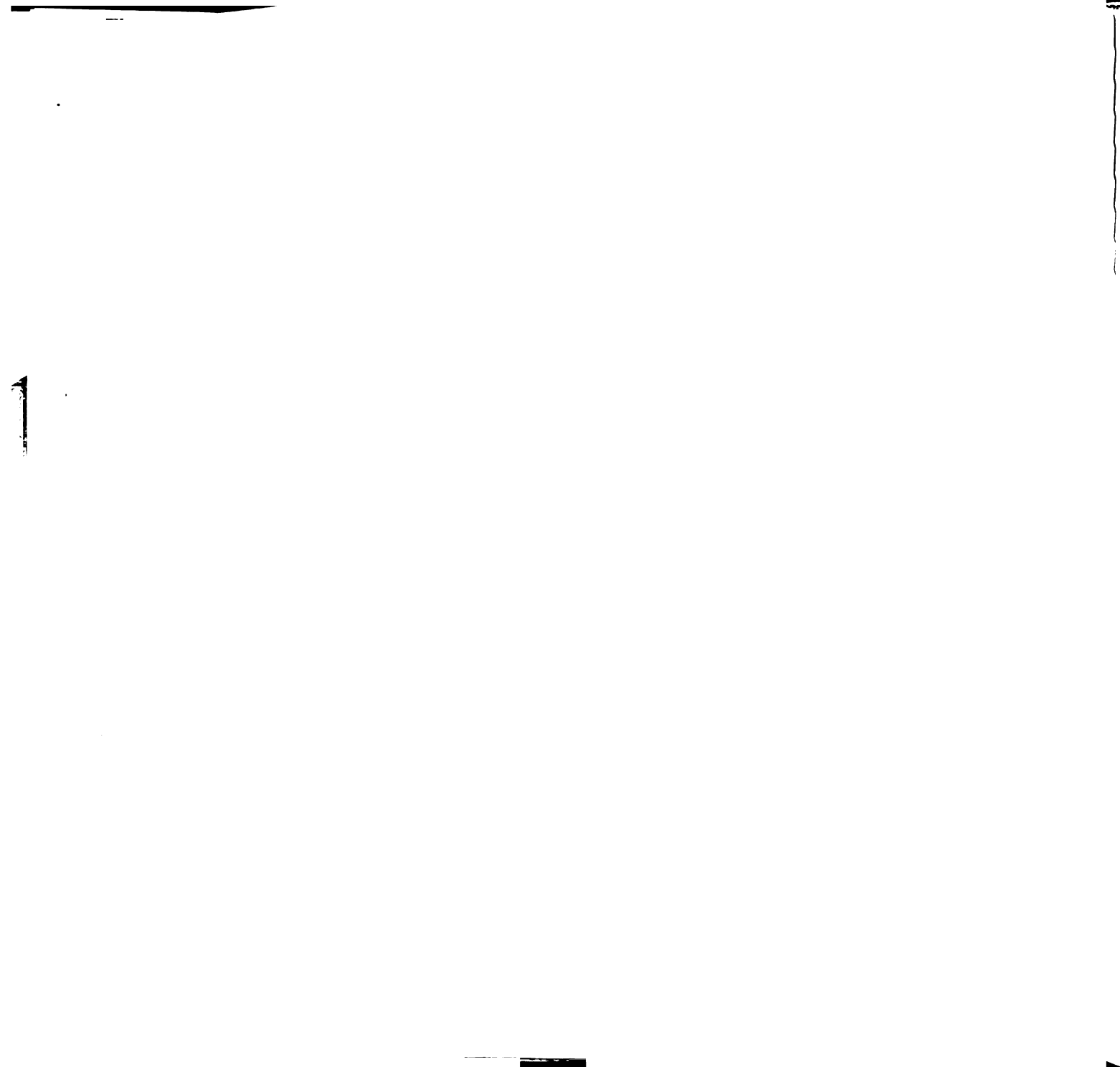


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| ED 841D | MOTOR VEHICLE ADMINISTRATION
Functions of motor vehicle administration in highway traffic administration. Driver licensing, motor vehicle inspection, vehicle titling and registration, and financial responsibility as legal and administrative methods of driver and vehicle control. | 3 credits |
| ED 883 | READINGS AND INDEPENDENT STUDY
Study on an individual or group basis in the various fields of highway safety. | 1-6 credits |
| ED 884 | LABORATORY AND FIELD EXPERIENCE
Supervised graduate practicums, observation, internships, and externships in the various fields of highway safety. | 3-6 credits |
| ED 899 | RESEARCH
Master's thesis | 6 credits |
| ED 982 | SEMINAR IN DRIVER AND TRAFFIC EDUCATION FOR COLLEGE PROFESSORS
An in-depth exploration of the problems of driver and traffic education at the university level. Development of model curriculums for the preparation of driver education teachers. Review of related research. | 3 credits |
| ED 983 | READINGS AND INDEPENDENT STUDY
Advanced study on an individual or group basis in the various fields of highway safety. | 1-6 credits |
| ED 984 | LABORATORY AND FIELD EXPERIENCE
Advanced graduate practicums, observation, internships, and externships in the various fields of highway safety. | 3-12 credits |

ED	999	RESEARCH Doctoral dissertation	36 credits
AE	443	AUTOMOBILE MECHANICS FOR DRIVER EDUCATION TEACHERS Principles of operation and ad- justments of internal combustion engines. Principal emphasis on two-stroke and four-stroke spark ignition engines, including cool- ing systems, braking, fuels and lubricants, and engine performance.	3 credits
CJ	433	ALCOHOL AND DRUGS: A SOCIAL DILEMMA An overview investigation of the substance abuse phenomena with em- phasis on alcohol. Sociological, psychological and medical aspects are discussed with implications for prevention, treatment, and rehabili- tation.	3 credits
CJ	440	INTRODUCTION TO HIGHWAY TRAFFIC ADMINISTRATION Systems approach to highway traffic administration emphasizing the inter- relationships among agencies having management responsibilities and their accident prevention and loss reduc- tion countermeasures to combat system failures. Future needs and alterna- tives.	4 credits
CJ	441	POLICE AND COURT TRAFFIC ADMINIS- TRATION Police and court traffic functions relative to other police and court functions in the Criminal Justice system. Systems approach to man- aging traffic accident prevention programs. Weaknesses, future needs and alternatives.	4 credits

- CJ 840 HIGHWAY TRAFFIC ADMINISTRATION 4 credits
The Federal-state-local partnership in highway traffic administration. Laws, standards and policies regulating the accident prevention and loss reduction countermeasures of governmental agencies and private industry. Problems and needs.
- HPR 407 SAFETY EDUCATION 3 credits
Safety problems in the home, school, and community; safety education programs in the elementary and secondary school.

BIBLIOGRAPHY



BIBLIOGRAPHY

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