

ABSTRACT

AN EXAMINATION OF THE KNOWLEDGE OF TRAFFIC REGULATIONS AND DEFENSIVE DRIVING AMONG A SELECTED SAMPLE OF SAUDI ARABIAN PRIVATE CAR OWNERS

By

Jallel A. Saif

The Problem

A modern accident reporting system helps policy-makers plan and organize future programs. These programs should be based on complete information about the average driver such as his age, education, occupation, past accident involvement, and the other human factors involved, such as place of residence and purpose of car usage. In developing nations, including Saudi Arabia, the accident reporting system is not as yet well developed to meet these requirements, subsequently the policymakers experience many difficulties in planning; therefore, this study has been undertaken with two objectives.

First, to compile basic statistics concerning various aspects of the traffic situation in the Arab World in relation to the world, and Saudi Arabia in relation to the Arab World, utilizing such information as concerns the number of fatalities, number of injuries, number of cars, and other related factors with an emphasis on Saudi Arabia.

The second purpose was to examine the knowledge of a sample of a growing universe--the private car owner (operator). The knowledge tested concerned (a) road signs, (b) the road rules and regulations, and (c) general safety information.

This information and certain personal data composing a profile image of the average Saudi private car owner (operator, driver) was analyzed.

A questionnaire was administered throughout the country of Saudi Arabia. The data were gathered and analyzed.

One-way analysis of variance was used to determine the relationship between the test scores and the level of education and occupation, and the test scores in relation to accident and non-accident drivers.

A chi-square test was used to determine the personal characteristics in relation to accident involvement.

The Major Findings

The following is a summary of the major findings of this study.

1. The Arab World contains less than 1 percent of the total cars of the World, while Saudi Arabia contains 7.74 percent of the total cars of the Arab World--thus one car per 48 Saudi citizens, as opposed to one car per every 68 persons in the Arab World.
2. Fatalities due to car accidents in the Arab World make up 4.72 percent of the world traffic fatalities, while Saudi Arabia has 6.72 percent of those within the Arab World.
3. Injuries in the Arab World amount to less than 1 percent of world traffic injuries. Saudi Arabia

contributes 1.94 percent to these--almost 2 percent of the Arab World injuries.

4. The first hypothesis, which concerned knowledge of subjects in three areas related to safe driving as measured by our questionnaire, was not rejected on the grounds that the sample showed a lack of knowledge on all parts of the test, particularly the area of international road signs as evaluated by standard criteria.
5. The second hypothesis, which concerned the relation of education and occupation to test score, was also not rejected on the grounds that the overall test score and the score on each part of the test did show a relationship to education and occupation.
6. The first sub-hypothesis, which concerned the relationship between test score and accident involvement, was not rejected on the grounds that a low score on the test was correlated with accident involvement and a high score correlated with less accident involvement.

7. The second sub-hypothesis, which concerned the relation of accident involvement and certain personal attributes, was both rejected in part and supported in part. Our data showed that there was no relationship between rural-urban residence, age, purpose of car usage, geographical location, income, kilometers driven, means of obtaining driver's license, or years of driving experience. There was a relationship between accident involvement and occupation and education.
8. A profile image of the average Saudi operator-driver was constructed. He came from a rural area, he was about 30 years of age, he used the car for work and pleasure, he came from the western part of the country, he has an income of between 6,000-10,000 Riyals (= \$1500-\$2500), he drove between 5,000-9,000 kilometers annually. He obtained his driver's license through passing the interview and the road test and he has 5 years of driving experience. A government employee, he has an intermediate education. One out of two has an accident record.

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By
Jallel A. Saif

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JALLEL A. SAIF

1973

Dedicated to my parents

and

To those people who address themselves to
traffic safety problems in Saudi Arabia.

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CHAPTER I
THE NATURE OF THE PROBLEM

Introduction

Throughout the ages, the history of mankind has closely reflected the history of transportation. According to Walter D. Ladd, "The traffic problem is as old as man's first effort to go from one place to another."¹ The same author contends that the first efforts at regulation stemmed from the problem of which of two meeting travelers should first move aside on a narrow lane and to which side.² The first signs probably originated in solution to the same type of practical problem.

Road traffic accidents in large numbers, however, are of comparatively recent origin in the more highly developed countries and are beginning to be a problem in less

¹Walter D. Ladd, Organizing for Traffic Safety in Your Community (Springfield, Illinois: Charles C. Thomas, 1959), p. 4.

²Ibid., p. 4.

developed countries, where preventative tools will be more effective, since they may be applied immediately, before the problem becomes too complex. Therefore, it becomes very important that the lessons learned by highly motorized countries should be made fully available and applied whenever practicable in countries where motorization is developing.

The deaths from road traffic accidents are growing in importance as countries become more highly developed and the number of accidents increases concomitantly. For example, two deaths were registered in 1896 in Great Britain due to motor vehicles.³ In 1970, in the same country the number of fatalities increased to 6,883.⁴ In the United States one death was registered in 1899.⁵ In 1971, in the same country, the deaths resulting from car accidents rose to 55,000 people.⁶ From these small beginnings a stream of deaths and injuries has followed.

³L. G. Norman, Road Traffic Accidents--Epidemiology Control and Prevention (Geneva, Switzerland: World Health Organization, 1962), p. 9.

⁴Statistics of Road Traffic Accidents in Europe (New York: UN, 1970), p. 9.

⁵L. G. Norman, op. cit., p. 9.

⁶J. L. Recht, "The 1971 Traffic Story--Rate Down," Traffic Safety, Vol. 72, No. 3 (1972), p. 28.

The size of the problem and the human loss involved is indicated by the fact that in 1970 there were more than 205 thousand people killed and more than 8.5 million people injured world-wide in road accidents.⁷ The tragedy of road traffic accidents is that they particularly involve the young and adventurous.

For example, as mentioned, the deaths in the United States as a result of road traffic accidents amounted to 55,000. Nearly one-third of all motor vehicle accident victims were of and between the ages of 15-24.⁸ Beside the pain and suffering caused by unfortunate death or permanent disability, a tremendous economic loss to nations arises as a result of road traffic accidents--these economic losses, involving medical and surgical treatment, the loss of the services and the efficiency of the injured person.

The magnitude of the problem is indicated by the fact that in 1971 the total cost as the result of the road traffic accidents in the United States was estimated to be \$14,300,000,000.⁹

⁷International Road Federation, World Statistics 1966-70, Geneva.

⁸J. L. Recht, op. cit., p. 28.

⁹Ibid., p. 28.

World-wide, the economic loss as estimated by the World Health Organization in 1967 was more than 40 billion dollars. This amount is equivalent to three times the aid given to developing countries from developed nations.¹⁰ These figures indicate a serious economic loss to the people of the world which should be taken into consideration in planning the future.

Purpose of the Study

The first purpose of this study is to compile basic statistics concerning various aspects of the traffic situation in the Arab World, and particularly Saudi Arabia, as these compare to various world traffic statistics. After a review of major sources of information, such as, The International Road Federation, World Health Organization, U.N. publications, etc., the conclusion was reached that there exist few or no sources where basic information concerning the Arab World had been gathered. Therefore, this study

¹⁰United Nations Conference on Road Traffic, Vienna, Austria, 7 October-8 November 1968. Translated by the Office of Transportation for the Arab League, Cairo.

undertook to perform this task. Where information was not available, an attempt was made to gather it, mainly through personal correspondence with the appropriate agency of each government. A second purpose was to examine the knowledge of a sample group representing an important growing universe of drivers in Saudi Arabia, that is, private drivers, using a mailed questionnaire. In 1970, 23,820 drivers' licenses were issued for the whole country and of these 19,178 can be classified as private drivers.¹¹

The knowledge tested concerned (a) road signs, (b) the road rules and regulations, and (c) general safety information. This information and certain personal data compose a profile image of the average Saudi driver including his age, education, driving experience, number of accidents involved in, purpose of car ownership, rural or urban residence, district, income, and occupation.

¹¹ Statistical Department of Traffic in Riyadh, Car Registration and Classification, 1970 [obtained from personal correspondence].

The Importance of the Study

A modern accident reporting system helps policy-makers plan and organize future programs. These programs should be based on complete information about the average driver--his age, education, jobs, accidents involved in, location, purpose of driving, etc. In the developing nation of Saudi Arabia, the accident reporting system is not well developed or organized. Subsequently, the policymaker experiences many difficulties in planning successful programs.

This study, the first of its kind in Saudi Arabia, and probably in the Arab World, intends to give a general profile image of the average male private car owner in Saudi Arabia. This type of study was highly recommended by the first Traffic Conference for the Arab World held in Cairo, Egypt, 20-25 May 1972.¹² The conference emphasized the fact that increasing numbers of persons are killed every year in road traffic accidents and pointed to the immediate need for scientific research as a major means of

¹²Recommendation of the First Traffic Conference for the Arab World Held in Cairo, 20-25 May, 1972, Amendment 7, p. 7.

discovering ways to communicate with drivers most effectively. Furthermore, the conference pointed out that any study of this nature should be published and disseminated among the Arab States for maximum benefit. A study of Saudi Arabia, part of the Arab World, would not be beneficial to that country alone but also to the rest of the Arab World.

Definition of Terms

Accident: An event or occurrence which is unexpected or undesigned, which has an element of chance or probability, and which has undesirable results.¹³

Arab World: The eighteen countries of Algeria, Bahrein, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, N. Yemen, Egypt, Qatar, Oman, Saudi Arabia, S. Yemen, Sudan, Syria, Tunisia, U.A.E. (Union of Arab Emirates).

¹³J. Stannard Baker and William R. Stebbins, Jr., Dictionary of Highway Traffic, p. 2.

Bus: Every motor vehicle designed for carrying more than 10 passengers and used for transportation of persons.¹⁴

Car (passenger): Every device used for the transport of passengers. In addition to the driver's seat, it should have at most eight seats or those used for the transport of goods that do not exceed 3.500 kg (7,700 pds).¹⁵

Defensive Driving: Driving to prevent accidents in spite of the incorrect actions of others and adverse conditions.¹⁶

Driver: Any person who drives and has actual physical control of a vehicle.¹⁷

Fatal Accidents: Implies the inevitability or actual occurrence of death a disaster.¹⁸

¹⁴Ibid., p. 20.

¹⁵United Nations Conference on Road and Motor Transport, Geneva, 23 August-19 September, 1949, New York: UN Publication, p. 62.

¹⁶Motor Fleet Safety Quiz, Traffic Safety, Nov., 1972, Vol. 72, No. 11, p. 21.

¹⁷Baker and Stebbins, op. cit., p. 58.

¹⁸Webster's New World Dictionary (Cleveland and New York: The World Publishing Company, 1962), p.

Kilometer: A unit of length or distance equal to 1,000 meters (3,280.8) feet or 5/8 of mile. One square kilometer = 0.386 square mile.¹⁹

Non-Fatal Injury Accident: An accident in which at least one person is injured, and no injury terminates fatally.²⁰

Truck: Every motor vehicle designed and used primarily for transportation of property.²¹

Vehicle: Every device upon or by which any person or property may be transported or drawn upon highway, excepting devices moved by human power.²²

Hypotheses

It was hypothesized that due to the lack of extensive driving tests, and the lack of overall emphasis through the media or educational channels concerning knowledge of road signs and road rules and regulations:

¹⁹Ibid., p. 804.

²⁰Baker and Stebbins, op. cit., p. 141.

²¹Ibid., p. 268.

²²Ibid., p. 268.

1. The sample group overall would show a basic lack of knowledge on all parts of the test.
2. The test scores will show a relationship to the personal attributes of individuals, especially education and occupation.

Sub-Hypotheses

1. The scores on the test are related to the accident involvement of respondents, i.e., a low score on the test is related to having had one or more accidents.
2. As stated above, test scores will vary according to certain personal attributes. Therefore these same personal attributes (and others) are also related to accident involvement.

Basic Assumptions

For the purpose of this study, the assumptions have been made that:

1. The use of the questionnaire was appropriate for the kind of information needed. The questionnaire was designed to reveal information about the average male private car owner in Saudi Arabia including driving knowledge, age, occupation, purpose for using the car, average annual kilometers driven, education, accident involvement, average annual income, etc. Since females are forbidden by law to drive in Saudi Arabia, this study considers only males.
2. Test was adequate for the purpose of the study.
3. Those taking the test would be cooperative.
4. A questionnaire can be designed which will collect suitable information about the individual.

Limitations of the Study

1. Some difficulties would be found in obtaining the same number of subjects regionally since the South and the North are particularly inaccessible.

2. Government employees were more available than the other categories of drivers, such as students, company employees, and businessmen; therefore, they will predominate as respondents, although the exact proportions of each group in the society are unknown and therefore whether this study represents those proportions is also unknown.
3. Due to the lack of accurate population statistics, maps or directories, a random mailed sample was not possible.

Organization of Chapters

Chapter I introduced the developing score of driving problems, and the increasing effect of these on the world scene.

Chapter II discusses the lack of traffic studies in the Arab World. However, a general overview of the extent of traffic problems, a growing concern in the Arab World, will be presented as these are related to the number of cars, the number of accidents, and factors involved. Saudi Arabia will be emphasized.

Chapter III will be concerned with the research design and methodology that was used.

Chapter IV will contain the statistical description and analysis of data.

Chapter V includes the summary of the major findings, conclusions, and recommendations.

CHAPTER II

REVIEW OF RELATED LITERATURE

The Importance of Research

Accident statistics are a main concern of road safety research since they supply basic information concerning the relative importance of the various factors which contribute to accidents. This information is often subsequently used as a guideline and method of preventing road accidents and also to assist in determining the direction of further investigation. They then again become useful as indicators of how successful the measures taken to reduce accident problems have been, that is, they provide a record of the trends taking place in accident situations.

The total accident picture is most easily obtained by recording the number of accidents over several years and the factors involved, and the number of vehicles registered from year to year. This information can be used not only

to estimate future growth, but also to help plan new roads and new traffic policies.¹

According to Aaron and Strasser,

The component parts of the traffic accident problem are identified as (1) the driver, (2) the highway, (3) the vehicle. Each of these are closely related to theories of traffic accident causation.

Without question, the human element is the single most important factor in the cause of traffic accidents. Basically such accidents are due to driver failure, carelessness, or violation of man-made laws or forces of nature. Estimates from several studies indicate that the human element is responsible for 80-85 percent of all traffic accidents.²

T. W. Forbes concurs when he writes that, "It has been clear almost from the first studies that errors, lapses and limitations of automobile drivers were involved in 75-90 percent and, at least in part, responsible for a vast majority of mishaps."³

These authors continue by saying that approximately 10 percent of traffic accidents are caused by unsafe

¹Dept. of Scientific Research, Research on Road Safety (London: Her Majesty's Stationery Office, 1963), p. 7.

²J. E. Aaron and M. K. Strasser, Driver and Traffic Safety Education (New York: The MacMillan, 1966), p. 12.

³T. W. Forbes, Human Factors in Highway Traffic Safety Research (New York: Wiley Interscience, 1972), p. 3.

highway conditions. Often these are due to highways which have not been modernized, poor maintenance, and improper traffic devices.⁴ Another 5 percent of traffic accidents are probably caused by mechanical deficiencies. The authors, however, mention that recent studies conducted at Harvard University "suggest that the percentage of mechanical failures causing traffic accidents is considerably more than this number."⁵

This study concerns itself with the human element, that is, the driver--his age, experience, education, and knowledge of the other two factors mentioned above, the highway and the vehicle.

According to Albert P. Weiss and A. R. Lauer, who wrote in the 1930's, the traffic problem was just beginning to be considered as a social problem in America. Traffic accidents up until this time were regarded as chance occurrences.⁶ Accidents were regarded as fortuitous events in

⁴Ibid., pp. 13-16.

⁵Ibid., p. 16.

⁶A. Weiss and A. Lauer, Psychological Principles in Automotive Driving (Columbus: Ohio State University, 1931), p. 11.

the past, according to A. G. Arbous and J. E. Kerrich,

Accidents are no longer regarded as entirely fortuitous events and the inevitable price to be paid for technological advancement. Events which were previously considered to be chance-determined are now regarded as preventable and causes which were hitherto regarded as beyond the control of the individual are now seen in many cases as intimately related to his psychophysiological make-up.⁷

Arbous and Kerrich conclude that conditions at the time of an accident are varied and complex; hence, the inability to apply simple solutions.

Since it is now realized that accidents are not caused by chance but by human factors which can be analyzed, this study will attempt to take a basic step in understanding the human factor, that is, to construct a profile image of the average private car owner in Saudi Arabia, based on factors such as age, education, driving experience, knowledge and attitudes, and skill. A number of other studies and Ph.D. dissertations were helpful in suggesting the format of the questionnaire used to obtain this information.

A similar study by A. R. Lauer constructs a type of profile image of the average American driver. Considered

⁷A. G. Arbous and J. E. Kerrich, "The Phenomenon of Accident Proneness," Industrial Medicine and Surgery, XXII (April, 1953), p. 141.

here only is his study concerning male drivers, since this study is concerned only with male drivers. He stated that,

The average male driver is in the neighborhood of 35 years of age. He drives a car between 4 and 5 years old with approximately forty thousand miles on the speedometer. The average male driver has driven about 20 years and travels slightly over ten thousand miles a year in his automobile. We should say this is the mode. This mileage is reached between the ages of 25 and 30. The mileage of male drivers builds up from around 4,000 at 16 to something over 13,000 at 27, then gradually goes down until the age of 40 when it levels off until about 55, after which there is a second drop down to about age seventy. Mileage then levels off again until about 75 or 80 The average male drives his car around 8,000 miles during the year in the daylight.

This individual is just short of having completed a high school education. Ultimately about six males out of ten are caught and booked for violating traffic ordinances. One in ten has a serious accident annually. One in eight has a major reportable accident.⁸

The factors discussed by Lauer in constructing his profile image have been the subject of study by other groups. In order to indicate why Lauer might have chosen itself with these same factors, certain recent studies stressing the importance of age, attitudes, driving

⁸A. R. Lauer, Psychology of Driving (Springfield, Illinois: Charles C. Thomas, 1960), pp. 73-74.

experience, occupation, socio-economic status, education, skill, and rural-urban residence in relation to safe driving are briefly discussed.

Age

Age has been a much discussed factor. In 1938, a national committee prepared a comprehensive report on this topic by analyzing 19,000 Connecticut driver records and concluded that younger drivers had an undue proportion of accidents.⁹

More recent studies support this finding and are summarized by T. W. Forbes.

Accidents and convictions for traffic offenses generally decrease with increasing age; however, when miles driven are taken into account, then both young and old drivers have poorer driving records than do middle-aged groups. A recent publication reporting additional findings from the 1964 California Driver Record Study indicates there are differences in violation patterns as a function of age. Specifically . . . those violations most prevalent among young drivers reflect a greater propensity for risk-taking behavior,

⁹Motor Vehicle Traffic Conditions in the U.S., Part 6, House Document No. 462 (Washington: U.S. Government Printing Office, 1938), p. 52.

while the violations most common among old drivers may be associated with increasing decrements in physical and judgmental skills that are known to occur with increasing age.¹⁰

Attitudes

Attitudes are important to safe driving. Attitudes have been defined by W. A. Mann as, "a psychological set to react to certain stimuli in a pre-determined direction with a pre-determined force."¹¹ Attitudes, determined by a large and complex number of factors may affect youngsters' or adults' attitudes toward driving, which is essentially a social relationship. Depending on the individual's attitudes, driving may be seen as competitive and unassociated with responsibility. Serious consequences, including accident involvement, may result. Other studies, such as that by A. R. Lauer, confirm the importance of attitudes.¹²

¹⁰T. W. Forbes, op. cit., p. 80.

¹¹William A. Mann, Building Attitudes for Safety (article), Highway Traffic Safety Center, Mich. State University, pp. 4 and 6.

¹²A. R. Lauer, The Psychology of Driving (Springfield, Ill.: Charles C. Thomas, 1960), p. 85; see also Herbert J. Stack, "Physical, Mental and Emotional Factors," in ENO Foundation, The Motor Vehicle Driver, His Nature and Improvement (Saugatuck, Conn.: ENO Foundation, 1949), p. 53.

Driving Experience

Available information seems to indicate that, in general, the more miles driven, the greater the exposure to risk, although exposure in urban areas could be expected to be greater than in rural areas. For example, T. W. Forbes concludes that "accidents and convictions increase with increasing mileage."¹³

Occupation

As of yet, there exists little conclusive data regarding the relationship between safe driving and occupation. According to several different sources,¹⁴ this difficulty may be due to the interaction between occupation and other variables such as education and socio-economic level.

¹³T. W. Forbes, op. cit., p. 80.

¹⁴Ibid., p. 81; and H. J. Stock and M. K. Moran, "Accident Repeaters and Chronic Violators," in ENO Foundation, op. cit., p. 105.

Socio-Economic Status

Some of the same difficulties exist in the study of socio-economic level as exist with regard to occupation. Contradictory data cause the results to be inconclusive. For example, Weiss and Lauer, Brody, and the ENO study could find no significant relationship; however, DeSilva found that a poor accident record and low socio-economic status were related.¹⁵

Knowledge, Information,
and Education

Again it is evident that more research is necessary to determine precise relationships between different variables and safe driving. While one study indicated that accident repeaters and nonrepeaters did not vary in terms of their knowledge and information of such things as, rules of the road, traffic signs, and facts pertaining to the automobile and highway; another study¹⁶ has shown that non-repeaters were better informed than repeaters as measured

¹⁵Ibid.

¹⁶Ibid., pp. 103-104.

by various standard tests. A related study concerning educational background (as opposed to simply general knowledge and information) indicates a significant relationship between educational level and driving record, poor records being found to correspond to lower educational levels.¹⁷

Rural-Urban Residence

It would be expected that the accident rate for those in urban areas would be higher than in the less congested rural areas. This expectation is in fact borne out by studies in both the U.S. and Great Britain. M. D. Kramer reported that, ". . . 80 percent of the drivers involved in accidents (in nineteen states, 1947) lived in urban areas."¹⁸ More recently, studies in Great Britain showed that,

The lowest accident rates are on motorways and rural roads in open country, and the highest in the centres of large towns. Fatality rates are low in towns but high

¹⁷T. W. Forbes, op. cit., p. 81.

¹⁸David Montoe and E. J. Honeycutt, "Accident Records and Driver Performance," in ENO, op. cit., p. 9.

on unrestricted main roads leading into large towns.¹⁹

While the above mentioned factors might therefore be expected to affect the accident involvement of an individual, the country or area of the world in which he is situated will also strongly affect his driving experience and accident involvement, since it provides the individual's driving context. Therefore the following information deals with traffic internationally, especially in the Arab World and Saudi Arabia, which provides the context for the average driver studied in this paper.

The Problem Internationally

Problems resulting from road traffic have not stopped in the developed nations, but have spread to developing nations as well, representing the price of modernization and convenience. A mutual international approach to road safety has therefore become not only necessary but of pressing importance.

¹⁹Dept. of Scientific Research, Road Research Laboratory, Research on Road Safety (London: Her Majesty's Stationary Office, 1963), p. 41.

Exchange of ideas and information on safety matters is of great value since problems are shared and one country may gain much from the past experience and solutions applied by another nation. International research isolating common factors involved in accident causation will thus play an increasingly important role. A dramatization of the problem may also make the driver more aware of his responsibilities, both within his own nation and others.

To provide information on the total situation within which the average Saudi Arabian private car owner drives, an attempt was made to review some pertinent characteristics of the traffic picture in Saudi Arabia.

Since analogous in-depth studies, such as those mentioned in the preceding section executed primarily in the United States, have not yet been carried out in the Arab World, this information will consist largely of statistical information concerning the magnitude of the problem, the number of fatalities, injuries, and other factors. For comparative purposes, Saudi Arabia was examined relative to certain selected countries and the Arab World, and in turn, the Arab World was examined in relation to the rest of the world. It is hoped that not only will this

information provide a background for the following discussion, but will also create an awareness of and concern about the growth of the problem in Saudi Arabia and the Arab World.

Information on studies or basic statistics was secured by sending letters to the embassies, traffic departments, public relations departments, and transportation departments of each state involved. Requests for this same information were also sent to most international organizations which concern themselves with road traffic, e.g., the International Road Federation (IRF) in Washington and Geneva, the United Nations, the International Criminal Police Organization in Paris (INTERPOL), Automobile Manufacturers Association in the U.S., the U.S. Department of Commerce, and World Touring and Automobile Organization (London). University Microfilms (Ann Arbor) were also contacted with regard to any internationally oriented studies (see Appendix A). Most of these international organizations, however, lacked basic information on the Arab World with regard to the number of fatalities and the number of injuries, and were largely unable to report any known studies concerning the Arab World.

In an attempt to fill in this knowledge gap, the following section gives a compilation of information as obtained from the above mentioned sources within the Arab states, with the emphasis on Saudi Arabia.

As shown in Figure 2.1, the Arab World consists of 8.8 percent of the total world area, with Saudi Arabia, which is itself rather large, comprising 18 percent of the Arab World's area. The population of the Arab World shown in Figure 2.2 is relatively large; however, the population of Saudi Arabia is small considering its large land area.

Figure 2.3a shows that the Arab World as a whole has as yet a small number of cars. However, Saudi Arabia, as shown in Figure 2.3b, has a relatively large number of cars, and is the fifth leading nation of the eighteen Arab states in terms of car ownership per capita (Figure 2.4). The rapid increase in number of cars in Saudi Arabia probably reflects the fact that the younger generation is obtaining a better education. This leads to increased job mobility, both from city to city, and also within the city as the young people move about to follow employment opportunities. Not only is the car increasingly necessary for

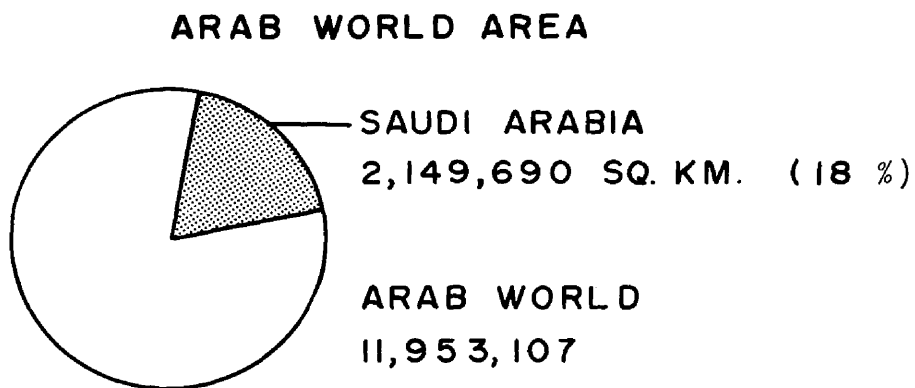
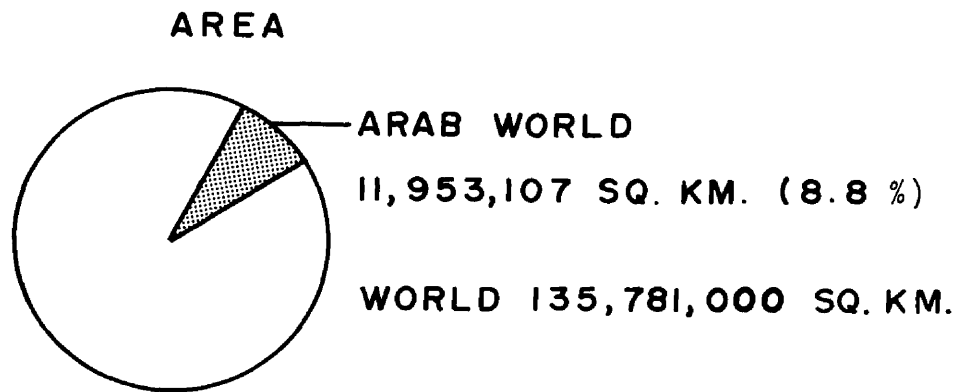


Fig. 2.1.--Area of the Arab World and Saudi Arabia, 1971.

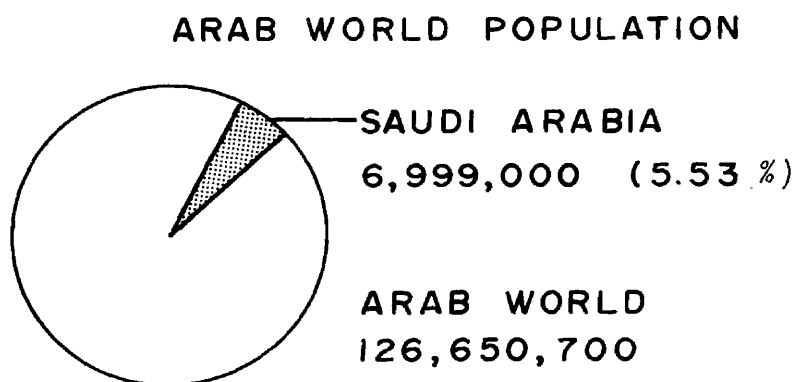
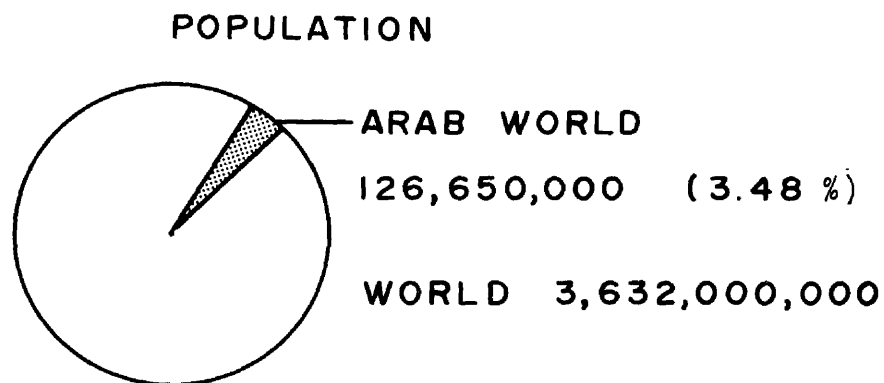


Fig. 2.2.--Population of the Arab World and Saudi Arabia, 1971.

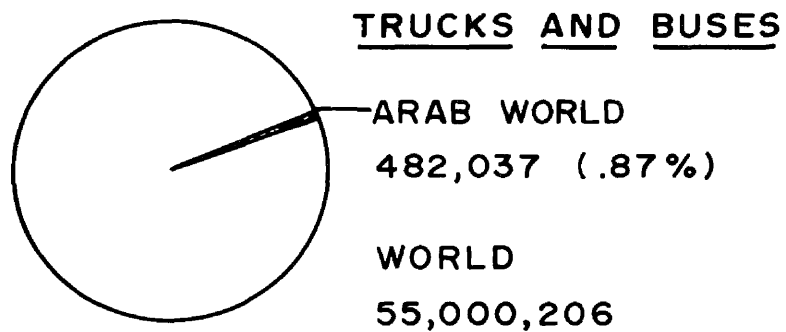
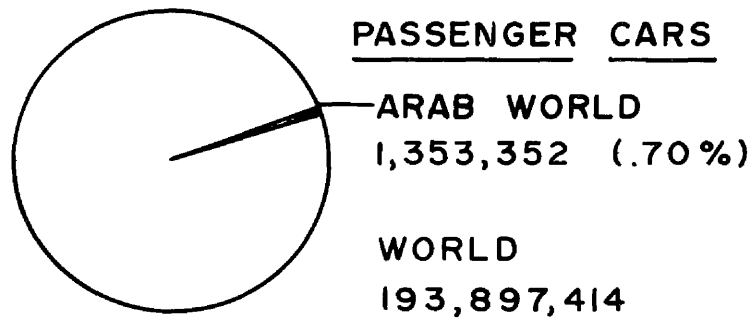
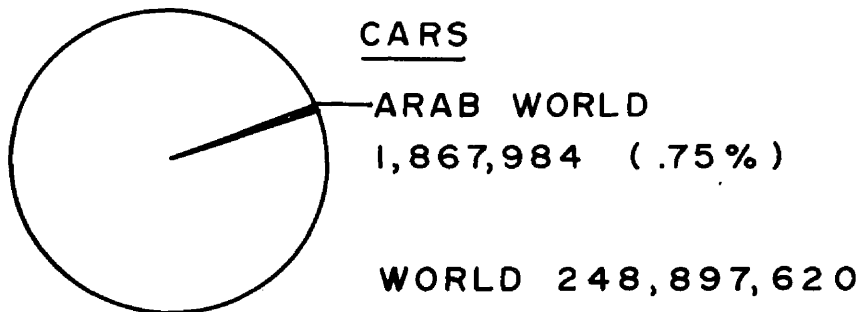


Fig. 2.3a.--Number of Vehicles in the Arab World,
Compared to Total World.

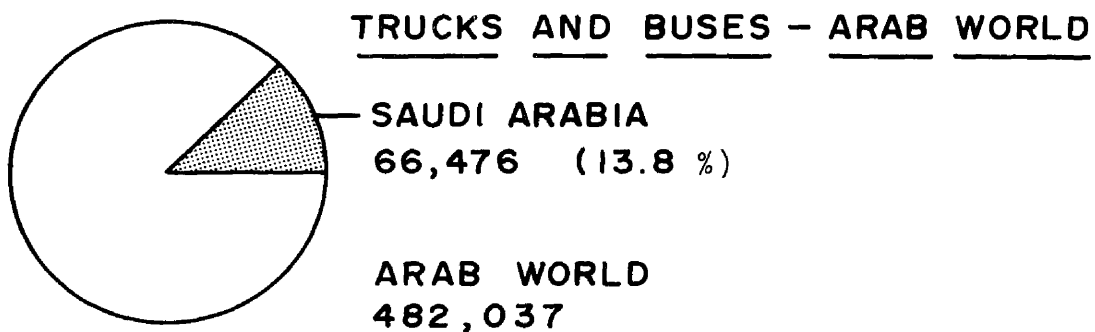
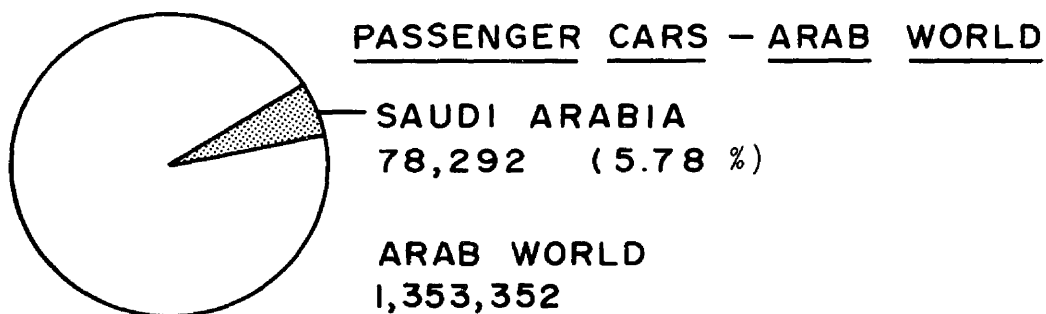
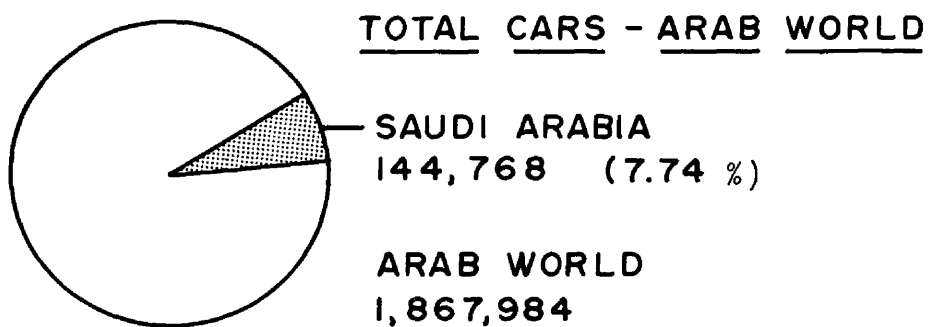


Fig. 2.3b.--Number of Vehicles in Saudi Arabia, 1971, Compared to Arab World.

CARS PER PERSON — ARAB WORLD

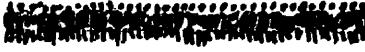
ARAB WORLD   68 PER CAR

3 LEADING ARAB STATES

BAHREIN   13.6 PER CAR

LIBYA   9 PER CAR

KUWAIT   5 PER CAR

EGYPT   174 PER CAR

SYRIA   129 PER CAR

IRAQ   86 PER CAR

SAUDI ARABIA   48 PER CAR

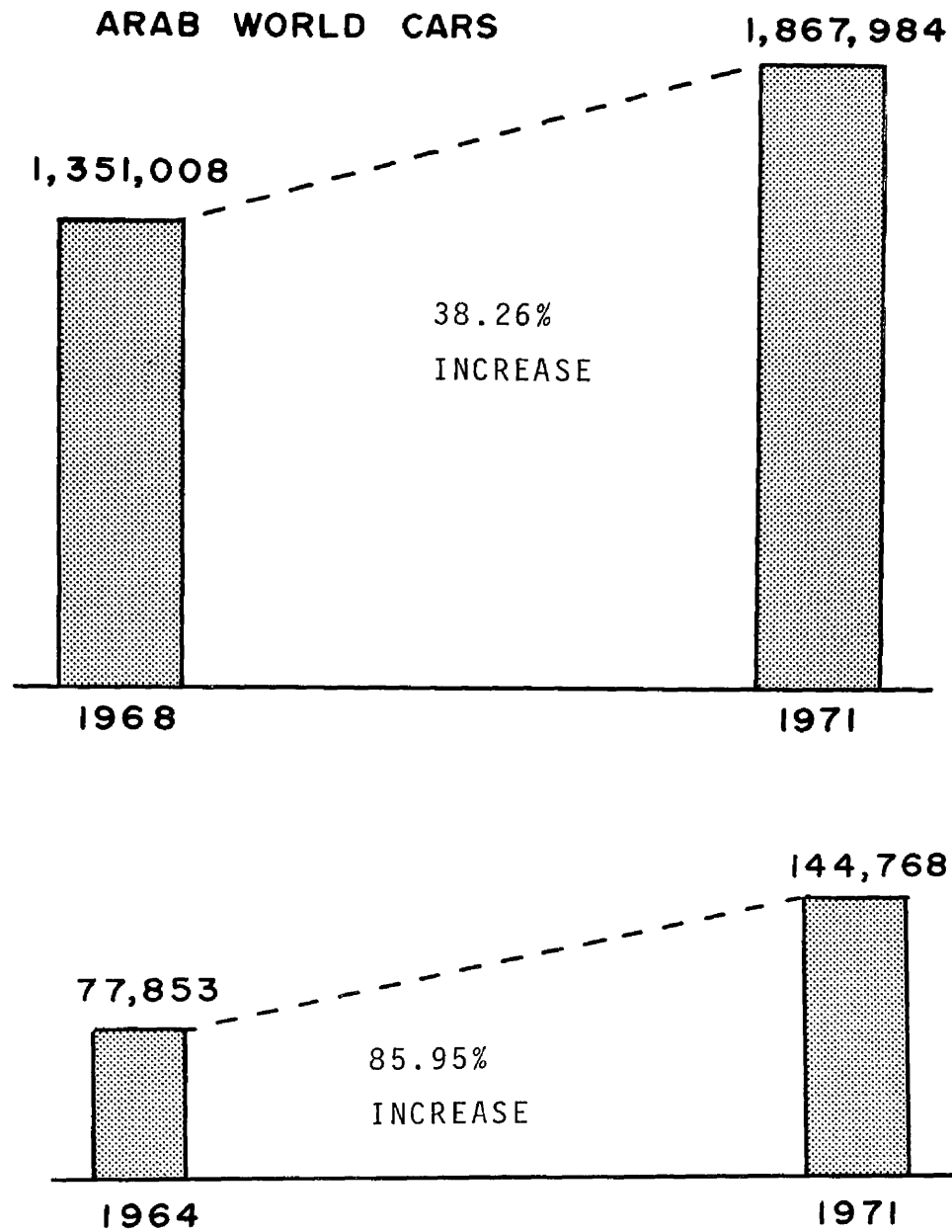
Fig. 2.4.--Car Ownership per Person, 1971.

employment purposes, but also represents a status symbol reflecting a modern life and convenience.

The number of cars is increasing tremendously as shown in Graph 2.1, on page 34. However, strict comparisons are difficult, since figures covering the same periods of time are not available. As indicated at the bottom of that page, the number of cars in Saudi Arabia almost doubled between 1964 and 1971. Since highway planners and road builders in the U.S.A. generally operate on the theory that the number of cars will normally double every twenty years and plans are made accordingly, the doubling of cars in Saudi Arabia within a seven-year period indicates the phenomenal growth taking place and points to the future problems inherent in these rates of growth.

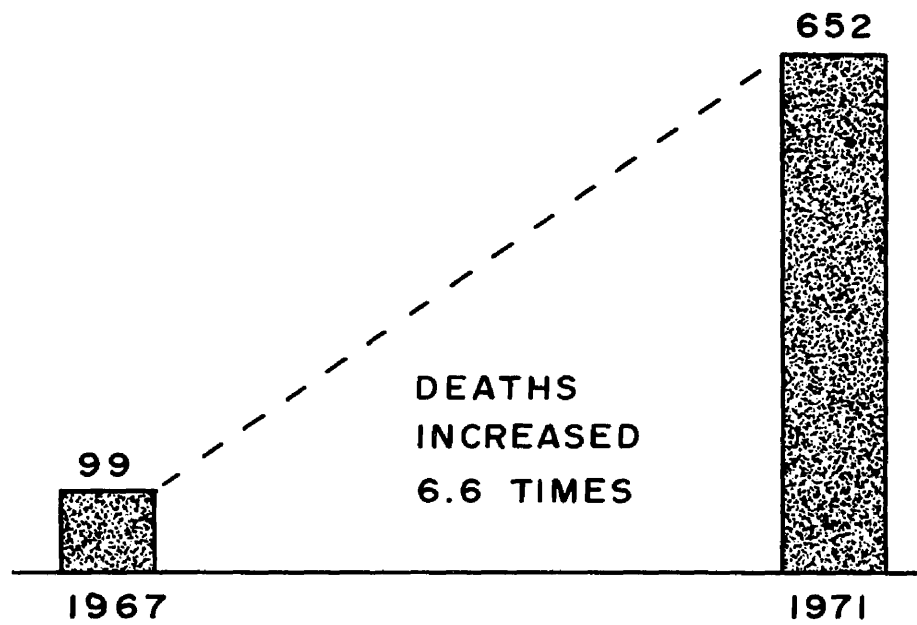
The increase in the number of behicles in the Arab World also runs high, as shown in this same graph. Between 1968 and 1971 the percentage increase was 38 percent.

As shown in Graph 2.2, one of the results of such a rapid increase in the number of cars is the tremendous increase in fatalities attributable to collisions--an increase of 6.6 times in Saudi Arabia between 1967 and 1971. Thus,



Graph 2.1.--Increase in Cars in the Arab World (top) and Saudi Arabia (bottom).

*Figures for the same number of years are not available.



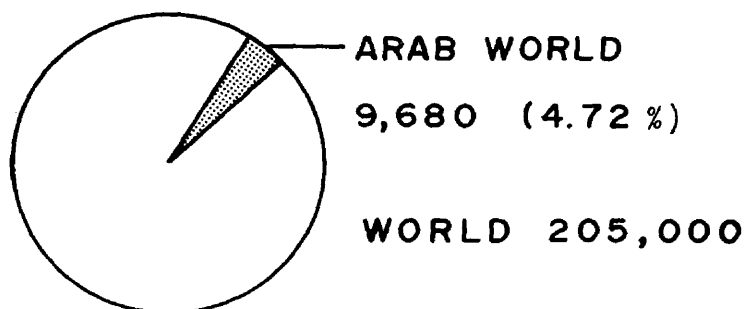
Graph 2.2.--Increase in Traffic Deaths from 1967-1971.

while the number of cars was doubling, the number of fatalities was increasing sevenfold in a four-year period.

Figure 2.5a indicates that in the Arab World, the number of cars amounts to less than 1 percent of the total number of cars in the world, while the number of fatalities amounts to almost 5 percent of the world fatalities.

One might conclude that this high number of auto fatalities in the Arab World, and Saudi Arabia in particular, is due at least in part to the lack of preparation to accommodate the increasing number of cars as well as the lack of adequate safety programs that reach the driver. The magnitude of the problem cannot be overemphasized, as is shown in Graph 2.3. The three Arab States shown are not only leading in number of fatalities among all the Arab nations, but also are the three leading nations in the world in number of traffic fatalities per 100,000 population. Thus in comparison with the more technologically advanced countries the Union of Arab Emirates has a death rate of 35.5 per 100,000 population; Libya has 30.2; and Kuwait 27.9 for 1971. On the other hand the U.S.A. has a death rate of 25 per 100,000; Italy has 18; and Great Britain only 13 deaths per 100,000 due to car accidents,

TRAFFIC FATALITIES



ARAB WORLD TRAFFIC FATALITIES

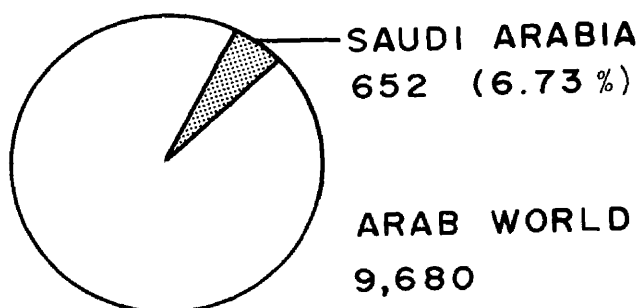
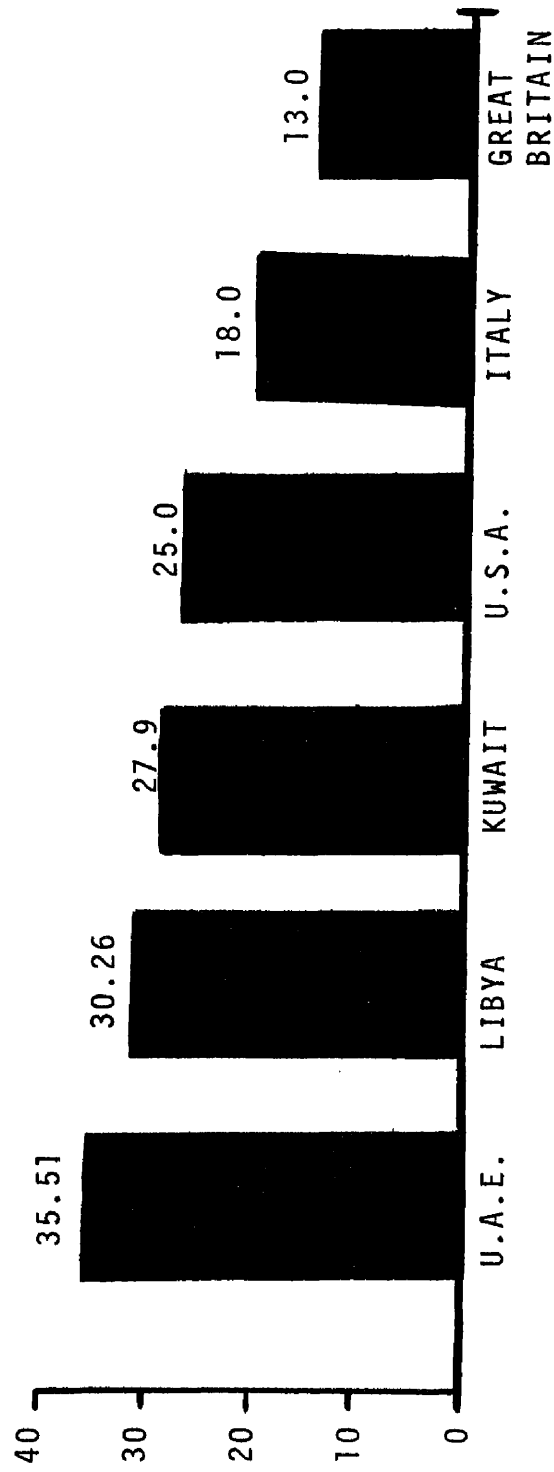


Fig. 2.5a.--Fatalities in the Arab World and Saudi Arabia.



Graph 2.3.--Death Rate per 100,000 Persons in Three Arab States Leading in Number of Fatalities.

as calculated from the statistics found in World Road Statistics, 1967-1971, published by the International Road Federation.

The percentages of fatalities far outnumber the number of injuries as shown in Figure 2.5b. Three Arab nations leading in number of injuries are shown in Graph 2.5. Graphs 2.6a and 2.6b indicate again the extremely large number of accidents in Saudi Arabia in relation to the Arab World and the large number of fatalities in the Arab World as related to other selected non-Arab countries, also indicated by Graph 2.7. Table 2.2 presents another visualization of this problem.

As a result of the growing number of cars, road networks throughout the Arab World have increased. As indicated in Table 2.3, by 1971, 69.5 percent of Saudi Arabia's roads had been paved; however, the density of total road networks was very low, and undoubtedly related to the fact that large areas of Saudi Arabia are virtually uninhabited.

From the above figures and graphs which give an overview picture of the traffic situation in the Arab World and Saudi Arabia, certain conclusions can be reached.

TABLE 2.1
SELECTED STATISTICS FOR THE ARAB WORLD--1971.

Country	Total No. of Cars	Total No. of Trucks & Buses	Total	Total Population (in 000's) ¹	Area in Sq. Kilometers ⁴	No. of People Per Automobile ⁵
Algeria	142,806	81,725 (WMR) ¹	224,431	14,500	2,381,741	64.6
Bahrien	11,406	4,376 (AL) ²	15,782	2154	598	13.6
Iraq	71,892	23,221 (AL)	116,191	10,000	434,924	86
Jordan	23,221	4,948 (PC) ³	30,169	2,500	97,740	82.9
Kuwait	120,924	37,067 (PC)	157,991	800	16,000	5.1
Lebanon	146,348	17,473 (PC)	173,438	2,800	10,400	16
Libya	166,348	45,402 (PC)	211,750	1,900	1,759,540	9
Morocco	224,884	84,276 (WMR)	309,160	16,300	445,050	52.7
N. Yemen	10,204	2,392 (WMR)	12,596	5,900	195,000	468
Qatar	1,668	821 (AL)	2,489	7904	22,014	317
Oman	1,624	846 (AL)	2,470	6574	212,457	266
Saudi Arabia	78,292	66,476 (WMR)	144,768	6,999	2,149,690	48
S. Yemen	15,658	3,880 (AL)	19,538	1,220	287,683	62
Sudan	47,000	30,000 (PC)	77,000	15,186	2,505,813	197
Syria	30,873	18,558 (AL)	49,431	6,400	185,180	129.5
Tunisa	73,731	25,905 (WMR)	99,636	5,300	164,150	53
U.A.E. (Emirate)	16,473	4,671 (AL)	21,144	290	83,678	13.7
U.A.R. (Egypt)	170,000	30,000 (PC)	200,000	34,900	1,001,449	174.5
Totals	1,353,352	482,037	1,867,984	126,657	11,953,107	

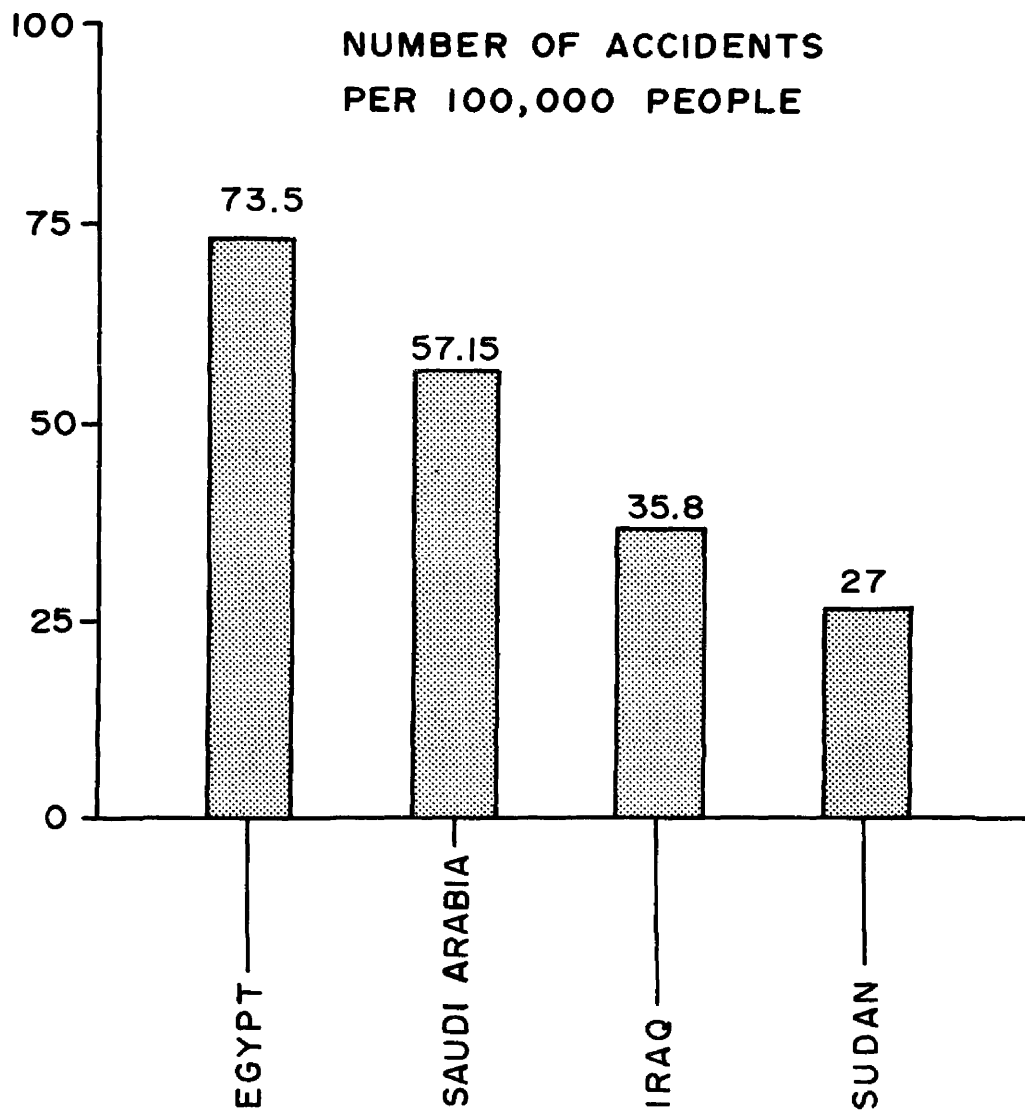
¹ World Motor Vehicle Production and Registration, 1970-71, U.S. Dept. of Commerce/Bureau of Domestic Commerce (BDC-790-08-006), March 1972, pp. 4-8 (all columns and rows marked with WMR or 1 with exceptions noted).

² Arab League--(Arab Information Center, Cairo)--personal correspondence to members of the League (all columns or rows marked with AL).

³ Personal correspondence to embassies of individual states (PC).

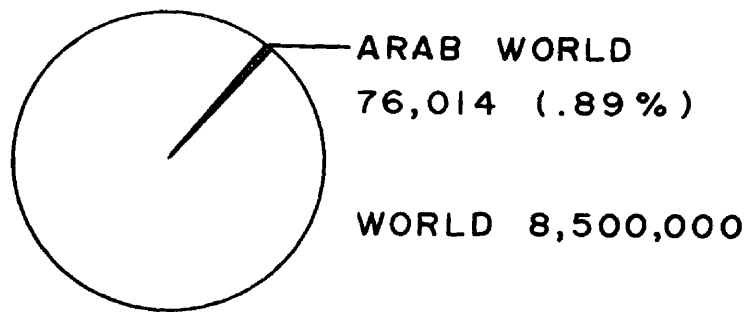
⁴ Statistical Yearbook, 1970, Statistical Office of the U.N., pp. 80-84.

⁵ Calculated from previous figures.



Graph 2.4.--The Number of Traffic Accidents per 100,000 People in Saudi Arabia Compared to Other Selected Arab Countries, 1971.

TRAFFIC INJURIES



ARAB WORLD TRAFFIC INJURIES

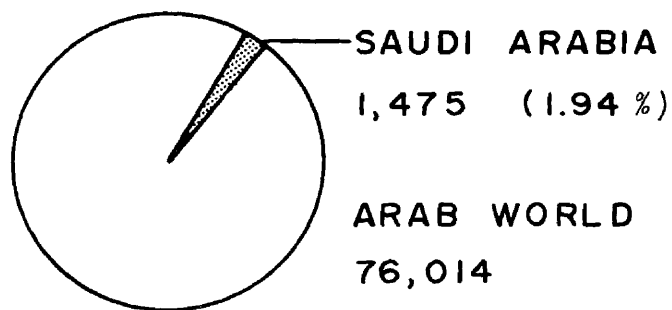
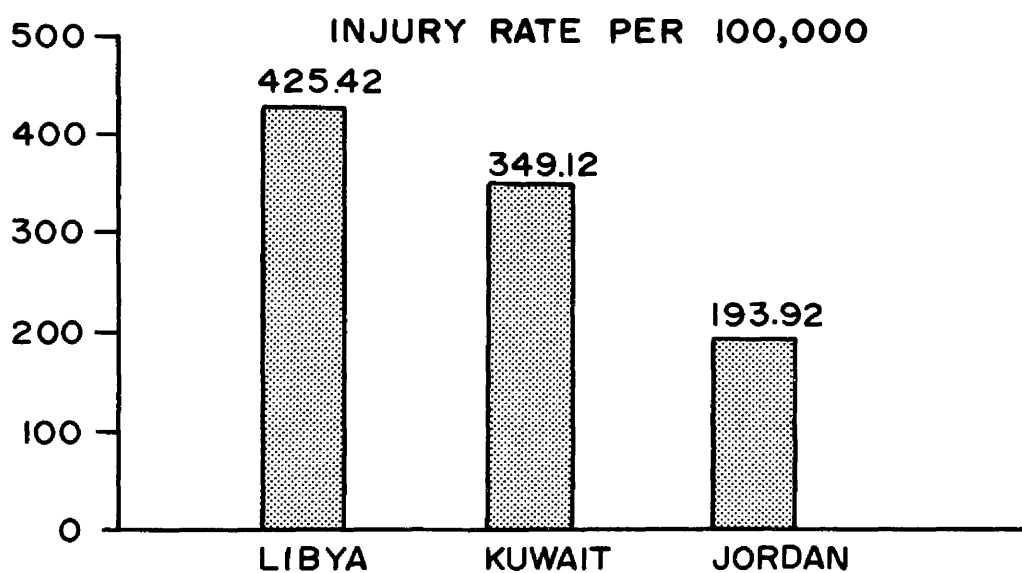
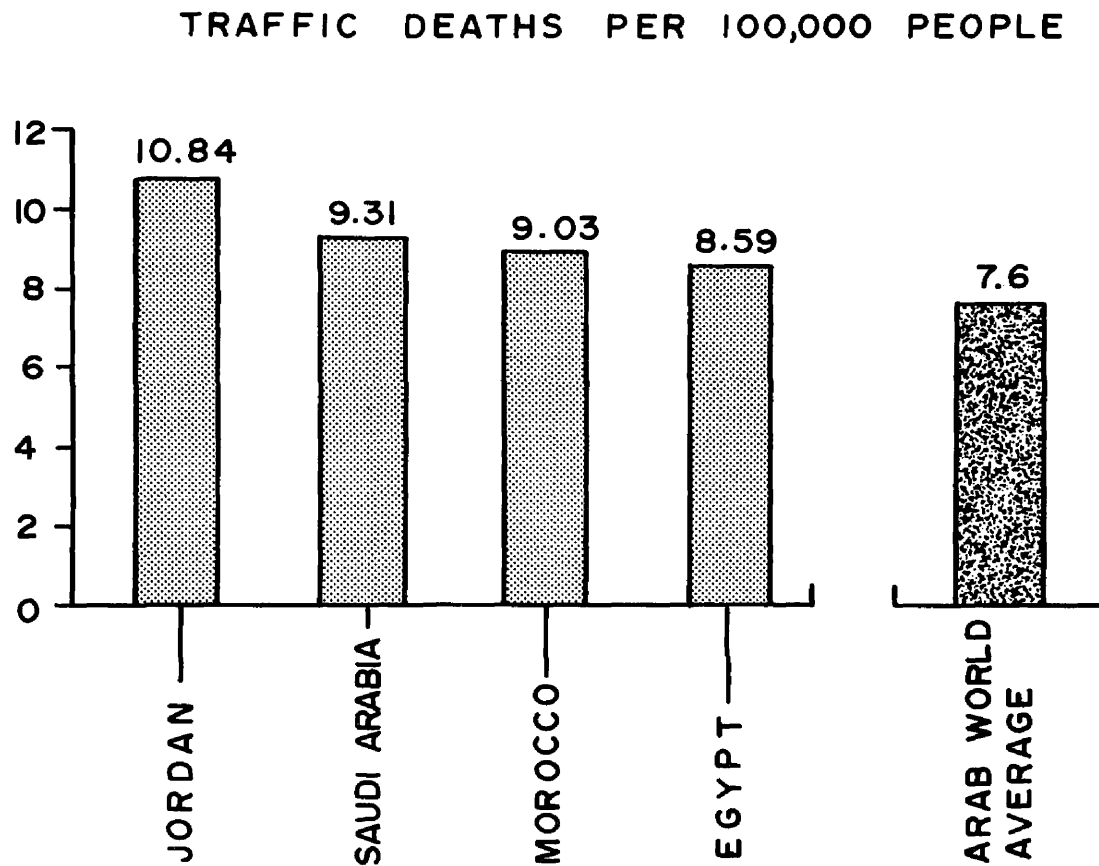


Fig. 2.5b.--Number of Traffic Injuries in the Arab World and Saudi Arabia, 1971.

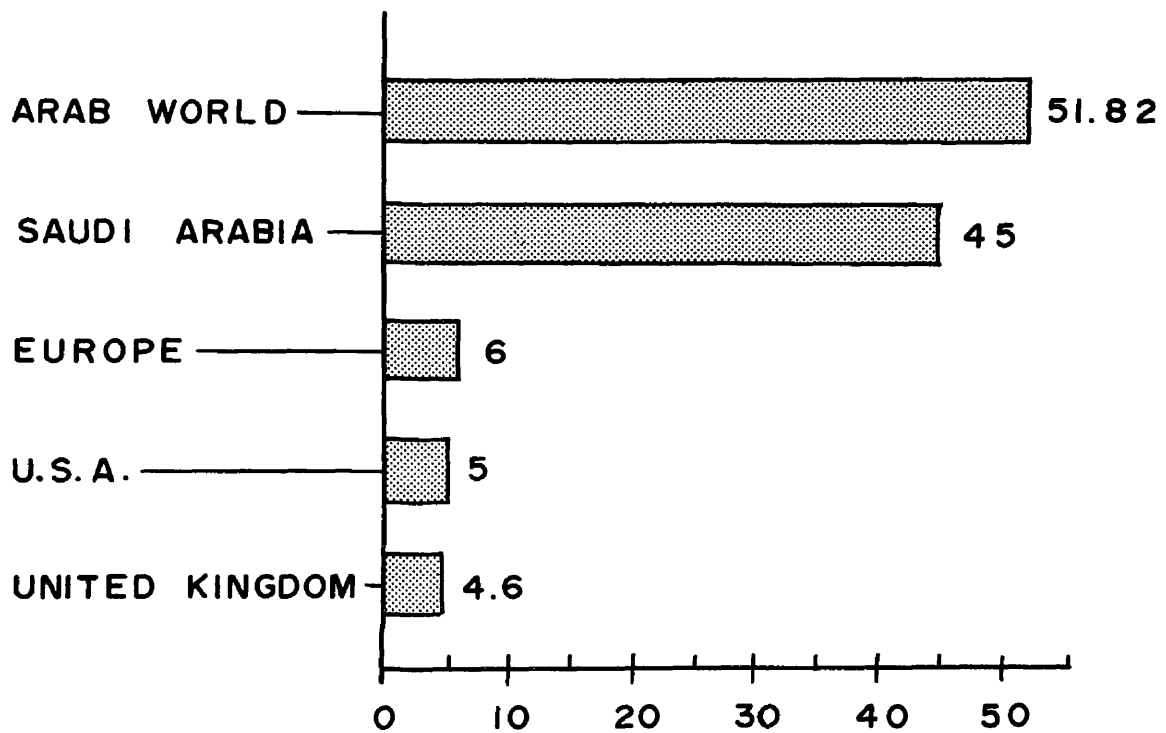


Graph 2.5.--Injury Rate per 100,000 People in Arab States Leading in Number of Injuries.

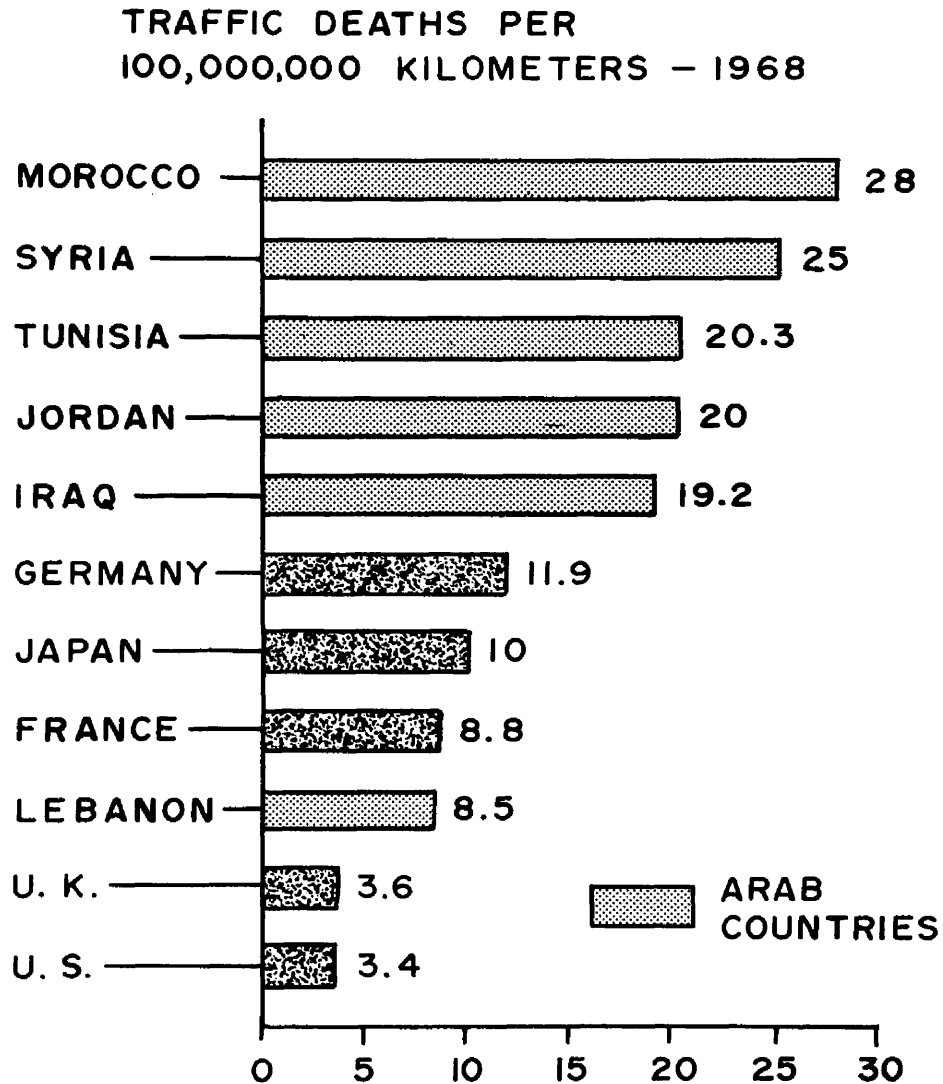


Graph 2.6a.--Traffic Deaths per 100,000 People in Saudi Arabia and Selected Arab Countries, 1971.

TRAFFIC DEATHS PER 10,000 CARS - 1971



Graph 2.6b.--Traffic Deaths per 100,000 Cars
in Saudi Arabia and Other Selected Areas of the World.



Graph 2.7.--Number of Fatalities per 100 Million Kilometers in Selected Arab States and Western Countries, 1968.

TABLE 2.2
SELECTED STATISTICS CONCERNING ACCIDENTS IN THE ARAB WORLD

Country	Total No. of Accidents	No. of Fatalities	No. of Injuries	Death Rate per 100,000	Injuries Rate per 100,000
Algeria	NA	NA	NA	NA	NA
Bahrien ¹	2,040	27	528	12.55	245.6
Iraq ¹	3,578	1,182	1,733	11.8	17.33
Jordan ¹	2,524	271	4,848	10.84	193.92
Kuwait ²	12,741	223	2,793	27.88	349.13
Lebanon ²	4,008	369	4,260	13.17	152.14
Libya ²	12,413	575	8,083	30.26	425.42
Morocco ²	15,962	1,472	20,601	9.03	126.38
N. Yemen	NA	NA	NA	NA	NA
Qatar ¹	1,073	31	380	3.92	48.1
Oman ¹	383	7	104	1.06	15.82
Saudi Arabia ²	4,000	652	1,475	9.31	21.07
S. Yemen ¹	698	20	386	1.63	31.7
Sudan ²	4,907	396	4,511	2.6	29.7
Syria ¹	6,473	824	3,511	12.88	55.32
Tunisia ²	4,071	528	5,199	9.96	98.09
U.A.E. (Emirate) ¹	2,758	103	572	35.51	197.24
U.A.R. (Egypt) ³	25,000	3,000	17,000	8.59	48.71
Totals	102,629	9,680	76,014		

Definition of Codes:

¹ AL: Arab League (Arab Information Center, Cairo) Personal correspondence to members of the League.

² (PC): Personal correspondence to embassies of individual States & Traffic Departments in their countries.

³ (A): Akbar Al-Youm dated 9/30/72, page 11, leading newspaper in Cairo, Egypt.

TABLE 2.3
ROAD NETWORKS IN KILOMETERS IN NINE ARAB STATES

Country	Year	Motorways	Main Roads	Secondary Roads	Minor Roads	Total	Percentage of Paved Roads	Density of Total Network in KMS/Sq. KM
Algeria	1971	14	18503	18950	38500	75967		0.033
Morocco	1971	14	7147	6322	11618	25087	86.0	0.057
Tunisia	1971	--	10483	5603	2181	18267	51.5	0.111
Iraq	1970	--	4792	3813	10000	18605	26	0.04
Jordan	1971	--	1717	1538	2438	5693	80.6	0.060
Kuwait	1970	--	--	--	--	1508.4	100	0.08
Lebanon	1971	33	2000	4537	830	7400	85	0.71
Saudi Arabia	1971	--	8500	4000	620	13120	69.5	0.0058
Syria	1971	63	8325	1767	1554	11709	81	0.090

Source: International Road Federation World Road Statistics 1967-1971, Edition 1972, pp. 15-20.

There is a relatively small number of persons per car and this is decreasing as the number of cars increases. On the other hand there are few roads with a large percent unpaved. Thus in the developing areas of the Arab World, traffic accidents and fatalities are even more numerous and serious than in the already developed countries. Undoubtedly, the inability of planning to keep up with the unexpected growth in number of cars has created the potential for fatal accidents.

More specifically, as discussed in the beginning of this chapter, human error is the main contributor to accident involvement and seems to be aggravated under the conditions of growth just mentioned. The information received from numerous governments of Arab states indicated that the immediate causes of accidents corresponds well to those mentioned by C. H. Lawski, Jr.²⁰ They are as follows:

. . . exceeding the speed limit or driving too fast for conditions, driving on the wrong side of the road, disregarding stop signs of signals, improperly failing to yield the right of way at intersections, attempting to pass on a

²⁰C. H. Lawski, Jr., Psychological Studies Related to Driving Speed on the Highway, Ph.D. Dissertation, Purdue University, 1940.

curve or hill a vehicle moving in the same direction, failure to signal intention to stop or turn, drinking or drugged driving, and other violations.

All of the above factors seem to be the result of four problems--inattention, indifference, incompetency, and inexperience.²¹ This study is designed to test Saudi drivers in all of these factors and to attempt to uncover the differences in personal profiles that might account for them. Chapter Three therefore deals with the research methods used in gathering this information.

²¹S. L. Beasley, et al., A Review of Current Research Related to Psychological Aspects Pertinent to Driver Education and Traffic Safety, M.S.U., College Instructors Workshop, August, 1963.

CHAPTER III

PROCEDURES

Purpose of the Chapter

This chapter is devoted to the discussion of the source of data and the procedures used in obtaining and evaluating the data. It is divided into four main categories: 1) the population sample, 2) the development of the instruments, 3) collection of data, and 4) analysis procedures.

The Sample

The population from which the sample for this study was selected consisted of those private car owners in Saudi Arabia who had obtained valid driver's licenses and were eighteen years of age or more. This group consists of government employees, businessmen, students, employees of companies, and others.

Due to the confidential nature of the records, their inaccessibility due to poor filing, the lack of street numbers or phone books, it was not possible to send a random mailed questionnaire to private car owners. As a result, data was gathered by sending three hundred questionnaires to different parts of the country, carried and administered by interviewers with full instructions as to how the questionnaire should be used. An attempt was made to randomly select respondents within each category of private car owners, that is, government employees, students, businessmen, and company employees from each of the five provinces. Interviewers located themselves in places frequented by members of each group and distributed the questionnaire to anyone within these categories who met the conditions of age and valid driver's licenses of the private type, i.e., not the driver of a taxi or other public vehicles. In the United States, the subjects of this study would be defined as having an operator's license. An attempt was also made to obtain an equal number of interviews from the various categories. However, due to the large number of government employees which our interviewers encountered, this was not possible and leads to the

speculation that government employees of various types outnumber the other categories of private car owners. Another expected problem arose with regard to obtaining an equal number of questionnaires from each of the five provinces since in the north and south roads are poor and there is a general lack of a transportation network and hence few licensed drivers. Also, many of the private car owners from these two provinces commute to and work in other provinces. This sample does not include females since they are not allowed to drive in Saudi Arabia. Of questionnaires used in the final analysis, subjects were distributed by occupation as follows: 102 government employees, 42 businessmen, 28 company employees, and 28 students. By region the distribution was 101 from the Western Province, 35 from the Eastern Province, 5 from the Northern Province, 5 from the Southern Province, and 54 from the Central Province. The total number of questionnaires upon which the final analysis was based is 200.

The Development of the Instrument

Preparation for this research started initially with a survey of related literature in the field. Many letters were sent to various international organizations related to traffic issues; however, there was apparently a dearth of research of this type being carried out in developing nations in general and the Middle East in particular. A survey of related literature in the United States and England was helpful in suggesting areas pertinent to the purpose of this study, particularly in those characteristics which would compose an adequate profile of an average driver. Other studies and a number of Ph.D. dissertations were helpful in suggesting a format for the questionnaire.

Pilot Study

After the questionnaire was translated from English to Arabic and approved by an Arab professor of Social Science, Dr. Fouzy Naggar, the questionnaire was pre-tested on 25 Saudi drivers who had just arrived in the United States

(see Appendix C for Dr. Naggar's letter of approval).

These drivers reflect different backgrounds in level of education, age, regions of origin, and driving experience. All of them were over 18 years of age and held valid driver's licenses from Saudi Arabia. Since these drivers had been in the U.S. for less than one month and none were as yet in possession of a car, they had not been exposed to driving experience in the U.S.A. nor had they taken the American driving test. These factors and their lack of knowledge of the English language assured that they were an uncontaminated sample, whose response to the questionnaire would be based completely on their knowledge resulting from driving in Saudi Arabia, not in the U.S.A.

The purpose of this pre-test was to determine or discover any misunderstandings or ambiguities in the wording of the questions. Since the questionnaire was based on the 1971 Manual of Traffic Regulations, respondents were asked to comment if they felt the question was not up to date in its assessment of the current traffic rules and regulations, which might vary slightly from the 1971 set of rules and regulations. For the same purpose, a copy of the questionnaire was also sent to the former Director of the

Traffic Department in Saudi Arabia, Brigidaire Yahya Al-Moullimi, for his comments. As a result, some corrections and revisions were made to make the questionnaire clearer and more accurate.

Before completing the final draft of the questionnaire, Arab students in class were asked to translate the Arabic version back into English to again assure that the meaning of the questions had not been altered in the translation process. When this had been successfully completed, the dissertation committee members approved the final version of the questionnaire (see Appendix B for the English version and Appendix C for the Arabic version).

Content of the Questionnaire

The questionnaire was designed in two parts. The first part consists of personal information including age, education, occupation, driving experience, urban or rural residence, purposes of car usage, means by which the driver's license was obtained, the number of kilometers driven annually, the province of residence, and socio-economic standing. This first section becomes the basis

for constructing a profile image of the average private car owner in Saudi Arabia (see questions 1-11 in Appendix B).

The second part of the questionnaire was designed to test the knowledge of Saudi drivers in three selected areas crucial to road safety.

1. Questions 3, 7, 24, 30, 32, 34, and 35 were designed to test the driver's recognition of and knowledge about international road signs, the standard type of road sign presently used in Saudi Arabia.
2. Questions 1, 2, 4, 5, 6, 8, 9, 12, 13, 14, 15, 19, 20, 25, 26, 31, 36, and 38 were designed to test the respondents' knowledge of traffic rules and regulations as stated in the vehicle code of Saudi Arabia.
3. Questions 10, 11, 16, 17, 18, 21, 22, 23, 27, 28, 29, 33, and 37 were designed to test general knowledge of safe driving principles (see Appendix B).

The scores on each area were analyzed in relation to the personal information elicited by part one of the

questionnaire, in order to prove or disprove the hypotheses and sub-hypotheses posited.

While the original questionnaire consisted of approximately 65 questions, through the process of elimination of poor or ambiguous questions, thirty-eight questions were finally used. The number of questions falling into each of the three areas constituting the second part of the questionnaire was determined by the importance that each area receives in enforcement in Saudi Arabia. It was hoped that by scrambling the questions that any cues for their answers would be eliminated.

Gathering the Data

Arrangements were made to have the questionnaire administered by a group of Saudi students who were candidates for the Masters or Ph.D. degree at Michigan State University and other universities. These students left the United States to go to Saudi Arabia for summer vacation--June-August, 1972. These eight students, from among whom there was at least one from each of the districts in Saudi Arabia, took the responsibility of administering the

questionnaire in their home district. Instructions to the interviewers were given on a separate page, including the criteria to be used in picking a respondent and the limitations within which the interviewer could interpret a question for a respondent. Instructions to the respondents were also given on the first page of the questionnaire. Also included on this first page were comments explaining the nature of the study. Respondents were encouraged to answer questions truthfully and were informed that their names were not required.

By September of 1972, 245 of the 300 questionnaires had been returned. Forty-five of the returned questionnaires were eliminated because respondents had given more than one answer in response to a single question. Another fifty-five questionnaires were returned too late to be included in the study. Thus approximately 66 percent of the questionnaires sent out were used in the final analysis, that is, 200 out of 300. Considering the inaccessibility of certain parts of the country of Saudi Arabia and the unfamiliarity of the respondents with studies of this type, the percentage used in the final analysis was considered adequate for the purpose of the study.

Analysis of Data

The study attempted to test the knowledge of private car owners in Saudi Arabia in relation to three important areas related to safe driving, i.e., knowledge of international road signs, the rules and regulations of the Saudi vehicle code, and general safety information. The main purpose was to support or disprove the hypotheses, sub-hypotheses, and assumptions mentioned in Chapter I (pp. 10-11).

A one-way analysis of variance test was used to determine the degree of the associations between the test score and accident involvement, the test score and education, and the test score and occupation. These three factors were of major interest to the researcher and since they are related to or underlie other characteristics (such as annual income) emphasis was placed on them rather than any other characteristics. The chi-square test was used to relate all of the characteristics making up the profile image to accident involvement in order to delineate those characteristics most important to accident involvement. These particular characteristics were selected on the basis

of their frequent mention in the literature on the subject (see Chapter 2). Thus the following characteristics were examined.

1. Rural or Urban Residence. Respondents were asked to answer in terms of whether the area they had resided in for most of their lives was rural or urban. No definition of rural or urban was necessary since the demarcation is clear in Saudi Arabia.
2. District of Longest Residence. There are five possible provinces where one could live: North, South, East, West, and Central.
3. Education. This was divided into the following categories: elementary, intermediate, high school, college, and no education. For some purposes no education, elementary, and intermediate were lumped together as low education and high school and college as high education.
4. Age. Age was categorized as falling from 18-29, 30-39, 40-49, 50 and above.

5. Years of Driving Experience. This was categorized into the units of 1-4, 5-9, 10-24, 25 and above.
6. Purposes of Car Usage. There were three possible answers: work and/or pleasure, as a status symbol, and private trips only.
7. Annual Number of Kilometers Driven. This was asked with regard to the respondent's estimate of the average number of kilometers driven each year of his driving experience. Responses could fall into the categories of 1,000-4,000, 5,000-9,000, 10,000-14,000, and 15,000 and above.
8. Annual Income. These categories are 2,000-5,000 Revals (\$1.00 = 4 SR), 6,000-10,000, 11,000-14,000, and 15,000 and above.
9. Occupation. These categories were: government employees, businessmen, company employees, students. Two categories were used, i.e., government employees and non-government employees.

10. Means of Obtaining Driver's License. It has been reported that in the past there was more than one means of obtaining a driver's license apart from the formal means of the oral exam and road test. Other means might fall into the categories of oral exam alone, road test alone, through a friend or through purchasing a license.

By accident involvement is meant either having ever been involved in an accident resulting in death, injuries, damage to your car or others, or no involvement at all. The first three categories are often simply referred to as accident involvement.

These two tests were considered appropriate for the data by computer consultants. A descriptive analysis is given in the following chapter.

Summary

The purposes of this chapter include:

1. A description of the questionnaire and its division into two parts (see Appendix B). The first part

consisted of 11 questions directed toward eliciting personal information. The second part consisted of 38 multiple choice questions related to three areas crucial to safe driving: 1) international road signs, 2) rules and regulations, and 3) general safety information.

2. A description of the methods used in obtaining the sample.
3. A description of how the instrument was developed.
4. A description of how the data was collected.
5. A description of the two major tests used in analyzing the data.

The following chapter will be concerned with the analysis of the data gathered for this study.

CHAPTER IV

ANALYSIS OF DATA

Preparation of Data for Statistical Analysis

This chapter was designed to analyze the data collected by questionnaires from a sample of drivers studied to determine the relationships between certain factors. Thus it was first hypothesized that:

1. The sample group over all would show a basic lack of knowledge on all parts of the test.
2. However, the overall test scores and scores on each part of the test will show a relationship to the personal attributes of individuals, especially education and occupation.

Sub-hypotheses were formulated as follows:

1. The overall scores and the scores on each part of the test are related to the accident involvement

of subjects. That is, for this sample, a low score on the test was correlated with a high rate of accident involvement and vice versa.

2. As stated above, test scores will vary according to certain personal attributes. Therefore these same personal attributes (and others) are also related to accident involvement, since test scores are related to accident involvement.

The data, collected from 200 drivers across the Saudi Arabian nation, were punched on computer cards in preparation for a one-way analysis of variance and chi-square tests. The .05 level of significance was used to reject the hypothesis of no difference. After being prepared for computer processing a Computer Control Data 3600 at Michigan State University was used.

Results of the Statistical Analysis

The one-way analysis of variance was used to examine the relationship between the test scores and occupation, education, and accident involvement (hypothesis 2 and

sub-hypothesis 1). The chi-square test was used to examine the relationship between various personal attributes and accident involvement. In this process, a profile image of the average Saudi driver was constructed.

Tables derived from the analysis of variance are presented in this chapter, while clarifications will be made based on tables of means.

In examining the relationship of education, occupation, and accident involvement to the test scores, the dependent variable was the test score and the independent variables were education, occupation, and accident involvement. Since the test was divided into three parts, the scores on each part were related to the independent variables as well as the overall score.

Table 4.1 deals with the relationship between education, high or low (see Chapter III for a definition of these terms), and international road signs. The data includes the 200 drivers tested and classifies them according to their educational level as this relates to their scores on that part of the test concerned with international road signs. One hundred eight drivers, those with a high school education or more had a mean score on this section of the

TABLE 4.1

RELATIONSHIP OF EDUCATION TO TEST SCORE
IN THE AREA OF INTERNATIONAL ROAD SIGNS

		Mean	N
Education	High (2)	4.28703704	108
	Low (1)	3.35869565	92
	Total		200

Source of Variation	MS	DF	F	P less than
	Mean Square	Degree of Freedom	Test Statistic	
Education	42.81510466	1	21.33939	0.0005*
Error	2.00638836	198		

*Significant at level 0.0005.

test of 4.287, whereas the ninety-two drivers with a junior high school education or less had a mean score of 3.358. The level of significance was high at the 0.0005 level. The data therefore indicate that drivers with a higher educational level gain a better score or are more knowledgeable

in the area of international road signs than those at lower educational levels. However, the mean score of the total group regardless of education in this area was only 3.86. Since the total possible score in this area was 7.0, the overall mean was considered as being low.

Table 4.2 indicates the results of testing the 200 subjects in the area of rules and regulations which are to be found in the Vehicle Code of Saudi Arabia adopted in 1971 and published in major newspapers throughout the country.

These results show that those with a high school education or more have a mean score of 10.75, while those with a junior high school education or less have a mean score of 8.978. The difference between the two groups was highly significant at the 0.0005 level. Drivers with a better education therefore are more knowledgeable about the rules and regulations involved in driving than are those with less education. The mean score of the whole group was 9.935 with the highest possible score being 17.

In Table 4.3 are presented results of testing the respondents in the area of general safety information.

TABLE 4.2

RELATIONSHIP OF EDUCATION TO TEST SCORE
IN THE AREA OF RULES AND REGULATIONS

		Mean	N
Education	High (2)	10.75000000	108
	Low (1)	8.97826087	92
	Total		200

Source of Variation	MS	DF	F	P less than
	Mean Square	Degree of Freedom	Test Statistic	
Education	155.94847829	1	19.89284	0.0005*
Error	7.83942688	198		

*Significant at level 0.0005.

The results indicate that the 108 drivers with a high education had a mean of 6.592 on this part of the test, whereas the 92 drivers with a low education had a mean of 5.532. While those with a high school education or more therefore scored higher than the rest of the sample, the level of significance was 0.0001.

TABLE 4.3

RELATIONSHIP OF EDUCATION TO TEST SCORE IN
THE AREA OF GENERAL SAFETY EDUCATION

		Mean	N
Education	High (2)	6.59259259	108
	Low (1)	5.53260870	92
	Total		200

Source of Variation	MS	DF	F	P less than
	Mean Square	Degree of Freedom	Test Statistic	
Education	55.81875201	1	12.07913	0.001*
Error	4.62109216	198		

*Significant at level 0.0001.

Finally, in Table 4.4 the total score, that is, the added scores of the three parts of the test, was examined with relation to education.

The mean score on the whole test for those drivers with a high school education or above was 21.629. The mean

score for those respondents with a junior high school education or less was 17.869. The analysis of data therefore clearly indicates that those with a higher educational level scored higher on the whole test than those with less education. The level of significance for this difference was 0.0005 as indicated in Table 4.4.

The mean for the 200 subjects for the whole test, that is, the three areas combined, regardless of education was 19.900. Since the test was composed of a total of 38 items, this mean was not considered as indicating adequate knowledge of the areas tested. The standard set in many nations, according to personal inquiries to the concerned officials, in the U.S.A., Great Britain, Ghana, and Pakistan, on a test such as this is that the driver answer 75 percent of the questions correctly. Since only approximately 52 percent of the questions were answered correctly, the general score of the Saudi subjects was considered as being quite low. When the mean of each area is compared to the total possible points within that area, the lowest scores seem to be in the area of international road signs. This may be explained by several factors. International road signs were introduced to the country only recently.

TABLE 4.4

RELATIONSHIP OF EDUCATION TO TOTAL TEST SCORE IN
THE AREAS OF INTERNATIONAL ROAD SIGNS, RULES AND
REGULATIONS, AND GENERAL SAFETY INFORMATION

		Mean	N
Education	High (2)	21.62962963	108
	Low (1)	17.86956522	92
	Total		200

Source of Variation	MS Mean Square	DF Degree of Freedom	F Test Statistic	P less than
Education	702.38003227	1	28.26870	0.0005*
Error	24.84656549	198		

*Significant at level 0.0005

Secondly, on many stretches of road in Saudi Arabia few signs are to be found at all. The Vehicle Code which contains most of the country's rules and regulations and discusses the signs, does not show illustrations of the signs,

and no other media source has emphasized them. Therefore, the driving population, as the results indicate, is especially uninformed with regard to these signs.

The data were also analyzed in relation to the effect of occupation which, along with education, was felt to be a major determining factor on test score.

Table 4.5 records the relationship between occupation and test score by dividing the subjects into two categories, government employees and non-government employees. For the 102 subjects classified as government employees, the mean score in the area of international road signs was 4.176, while the 98 subjects who were classified as non-government employees had a mean of 3.530. This difference was significant at the 0.002 level. While this indicates that government employees are more knowledgeable in this area, the mean for the whole group was only 3.86.

Table 4.6 indicates the effect of occupation on understanding rules and regulations as tested by the questionnaire. For the 102 government employees, the mean score in this area was 10.450. For non-government employees, the mean score was 9.397. The difference between

TABLE 4.5

RELATIONSHIP OF OCCUPATION TO TEST SCORE
IN THE AREA OF INTERNATIONAL ROAD SIGNS

		Mean	N
Occupation	Gov. (1)	4.17647059	102
	Other (2)	3.53061224	98
	Total		200

Source of Variation	MS	DF	F	P less than
	Mean Square	Degree of Freedom	Test Statistic	
Occupation	20.84830732	1	9.84650	0.002*
Error	2.11733178	198		

*Significant at level 0.002.

the two groups is significant at 0.001. Again, government employees have a higher mean than non-government employees, although the total mean was only 9.935.

TABLE 4.6

RELATIONSHIP OF OCCUPATION TO TEST SCORE
IN THE AREA OF RULES AND REGULATIONS

		Mean	N
Occupation	Gov. (2)	10.45098039	102
	Other (1)	9.39795918	98
	Total		200

Source of Variation	MS Mean Square	DF Degree of Freedom	F Test Statistic	P less than
Occupation	55.42050619	1	6.63946	0.011*
Error	8.34714391	198		

*Significant at level 0.011.

Table 4.7 reveals that the mean score in the area of general safety information for government employees was 6.529. For non-government employees, it was 5.663, the difference being significant at 0.005. While government

employees again scored higher, the mean for both groups combined was only 6.105.

When all three areas of the test were combined, the government employees had a combined mean score of 21.156. The 98 non-government employees had a combined mean score of 18.591.

As shown in Table 4.8 below, the difference between the two groups was considered significant at 0.001.

Government employees on the whole scored higher on all areas of the test. One explanation for this fact is due to the interdependence of the two variables of education and occupation. In order to receive a government job, some education, at least at the elementary level, is necessary. Government employees have more access to government pamphlets and publications of all types--this higher visibility of material concerning traffic safety might also partially explain the difference between the two groups.

The mean aggregate score for both groups for questions answered correctly on the test was 19.900, or exactly 50 percent of the 38 questions.

TABLE 4.7

RELATIONSHIP OF OCCUPATION TO TEST SCORE IN
THE AREA OF GENERAL SAFETY INFORMATION

		Mean	N
Occupation	Gov. (2)	6.52941176	102
	Other (1)	5.663266531	98
	Total		200

Source of Variation	MS Mean Square	DF Degree of Freedom	F Test Statistic	P less than
Occupation	37.49548019	1	7.95469	0.005*
Error	4.71363394	198		

*Significant at level 0.005.

In order to examine sub-hypothesis 2, the data were looked at next with regard to the relationship between the whole test and also each part of the test and the accident involvement of the respondents. The respondents were divided into two groups--those who had had one or more

TABLE 4.8

RELATIONSHIP OF OCCUPATION TO TEST SCORE IN
THE AREAS OF INTERNATIONAL ROAD SIGNS, RULES
AND REGULATIONS, AND GENERAL SAFETY INFORMATION

		Mean	N
Occupation	Gov. (2)	21.15686275	102
	Other (1)	18.59183673	98
	Total		200

Source of Variation	MS	DF	F	P less than
	Mean Square	Degree of Freedom	Test Statistic	
Occupation	328.83633453	1	12.30070	0.001*
Error	26.73314983	198		

*Significant at level 0.001.

accidents and those who had not had any accidents (see Chapter III for a definition of "accident"). Table 4.9 indicates the results of testing the two groups of drivers on their knowledge of international road signs. The 103 respondents who had reported accident involvement had a

mean score of 3.155, while the 97 drivers with no reported accidents had a mean score of 4.608.

TABLE 4.9

RELATIONSHIP OF ACCIDENT INVOLVEMENT TO
TEST SCORE IN THE AREA OF INTERNATIONAL
ROAD SIGNS

		Mean	N
Accidents	Yes (2)	3.15533981	103
	No (1)	4.60824742	97
	Total		200

Source of Variation	MS	DF	F	P less than
	Mean Square	Degree of Freedom	Test Statistic	
Accidents	105.45203482	1	62.39617	0.0005*
Error	1.69004023	198		

*Significant at level 0.0005.

The difference between the two groups is significant at 0.005. Those respondents with no accident involvement score higher than those respondents with a record of accident involvement, although the mean for both groups is low, being 3.86.

Table 4.10 shows the relationship between accident involvement and the scores on the test in relation to knowledge of safety rules and regulations.

For those drivers with an accident record, the mean score in this area was 8.728. The mean score of those drivers with no reported accidents was 11.216. The difference between the means of the two groups was significant at the 0.0005 level. The mean for all the respondents in this area was 9.935.

The respondents were also tested in the area of general safety information. Table 4.11 illustrates the results.

Those drivers who report having had an accident(s) had a mean score of 4.96 in this area. Those reporting no accidents had a mean score of 7.319, with a significance level at 0.0005. The mean score of the whole group was 6.105.

TABLE 4.10

RELATIONSHIP OF ACCIDENT INVOLVEMENT TO TEST
SCORE IN THE AREA OF RULES AND REGULATIONS

		Mean	N
Accidents	Yes (2)	8.72815534	103
	No (1)	11.21649485	97
	Total		200

Source of Variation	MS Mean Square	DF Degree of Freedom	F Test Statistic	P less than
Accidents	309.31304224	1	43.78192	0.0005*
Error	7.06485837	198		

*Significant at level 0.0005.

Combining the three areas of the test, the results are shown in Table 4.12.

When all three areas of the test were combined the mean score for those reporting accidents was 16.844. For those with no accident involvement, it was 23.144. The

TABLE 4.11

RELATIONSHIP OF ACCIDENT INVOLVEMENT TO TEST
SCORE IN THE AREA OF GENERAL SAFETY INFORMATION

		Mean	N
Accidents	Yes (2)	4.96116505	103
	No (1)	7.31958763	97
	Total		200

Source of Variation	MS Mean Square	DF Degree of Freedom	F Test Statistic	P less than
Accidents	277.85755629	1	29.39504	0.0005*
Error	3.49968406	198		

*Significant at level 0.0005.

difference was significant at 0.0005. The results indicate that drivers who have had accidents score lower than drivers who have had none. While other factors may be involved in these accident experiences, these results indicate that one factor, apparently strongly related, if not

causal, would be a lack of knowledge in the areas of international road signs, rules and regulations, and general safety information. The combined mean was 19.9000 from 38 questions or about 50 percent.

TABLE 4.12

RELATIONSHIP OF ACCIDENT INVOLVEMENT TO TEST
SCORE IN THE AREAS OF INTERNATIONAL ROAD
SIGNS, RULES AND REGULATIONS, AND
GENERAL SAFETY INFORMATION

		Mean	N
Accidents	Yes (2)	16.84466019	103
	No (1)	23.14432990	97
	Total		200

Source of Variation	MS Mean Square	DF Degree of Freedom	F Test Statistic	P less than
Accidents	1982.50605562	1	107.85461	0.0005*
Error	18.38128255	198		

*Significant at level 0.0005.

Accident Involvement and
Personal Attributes

In the following discussion, the effect of certain personal attributes on accident involvement will be examined. In this manner, sub-hypothesis 2 will be discussed and a profile image drawn of the average Saudian driver. The purposes are to ascertain who the average Saudi driver is, in terms of his age, miles driven, etc., since little information of this type exists in Saudi Arabia presently upon which safety programs could be based. Secondly, an attempt is made to examine these characteristics in terms of accident involvement, so that special prevention measures can be taken. If after repeated study, certain characteristics seem to be more related to accident involvement than others, for example, a certain age or income level, then programs might be initiated directed at those with these characteristics. Thirdly, by pursuing the second aim, the theories put forth in the "western" world are also being tested for relevance to non-western societies. For example, studies mentioned in the review of literature (see Chapter 2) discuss certain associations between age

and accident involvement. Cross-culturally, however, that association might not exist or be as strong.

The characteristics first examined was rural or urban residence.

As indicated by Table 4.13, from the sample of 200, 77 percent came from rural areas and 23 percent from urban areas. Fifty-two percent of those living in urban areas had been involved in accidents, while 51 percent of those from rural areas did. The chi-square test was 0.011, which is not significant.

Many other studies (see Chapter 1, pp. 22-23) have shown that accident involvement is higher in urban communities than in rural areas. The assumption was made in this study that those living in rural areas who had had accidents were involved in the accidents in a rural area. This assumption may have been erroneous or the results might suggest that hazardous driving conditions in the countryside balance the crowded conditions in cities making both areas almost equally accident producing.

Table 4.14 discusses age which was also considered as an important variable that might affect accident involvement.

TABLE 4.13

DISTRIBUTION OF THE SAMPLE ACCORDING TO RURAL-URBAN
RESIDENCE AND ACCIDENT INVOLVEMENT

		Rural	Urban	Total	%
Accidents	Yes (1)	79 (51%)	24 (52%)	103	52
	No (2)	75 (48%)	22 (47%)	97	49
	Total	154 (77%)	46 (23%)	200	100

Chi-square = 0.011
Nonsignificant

More drivers of the ages 40-49 (Category 3) had been involved in accidents than other groups during their lifetime--16 out of 21 or 76 percent had had accidents.

The chi-square is 5.891 which indicates that age is not a significant factor determining accident involvement.

This finding is contrary to what one would expect to find based on the literature (see Chapter II, p. 19). Accidents and conviction for traffic offenses generally decrease with increasing age. The data used for this study indicate that Category 1 (18-29 years of age), where the

highest percentage of accident involvement is expected, has about the same percent of persons involved in accidents as other age groups, and considerably fewer than those in Category 3. A possible explanation for this lies in the fact that the younger age group has more education due to widening educational opportunities in the country as a whole than in the recent past. Also, the younger age group was probably exposed to a more difficult driving test. The average age of the drivers sampled was approximately 30.

TABLE 4.14

DISTRIBUTION OF THE SAMPLE ACCORDING TO AGE OF
DRIVERS AND THEIR ACCIDENT INVOLVEMENT

		Years of Age				Total	%
		18-29	30-39	40-49	50 over		
Accidents	Yes (1)	48 (48%)	37 (49%)	16 (76%)	2 (40%)	103	52
	No (2)	51 (52%)	38 (51%)	5 (23%)	3 (60%)	97	48
	Total	99 (49%)	75 (38%)	21 (10%)	5 (3%)	200	100

Chi-square = 5.891

Nonsignificant

As presented in Table 4.15, it was felt that the purpose for which the car was used might have some bearing on accident involvement.

The group with the highest accident involvement falls under Category 3, or those who are mainly concerned with using the car for status. Sixty-seven percent of this group had been involved in accidents. This perhaps could be related to the economic well-being of this group and their ability to pay fines for violations thus resulting in their being less cautious as drivers. The chi-square test was 3.041 indicating that purposes of car usage is not significantly related to accident involvement.

Table 4.16 contains information regarding district and accident involvement. It was thought that since the country is divided geographically into five districts, that the most urbanized and modern of these, the western district, might have a lower percentage of persons involved in accidents. Enforcement is also more strict in this district.

As shown in the table, the eastern district, containing eighteen percent of the sample, had the highest number of persons involved in accidents--65 percent or

TABLE 4.15

DISTRIBUTION OF THE SAMPLE ACCORDING TO CAR USAGE
AND ACCIDENT INVOLVEMENT

		Car Usage			Total	%
		1	2	3		
Accidents	Yes (1)	12 (52%)	69 (48%)	22 (65%)	103	52
	No (2)	11 (48%)	74 (52%)	12 (35%)	97	48
	Total	23 (12%)	143 (71%)	34 (17%)	200	100

Chi-square = 3.041

Nonsignificant

Codes

1--Work only

2--Work and pleasure

3--Status and trips not related to work

23 drivers of a total of 35 drivers from this district had been involved in an accident.

However, the chi-square coefficient of 4.240 indicates that district plays no significant role in determining accident involvement.

Results of studies attempting to examine the relationship between economic level and accidents have reported

TABLE 4.16

DISTRIBUTION OF THE SAMPLE ACCORDING TO DISTRICT AND ACCIDENT INVOLVEMENT

	Geographical District					Total	%
	West	East	North	South	Central		
Yes (1)	47 (46%)	23 (65%)	3 (60%)	2 (40%)	28 (51%)	103	52
Accidents							
No (2)	54 (50%)	12 (34%)	2 (40%)	3 (60%)	26 (48%)	97	48
Total	101 (50%)	35 (18%)	5 (2%)	5 (3%)	54 (27%)	200	100

Chi-square = 4.240
Nonsignificant

contradictory results, some stating a relationship between low socio-economic status and accidents and others finding no relationship at all.

According to Table 4.17, the majority of drivers have an income falling between 6,000 and 10,000 Rihadhs. The highest number of persons involved in accidents occurred for those people with an income of between 2,000 and 5,000 Riyadhhs. The chi-square of 4.895 indicates that income has no significance in relation to accident involvement. These findings are similar to the ENO study findings which shows no significant relationship between socio-economic status and accidents.¹

Table 4.18 considers as one measurement of driver experience the number of kilometers a driver estimated that he had driven annually. Some studies (see Chapter II, p. 20) have claimed that accident involvement increases the more mileage driven.

The majority of drivers in this sample drive between 5,000 and 9,000 kilometers a year. This is also the group which has the largest number of people involved in

¹H. Stock and M. K. Moran, "Accident Repeaters and Chronic Violators," in ENO Foundation, The Motor Vehicle Driver, His Nature and Improvement (Saugatuck, Conn.: ENO Foundation, 1949), p. 53.

TABLE 4.17

DISTRIBUTION OF THE SAMPLE ACCORDING TO INCOME AND ACCIDENT INVOLVEMENT

	Income (in 000's)*					Total %
	0-1	2-5	6-10	11-14	15+	
Yes (1)	12 (44%)	22 (64%)	29 (55%)	18 (46%)	22 (44%)	103 52
Accidents						
No (2)	14 (56%)	12 (35%)	24 (44%)	21 (53%)	26 (56%)	97 48
Total	26 (13%)	34 (17%)	53 (26%)	39 (20%)	48 (24%)	200 100
Chi-square at level 4.895 Nonsignificant						

*\$1.00 = 4 Saudi Riyals (before the devaluation of the dollar).

accidents in this sample. However, the number of kilometers driven has no significance in relation to accident involvement according to the chi-square test.

TABLE 4.18

DISTRIBUTION OF THE SAMPLE ACCORDING TO KILOMETERS
DRIVEN ANNUALLY AND ACCIDENT INVOLVEMENT

		Kilometers Driven (in Thousands)				Total	%
		1-4	5-9	10-14	15+		
Accidents	Yes (1)	29 (53%)	35 (57%)	23 (44%)	16 (47%)	103	52
	No (2)	25 (46%)	26 (42%)	29 (55%)	17 (53%)	97	48
	Total	54 (27%)	61 (30%)	52 (27%)	33 (16%)	200	100

Chi-square at level 2.317
Nonsignificant

Table 4.19 reveals the relationship between the several means of obtaining a license in Saudi Arabia. The use of illegal means might indicate that the person feels he is not capable of passing an interview or road test. If he is not capable he might be expected to have more accidents.

TABLE 4.19

DISTRIBUTION OF THE SAMPLE ACCORDING TO MEANS OF
OBTAINING LICENSES AND ACCIDENT INVOLVEMENT

	License					Total	%
	1	2	3	4	5		
Yes (1)	5 (83%)	33 (64%)	53 (42%)	11 (68%)	1 (100%)	103	52
Accidents							
No (2)	1 (16%)	18 (35%)	73 (57%)	5 (31%)	0 (0%)	97	48
Total	6 (3%)	51 (25%)	126 (63%)	16 (8%)	1 (1%)	200	100

Chi-square = 13.335
Nonsignificant

Codes

- 1--I passed the interview only
- 2--I passed the road test only
- 3--I passed both the interview and the road test
- 4--I got it through a friend
- 5--I purchased a driver's license

The majority of drivers in this sample passed both the interview and the road test. Those who passed the interview alone tended to be involved more in accidents, closely followed by those who got their licenses through friends; however, the sample is not big enough to show significance at any level.

Table 4.20 contains data concerning the years of driving experience and accident involvement. Most of the drivers in this sample, 40 percent, fall between having one to four years of driving experience. Those drivers being the most involved in accidents are those who have had more than 25 years of driving experience, although the total number in the sample is very small. However, overall results show no significant difference among groups in accident involvement.

Table 4.21 supports the expectation that government employees would not only achieve a better score on the test as discussed above (see Chapter I, p. 11), but also would have fewer accidents than other types of employees. This expectation was based on the fact that government employees generally are required to have at least an elementary school education and most have more. Also, exposure to

TABLE 4.20

DISTRIBUTION OF THE SAMPLE ACCORDING TO DRIVING
EXPERIENCE AND ACCIDENT INVOLVEMENT

		Years Driving Experience				Total	%
		1-4	5-9	10-24	25+		
Accidents	Yes (1)	35 (43%)	37 (52%)	26 (61%)	5 (66%)	102	52
	No (2)	45 (56%)	34 (47%)	16 (38%)	2 (32%)	98	48
	Total	80 (40%)	71 (36%)	42 (21%)	7 (3%)	200	100

Chi-square at level 4.301
Nonsignificant

news bulletins and other official documents is high in government offices.

The majority of the group are government employees. More company employees and businessmen in this sample seem to be involved in accidents than any other group.

The results were significant at the 0.0020 level. Thus the government employees scored higher on the test and also have fewer accidents than other occupational categories, thus, supporting sub-hypothesis two that occupation is related to accident involvement.

TABLE 4.21

DISTRIBUTION OF THE SAMPLE ACCORDING TO OCCUPATION
AND ACCIDENT INVOLVEMENT

		Occupation				Total	%
		1	2	3	4		
Accidents	Yes (1)	43 (42%)	26 (62%)	22 (78%)	12 (41%)	102	52
	No (2)	59 (57%)	16 (38%)	7 (21%)	15 (60%)	97	48
	Total	102 (51%)	42 (22%)	29 (14%)	27 (13%)	200	100

*Significant at level 0.0020.

Codes

- 1--Government employee
- 2--Businessman
- 3--Company employee
- 4--Student

Table 4.22 reveals the relationship between education and test score. Education is perhaps the most important factor since it underlies occupational differences. Education implies literacy which allows the driver to read the vehicle code (published in major newspapers) and have more access in general to driver safety information.

More of those persons with either elementary education or no education had been involved in accidents than

TABLE 4.22

DISTRIBUTION OF THE SAMPLE ACCORDING TO EDUCATION AND ACCIDENT INVOLVEMENT

	Education					Total	%
	1	2	3	4	5		
Yes (1)	18 (64%)	29 (65%)	22 (44%)	23 (37%)	11 (57%)	103	52
Accidents							
No (2)	10 (35%)	16 (34%)	28 (56%)	35 (62%)	8 (42%)	97	48
Total	28 (14%)	45 (22%)	50 (25%)	58 (29%)	19 (10%)	200	100

*Significant at level 0.0245.

Codes

- 1--Elementary Education
- 2--Intermediate Education
- 3--High School Education
- 4--College Education
- 5--None

groups with more education. These results were significant at 0.0245 using the chi-square test. This supports the hypothesis that certain personal attributes are related to accident involvement, namely education and occupation which were also related significantly to test scores.

These results also substantiate other studies (see Chapter II, p. 22) which have stated that non-repeaters were better informed than repeaters as measured by various standard tests. Other studies have shown a significant relationship between educational level and driving record--poor records being found to correspond to lower educational levels.

Summary

In this chapter data gathered for the purpose of providing an understanding of factors related to safe driving were presented. Analysis of variance techniques were used to determine the relationship between education and test score, occupation and test score, and accident or non-accident involvement with test score. Chi-square tests

were used to construct a profile image of the private car owner in Saudi Arabia and to examine the relationship between the characteristics making up this profile image, such as, age, occupation, education, purposes of car usage, driving experience, kilometers driven, urban or rural residence, means of obtaining licenses, income, and geographical location, and accident involvement.

The analysis of data presented in this chapter revealed that there was an overall lack of knowledge on all parts of the test as shown in Table 4.4. The mean score of the total sample on all parts of the test was 19.9 out of 38 questions. This is lower than the 75 percent score required on many standard tests. Hypothesis 1, therefore, was not rejected on the basis of the mean score shown in Table 4.4.

Hypothesis 2 also was not rejected on the grounds that education was significantly related to the test score at the 0.0005 level as shown in Table 4.4. There was also a significant relationship between test score and occupation at the 0.001 level as shown in Table 4.8.

Therefore the major hypotheses were not rejected. The average Saudi driver indicated a lack of knowledge

needed for safe driving, but this was significantly related to his occupational position and level of education. Government employees and those with a high school education or above (this category includes many government employees as a certain education is a requirement for the position) make the safest drivers. Those who show the lowest test scores have either an education below high school level or are businessmen or company employees. Businessmen are usually those operating small private businesses for which no educational qualifications are essential. Many company employees hold manual jobs requiring little education. Licensing tests and training program should emphasize the latter groups.

Sub-hypothesis 1 was not rejected since there was a significant relationship between accident involvement and test score at the 0.0005 level as shown in Table 4.12.

Sub-hypothesis 2 was rejected for certain characteristics. Age, purpose of car usage, driving experience, kilometers driven, urban or rural residence, income, means of obtaining a license, and geographical location were not significantly related to accident involvement. Education and occupation were significantly related to accident

involvement, as expected from their relationship to the test score.

The chi-square tests on the data revealed the characteristics of the average Saudi private car owner (operator). These characteristics have been described and presented in table form throughout this chapter and the major characteristics composing the profile image are summarized below.

The data reveal that the majority of private car owners in Saudi Arabia have lived longest in rural areas, as shown in Table 4.13. The average age is approximately 30 years old, as shown in Table 4.14. The average driver's purpose of using the car is primarily for work and pleasure, as shown in Table 4.15. The majority of drivers had lived in the Western province or district most of their lives, as shown in Table 4.16. The Western province is urbanizing rapidly. The average income is approximately 9,500 Saudi Riyals (equivalent to \$2375) a year, as shown in Table 4.17. The average distance traveled is over 9000 kilometers every year, equivalent to 5,555 miles--Table 4.18. The majority obtained their driver's license by passing the oral interview and the road test, as shown in

Table 4.19. The average driver has only about five years of driving experience (see Table 4.20). The majority work as government employees (see Table 4.21). The average driver has an education slightly above the intermediate (junior high school) level (see Table 4.22). Slightly more than one out of two drivers have been involved in accidents (see Table 4.13).

CHAPTER V
SUMMARY OF FINDINGS, CONCLUSIONS,
AND RECOMMENDATIONS

Summary

Statement of the Problem

A modern accident reporting system helps policy-makers plan and organize future programs. These programs should be based on complete information about the average driver such as his age, education, occupation, past accident involvement, and the other human factors involved such as place of residence, purpose of car usage, and others. In the developing nations including Saudi Arabia, the accident reporting system is not as yet well enough developed to meet these requirements, subsequently the policymaker experiences many difficulties in planning successful programs. Therefore this study was undertaken with two objectives, the first being to compile basic statistics concerning various aspects of the traffic situation in the Arab

nation in relation to the world and Saudi Arabia in relation to the Arab nations, utilizing such information as the number of fatalities, number of injuries, number of cars, and other related factors with an emphasis on Saudi Arabia. The second purpose was to examine the knowledge of a sample of a growing universe--the private car owner and operator. A profile image of the average private car owner was constructed.

Summary of Statistics Concerning the International Traffic Problem

In fulfilling the first objective of the study, the author reviewed various traffic statistics and compiled the following information.

The Arab nations compose 8.8 percent of the world land area and Saudi Arabia composes 18 percent of the land area of the Arab World. The population of the Arab World composes 3.48 percent of that of the world, while Saudi Arabia composes 5.53 percent of the population of the Arab World.

The Arab World contains less than 1 percent of the total cars of the world, while Saudi Arabia contains 7.74

percent of the total cars of the Arab World. There is one car per 48 Saudi citizens, as opposed to one car per every 68 persons in the Arab World.

Fatalities due to car accidents per year in the Arab World make up 4.72 percent of the world traffic fatalities, while Saudi Arabia has 6.72 percent of those within the Arab World.

The Arab World has a high percent of the world's fatalities and Saudi Arabia has a high percent of the Arab World's fatalities. However, injuries outnumber the fatalities in both cases.

The three Arab states which lead in number of traffic fatalities per 100,000 persons are the U.A.E., Libya, and Kuwait. These three countries have some of the highest fatality rates in the world. While Saudi Arabia's number of fatalities is high relative to its number of cars and population size, it does not compare with the three above mentioned Arab countries (see Graph 2.3, Chapter II, p. 37).

Leading in traffic injuries within the Arab World are Libya, Kuwait, and Jordan. Saudi Arabia again has considerably fewer injuries. As mentioned, this is probably an artifact of the recording techniques.

The Arab World has 51.82 fatalities per 10,000 cars, while Saudi Arabia has 45 fatalities. These figures run very high relative to three of the most technologically advanced areas of the world. Thus Europe has six fatalities per 10,000 cars, the United Kingdom has 4.6 fatalities per 10,000 cars, and the United States has 5.0 fatalities per 10,000 cars (see Graph 2.6b, Chapter II, p. 44).

These figures indicate that the problems of today, already serious, may take on even more serious overtones in the future, and thus require concentrated effort to stem the onslaught. This could be accomplished at least in part by making the public aware of these statistics and impressing upon them the idea that accidents are not "accidental" or fortuitous, but result largely from human failure. A social responsibility must be assumed to prevent accidents to self and others.

Findings

To accomplish the second goal of this paper, various hypotheses and sub-hypotheses were examined.

The first hypothesis, which concerned knowledge of subjects in three areas related to safe driving as measured by a questionnaire, was not rejected on the grounds that the sample showed a lack of knowledge on all parts of the test as evaluated by standard criteria. Thus the combined mean for all three parts of the test was 19.9 out of 38 questions.

The second hypothesis, which concerned the relation of education and occupation to test score, was also not rejected on the grounds that the overall test score and the score on each part of the test did show a relationship to education and occupation.

The first sub-hypothesis, which concerned the relationship between test score and accident involvement, was not rejected on the grounds that a low score on the test was correlated with accident involvement and high scores were correlated with less accident involvement.

The second sub-hypothesis, which concerned the relation of accident involvement and certain personal attributes, was both rejected in part and supported in part. Our data showed that there was no relationship between accident involvement and rural-urban residence, age,

purposes of car usage, geographical location, income, kilometers driven, means of obtaining driver's license, and years of driving experience. There was a relationship between accident involvement and occupation and education.

Rural-Urban Residence

There was a low level of association (0.011) between rural-urban residence and accident involvement. However, a higher percentage of drivers from urban areas tended to have been involved in accidents than those from rural areas (see Table 4.13).

Age

A low level of association (5.891) was found between age and accident involvement. Those between the ages of 40 and 49 answered positively to the question concerning accident involvement more frequently than those in other age categories, although this association was not high enough to be significant (see Table 4.14).

Purposes of Car Usage

The association between purposes of using a car and accident involvement was low (3.041). Those respondents who indicated that they used a car mainly as a status symbol more frequently reported having been involved in an accident than those in other categories. However, this group was not large enough to test the significance of this factor (see Table 4.15).

Geographical Location

Whereas a low level of association (4.240) was found between geographical location and accident involvement, those respondents living in the eastern district tended to have answered more frequently that they had been involved in accidents than respondents from other areas (see Table 4.16).

Income

A low level of association (4.895) was found between yearly income and accident involvement. Those with

an income falling between 2000-5000 SR tended to indicate more frequently that they had been involved in accidents than did other groups. The low level of significance of those findings is surprising, however, since it was expected that income, being associated with occupation and education which have been shown to be two major factors related to accident involvement, would also be related. However, these data show little association (see Table 4.17).

Kilometers Driven

A low level of association (2.317) was shown to exist between the number of kilometers driven yearly and accident involvement. Those driving between 5,000 and 7,000 kilometers yearly tended to have had more accident involvement as measured by our questionnaire. However, the association is not strong enough to be significant (see Table 4.18).

The Means of Obtaining a Driver's License

There was a low level of association (13.335) between the means used in obtaining a driver's license and

accident involvement. Those respondents who had only successfully completed an oral interview (but not a written or actual driving test) tended to more frequently have had an accident experience. However, the number of respondents in this group was too small for the association to be significant (see Table 4.19).

Driving Experience

A low level of association (4.031) was found between years of driving experience and accident involvement, although those who had been driving the longest more frequently had had an accident experience (see Table 4.20).

Occupation

There was a high degree of association (0.0020) between occupation and accident involvement. Government employees tended to claim less accident involvement than those in other occupations (see Table 4.21).

Education

A high degree of association (0.0245) existed between education and accident involvement. Drivers with a high education (high school and above) had been involved in accidents less frequently than those with a lower level of education (see Table 4.22).

The Profile Image

Through the use of the chi-square tests, which revealed the relationship between accident involvement and certain personal characteristics, a profile image was also constructed as indicated in the following table.

<u>Characteristics</u>	<u>The Average Private Car Owner</u> (approximate figures)
Area	Rural
Age	30 years old
Purpose of Car Usage	Work and pleasure
Geographical Location	Western province
Income	6,000-10,000 Saudi Riyals (\$1,500-\$2,500)
Kilometers Driven Annually	5,000-9,000 kilometers
Means used in Obtaining Driver's License	Passing the Interview and Road Test
Years of Driving Experience	5 years
Occupation	Government employee
Education	Junior high school
Accident Involvement	50% involved in accidents

Seventy-seven percent of the drivers sampled had resided for most of their lives in rural areas. The majority of the sample was approximately thirty years of age and used the car mainly for purposes of work and pleasure. About half of the sample had lived longest in the Western District or Province. The majority had an income of between 6,000-10,000 Saudi Riyals. The majority of drivers had driven approximately 9,000 kilometers per year. One hundred twenty-six drivers out of the sample of 200 had received their driver's license after passing the interview and road test. Seventy-six percent of the sample had been driving between one and nine years. Over 50 percent were government employees. The mean education was between junior high school and high school level. About one out of two drivers in this sample had been involved in an accident.

Conclusions and Recommendations

There is a general lack of emphasis placed on driver education as an important area in Saudi Arabia. At the moment, there are no driver's safety programs

offered at any educational level. At the same time, there are few qualified people concerned with this area to disseminate information at licensing bureaus, schools, or through the media. Subsequently the new applicants for licenses are judged on how well they handle a car during the road test, rather than their actual knowledge of signs, rules, and regulations pertaining to safe driving.

There also has been a lack of studies concerning drivers in Saudi Arabia. This study is the first study dealing with driving problems in Saudi Arabia, although it is limited in scope and population represented. Therefore, many more studies should be directed toward this area, with larger samples and more variables considered, such as the effect of daytime and nighttime driving on accident involvement. Similar studies should be conducted concerning taxi drivers, bus drivers, and truck drivers, i.e., professional drivers. Comparisons could then be made between private car owners and professional drivers. Studies should begin to be conducted on the contribution of the vehicle and road conditions to accident involvement. Physiological and psychological factors which lead to traffic accidents in Saudi Arabia should also be studied.

Education and Occupation as Related
to the Test Score

Occupation and education were the two variables most related to both test score and accident involvement. These two variables are highly interdependent since a certain amount of education is required to enter certain occupations.

Education

Those with a high school education or more scored significantly higher on the test than did those with less education. It appears that a long exposure to schooling and the consequent facility of reading and writing might increase awareness of information concerning safe driving.

In the Kingdom of Saudi Arabia, some of this information is usually contained in newspapers. Their exposure to test taking situations might also have affected their score on the questionnaire designed for this study. In terms of this finding, it would seem advisable to try especially to reach those who do not go on to high school either through a school program or through pamphlets or

discussion groups at the licensing bureau at the time of application for a license.

Occupation

Most government employees must have at least an elementary education to obtain their jobs. Their high score on the test relative to other occupations probably reflects both their educational level and their higher access to information which is made available at their place of work. These same employees are likely to be more aware of their actions and their effects due to the status of their jobs. They have also been exposed to more test taking situations, which might have effected their score on the questionnaire used in this study. Their socio-economic status allows them to travel which raises their awareness of various traffic situations. While continuing to display pertinent information in government offices, other occupations must be emphasized in any attempt at distributing information. Since these occupations appear to be less well informed, it seems advisable to make special attempts to reach them through discussion or distribution of literature at their places of work or other gathering places.

Accident Involvement and
Personal Attributes

This is the first study in the author's knowledge concerned with the average private car owner in Saudi Arabia. The above mentioned findings cannot be taken as conclusive due to the limitations of the study. There was a lack of previous literature on the topic to aid in the formation of assumptions and speculations. Other limitations beset the study. There was some difficulty in obtaining the same number of subjects regionally since the south and the north are particularly inaccessible. Government employees, since they are financially capable of car ownership, outnumber other respondents. Due to the lack of basic population statistics, such as a classification of those with driver's licenses by occupation, a proportionate distribution of questionnaires was impossible. Also some of the questions were probably answered conservatively. Apart from sampling difficulties, the size of the sample was limited by time and available interviewers. Many drivers are unexperienced with this type of study and this may have influenced their answers.

Another large group of important drivers in Saudi Arabia are the professional drivers. Other studies should be directed toward learning more about this group and comparing it to the private car owners.

However, despite these limitations, this study indicates in broad outline some general information concerning the average private car owner and operator and his knowledge and as such can be used for planning future programs.

In planning for any safety program it is important to know the kind of driver that you are dealing with. This was the purpose of constructing a profile image. Thus certain characteristics become important not only as they are related to accident involvement, but also as they form a basis for safety programs.

Rural-Urban Residence

Since the majority of drivers have lived longest in rural areas, programs should be oriented toward helping them cope with urban driving situations, since many will leave the rural areas to seek jobs in the cities. Since

both rural and urban drivers are almost equally involved in accidents, programs are needed equally in both areas.

Age

Age is important in determining the type of approach or message used in communicating with drivers. A message carried over the media should be differently designed for those who are 60 years old as opposed to the 18 year old. Since the mean age for the sample was about 30 years old, this implies that most men will be married with children. Message to this group should emphasize their need to protect themselves and others as heads of families, and be otherwise suitably constructed for this age group. The age group of 40-49 have the most accidents in this sample. Whereas, it might be expected that younger drivers would have had most accident involvement, education probably becomes an intervening variable, since the young are better educated than their elders.

Purposes of Car Usage

Knowing for what purposes a car is being used will help traffic officials make decisions about punitive

measures, such as suspension and revocation of driver's licenses. Since the majority of drivers (71 percent) were using their cars for purposes of work and pleasure, revocation or suspension of license might cause many men to miss work and cause hardship to their families. In these cases, rehabilitation programs might be a more effective means of sanctioning a driver. Although there was no significant difference between groups in the sample who used their cars for different purposes, those who used it mainly for status purposes had more accidents than other groups. This might be due to their small dependence on the car as necessary to a job and might imply an attitude of carelessness.

District

If one geographical area of the country contains the majority of drivers, enforcement agencies should be aware of this in order to maximize their manpower efficiency. Educationally, this area should also be emphasized. In this sample, the Western district is such an area. The majority of drivers having had an accident come from the Eastern district for this sample. Increased

enforcement and educational efforts should be made in this area.

Income

Any monetary fine should be based on the average income of the driver, so that excessive fines will be avoided. Since the average income for the group studied is high, fines might constitute appropriate punitive measures. Those with an income of between 2,000-5,000 Riyals have been involved in accidents to a greater extent than other groups; although the difference between groups was nonsignificant and the group with the lowest income did not have the highest number of accidents. Further studies need to be conducted in this area.

Kilometers Driven

Having an approximate idea of the kilometers driven by the average driver annually, will help planners to extend those programs concerned with road upkeep, sign placement, marking, etc. beyond the local level. Although the data is nonsignificant, it indicates that those driving

more kilometers a year have fewer accidents than do those who drive from five to nine thousand kilometers a year. One might expect that increased exposure would be more accident producing, but these findings show the reverse. The area in which one drives might be an intervening variable here, since in urban areas there is higher risk. If further studies show these results to be stable, then messages to the public should emphasize that one need not drive lengthy distances in order to be involved in accidents.

Means of Obtaining Licenses

If planners of safety programs find that many drivers have obtained a license illegally, then action must be taken to correct the potential existence of drivers using the highways who have little safety knowledge. Based on this sample, the majority of drivers have taken both the interview and road test and it is this group which was least involved in accidents. This implies that both the interview and the road test are necessary to prepare an individual to receive a driver's license and a licensing

bureau should take the responsibility in seeing that both are passed.

Driving Experience

Drivers who have been driving for many years may have formed certain attitudes toward and patterns of driving, which will determine the type of program designed. For example, such a program would emphasize changing attitudes, rather than teaching skill and basic information. Based on this sample, the majority of drivers have only been driving approximately five years. Emphasis should be placed in any instructional programs on teaching skill and basic information. The greater the number of years of experience, the more accident involvement. This leads to the conclusion that the longer one has driven and the longer one has been exposed to traffic situations, the more likely it is that one will be involved in accidents.

Occupation

Knowing the occupation of drivers will help the planner locate them and enable him to distribute

information in appropriate locations. In rehabilitation programs emphasis should be directed toward those occupational groups who have been shown by studies to be less knowledgeable about safe driving or to have been more frequently involved in accidents. Occupation may also determine the type of driver's test given, for example, taxi drivers, bus drivers, truck drivers may be required to be tested more rigidly due to their heavier driving responsibilities. Since the majority of private car owners are government employees, many drivers can be contacted through government offices. However, businessmen and company employees had greater accident involvement than either government employees and students, so that means must be found to reach them. Education is probably an underlying variable here, since both students and government employees have a higher education than businessmen and company employees. Occupation leads to significant differences between groups in terms of accident involvement. Those with occupations which give them little access to information and for which little education is required should be informed about safe driving through the media and special programs.

Education

A necessary element in any successful message is knowledge of the educational level of the receiver. If the message is beyond the level of comprehension of the receivers, the message will break down. If the message is too elementary, it will not be effective. Educational level also determines the type of driver's test which officials are able to administer. For example, an oral exam is necessary for those who are illiterate. Since the data show that those having the most accident involvement have either no education or at most an intermediate education, programs should be directed toward these groups in particular. This study indicates a significant relationship between education and accident involvement.

Knowledge of accident involvement determines the need for a program and its size and type. For example, in Saudi Arabia where accident involvement includes approximately one out of two drivers and fatalities are high, the program should emphasize these factors. A high number of accidents implies a need for restructuring the traffic department.

Discussion

Suggested Safety Program

After reviewing several safety programs used in the United States and several other countries, a combined model was developed which, it is felt, could be usefully applied in Saudi Arabia.

Police functions in Saudi Arabia are combined under the Ministry of the Interior and are practiced by several agencies directed by the Minister of the Interior. The most important of these agencies is the Public Security Department. Together with this agency are several others; the General Department of Civil Defense, the General Department of Guards and Border Guards, the General Department of Investigation, the General Department of Passports and Nationalities, the Police College and National Center of International Criminal Police Organization.

Under the Public Security Department there are several sub-departments; the General Directorate of Identification and the General Directorate of Emergency and Traffic.

The General Directorate of Emergency and Traffic has its main headquarters in Riyadh, the capital city of the Kingdom of Saudi Arabia, with major and minor departments in cities of varying sizes. These departments are responsible for establishing traffic safety programs throughout the country and are periodically evaluated. The high rate of accident involvement among the country's drivers, however, suggests that these departments are not carrying out their responsibilities efficiently. This may be due in part to duplication of functions among these departments, lack of unification and delimitation of responsibilities. Thus the following steps should be taken:

1. Distinction of Responsibilities--Each department should have a written guideline which explains the duties and responsibilities of both the department and individuals with the department.
2. Delimitation--There should be definite limitations or boundaries on the authority and responsibilities of the departments and individuals within the department, i.e., responsibilities for certain duties should be clearly placed on specific individuals.
3. Unification--Under the traffic department in the capital city, are the many sub-divisions in the various large and small cities throughout the country. Many of these are duplicating their work efforts. These sub-departments should be better integrated and should file reports periodically to one major department.

The application of the three principles mentioned above would give the department of traffic a stronger public image and hence more public support.

With this in mind, the following model in Figure 5 was devised which contains the most important elements needed in establishing a traffic safety program and accident prevention.

Objectives

Traffic accidents today are among the leading causes of death in many parts of the world. Already high in industrialized nations, the problem is beginning to become serious in the developing nations also, such as, U.A.E., Kuwait, and Libya. An increase in human suffering and economical loss is the inevitable result.

In Saudi Arabia in 1971, about 652 persons lost their lives and 1475 were injured, many seriously. These accidents will continue as the price for modernization as the number of cars rapidly increase in the country.

In The Psychology of Traffic, A. R. Lauer calculates that one meets an accident situation about once

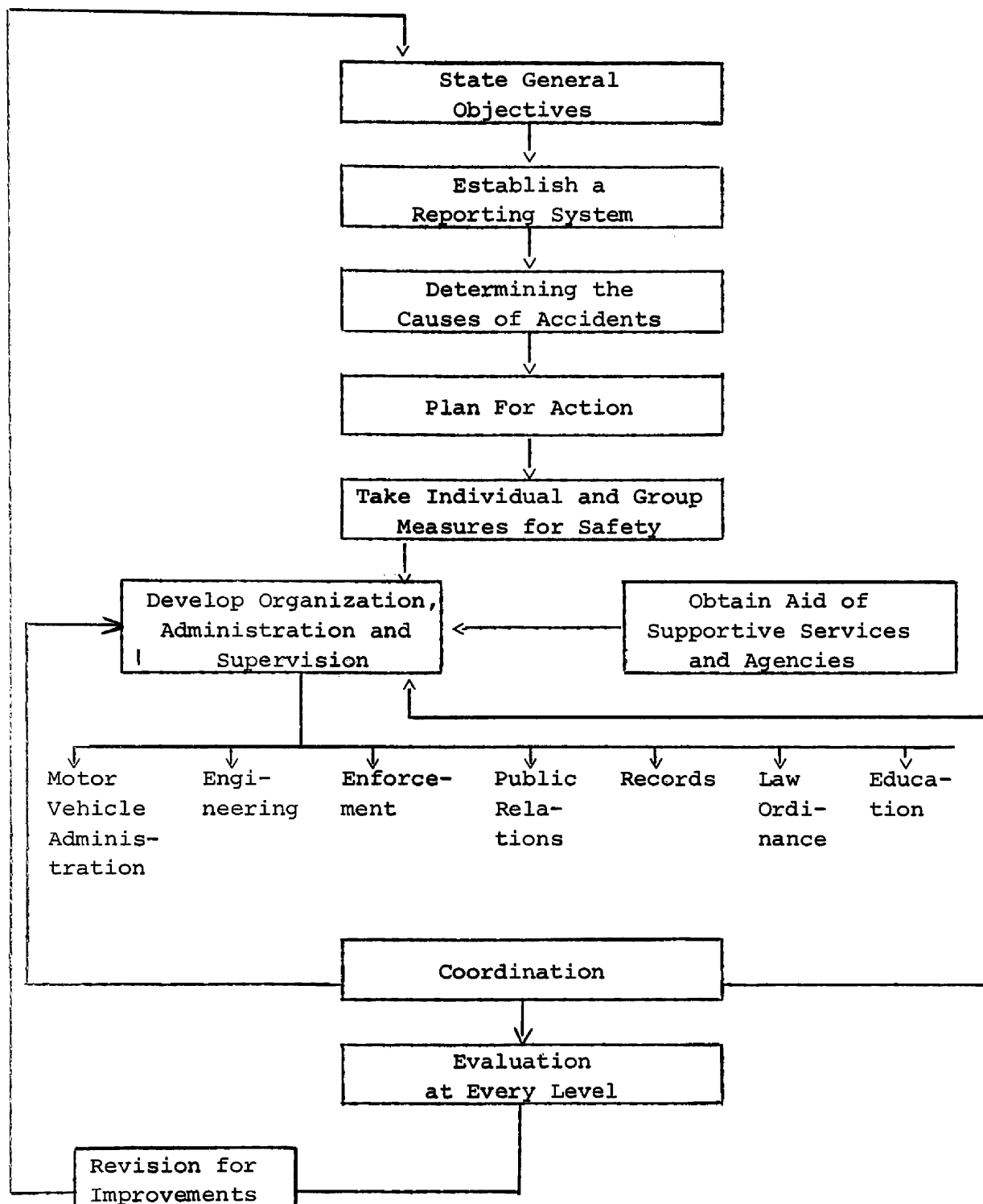


Fig. 5.1.--Model for Traffic Safety Program and Traffic Accident Prevention.

every three thousand hours of driving. The estimate has been verified by a human engineer of the Ford Motor Company. Other estimates indicate that the average driver copes with one out of three situations successfully, while another third lead to misfortune.¹

These studies indicate that accidents could be reduced. The objective of a traffic program should be to prevent accidents by educating the driver to understand that accidents are not fortuitous but are often based on human factors. The objectives of the program should be understood by those who administer the program and by the community at large.

Reporting System

Any organization is dependent for efficient functioning on its reporting system. The reporting system in Saudi Arabia is newly introduced and is as yet limited. Any successful planning of work in a traffic department rests upon the possession of information received through a reporting system. A reporting system should be

¹A. R. Lauer, The Psychology of Driving (Springfield, Illinois: Charles C. Thomas, 1960), p. xv.

established for every branch of a department. The reporting system which prepares records and reports is very essential. These reports should be evaluated and improved periodically to meet needs arising locally.

For efficiency these records, especially traffic accident records, should be standardized nation-wide to minimize the efforts of those responsible for their interpretation. It is proposed that the following information be included.

1. Name of driver, address and age.
2. Location of accident.
3. Time of day.
4. Type of weather and condition of the car.
5. Factors involved.
6. Pedestrian involvement, bicyclist involvement.
7. Type of damage (fatalities, injuries, or property damage).
8. Type of accident (collision, run-over, overturning or run off the road).
9. Type of road.
10. Type of motor vehicle(s) involved.

These reports could be used to plan for the future, indicate manpower needs, indicate the quality of department performance, and will indicate whether standards and requirements set for the driving public need to be changed.²

Determining Causes

The same and rapid movement of pedestrians and cars is the utmost interest of the traffic department. Ending inconvenience and dangers which result from congestion, delay, stopping and parking are all part of its function. In this interest, these causes of accidents and other causes should be determined and analyzed. Once discovered, these causes should be remedied and the public should be informed so that it can drive defensively.³

Plan for Action

Basic to maximum accident prevention is the creation of public awareness of the seriousness of the problem

²H. E. Stocker, Motor Traffic Management (New York: Prentice Hall, 1942), p. 4.

³O. W. Wilson, Police Administration (New York: McGraw-Hill Book Co., 1963), pp. 353-354.

and the generation through this awareness of citizen support. In every society there are groups and individuals who address themselves to traffic problems through voluntary organizations. These groups and persons should be encouraged and recognized.⁴

Organization, Administration,
and Supervision

Organization is concerned with the structure and nature of various activities, according to H. G. Stack and J. D. Elkow.⁵ The activities should be directed toward:

1. Establishing a safe environment.
2. Accident reporting.
3. Safety instruction.
4. Community leadership.
5. Safe transportation.
6. Co-curricular activities.

⁴Report of the President's Committee for Traffic Safety, Organized Citizen Support--A Section of the Action Program for Highway Safety (Washington, D.C.: The President's Committee for Traffic Safety, 1960), p. 3.

⁵H. G. Stack and J. D. Elkow, Education for Safe Living (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1966), p. 303.

Administration, according to these same authors, is concerned with seven main related elements: planning, organizing, staffing, directing, coordinating, reporting, and budgeting.

The operation of the program falls under the category of supervision. Rather than directing, the supervisor's role has become one of support and assistance. He also works and cooperates with other administrators to see that the program is carried out. Some of the major functions of a supervisor are to develop an accident reporting system, to set up safety curricula, improve instruction, establish good relationships with the community, and evaluate the effectiveness of the safety program.⁶

Motor Vehicle Administration

Motor vehicle administration includes many regulatory functions related to vehicle usage, such as, vehicle registration, titling, and inspection; driver licensing and driver improvement; financial responsibilities; and others.⁷

⁶Ibid., p. 303.

⁷U.S. Government Printing Office, Highway Safety Action Program (Washington, D.C.: U.S. Government Printing Office, 1966), p. 30.

The author would like to place special emphasis on motor vehicle inspection and licensing, since Saudi Arabia lacks an on-going program concerned with these two areas.

The purpose of periodic vehicle inspection is to augment the official accident prevention program by ascertaining that every vehicle operated on public highways is properly equipped and is in reasonably safe condition; thus, the vehicle as well as human factors are considered.

Thus, provisions should be made for a program which will periodically check all registered vehicles. The program should include several factors:

1. Every vehicle registered should be inspected at the time of initial registration, and at least annually thereafter.
2. Competent personnel who are specifically trained for this purpose should carry out the inspection.
3. The inspection should include all systems and parts having substantial relation to safe vehicle performance.
4. Each inspection station should maintain records in a standardized form, which should include:
 - a) class of vehicle
 - b) date of inspection
 - c) make of vehicle
 - d) model year
 - e) vehicle identification number
 - f) defects by category

- g) identification of inspector
- h) mileage or odometer reading.⁸

As mentioned, licensing is another important task of administration. The main purpose of driver examining is to determine whether an applicant for a license has the knowledge, the ability, and the skill needed for safe driving. The successful passing of an examination means that the applicant has met standards regarding what he must know and be able to do to drive safely. Several elements should be understood by the examiner as well as the public.

1. The government is responsible for the welfare and safety of its citizens and may legislate for them.
2. A license to operate a motor vehicle is a privilege rather than a right.
3. Driver licensing is an administrative function.
4. The motor vehicle administration is responsible for the quality of drivers using the streets and highways.
5. The test and standards should be related to the actual driving task itself. It is in the process of driving that the driver will really be tested and which will establish his success as a safe driver.
6. Examinations should measure the knowledge and skills a driver has at the time of the test.

⁸Office of Highway Safety Planning, Michigan Department of State Police, Highway Safety Program Standards (East Lansing, Michigan: Office of Highway Safety Planning, n.d.), p. 2.

7. Driver examinations contribute to safe driving by encouraging drivers to increase their knowledge and skills, but increasing the value of the license and by eliminating incompetent drivers. Driver examining is the major means of reaching all drivers, who usually have little contact with traffic safety officials otherwise.
8. A driver should obtain only one license.
9. Different types of licenses should be recognized for different purposes, such as, the instruction permit, the operator's license, and the chauffeur license.
10. Rules and regulations governing safe vehicle operation and standards for drivers must be published and widely distributed.⁹

Traffic Engineering

The official definition of this area as adopted by the Institute of Traffic Engineers is:

Traffic Engineering is that phase of engineering which deals with the planning and geometric design of streets, highways, and abutting lands, and with the traffic operations thereon as their use is related to the safe, convenient, and economic transportation of persons and goods.¹⁰

⁹American Association of Motor Vehicle Administrators, Examining Applicants for Driver's Licenses (Washington, D.C.: American Association of Motor Vehicle Administrators, 1957), pp. 1-8.

¹⁰Carlton Robinson, Traffic Engineering (New York: Universal Publishing and Distributing Corporation, 1966), p. 13.

Traffic engineers are also responsible for the installation of traffic signs and the marking of pavement to guide the motorist.

There are certain guidelines for these responsibilities as follows:

1. Competent traffic engineers should plan for long range transportation needs as well as examine traffic operation and conduct research.
2. Engineers should make an effort not only to design safe streets, highways, and vehicles, but also invent measures for their control.
3. Planning should be comprehensive and uniform to meet future needs.
4. Cooperation and coordination with government agencies must be sought.
5. Full information should be obtained on the precise location of accidents.
6. Limits for vehicle size and weight should be set.
7. The street patterns in residential areas should be designed to avoid conflict.
8. Emphasis on more safety equipment in the vehicle based on scientific studies should be required.¹¹

Law Enforcement

Police are responsible for safe and efficient traffic movement. Their duties cover traffic direction

¹¹U.S. Government Printing Office, op. cit., p. 25.

and control, accident investigation, and law enforcement. The quality of enforcement depends upon many factors including the size of the area served, the kind of traffic, and the street or highway system, training and number of officers.

Law enforcement responsibilities can be classified as follows:

1. Police officers should be well informed about laws and their implications.
2. The police officer is responsible for maintaining a high quality of investigation.
3. Periodic evaluation of accident conditions are recommended.
4. Enforcement tactics should be relevant to the community.
5. Constant communication and cooperation should be maintained with other traffic and related agencies, especially between the police department and traffic court.
6. Special attention should be given to the pedestrian problem.
7. Research on current problems should be undertaken.
8. Traffic policing.
9. Avoidance of excessively liberal tolerance, but use of proper warning devices is recommended. No special privilege should be allotted to any group or individual.

10. Personnel assigned to traffic duties should receive special training to cope with traffic problems.

Public Relations

In Saudi Arabia there is a prevailing image of the policeman as being uneducated and of a low mentality, that they were chosen on the basis of physical strength and courage alone, and that they are of doubtful integrity. It is also believed that police officers are on the offensive against society, but one may insure oneself against their whims if one has money or position.

These attitudes must be changed through a public relations program. Attitudes should be based on respect for and confidence in the abilities of the police. The support of the public is necessary for the enforcement of major laws as well as minor regulations. The attitude of the public will also affect the morale of the department. The policeman must strike a balance between giving service and being servile, and being courteous and being ineffective.

The following are positive steps to be taken in this direction:

1. The public should know the facts about traffic accidents, i.e., their number, location, circumstances, estimated cost and measure that could have been taken to prevent them.
2. Media and educational channels should be made use of to get across information or messages, and to encourage each individual to accept personal responsibility for solutions to the traffic problem and for protecting himself.
3. Citizens should be familiar with all phases of the safety program.
4. While mechanical defects in the vehicle produce mishaps, accidents result largely from unsafe behavior.¹²

Records

Complete records of driving activities must be maintained and analyzed to serve one primary purpose--improving the quality of drivers using streets and highways. Administrators would be unable to estimate the scope of necessary activities, and the needs of short-term and long-term plans without records. Assignment of record keeping duties must be made so a coordinated effort will exist. Many administrators contend that the quality of a

¹²Ibid., p. 36.

traffic department is equivalent to the quality of its records. Records are kept for the following purposes:

1. To offer appropriate information on traffic accidents, drivers, motor vehicles, and roadways for future use.
2. Standardized forms should provide accurate trend information on the magnitude and nature of accident problems locally and nation-wide.
3. Records should be used to inform educational institutions so that they can integrate it into their programs.
4. Means for evaluation of the results of records should be provided, so that the results can serve as guidelines to locate such problems as high accident locations. The public should then be informed of this type of information.¹³

Law Ordinances

Every citizen is affected by motor vehicle laws and regulations. The laws act as guidelines to set the duties and responsibilities of the motorists and pedestrians using highways.

Traffic laws and regulations grow as traffic problems grow, as a result of more persons sharing more streets and highways. According to the 1971 Vehicle Code in Saudi

¹³Office of Highway Safety Planning, op. cit., p. 13.

Arabia, certain basic principles concerning these laws and regulations have been agreed upon. Factors that every vehicle code should meet are the following:

1. Laws should be based on sound, realistic information, especially in view of the need to practice fair monetary punishment.
2. The vehicle code should include laws and regulations which are practiced uniformly throughout the country, such as laws concerning signs, signals, road marking and regulations related to safe driving.
3. This information should be available to all drivers and pedestrians for their protection. This can be done through the licensing bureau both for new applicants and old drivers.¹⁴

Education

Education provides the best preventative long-range technique for reducing accidents.¹⁵ Traffic officers and

¹⁴Walter Ladd, Organizing for Traffic Safety in Your Community (Springfield, Illinois: Charles C. Thomas, 1959), pp. 184-185.

¹⁵Information of ideas pertaining to an educational program were taken from the following sources:

1. David Stimar, Teachers Guide for Traffic Safety (Pontiac, Michigan: Driver and Traffic Safety Education Department, 1970).
2. Stack, op. cit.

others dealing with traffic safety should consider themselves to be teachers, and it has been recommended they should study the technique of teaching and should at least be in contact with educational institutions. An attempt should be made to attend various types of meetings: parent-teacher association; public school programs, civic organizations, and service clubs. Good public relations will be developed as well as the accomplishment of the main goal of traffic safety education--the building of responsible citizens and the preservation of human life.

Responsibility first of all rests with the parent who should bring children up with positive attitudes about safety. Schools also have a twofold responsibility; to keep pupils safe and to teach pupils how to keep themselves and others safe.

At lower levels of schooling, the program must be planned so as to allow children to gain an understanding of

3. J. E. Aaron and M. K. Strasser, Driver and Traffic Safety Education (New York: The MacMillan Co., 1970).
4. Proceedings of the Second Annual Traffic Safety Research Symposium of the Automobile Insurance Industry, Driver Behavior (Washington, D.C.: Insurance Institute for Highway Safety, 1968).
5. G. W. O'Conner and C. G. Vanderbosch, The Patrol Operation (Washington, D.C.: SACP, 1967).

traffic that is consistent with their age and maturity. In Saudi Arabia, schools at all levels lack these programs. Initiative should be taken to establish these programs especially at the elementary level as a building block for later safety training. These programs should accomplish the following:

1. Impart the idea that accidents are not accidental but result from actions taken in the home, school, and streets. Accidents are caused by people and can be controlled.
2. Programs should help children understand responsibility toward self and others and that cooperation with others is necessary.

Elementary school children being particularly susceptible to accidents, planning should concentrate on programs for children at that level.

In planning a safety program for children, certain characteristics of children should be recognized:

1. Children usually depend on adults for their safety.
2. Children generally do not recognize potential danger.
3. Fears are not learned until a bad experience or until they have been taught.
4. Children lack muscle coordination. Physical defects and/or slow coordination are safety hazards. Rapid growth in certain periods results in poor safety habits.

5. Children from broken homes may be subject to stresses and strain that make them not alert.

With these factors in mind, there are four programs used internationally which the author believes to be constructive. The programs concern pedestrian safety, bicycle safety, signs and signals, and laws and regulations.

As regards pedestrian safety, teachers should guide the student toward recognition and acceptance of the responsibilities involved in walking safely and that there are rules and regulations applying specifically to pedestrians. Students' understanding of the signals people give is also important.

Bicycle riders use the same streets as do motorists and are subject, therefore, to the same regulations. Thus, it becomes necessary to instruct bicycle riders in the best safety practices. A program in bicycle safety should help children understand the cause of bicycle accidents and how and what each person can do to reduce these accidents. They should be taught responsibility to observe safety rules, know what to do in case of accidents, and why and how to report an accident. Regulations concerning bicycle riding must be learned so that communication with other road users can take place.

As regards signs and signals, the child should learn the meaning of colors of traffic signals and the reasons for and implications of the order of color appearance and position of each light. The shape of major signs and their color and meaning should be taught and memorized by students. The child should be taught how to cross streets carefully and to obey traffic signals, signs, and the police.

The general objective of instructing the child about laws is to teach him an appreciation of the implications of these laws, how laws govern citizens, and what would happen if there were no laws. The child should be able to answer the question, "What is the law?" A distinction should be made between man-made laws and natural laws, i.e., the child should be taught that there are certain physical limitations such as the time it takes a driver to react and its consequences for his stopping distance. The implications of vision and how this affects people who are driving should be stressed. Best results in teaching traffic safety are obtained through group activities and learning.

At the high school level, a primary goal is to prepare safe and efficient drivers, who are capable of participating in a safe manner in today's complex driving situations.

A number of studies have stated that attitudes are at least as important as skill and knowledge and possibly more so. Since attitudes are so important, a program should be designed to produce the correct attitudes for safe driving. The most successfully used approaches are the following:

1. Logic approach.
2. Administrative approach.
3. Proficiency approach.
4. Human approach.
5. Fear and exaggeration approach.
6. Group dynamic approach, known to be the best approach.

The objectives of the program should be understood by both teachers and students. The following objectives should be emphasized:

1. The development of a strong sense of personal and social responsibility.

2. The development of pride in maintaining a high standard of performance.
3. Knowledge as to the safe, efficient, and enjoyable use of equipment.
4. Good habits of cooperation with others sharing the road. The student should learn that there are three factors involved in accidents--the driver, the vehicle, and the road. As regards drivers, the idea should be developed of keeping as many good drivers on the road as possible. Vehicles have been developed with modern safety features which should be used. Hills and curves are potentially dangerous. Roads should be well marked and markings should be obeyed.

To meet these objectives, teachers should follow these guidelines:

1. Stress the importance of the car in society.
2. Stress the importance of traffic laws and police enforcement.
3. The road is being used by others and the student must consider them.
4. The student should recognize and correct his own limitations in driving.
5. Recognition of hazards and, accordingly, defensive driving should be promoted.
6. Students should be taught economical uses of the car, e.g., the importance of speed on gasoline consumption.
7. Natural laws which affect safe driving should be stressed.

Several approaches have been used to motivate students to learn traffic safety. These are an emphasis on: self-preservation, personal gain, and group membership. Pride and interest may be generated and maintained through friendly competition. Safety learning can be also integrated with an interesting subject. However teaching safety separately should be encouraged. Methods used in teaching are to give the students practice and experience, demonstrations, dramatizations of problems, letting them do problem-solving; use of audio-visual aids and lecture and discussion methods.

Due to the complexities of the traffic problem, universities and colleges level should take the leadership in providing specialized courses in safety in areas like traffic safety education, athletic safety and fire prevention, traffic engineering, traffic safety administration, and transportation. In Saudi Arabia, these areas could be integrated in one or two courses taught within other related departments. As enrollment and interest increase, a separate department could offer separate courses on each area.

Special attention should be given to training teachers of traffic education. Not only should courses be established to do this within the university, but for immediate purposes the Ministry of Interior, utilizing existing colleges, could set up short training programs. Ample motivation should be provided for entering this field.

Colleges and universities should take responsibility for directing and encouraging research in traffic safety, conducting seminars, conferences, and providing other types of leadership. A good program in the colleges can be the focal point in the development of a strong traffic safety program.

Evaluation and Improvement

Means should be established for periodic evaluation of the program. Its effectiveness can be measured by various means, among these are: whether accident statistics as compared through records of previous years have been improved, whether the public and personnel understand the objectives of the program, spot checks to see if personnel

know their duties and are carrying them out, and other means. As a result of the evaluation of a program revisions may need to occur. A program should be flexible enough to incorporate these.

Recommendations for a Safety Program

As a result of this study the following recommendations should be considered.

1. A manual including all the traffic rules and regulations should be published and distributed to the drivers, particularly those new applicants for driver's licenses.
2. New applicants for driver's licenses must pass the knowledge required for safe driving.
3. Some form of exam should be administered, preferably written, for those who can read and write and an oral form for those who are illiterate.
4. The emphasis on road tests should be on the attitude of the driver and his perception of driving rather than the technology of the driving.
5. Those drivers who already have driver's licenses and seem to be a problem should be called for re-examination and probably sent to a rehabilitation program for further knowledge in safe driving. These rehabilitation programs could be done at traffic institutes or some other related departments with qualified teachers.

6. The traffic safety program is a complete program. One agency can't function without the other. The author highly recommends the application of the model previously presented and the coordination of every agency, with full understanding of the demarcation of responsibilities and the unification of overlapping efforts. This program should serve as a guideline toward achieving the objectives of the traffic safety program--saving human life.
7. Traffic safety education should be introduced at all educational levels and private levels.
8. Colleges and universities must address themselves to traffic safety problems and should take an active role by constructing safety courses and preparing teachers for all safety aspects.
9. Universities should also take the initiative in taking an active role in traffic safety researches.
10. The author encourages the application of the recommendations of the first Traffic Conference held in Cairo, May of 1972, particularly the Articles 8 and 23, which recommend the establishment of a traffic research institute at the Arab League Headquarters in Cairo as well as establishing traffic research institutes at the local level.
11. People who are in charge of handling traffic problems financially or otherwise, should be qualified in traffic safety aspects and their implications and should be trained to understand the physiological makeup of the driver.
12. More people should be trained in specific traffic problems such as traffic investigation, data processing, traffic engineering, and traffic enforcement.
13. Uniform standards for traffic rules and regulations should be established throughout the country.

14. Use should be made of the media in all the educational aspects of traffic safety problems.
15. The people should be well informed about the objectives of the department and its policies. The community should be oriented toward accepting innovations and modern methods of performance.
16. Those people at patrolman level should be qualified to deal with the public, by knowing his duties and responsibilities and the limitations of his rights and the rights of others. He should know especially those laws he must apply everyday plus be concerned about public relations.
17. Studies should investigate Saudi Arabia's unique situation of having a higher number of fatalities rather than injuries.

If the suggested model is implemented and follow-up studies similar to this one are frequently conducted using the best scientific means available, the result, it is hoped, will be a greater preservation of life.

APPENDICES

APPENDIX A

INTERNATIONAL ROAD FEDERATION

GENEVA

WASHINGTON



63, rue de Lausanne, Genève

Téléphone 31 71 50

Cable: "Introadfed", Genève

P.6/2/B

5 March 1973

Mr. Jallel Saif,
P.O. Box 418,
East Lansing, Mich. 48823,
U.S.A.

Dear Mr. Jallel Saif,

We were most interested to receive your letter of 26th February and we congratulate you on the success you have had in collecting statistics relating to the Arab World.

We realise that our figures are far from complete but we send questionnaires to countries every year and gradually we find that an increasing number of countries are kind enough to send us a wider range of statistics.

Thank you for your offer to send us a copy of your dissertation - we shall be most interested to receive it.

Yours sincerely,
INTERNATIONAL ROAD FEDERATION "IRF"
Director

W. G. Kennedy

UNITED NATIONS NATIONS UNIES
NEW YORK

CABLE ADDRESS—ADRESSE TELEGRAPHIQUE UNATIONS NEWYORK

REFERENCE: LE 212/1 (4)

12 September 1972

Dear Mr. Saif,

I refer to your letter of 5 September 1972 relating to the 1968 Conventions on road traffic and road signs and signals.

In this connexion, I should like to explain that the list of countries which was sent to you on 1 May 1972 refers to the signing of the Final Act of the Conference which adopted the two Conventions. A Final Act is a procès-verbal drawn up by the plenipotentiaries that took part in the Conference and generally consists of a short summary of the proceedings of the Conference, providing the names of the participants, etc. A Final Act should therefore be distinguished from the actual instruments (convention, treaty, etc.) that the Conference may have adopted.

In my letter of 14 August 1972, I sent to you the list of countries that signed, ratified or acceded to the two Conventions adopted by the Conference, i.e., the Convention on road traffic and the Convention on road signs and signals. You should rely on that information (no change has occurred since my last letter) to ascertain the status of the various States in regard to the two Conventions.

On the one hand, the Conventions were not automatically signed or ratified, or acceded to, by those countries that took part in the Conference and signed the Final Act;

Mr. Jallel Saif
P.O. Box 418
East Lansing
Michigan 48823

UNITED NATIONS NATIONS UNIES

- 2 -

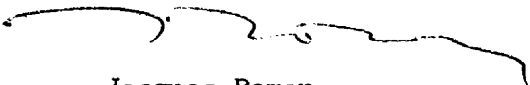
on the other hand, certain countries which did not take part in the Conference decided to accede to the Conventions. This explains why the list of countries that signed the Final Act differs from the lists of countries that effected a formality with respect of one of the two Conventions.

Finally, I should like to confirm that the lists enclosed in my letter of 14 August 1972 were excerpted, as I indicated in the second paragraph of that letter, from the Secretariat publication entitled Multilateral Treaties in respect of which the Secretary General performs depositary functions - List of Signatures, Ratifications, Accessions, etc., as at 31 December 1971 (ST/LEG/SER.D/5). You should have no difficulty in obtaining that document from libraries or organizations that are depositaries for United Nations documents.

.....

I am returning herewith for your convenience, the documents enclosed in your letter.

Yours sincerely,


Jacques Roman
Legal Officer, Treaty Section



U.S. DEPARTMENT OF COMMERCE
Bureau of Domestic Commerce
 Washington, D.C. 20230

May 4, 1972

Mr. Jallel Saif
 P. O. Box 418
 East Lansing, Michigan 48823

Dear Sir:

April 30 completion of publication of 1970-71 World Motor Vehicle Production and Registration (WMVP&R) permits this tardy response to your request of February 27, 1972 for the publication and some points of information. The statements below are numbered in the sequence of your questions.

1. WMVP&R uses as primary source information received from the U.S. diplomatic post in that country. In the absence of post response, data from the statistical department of the United Nations is used. For the Arab world in the enclosed issue:

Diplomatic Post Response

Kuwait
 Saudi Arabia
 Jordan
 Lebanon
 Tunis
 Algeria
 Sudan
 Morocco

UN Data

United Arab Republic
 Iraq
 Syria
 People's Democratic
 Republic of Yemen
 Libyan Arab Republic

2. Registration requirements within the country determine what vehicles are included.
3. See enclosed WMVP&R. Population figure in 1969-70 issue in error.
4. AMA sources believed to be copies of our past responses forwarded from this department.
5. Recommend that for #4 and #5 you check with AMA, 320 New Center Building, Detroit, Michigan 48202.

2.

Please notice the caveats in the introduction to the publication.
Both production and registration information is subject to individual
country requirements which results in a lack of precise direct compa-
rability between country totals.

If we can be of further help, please let us know.

Sincerely,

A handwritten signature in dark ink, appearing to read "T C Meehan". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Thomas C. Meehan
Industry Specialist
Transportation Equipment Division

Enclosure

March 28, 1972

British Information Services
845 Third Avenue
New York, New York 10212

To Whom It May Concern:

I am a student at Michigan State University presently writing my Ph.D. dissertation in the area of Traffic Safety. Part of the dissertation deals with the standard test for driver licensing, specifically the standard test for applicants who own passenger cars.

I am most interested in the following information.

1. The score necessary on your standard test that an applicant must achieve before he is granted a license.
2. The type of knowledge you stress on the written test if you have one.
3. If possible, a copy of your test, especially the one for passenger car drivers.
4. If possible, a copy of your traffic manual.
5. Any related information.

Your immediate response to this request would be greatly appreciated.

Sincerely,

Jallel Saif
P.O. Box 418
East Lansing
Michigan 48823

March 29, 1972

Main Traffic Department
Pakistan

To Whom It May Concern:

I am a student at Michigan State University presently writing my Ph.D. dissertation in the area of Traffic Safety. Part of the dissertation deals with the standard test for driver licensing, specifically the standard test for applicants who own passenger cars.

I am most interested in the following information:

1. The score necessary on your standard test that an applicant must achieve before he is granted a license.
2. The type of knowledge you stress on the written test if you have one.
3. If possible, a copy of your test, especially the one for passenger car drivers.
4. If possible, a copy of your traffic manual.
5. Any related information.

Your immediate response to this request would be greatly appreciated.

Sincerely yours,

Jallel Saif
131 Orchard Street
East Lansing
Michigan 48823

Dear Mr. Jallel Saif:

I, as a traffic police inspector, would like to answer your questions and provide you with other relevant information. I hope it will help you to complete your dissertation and wish you the very best luck in your studies.

There is no written test required to achieve a driving licence for passenger cars in Pakistan.

Whenever somebody wants to get a driving licence, first of all he has to get a learning driving license which he can get from the Traffic Department without any kind of test. He has to pay only a small fee. After getting this learning licence, he can drive a car when somebody is with him in the car who has achieved a final licence. In this way he gets training. When he thinks that he can drive a passenger car, he will go to the Traffic Department for a practical test which is called a road test. At this time the applicant will bring his car, and he will demonstrate his road test in the presence of a traffic officer. After the favorable recommendation of this traffic officer, a final driving licence will be issued.

During the road test, the traffic officer will judge his performance and capability to start, pull out, park, and to observe traffic lights, etc. We do not have very many traffic signs.

CH. Mohamad Altaf
Traffic Police Inspector
LAHORE, PAKISTAN

March 28, 1972

Ministry of Transport
St. Christopher House
Southwark Street
London, S.E. 1
England

To Whom It May Concern:

I am a student at Michigan State University presently writing my Ph.D. dissertation in the area of Traffic Safety. Part of the dissertation deals with the standard test for driver licensing, specifically the standard test for applicants who own passenger cars.

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3. If possible, a copy of your test, especially the one for passenger car drivers.
4. If possible, a copy of your traffic manual.
5. Any related information.

Your immediate response to this request would be greatly appreciated.

Sincerely,

Jallel Saif
P.O. Box 418
East Lansing
Michigan 48823

WASHINGTON
1619 MASSACHUSETTS AVENUE N.W.

NEW YORK
366 MADISON AVENUE

AUTOMOBILE MANUFACTURERS ASSOCIATION, INC.

320 NEW CENTER BUILDING • DETROIT, MICHIGAN 48202 • AREA 313-872-4311

VIRGIL E. BOYD, CHAIRMAN
FRANKLIN M. KREML, PRESIDENT
RUSSELL E. MACCLEERY, VICE PRESIDENT

January 28, 1972

Mr. Jallel Saif
P. O. Box 418
East Lansing, Michigan 48823

Dear Mr. Saif:

Thank you for writing to us on January 26, asking for additional vehicle data in the Arab World. Let me reply to your questions in the same sequence:

1. The 144,768 total vehicles registered in 1969 for Saudi Arabia was obtained from World Motor Vehicle Production and Registration, 1969-70, published by the U.S. Department of Commerce, Bureau of Domestic Commerce. Price 10 cents. The notes do not indicate whether they include government and military vehicles. I would presume not, but you should check that out with the Bureau.
2. The same publication gives the number of American cars only for the following countries you asked for:

	<u>Year</u> <u>Jan. 1</u>	<u>Passenger</u> <u>Cars</u>	<u>Trucks &</u> <u>Buses</u>
Kuwait	1970	57,624	16,700
Lebanon	1969	1,141	276
Morocco	1970	24,130	17,968
Saudi Arabia	1970	25,000	30,000

3. I have enclosed xeroxed tables dealing with Road Accidents found in World Road Statistics 1965-1969 published by International Road Federation, 1023 Washington Building, Washington D. C.

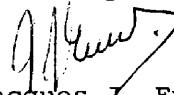
Mr. Saif

-2-

January 28, 1972

4. We have added your name to our Automobile Facts and Figures mailing list.

Sincerely,

A handwritten signature in dark ink, appearing to read 'J. Evers', with a stylized flourish extending from the end.

Jacques J. Evers
Economic Research and
Statistics Department

Enclosures

February 17, 1972

Bureau of Domestic Commerce
U.S. Department of Commerce
Washington, D.C.

To Whom It May Concern:

I am a student at Michigan State University, presently writing my Ph.D. dissertation in the area of Traffic Safety. I am especially interested in traffic problems in the Arab World. I was fortunate enough to obtain your publication, World Motor Vehicle Production and Registration, 1969-1970. It was a great help to me; however, I would appreciate receiving the following information:

1. If possible, the sources from which you compiled the figures for the total number of cars in the Arab World (Egypt, Syria, Sudan, Morocco, Yemen, Algeria, Iraq, Quwait, Tunisia, Lebanon, Libya, Jordan, and Saudi Arabia. I am especially interested in Saudi Arabia).
2. Are the official and military cars included in these figures?
3. Your publication mentioned Southern Yemen. Are you referring to the present-day Republic of Yemen? I am unclear on this because your table shows the population as being approximately one million, whereas I believe it to be nearer 5 million.
4. I have noticed some inconsistencies in figures between your publication and one published by Automobile Manufacturers' Association, 1971, called Automobile Facts and Figures. For example, figures for the same year (1969) for Algeria's total number of cars was 205,500 in your publication as compared to 258,505 in Automobile Facts and Figures.
5. Any information you might have concerning car accidents in these 13 countries.

I would also like to subscribe to your publication, World Motor Vehicle Production and Registration and any related information. I will be glad to pay any cost incurred.

Sincerely,

Jallel Saif
P.O. Box 418
E. Lansing,
MI. 48823

March 1, 1972

International Road Federation
1023 Washington Building
Washington, D.C.

Dear Sir:

I am a student at Michigan State University, presently I am collecting information for my Ph.D. dissertation. My area of special interest is car accidents analyses particularly the Arab World. I was fortunate enough to obtain your publication, World Road Statistics, 1953. I found it a great help to me; however, I would appreciate it if you could send me the most recent World Road Statistics.

I am very much interested in receiving your publications constantly, World Road Statistics in particular, and any other related information. I will be glad to pay any cost incurred.

Sincerely yours,

Jallel Saif
P.O. Box 418
E. Lansing
Michigan 48823

October 24, 1971

Arab Information Center
Head Office
757 Third Ave.
New York, New York 10017

Dear Mr. Rishad Murad:

I am a citizen of Saudi Arabia attending Michigan State University. At the present time I am in the process of writing my Ph.D. dissertation in the area of Highway Traffic Safety. The proposed title of my dissertation is Car Accident Investigation in Saudi Arabia, in particular, and the Arab World in General. In order to proceed with my work, I would appreciate your sending me the following information:

1. The addresses of all Arab embassies or their substitute agencies in the U.S.A., and if possible, the names of their respective ambassadors.
2. Any available information on studies that have been made in any Arab state in the area of traffic accident investigation or any related information.
3. To my knowledge, the Arab League sent representatives to the United Nations Conference on International Road Traffic. I would appreciate your sending me information about the last conference, that is, whether any of the Arab states adopted and signed the final act. Also, I would like to know what is the role of the Arab League in this respect.

Sir, it is not an exaggeration to say that the progress of my dissertation depends entirely on your response and cooperation and the response of the rest of the Arab World. Your aid in this will be gratefully received.

Sincerely,

Jallel Saif
P.O. Box 418
East Lansing, Michigan 48823

January 26, 1972

Mr. Peter E. Pekkala, Manager
Economic Research and Statistics Dept.
Automobile Manufacturers Association, Inc.
320 New Center Building
Detroit, Michigan 48202

Dear Sir:

I am a student at Michigan State University. Presently I am working on my Ph.D. dissertation in the area of Traffic Safety. Part of my dissertation will be a discussion of the number of cars in the Arab World and, if possible, the percentage of American-made cars in relation to the total number of cars in each country. I am also interested in the car accidents as to the number of fatalities and injuries in these countries for the most recent year.

Your 1971 Automobile Facts and Figures which was published by the Automobile Manufacturers Association, Inc. was very useful in giving the total number of cars in each country. I will appreciate it if it is possible to furnish me with the following information.

1. For example, in your book, 1971 Automobile Facts and Figures, the total number of cars in Saudi Arabia is 144,768 for 1969. What is your source of information and did you include in this figure the government cars and military cars?
2. I will appreciate your sending me information on the number of American-made cars in the Arab World (Egypte, Saudi Arabia, Syria, Lebanon, Kuwait, Iriq, Morocco, Tunisia, Sudan, Yemen, Jordan, Libya, Algeria).
3. If you have it available, please send information on automobile accidents in each country.
4. I am very much interested in receiving continually your regular publication particularly Automobile Facts and Figures which includes trucks, buses, and passenger cars. I will be glad to pay any costs and if its possible to regularly receive any publications and have membership in your association.

Sir, your help and cooperation will be very much appreciated.

Sincerely yours,

Jallel Saif
P.O. Box 418
East Lansing, Michigan 48823

P. O. Box 418
East Lansing, Mi. 48823
February 26, 1973

Secretariat
International Road Federation
63, rue de Lousanne
Geneve
SWITZERLAND

Dear Sir:

In the process of reading your publications, World Road Statistics, 1966-1970, and 1967-1971, I noticed several discrepancies and would like to bring the following facts to your attention:

- 1) There is a general lack of road statistics concerning the Arab World, which consists of eighteen countries, particularly in the areas of the enumerating of fatalities and injuries.
- 2) While there are some statistics concerning the number of cars in a few of the Arab states, I have reason to believe that these figures are not up to date.

As an individual coming from that part of the world and whose major field is Highway Traffic Safety, I devoted part of my Ph.D. dissertation to these particular problems.

With the help of the Arab League in Cairo, United Nations publications and personal correspondence with the embassies of many of the Arab states and appropriate agencies, I was able to gather and compile what I believe to be fairly accurate and very recent information mainly concerned with the number of cars in each state, the number of fatalities, the number of injuries and other related information. This information is complete with the exception of two states (Algeria and North Yemen) for which I have only partial information.

Secretariat

Page 2

February 26, 1973

To make this information of use to other students of the area, I would be happy to send you a copy of my dissertation. If you decide that this would be helpful to you, please contact me before June 1973, as I will return to the Middle East at that time.

Sincerely,

Jallel Saif

JS/aec

January 17, 1972

Information Section
League of Arab States
Cairo, Egypt

Dear Sir:

I am a citizen of Saudi Arabia attending Michigan State University. At the present time I am in the process of writing my Ph.D. dissertation in the area of Highway Traffic Safety. The proposed title of my dissertation is Car Accident Investigation in Saudi Arabia, in particular, and the Arab World in General. In order to proceed with my work, I would appreciate your sending me the following information:

1. Any available information on studies that have been made in any Arab state in the area of traffic accident investigation, i.e. number of fatalities, and injuries, and, if available, the factors involved, for a one-year period.
2. To my knowledge, the Arab League sent representatives to the United Nations Conferences on International Road Traffic. I would appreciate your sending me information about the last conference, that is, whether any of the Arab states adopted and signed the final act. Also, I would like to know what is the role of the Arab League in this respect.

Sir, it is not an exaggeration to say that the progress of my dissertation depends very much on your response and cooperation. Your aid in this will be greatly received.

Sincerely,

Jallel Saif
P.O. Box 418
East Lansing, Michigan 48823
U.S.A.

JPF/LR

MINISTÈRE DE L'AMÉNAGEMENT DU TERRITOIRE, DE L'ÉQUIPEMENT, DU LOGEMENT ET DU TOURISME

~~MINISTÈRE~~
~~DE L'ÉQUIPEMENT~~
~~ET DU LOGEMENT~~

DIRECTION DES ROUTES
 ET DE LA
 CIRCULATION ROUTIÈRE

PARIS, LE

244, BOULEVARD SAINT-GERMAIN (VII^e)
 TÉLÉPHONE : 325-24-63
 CODE POSTAL 75 775 PARIS CEDEX 16
 TELEX 25 038

S/Direction de la Réglementation de
 la Circulation et du Contentieux

REC.2

R 129 - 21/72

Monsieur,

Vous avez sollicité un certain nombre de renseignements concernant le déroulement et les modalités d'obtention du permis de conduire les véhicules de tourisme en France.

Je vous prie de bien vouloir trouver ci-dessous les précisions demandées :

I - L'examen du permis de conduire les véhicules de tourisme comporte deux épreuves, l'une théorique, l'autre pratique.

1-1 - L'examen théorique depuis le 1er février 1972 est devenu collectif et audiovisuel. Il s'effectue en salle contrairement à l'ancienne épreuve orale individuelle qui se déroulait dans les voitures sur les centres d'examen.

A la même époque, il a été créé une admissibilité aux épreuves théoriques ; c'est à dire que les candidats qui depuis le 1er février 1972 subissent l'examen doivent être reçus à l'interrogation sur le code pour pouvoir se présenter aux épreuves pratiques.

L'épreuve collective audiovisuelle sur le code de la route consiste à projeter sur un écran une diapositive comportant à la fois une image reproduisant une situation réelle de circulation et une série de questions identifiées par les lettres A, B, C, et D. Les questions sont répétées par un magnétophone synchronisé avec la projection de l'image.

Les candidats qui sont en possession d'une feuille de réponse doivent cocher la ou les bonnes réponses.

Monsieur JALLEL Saïf

1 Orchard Street
 East Lansing

Michigan 48823

(U.S.A.)

.../...

[Sample of the letter sent to
all Arab Embassies in
Washington, D.C.]

P.O. Box 418
E. Lansing, MI, USA 48823
January 5, 1972

Algerian Interests Section
(Embassy of Guinea)
2118 Kalorama Rd. N.W.
Washington, D.C. 20008

To Whom It May Concern:

I am a citizen of Saudi Arabia presently attending Michigan State University and am now working on my doctoral (Ph.D.) dissertation. The proposed topic for my dissertation is "Automobile Accident Analysis in Saudi Arabia, in Particular, and The Arab World in General."

To proceed I desperately need the following information:

1. Any studies done on automobile accidents, i.e. number of fatalities and injuries (especially recent studies) and, if available, the factors involved.
2. The number of registered cars and the number of drivers in your country.
3. Information as to whether your government signed the final act relating to international road signs proposed at a conference held in Vienna in 1968. If not, when is your representative going to sign the act.
4. Any related information, for example, for your motor vehicle manual, etc., would be appreciated.

An answer from you, either sending this information or informing of your inability to do so, is essential.

I am not exaggerating when I tell you that my progress will depend entirely on your help and the cooperation of your countrymen.

I am forwarding this letter to you because in the past I wrote a Master's degree thesis on international road signs and requested information from the traffic department of your country and never received a reply.

Hopefully, this time with your help and cooperation my request can be forwarded to the proper agencies in your country.

Your help will be greatly appreciated.

Sincerely,

Jallel Saif

EMBASSY OF LEBANON
WASHINGTON

الرقم : ٨٣٣
التاريخ : ١٩٧٢ / ٦ / ٢٢

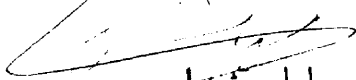
حضرة السيد جليل سيف المحترم

الموضوع : معلومات عن حوادث السير في لبنان

المرجع : كتابكم تاريخ ٥ / ١ / ٧٢ و ٢٨ / ٤ / ٧٢

اودعكم ربنا المعلومات المتوفرة عن حوادث السير
في لبنان وعدد السيارات واجازات السوق الح ٠٠٠ كما وردتنا
من وزارة الاشغال العامة والنقل ، المديرية العامة للطرق والمباني –
مصلحة التصميم والبرامج ، وذلك بناء على طلبكم .
املة ان تكون مفيدة لكم في دراستكم التي تعدونها لنيل
شهادة الدكتوراه متمنية لكم النجاح .

سكرتير السفارة في واشنطن


ليلى شهاب

ف . ش .

EMBASSY OF TUNISIA
2408 MASSACHUSETTS AVENUE
WASHINGTON, D. C.

E. T. 2840

August 28, 1972

Mr. Jallel SAIF
P O Box 418
E. Lansing, Michigan 48823

Dear Mr. Saif,

Following our letter of January 19, 1972, we are pleased to inform you that we have just received the material you requested for the preparation of your doctoral dissertation entitled "Automobile Accident Analysis in Saudi Arabia in Particular and the Arab World in General", although we regret it took so long.

We would now like to know however, if you are still interested in the material and whether you are still at the same address. As soon as we receive an affirmative reply from you, we will have it airmailed at once.

Sincerely yours,



Moncef RIAHI
Economic Section

MR/yv



EMBASSY OF THE REPUBLIC OF GUINEA
ALGERIAN INTERESTS SECTION
2118 KALORAMA ROAD, N. W., WASHINGTON, D. C. 20008

AW/ACC/No 0051

January, 19, 1971

Mr. Jallel Saif
P.O. Box 418
E. Lansing, Michigan 48823

Dear Mr. Saif :

In reply to your letter dated January 5, 1972, I regret to inform you that I am not in a position to answer your questions. However, I recommend that you write directly (in arabic or in french), to the following address in Algiers :

Direction Générale
Gendarmerie Nationale
EL BIAR - ALGER (ALGERIA)

Yours truly,

Head of the Algerian
Interests Section

A handwritten signature in dark ink, appearing to read 'A. Bousselham'.

A. BOUSSELHAM

هاتف : ٢٤٢ / ٣٥٨ / ٢٧١٤١
صندوق البريد : ١٩٣
برقياً : الارشاد

الاشارة : ١٩٧٢ / ٤ / ١١



وزارة الاعلام

ادارة الثقافة والنشر
قسم السياحة

الكويت في : ١٩٧٢ / ٤ / ١١

السيد المحترم جليل سيف ،
ميتشيجان ،
الولايات المتحدة الامريكية

تحية طيبة وبعد ،

بالاشارة الى كتابكم المؤرخ ١٩٧٢ / ١ / ٥ الموجه الى سفارة دولة الكويت في واشنطن ،
بشأن طلب بعض المعلومات التي من شأنها مساعدتكم في تحضير الرسالة التي تعدونها حول تحليل
حوادث السيارات .

نرفق لكم طيه البيانات التالية :

- (١) احصائية بحوادث السيارات للاعوام من ٦٠ - ١٩٧٠ .
 - (٢) احصائية بعدد السيارات لعامي ٧٠ ، ١٩٧١ .
 - (٣) نسخة من قانون السير وقانون تنظيم محكمة المرور .
- ونأمل ان تكون هذه البيانات موفية بالغرض .
وتفضلوا بقبول فائق الاحترام ،،،

وكيل الوزارة

احمد سيد عبد الصمد

نسخة : السياحة

م/ع/ش

TRANSPORT & COMMUNICATIONS

جدول بالحوادث الواقعة في الجمهورية العربية السورية لعام ١٩٦٢ - ١٩٦٦

TABLE OF ACCIDENTS IN S.A.R. 1962 — 1966

Table 110

Kinds of accidents	١٩٦٢ 1962	١٩٦٣ 1963	١٩٦٤ 1964	١٩٦٥ 1965	١٩٦٦ 1966	أنواع الحوادث
Death caused by accident						حوادث أدت للوفاة
Total	77	56	41	89	95	المجموع
Motor car accident	54	50	37	75	64	صدام سيارات
Bicycle accident	4	2	—	—	1	صدام دراجات
Vehicles accident	11	3	4	13	18	غير مركبات
Others	8	1	—	1	12	حوادث أخرى
					0	
Bodily injury caused by accident						حوادث أدت لإضرار جسمانية
Total	1,000	1,021	801	977	524	المجموع
Motor car accident	922	908	603	480	380	صدام سيارات
Bicycle accident	134	132	129	93	61	صدام دراجات
Vehicle accident	28	33	20	69	60	غير مركبات
Others	5	8	9	30	23	حوادث أخرى
Material injury caused by accident						حوادث أدت لإضرار مادية
Total	817	471	358	542	575	المجموع
Motor car accident	767	437	325	492	516	صدام سيارات
Bicycle accident	16	7	14	18	14	صدام دراجات
Vehicle accident	31	26	17	30	28	غير مركبات
Others	3	1	2	2	17	حوادث أخرى

Vehicles . (cars, bicycles & others) .

مركبات : (سيارات - دراجات - وبقيّة الآليات) .

Source : Internal Security Force.

مصدر : قيادة قوى الأمن الداخلي .



رئاسة بوليس السودان

وزارة الداخلية

ص . ب ٢٨٨

العنوان التفرافي - الشرطة

المكتبة رقم : رئاسة البوليس / ١١/١٢

الخرطوم : ١١/١٢/١٩٧٢



السيد / وكيل وزارة الخارجية

وصلتني البرقية المرفقة صورتها من السيد / جلال سيف
بولاية شيقان بالولايات المتحدة - وفي هذه البرقية يطلب السيد /
جلال منه بعض احصائيات حوادث حركة المرور .

بيان الحوادث المشار اليها عنه عام ١٩٧٢ / ٧٢ لكل القطر

كالتالي :-

٣٩٦	الموت بفعل طيش واهمال
٩٧٥	سبب الاذى الجسيم
٣٥٣٦	سبب الاذى البسيط
٤٩٠٧	المجملة

ارجو التكرم برفع هذه البيانات لسفارتكم بواسطة شخص تثق بيهما
للسيد جلال - ونسلكوا

على فضلي مدير
مدير البوليس

Feb 22nd 1972

Dear Mr Saif.

With regards to your letter asking for information about cars & accidents I am enclosing some information which I hope will be of some help to you. As regards statistics & figures mentioned from the occupied West Bank - i.e. JBL, etc., etc., the figures mentioned are the last recorded i.e. ~~per~~ before 1967

Jordan did not participate in the road sign conference in Vienna in 1968 & thus did not sign the act but we try to follow the international signs as close as possible.

Hoping these information will be of some help & wishing you all the luck

yours truly

Maher Nabulsi

Maher Nabulsi
Assistant Traffic Director
Security Department
Amman
Jordan

بسم الله الرحمن الرحيم



سفارة الجمهورية العربية الليبية

واشنطن

التاريخ : ٥١ صفر ١٤١٢ هـ

الموافق : ٢١ طوبس ١٩٧٢ م

الموضوع : _____

رقم : ١٦٧٢ _____

الاخ جليل سيف

بمعدلتهم

نشير لرسالتنا المؤرخه في ١٩ اذوالحجه ١٣٩٢ هـ الموافق ١٩٧٢/٢/٤ م . نفيدكم بأننا تلقينا اخيرا المعلومات المتعلقة بالمرور والتي سبق وان طلبتموها وهي كالآتي :-
اولا :- أود أن احيظكم علما بأن لدينا من الاحصاءات والمعلومات المتعلقة بالمرور وجميع الامور الأخرى الخاصه بالشروط مايمهد فخرة لتنظيمها ودقتها .
ثانيا :- أن عدد حوادث الطرق التي حصلت في الجمهوريه العربيه الليبيه خلال عام ١٩٧٠ م . بلغت ١٢٤١٣ نتج من ٤٨٥ حادث منها وفاة ٥٢٥ شخص كما أصيب عدد ٨٣ شخص في ٥٧٢٢ حادث أصابات بعضهم خطيرة وأهم الاسباب التي أدت الى وقوع هذه الحوادث هي :-

السير بسرعه تفوق الحد المقرر قانونا / عدم الالتزام بالجانب الايمن للطريق أثناء السير استعمال الانوار المبهرة ليلا / عدم مراعاة أولويه مرور المشاة .
ثالثا :- بلغ عدد السيارات المسجله في الجمهوريه العربيه الليبيه حتى نهاية عام ١٩٧١ م ، ٢٢٦,٢١٨ (٢٢٦,٢١٨) ودرجاته ثابته ، وعدد السائقين ٢٢٦,٢١٨ .
رابعا :- لم توقع حكومه الجمهوريه العربيه الليبيه على اتفاقية مؤتمر فيينا لعام ١٩٦٨ وانما تجوز الان دراسة شاملة لهذه القرارات ومن المتوقع يتم التوقيع عليها .
تجدون مرفق طيه بعض النماذج المتعلقة برخص السيارات المعمول بها ج . ع . ل ، نأمل ان تكون هذه المعلومات وافييه .

والسلام عليكم ورحمة الله

" محمد رجب فيتور "

المستشار

تفضل لخدمتي في العربية
يرافقكم

السيد جليل السيد

تحية طيبة وبعد

إشاعة الخلل في اللغة العربية، والذين استلموا أفضا أفض
أني يبدو أنه الروعيه سوف يتأخر بعض الشيء كما هو
وحيث أنه المطلوب قد مررنا بالفضل في الوقت الحاضر
فإننا نأسف لعدم إبقاءنا على طابع اللغة العربية
عندنا هذا حيث أنه الأفضل قد وضعه محمد كليب ولا بد
أنه تلب جميع الطلبات خاصة تلك التي يكون فيها قدر كبير

صوف الإصدار

في القصر
نزار غانم

١٩٧٠/٩/٢٨

بسم الله الرحمن الرحيم

المملكة العربية السعودية
أمانة مدينة الرياض
عدد

التاريخ
التوايح
الموضوع

الأخ العزيز جليل السيد

شعبة اهل البيت وثقته ربه:

كليني سيدي الوالد جليل ربح حلتك الوطنيه والوجهه اليه
تاريخ ١١ / ٨ / ١٤٠٥ .. وهو بمثابة نصه طيبة لتجديد لعمرك
بكم لا حياءه كنهه في اسعد الاصول واجل ..
بابه لعدد العواطف هوادى السيارى لعالم ملقة
بلغ ٤٠٠٠ (اربعه آلاف) حارته توفي شجرة لاه (٦٥٠)
سماه وانكاد وضوءه شمساً وجمع فيل (١٤٧٥)
الف واربعائه وخمسة وسبعه شمساً

يسعدني في الختام انه ارجوكم استمرار الدخيل وطناً
ار حارة رانه ابعثكم ثبات الوالد الحامد وهو منى رطانه

الرجاء تدارك رالي بقاد
اضفك
عبد الله محمد علي
١٤٠٥ / ٩ / ٢٤

EMBASSY OF INDIA
IRAQI INTERESTS SECTION
1801 P STREET, N.W.
WASHINGTON, D. C. 20036

بسم الله الرحمن الرحيم

السفارة الهندية
شعبة رعاية مصالح
الجمهورية العراقية
واشنطن

الرقم / اقتصاديه / ١٧ / ٤٤

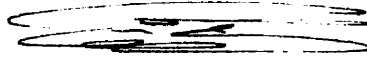
التاريخ ١٩٧٢/٤/٢٦

Mr. Jallel Saif
P.O.B. 418
East Lansing, Michigan 48823

الى السيد جليل سيف المحترم

الموضوع / طلب معلومات عن المرور

نود ان نخبركم باننا كتبنا للجهات العراقية المختصة بصدد طلبكم لمعلومات عن
المرور • ونرفق بطيه كتابنا المؤرخ في ١٢/٤/١٩٧٢ المتعلق بهذا الشأن •
يرجى الاطلاع •



مهدى البغدادى
السكوتير الاول

٤/٢٦ عبد الحافظ

EMBASSY OF MOROCCO
WASHINGTON, D. C.

SEC/ 091

January 18, 1972

Mr. Jallel Saif
P.O. Box 418
E. Lansing, Michigan 48823

Dear Mr. Saif:

Thank you for your letter of January 5, 1972,
regarding automobile accidents in Morocco.

In answer to your first and third questions, it
is advised to write to the Ministry of Public Works in
Rabat, Morocco.

Referring to your second question, kindly find
enclosed, literature that may prove useful.

Trusting to have been of assistance, I remain,

Sincerely yours,



Mekki Benjaber
Counselor

MB/tmc

التاريخ : ٢ / ٢ / ١٩٧٢ م

وزارة الخارجية
سفارة المملكة العربية السعودية في واشنطن
ROYAL EMBASSY OF SAUDI ARABIA
WASHINGTON, D. C. 20036

السيد جليل سيف

بعد التحية :

بالإشارة الى خطابكم المؤرخ في ٥ يناير ١٩٧٢ بشأن
طلبكم بعض المعلومات الاحصائية عن السيارات وما يتصل بامور المرور
بالمملكة .

ننصح لكم بمعاودة الكتابة مرة اخرى للمديره العامة
للمرور بوزارة الداخلية وليكن ذلك باللغة العربية .

وتقبلوا تحياتنا،،

عبد اللطيف عبد الله الميمني


السكرتير الثالث بالسفارة

APPENDIX B

Dear Saudi Arabian drivers:

I deeply believe that any future planning or programming in any field should be based on scientific research. Through research, problems and possible solutions can be diagnosed and found.

For these reasons, I am doing my research on a growing area of importance for all of us--traffic safety. Little research on this area has ever been done in Saudi Arabia.

To make this study successful, I need your full cooperation in answering this questionnaire honestly and to the best of your ability. The results will not be disclosed or affect your driving record. Your name is not required.

The objective of this study is to examine your knowledge as a member of a growing group of drivers in Saudi Arabia, private car owners.

Answer this questionnaire according to your knowledge and experience gained through driving in Saudi Arabia.

The questionnaire is divided into two parts: first, some information about yourself and secondly, your knowledge about safe driving. After each question there will be several possible answers. Please circle the one answer which you feel most correctly answers the question.

Thank you for your cooperation.

Jallel Saif

PERSONAL INFORMATION

1. Would you classify the area where you have lived most of your life as
 - 1) rural
 - 2) urban
2. Which province have you lived in for most of your life?
 - 1) Western Province
 - 2) Eastern Province
 - 3) Northern Province
 - 4) Southern Province
 - 5) Central Province
3. What amount of education have you completed?
 - 1) elementary or equivalent
 - 2) intermediate
 - 3) high school
 - 4) college
 - 5) none
4. What is your age?
 - 1) 18-29
 - 2) 30-39
 - 3) 40-49
 - 4) 50 or above
5. How many years have you been driving?
 - 1) 1-4
 - 2) 5-9
 - 3) 10-24
 - 4) 25 or more
6. What is your major reason for driving?
 - 1) work only
 - 2) work and pleasure
 - 3) status
 - 4) trips not related to work

7. Have you been involved in any of the following types of accidents?
 - 1) fatal accident
 - 2) accident including injury
 - 3) accident including damage to car only
 - 4) none
8. In general, how many kilometers do you drive in an average year?
 - 1) 1,000-4,000
 - 2) 5,000-9,000
 - 3) 10,000-14,000
 - 4) 15,000 or more
9. Please circle the average annual income most closely corresponding to your own.
 - 1) below 2,000 RS
 - 2) 2,000-5,000 RS
 - 3) 11,000-14,000 RS
 - 4) 15,000 and above RS
10. What is your occupation?
 - 1) government employee
 - 2) businessman
 - 3) company employee
 - 4) student
 - 5) other
11. How did you obtain your first driver's license?
 - 1) I passed the interview only
 - 2) I passed the road test only
 - 3) I passed both the interview and the road test
 - 4) I got it through a friend
 - 5) I purchased a driver's license

TEST OF KNOWLEDGE

1. Unless otherwise posted, the maximum speed limit for small cars outside the city is
 - 1) 70 kilometers per hour
 - 2) 80 kilometers per hour
 - 3) 100 kilometers per hour
 - 4) 60 kilometers per hour

2. Unless otherwise posted, the maximum speed limit in the city for small cars is
 - 1) 50 kilometers per hour
 - 2) 30 kilometers per hour
 - 3) 25 kilometers per hour
 - 4) 40 kilometers per hour

3. The posted speed limit is meant to function in
 - 1) rainy weather
 - 2) all kinds of weather
 - 3) clear weather conditions
 - 4) when the road is covered by sand and gravel

4. The basic speed law requires the driver to drive
 - 1) so as to be able to stop with an assured safe distance of any object
 - 2) at 70 kilometers per hour for small cars outside of city limits
 - 3) at 45 kilometers per hour for passenger cars in cities
 - 4) as fast as possible

5. When you are driving down a steep hill
 - 1) you should stop your engine and put your foot on the brake
 - 2) leave your engine running even though you don't need the power
 - 3) stop your engine and put your gear in neutral
 - 4) apply your handbrake

6. When you are using the high beam of your headlights, law requires that they cover a distance of at least
 - 1) 50 meters
 - 2) 100 meters
 - 3) 25 meters
 - 4) 75 meters
7. "YIELD RIGHT OF WAY" signs mean
 - 1) you must come to a complete stop
 - 2) you do not need to decrease your speed
 - 3) you may proceed cautiously without stopping if both directions are clear
 - 4) that you can assume that you have the right of way
8. When you are using the low beam of your headlights, law requires that they cover a distance of at least
 - 1) 20 meters
 - 2) 30 meters
 - 3) 15 meters
 - 4) 10 meters
9. A single, solid yellow line on your side of the center line of the street means
 - 1) you can pass slower traffic
 - 2) you can cross the center line to gain clearer vision of traffic ahead
 - 3) you may not cross the center line
 - 4) you may pass with care
10. Streets are generally most slippery
 - 1) just after it starts to rain
 - 2) when it has been raining for several hours
 - 3) when it rains at night
 - 4) when it has been raining for several days
11. If an oncoming driver fails to dim his headlights you should
 - 1) keep your eyes on the centerline of the road
 - 2) keep your eyes on the centerline of the road and flash your headlight until you pass
 - 3) keep flashing your lights from high to low until you pass
 - 4) flash your lights once and look ahead at the right edge of the road

12. On a narrow two lane road, if the vehicle ahead stops to make a left turn, you are obligated to
 - 1) pull off the pavement and pass him on the right
 - 2) sound your horn to cause him to complete his turn
 - 3) remain stopped behind him until he completes his turn
 - 4) sound your horn and pass him on the left
13. When you hear a siren or see a red warning light of an emergency vehicle, you are required by law to
 - 1) pull over immediately to the left side of the road and stop
 - 2) slow down and stop where you are
 - 3) pull over to the right side of the street and stop
 - 4) pull over to the left side of the street and turn off your engine
14. When two vehicles approach an open intersection at the same time where there is no sign, signal, or officer
 - 1) the vehicle on the left has the right of way
 - 2) the vehicle on the right has the right of way
 - 3) both cars have the right of way
 - 4) whichever car takes the initiative has the right of way
15. The law requires that the closest legal distance you can park to a stop sign, a signal, or a curve is
 - 1) 5 meters
 - 2) 15 meters
 - 3) 12 meters
 - 4) 10 meters
16. While you are driving, if your tire blows up, you should
 - 1) brake hard and turn toward the right edge of the road
 - 2) pump your brake constantly, so you will be able to stop in a short distance
 - 3) grip the steering wheel firmly, slow down and brake lightly and move to the right
 - 4) maintain your normal speed of your car and it finally will come to a stop

17. An intoxicated driver has the following characteristic:
 - 1) his reaction time will be faster than usual
 - 2) a tendency to be more careful because he knows he is handicapped
 - 3) his judgment is impaired
 - 4) don't know
18. When you travel in foggy weather you should
 - 1) drive more slowly and use the high beam of your headlights
 - 2) maintain regular speed and do not use headlights
 - 3) drive slower and turn your headlights on and off
 - 4) drive slower and use the low beam of your headlights
19. When you are driving in the city at night your headlights should be
 - 1) kept on the high beam all the time
 - 2) kept on a low beam only when you are behind another car
 - 3) put on the high beam when passing another car
 - 4) kept on the low beam as long as driving within a city area
20. Brakes on your car must be good enough to
 - 1) keep the car from being pushed or pulled when parked
 - 2) stop the car within one car length of any object at any speed
 - 3) stop your car within an assured safe distance from any object
 - 4) only need checking every three years
21. After losing braking because of driving through deep water, the driver should
 - 1) brake hard several times to dry out the brakes
 - 2) speed up to dry the brake lining
 - 3) apply gentle pressure on the brakes until they dry out
 - 4) do not put pressure on brakes until they dry out

22. When driving on a straight, dry, concrete pavement, at a speed of 100 kilometers per hour, a car will travel approximately
 - 1) 15 meters per second
 - 2) 25 meters per second
 - 3) 10 meters per second
 - 4) 28 meters per second
23. When you increase your speed from 50 kilometers to 100 kilometers per hour, the braking distance is increased approximately
 - 1) 2 times
 - 2) 3 times
 - 3) 4 times
 - 4) 10 times
24. "STOP" signs mean
 - 1) reduce speed
 - 2) slow down and yield right of way
 - 3) stop when there is traffic
 - 4) stop even when the intersection is clear
25. When you are involved in an accident involving injuries to a person you should
 - 1) obtain aid for the injured and notify closest police station
 - 2) notify police only when accident is my fault
 - 3) wait for a passing motorist to notify police
 - 4) take injured person to hospital
26. Drivers of motor vehicles should maintain a distance from the rear of other motor vehicles of
 - 1) one car length for every ten kilometers per hour
 - 2) 50 meters
 - 3) 10 car lengths for every 10 kilometers per hour
 - 4) 25 meters
27. The handbrake controls
 - 1) only the front wheels
 - 2) all four wheels
 - 3) only rear wheels
 - 4) doesn't affect the wheels

28. The most important factor in safe driving is
- 1) skill
 - 2) knowing the laws
 - 3) attitude
 - 4) condition of your car
29. The white lights located at the rear of a car indicate
- 1) that the car is moving forward
 - 2) that the car is reversing
 - 3) that the car is in emergency
 - 4) that the car is turning
30. The general meaning of international road signs is indicated by their
- 1) size
 - 2) color
 - 3) shape
 - 4) symbols
31. When approaching a green traffic signal, the driver should
- 1) continue at a constant speed because he has the right of way
 - 2) blow his horn if pedestrians try to interfere with his progress
 - 3) stop only if an officer or police traffic director asks him to
 - 4) yield right of way to pedestrian
32. Stop signs are recognized by the following shape
- 1) circular bearing a triangle in the middle
 - 2) square bearing a triangle in the middle
 - 3) rectangular bearing a triangle in the middle
 - 4) triangular bearing a circle in the middle
33. When driving, if the rear of car skids to the right on a slippery road, you should
- 1) take your foot off the gas pedal and steer to the left side of the road
 - 2) steer to the right and accelerate
 - 3) take your foot off the gas pedal and steer to the right side of the road
 - 4) maintain your speed and stay on your course

34. "WARNING" signs can be recognized by the following shape
- 1) circular
 - 2) triangular
 - 3) square
 - 4) rectangular
35. Regulatory signs are recognized by the following shape
- 1) square
 - 2) rectangular
 - 3) circular
 - 4) triangular
36. If a driver is driving a used car, he should have it inspected for mechanical defects every
- 1) 4 years
 - 2) 3 years
 - 3) 1 year
 - 4) 2 years
37. When entering an intersection on a two-lane street, one should
- 1) look right, then left, then right
 - 2) look left, then right, then left
 - 3) look wherever is best for his own vision
 - 4) look straight ahead
38. According to law, the fine for a traffic violation will be doubled
- 1) if you repeat the same violation five times a year
 - 2) if you repeat the same violation 3 times a year
 - 3) if you repeat the same violation within the same year
 - 4) if you repeat the same violation within 2 years

Thank you for your cooperation.

APPENDIX C

MICHIGAN STATE UNIVERSITY EAST LANSING • MICHIGAN 48823

UNIVERSITY COLLEGE • DEPARTMENT OF SOCIAL SCIENCE • BESSEY HALL

June 2, 1972

TO WHOM IT MAY CONCERN

This is to certify that the translation of this questionnaire into Arabic by Mr. Jallel Saif is quite correct and seems to convey the meaning and purpose of the research scheme.

Truly,



Fauzi M. Najjar
Professor

MICHIGAN STATE UNIVERSITY
DEPARTMENT OF SOCIAL SCIENCE
UNIVERSITY COLLEGE
129 BESSEY HALL
EAST LANSING, MICHIGAN 48823

تحية طيبة وبعد :-

وانطلاقاً من هذا المبدأ حاولت جاهداً ان اعمل بحتى هذا فى ميدان من الميادين
الدراسية التى تهبطنا جميعاً والتى هى فى تطور مستمر . ذلك هو المرور وما يتصل به من
نظم وقوانين يتحتم علينا معرفتها والالمام بها ولعل هذا البحث هو الاول من نوعه فى وطننا
العزیز المملكة العربية السعودية .

ان هذه الاسئلة تنقسم الى فئتين رئيسيتين .

الأولى : تتعلق ببعض المعلومات الشخصية اللازمة للبحث

الثانية : معلومات عامة عن متطلبات القيادة الصحيحة والتي هي مدار البحث • وتستجد بعد كل سؤال عددا من الافتراضات الممكنة للاجابة الصحيحة • يوجد بينها افتراض واحد فقط هو
الجواب الصحيح • وكل ما هو مطلوب من التفضل بوضع دائرة على رقم احد الافتراضات السدي
تري انه يتضمن الجواب الصحيح •

شاكرين لك حسن تقديرک وتجاوبك،

مـتـحـيـاتـي المـخـلـصـة.

۱۰۰

جسلیل السہب

(١)

١- اين قضيت معظم حياتك المعيشيه ؟

(١) المدينة

(٢) القرية

٢- ما المنطقة التي كنت تعيش فيها ؟

(١) المنطقة الغربية

(٢) المنطقة الشرقية

(٣) المنطقة الشطالية

(٤) المنطقة الجنوبية

(٥) المنطقة الوسطى

٣- ما المؤهل الدراسي الذي حصلت عليه ؟

(١) المرحلة الابتدائية

(٢) المرحلة المتوسطة

(٣) المرحلة الثانوية

(٤) المرحلة الجامعية

(٥) بدون مؤهل دراسي

٤- حدد عمرت من بين هذه الفئات .

(١) ١٨-٢٩

(٢) ٣٠-٣٩

(٣) ٤٠-٤٩

(٤) ٥٠ فأكثر

٥- ما المدة التي زاولت فيها عمل القيادة ؟

(١) ٤ سنة

(٢) ٥-٩ سنة

(٣) ١٠-٢٤ سنة

(٤) ٢٥ فأكثر سنة

(٢)

٦- ما الغرض الرئيس من قيادتك السيارة ؟

(١) الذهاب للعمل

(٢) الذهاب للعمل والاستماع معاً

(٣) لمركز الاجتماعى

(٤) للرحلات الخاصة

٧- هل حصل لك حادث نتج عنه احد الامور الآتية ؟

(١) الموت

(٢) شجاج او جروح

(٣) اضرار للسيارة فقط

(٤) لم تتعرض لاي منها طيلة ممارستك القيادة

٨- كم على وجه التقريب المسافة مقدرة بالكيلومتر التى تقطعها سنوياً ؟

(١) ١٠٠٠ - ٤٠٠٠

(٢) ٥٠٠٠ - ٩٠٠٠

(٣) ١٠٠٠٠ - ١٤٠٠٠

(٤) ١٥٠٠٠ فأكثر

٩- ما متوسط دخلك السنوى على وجه التقريب مقدراً بالريال السعودى ؟

(١) اقل من ٢٠٠٠

(٢) ٢٠٠٠ - ٥٠٠٠

(٣) ٦٠٠٠ - ١٠٠٠٠

(٤) ١١٠٠٠ - ١٤٠٠٠

(٥) ١٥٠٠٠ فأكثر

١٠- ما المهنة التى تـزاولـها ؟

(١) موظف حكومى

(٢) رجل اعمال

(٣) موظف شركة او مؤسسة غير حكومية

(٣)

٤) طالب

٥) اى مهنة اخرى غير ما ذكر

١- اى طريقة من الطرق الآتية حصلت على رخصة القيادة ؟

١) نجاح فى القابلة الشخصية فقط

٢) نجاح فى القيادة العملية فقط

٣) نجاح فى القيادة العملية والقابلة الشخصية معا

٤) بواسطة صديق او قريب

٥) بوسيلة اخرى غير ما ذكر (كالشراء)

(٤)

مسدى معرفتك لانتظمة المرور

١- ما السرعة القصوى للسيارة الصغيرة فى الأماكن التى لا يوجد بها اشارات مرور لتحديد

السرعة خارج المدينة ؟

(١) ٧٠ كيلومترا فى الساعة

(٢) ٨٠ كيلومترا فى الساعة

(٣) ١٠٠ كيلومترا فى الساعة

(٤) ٦٠ كيلومترا فى الساعة

٢- ما السرعة القصوى للسيارة الصغيرة فى الأماكن التى لا يوجد بها انتظمة لتحديد السرعة

وذلك داخل المدينة ؟

(١) ٥٠ كيلومترا فى الساعة

(٢) ٣٠ كيلومترا فى الساعة

(٣) ٢٥ كيلومترا فى الساعة

(٤) ٤٠ كيلومترا فى الساعة

٣- فى اى الحالات التالية تنطبق السرعة المحددة فى نظام المرور ؟

(١) فى الجو المعطر

(٢) فى الاحوال المناخية المختلفة

(٣) فى الجو الصحو

(٤) فى الطرقات المغطاة بالاتربة او الرمال

٤- نظام المرور للسرعة ينص على احدى الحالات الاتية :

(١) القدرة على ايقاف السيارة على بعد كات من اى خطر

(٢) القيادة بسرعة ٧٠ كيلومترا فى الساعة للسيارة الصغيرة خارج المدينة

(٣) القيادة بسرعة ٤٥ كيلومترا فى الساعة للسيارة الصغيرة داخل المدينة

(٤) القيادة بان سرعة تشاء*

٥- فى حالة قيادتت السيارة من منحدر مرتفع، ما الذى يتوجب عليك نظاما ؟

(١) ايقاف المحررت تماما لعدم الحاجة اليه .

(٢) ايقاف المحرك ووضع القدم على الفرامل

(٣) ايقاف المحررت مع وضع المبدل (النعشيش) على الفراغ (الفاضى) .

(٥)

(٤) استخدام فرامل اليد (الجلنط)

(٥) عدم ايقاف المحرك مع عدم الحاجة اليه .

٦ - عند استعمل انوار الطريق (النور العالى) نظام المرور يتطلب انارة مسافة لا تقل عن :

(١) ٥٠ مترا

(٢) ١٠٠ مترا

(٣) ٢٥ مترا

(٤) ٧٥ مترا

٧- اشارة اولوية المرور تعنى :-

(١) وجوب ايقاف السيارة تماما

(٢) لا داعى لتخفيف السرعة

(٣) الاستمرار متى كان تقاطع الطرق خاليا

(٤) افتراض ان اولوية المرور لك

٨- عند استعمال انوار التالى (النور الواطئ) نظام المرور يتطلب انارة مسافة لا تقل عن :-

(١) ٢٠ مترا

(٢) ٣٠ مترا

(٣) ١٥ مترا

(٤) ١١٠ مترا

٩- ما الذى يعنيه الخط الواحد المتصل (الاصفر او الابيض) الذى يتوسط الطريق ؟

(١) السطح يتجاوز السيارة التى امامك

(٢) امكانية التجاوز لغرض الرؤية الواضحة

(٣) عدم التجاوز

(٤) التجاوز مع الحرس الشديد

١٠- فى اية حالة من الحالات التالية تكون الطرق اكثر عرضة لانزلاق السيارة ؟

(١) عند نزول المطر مباشرة

(٢) بعد ساعات من نزول المطر

(٣) عند نزول المطر وخاصة فى الليل

(٤) عند استمرار نزول المطر لعدة ايام

(٦)

١- ما الذى يتوجب نظاما عند مواجعتك لسيارة عالية الانوار فى طريق مزدوج ؟

- (١) النظر الى منتصف الطريق وتحديد اتجاه سيرك
- (٢) النظر الى منتصف الطريق وتحديد اتجاه سيرك مع لخداع الانوار العليا حتى يتجاوز السيارة المواجهة
- (٣) الاستمرار فى السير مع اعطاء الاشارات الضوئية المتكررة بواسطة النور العالى والواظى معا حتى تتجاوز

(٤) اعطاء اشارة بالنور العالى والاخذ بيمينه الطريق مع النظر الى الامام

٢- اذا كنت فى طريق ضيق مزدوج وتوقفت امامك سيارة قاصدة الاتجاه الى اليسار . ما الذى يتحتم عمله ؟

- (١) الخروج على الرصيف من الناحية اليمنى والاستمرار فى السير
 - (٢) استعمل العنبر باستمرار حتى يفسح لك الطريق
 - (٣) الوقوف تماما حتى تأخذ اتجاهها
 - (٤) استعمل العنبر والتجاوز من ناحية الشمال
- ٣- عند سماعك او رؤيتك لسيارات الطوارئ . ما الذى يتحتم عمله نظاما ؟

- (١) الاتجاه الى اليسار والوقوف
 - (٢) تخفيف السرعة والوقوف حيث انت
 - (٣) الاتجاه الى اليمين والوقوف
 - (٤) الاتجاه الى اليسار مع ايقاف المحرك
- ٤- ما الذى يجب عمله عند تقاطع الطر مع وجود سيارة اخرى حيث لا يوجد اشارة وقوف او جندى مرور ؟

- (١) السيارة التى فى جهة الشمال لها افضلية المرور
- (٢) السيارة التى فى جهة اليمين لها افضلية المرور
- (٣) كلتا السيارتين لها افضلية المرور معا
- (٤) اى سيارة تبدأ بالتحرك أولا لها افضلية المرور

(٢)

٥- اقرب مسافة نظامية لايقات السيارة وتركها قبل منعطف او اشارة وقوف

(١) ١٥ متر

(٢) ١٥ مترا

(٣) ١٢ مترا

(٤) ١٠ متر

٦- كيف تتصرف اذا انفجر احد اطارات السيارة وانت في حالة السير ؟

(١) الكبس بشدة على الفرامل لايقات السيارة مع الاتجاه الى اليمين

(٢) تكرار الكبس على الفرامل مرة بعد اخرى حتى تستطيع ايقاف السيارة في اقصر مسافة

ممكنة

(٣) القبس على عجلة القيادة مع تخفيف السرعة والكبس على انفرامل ببطء مع الاتجاه لليمين

(٤) الاستمرار في السير بالسرعة العادية حتى تقف السيارة ذاتها

٧- سائق السيارة الواقع تحت تاثير الكحول يتصرف باحدى الصفات الاتية

(١) رد الفعل لديه اسرع منه في حالته الطبيعية

(٢) شعوره بالخطر يدفعه الى محاولة التحكم في سيره

(٣) عدم قدرته على تقدير الامور كما ينبغي

(٤) لا اعرف

٨- عند السفر في حالة وجود ضباب وعدم وضوح الرؤية يتحتم

(١) القيادة ببطء مع استخدام انوار الطريق (النور العالي)

(٢) الاستمرار بنفس السرعة مع عدم استعمال انوار الطريق

(٣) السير ببطء مع تكرار اضاءة انوار الطريق واطفائها

(٤) السير ببطء مع استعمال انوار التلاقي (النور الواطئ)

٩- في حالة قيادت السيارة ليلا داخل المدينة

(١) الاستمرار في اضاءة انوار الطريق

(٢) استخدام انوار التلاقي في حالة السير خلف سيارة

(٣) استخدام الانوار العليا عند مجاوزت سيارة اخرى

(٤) استخدام انوار التلاقي طيلة السير

(٨)

٢٠- فرامل السيارة يجب ان تكون فى حالة جيدة بحيث تمكن من :-

- (١) ايقاف السيارة حيث هى بحيث لا يمكن زحزحتها من مكانها
- (٢) ايقاف السيارة على بعد طول سيارة من اى جسم مهما كانت السرعة
- (٣) ايقاف السيارة على مسافة كافية لضمان سلامتها .
- (٤) ضرورة الفحص كل ثلاث سنوات لتوؤد و واجبها

٢١- عند عطل الفرامل نتيجة وصول ماء اليها . ما الذى يتحتم عمله

(١) تكرار الكبس (التبديل) حتى تجف

(٢) السير بسرعة لغرض التجفيف

(٣) الكبس برفق حتى تجف

(٤) ترك استعمالها حتى تجف طبيعيا .

٢٢- فى حالة السير بسرعة ١٠٠ كيلومتر فى الساعة فى طريق مستقيم مسفلت . ما المسافة التقريبية

التي تقطعها بالقر فى الثانية الواحدة

(١) ٥ مترا فى الثانية

(٢) ٢٥ مترا فى الثانية

(٣) ١٠٠ مترا فى الثانية

(٤) ٢٨ مترا فى الثانية

٢٣- عند زيادة السرعة من ٥٠ كيلومترا فى الساعة الى ١٠٠ كيلومترا فى الساعة المسافة المقررة

للقوف تتضاعف تقريبا :

(١) مرتان

(٢) ثلاث مرات

(٣) اربع مرات

(٤) عشر مرات

٢٤- ما الذى تعنيه اشارة الوقوف ؟

(١) تخفيف السرعة

(٢) تخفيف السرعة واعطاء اولوية المرور

(٣) الوقوف عند ما نوجد سيارة اخرى

(٤) الوقوف مع عدم وجود اى سيارة

(٩)

٢٥- عند التعرض لحادث نتج عنه بعض الاصابات يتحتم الاتى :-

- (١) الحصول على اسعافات اولية واخبار اقرب مخفر بالحادث
 - (٢) اخبار الشرطة فى حالة التسبب فى وقوع الحادث
 - (٣) الانتظار فى مكان الحادث ريثما تبلغ الجهة المختصة بالحادث
 - (٤) الاسراع باخذ العصاب الى اقرب مستشفى
- ٢٦- ما المسافة التى يتحتم تركها بين سيارتين وبين سيارة تسير امامك
- (١) مسافة طول سيارة لكل ١٠ كيلومترا فى الساعة
 - (٢) ٥٠ مترا
 - (٣) طول عشر سيارات لكل ١٠ كيلومترات فى الساعة
 - (٤) ٢٥ مترا

٢٧- ما مهمة فرامل اليد (الجلنط)

- (١) ضبط العجلات الامامية فقط
- (٢) ضبط العجلات الاربعة
- (٣) ضبط العجلات الخلفية فقط
- (٤) لا اهمية لها بالنسبة لعجلات السيارة

٢٨- ما اهم عامل بالنسبة لسلامة القيادة ؟

- (١) المهارة
- (٢) الالمام بالانظمة
- (٣) تقدير المسئولية
- (٤) حالة السيارة

٢٩- علام تدل الانوار الخلفية البيضاء فى السيارة ؟

- (١) التحرك الى الامام
- (٢) التحرك الى الخلف
- (٣) حالة الطوارئ
- (٤) حالة تغيير الاتجاه

(١٠)

٣٠- كيف تميز اشارة رات المرور الدولية ؟

(١) بالحجم

(٢) باللون

(٣) بالشكل

(٤) بالرمز

٣١- ما الذى يتحتم على السائق عند الاقتراب من اشارة ضوئية خضراء ؟

(١) الاستمرار فى السرعة

(٢) استعمال المنبه فى حالة مشاة فى الطريق مع الاستمرار فى السير

(٣) الوقوف فقط فى حالة وجود جندي مرور واعطاء الاشارة بالوقوف

(٤) اعطاء اولوية المرور للمشاة

٣٢- اشارة الوقوف تعرب بالشكل الاتى :

(١) دائرة يتوسطها مثلث

(٢) مربع يتوسطه مثلث

(٣) مستطيل يتوسطه مثلث

(٤) مثلث تتوسطه دائرة

٣٣- فى حالة انزال السيارة من الخلف ناحية اليمين يجب عليك :-

(١) رفع القدم عن دعاسة البنزين مع ادارة المقود ناحية اليسار

(٢) ادارة المقود ناحية اليمين مع زيادة السرعة

(٣) رفع القدم عن دعاسة البنزين مع ادارة المقود الى اليمين

(٤) الاستمرار بنفس السرعة

٣٤- اشارة رات المرور التحذيرية تعرب بشكل من الاشكال الاتية :-

(١) شكل دائرة

(٢) شكل مثلث

(٣) شكل مربع

(٤) شكل مستطيل

(١١)

٣٥- اشارة النهى والتنظيم للسير تعرف بشكل من بين الاشكال الاتية :-

(١) مربع

(٢) مستطيل

(٣) دائرة

(٤) مثلث

٣٦- متى يتحتم نظاما فحص السيارة المستعملة للتأكد من صلاحيتها للاستمرار ؟

(١) كل اربع سنوات

(٢) كل ثلاث سنوات

(٣) كل سنة

(٤) كل سنتين

٣٧- عند عبور نقطة تقاطع لشارع مزدوج ٠ ما الذى يجب عليك عمله ؟

(١) الالتفات الى اليمين ثم الى الشمال ثم الى اليمين مرة اخرى

(٢) الالتفات نحو الشمال ثم اليمين ثم الشمال

(٣) التصرف بما تراه مناسبا

(٤) النظر الى الامام

٣٨- طبقا لنظام العقوبات فى المرور تتضاعف العقوبة :

(١) فى حالة تكرار المخالفة خمس مرات فى السنة

(٢) فى حالة تكرار المخالفة ثلاث مرات فى السنة

(٣) فى حالة تكرار المخالفة فى سنة واحدة

(٤) فى حالة تكرار المخالفة الواحدة فى مدة سنتين

شكرا لتجاربكم

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