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Economic Commission for Africa

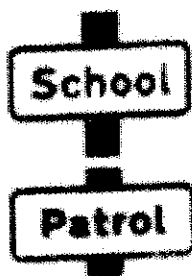
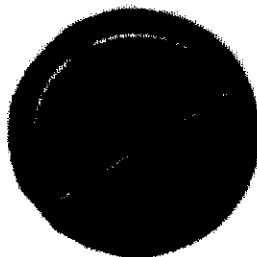
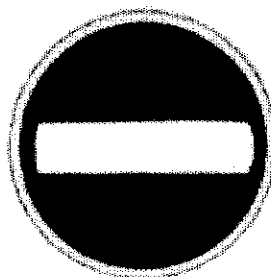
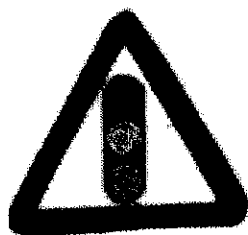
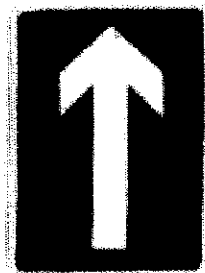
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ECA Multidisciplinary
Regional Advisory Group



**REPORT ON
ROAD USER EDUCATION CAMPAIGN
FREETOWN, SIERRA LEONE
7TH - 26TH OCTOBER 1996**



BY
DANIEL R. W. FAUX
REGIONAL ADVISER (TRANSPORT)
MRAG/TCTD

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**ADDIS ABABA, ETHIOPIA
OCTOBER 1996**

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I. BACKGROUND

1.1 Request from the Sierra Leone Roads Authority (SLRA) and Objective of Mission

1. On the 5th of September 1996, the Executive Secretary of the Economic Commission for Africa (ECA) received a letter from the Sierra Leone Roads Authority (SLRA) informing him about a plan to hold a three-week Road User Education Campaign. In addition, SLRA requested assistance from the ECA in the way of literature, posters, video cassettes and the release of the Regional Adviser (Transport) to act as a resource person in the Traffic Management Committee as well as for his participation in the activities of the campaign. The Regional Adviser visited Sierra Leone from September 30, 1996 to October 13, 1996.

1.2 Relevance of Mission and Preparation

2. Within the framework of the United Nations Transport and Communication Decade Program for Africa (UNTACDA II), road safety activities feature prominently. Objective seven of the global objective of UNTACDA II is concerned with the "Improvement of transport safety and security as well as strengthening transport-related environment protection measures". Priority areas identified within UNTACDA II pertaining to road safety improvement are:

- (a) Integration of road safety measures;
- (b) Financing of road safety activities;
- (c) Training, education, and information dissemination;
- (d) Accident data collection and treatment;
- (e) Traffic regulations and enforcement;
- (f) Low cost physical measures;
- (g) Priority areas for research;
- (h) Technology transfer and assistance policy.

3. Stemming from priority (g) above, topical areas in road traffic safety include:

- Research on accident data collection, treatment of data and data analysis;
- Research on the interaction between different elements of road infrastructure and safety;

- Research on comprehensive and integrated road safety schemes;
- Research on law enforcement of different infringements and law enforcement of different road user groups;
- Research on high risk groups;
- Research on road user behavior, mental conditions, social acceptance, road user psychology;
- Research on training, education and information campaigns.

4. Prior to the mission, an extract of the ECA research paper, **IMPROVEMENT OF PEDESTRIAN SAFETY IN URBAN AREAS** and a **CAMPAIGN POSTER** were prepared. (see the conclusion for this extract in Annex 1 and the poster in Annex 2)

II. ROAD USER EDUCATION CAMPAIGN

2.1 Background of the Road Transport Industry in Sierra Leone

2.1.1 General

5. Before the closing down of the Sierra Leone Railway in 1973, road transport competed fairly well with air and rail transport. The pressing Government policy at that time was to provide **LINKS** to the provincial towns in the first instance. The importance of road development took a new dimension when the railway was finally phased out. In term of export and internal trade transactions, road transport accounted for 78 per cent of the total market share, which it still commands.

6. The road network stands at some 13,200 kilometers. About a third of these roads have bitumen surfaces. The country has a low average density of road network, about 0.30 per square miles. The main trunk roads are adequate in length for current needs. The present focus of the government is on maintenance and rehabilitation of the major links. In terms of investment, (both local and foreign) road transport accounted for 80 per cent of total investment in the transport sector.

2.1.2 Legislative Framework

7. The central legislation affecting the road transport industry is the Act to consolidate and Amend the Law relating to Road Traffic. (Cited as the Road Traffic Act. 1964). This Act is supervised by the Ministry of Transport, Communications and the Environment. It has the following essential parts:

- Licensing Authority and Registration and Licensing of vehicles;
- Road Transport Board: and Road Transport Advisor Council;
- Licensing of Drivers;
- Control of Traffic;
- Offenses;
- General Regulations.

8. The Road Traffic Act of 1964 is by and large, still valid. The major problem is its implementation and interpretation. The effectiveness of any system is the implementation of its laws and the unbiased interpretation of those laws. The timely interpretation of the laws is also important.

2.1.3 Main Characteristics

9. The following are the main characteristics of the Road Transport industry as related to safety:

- The regulations on the weight and dimensions of vehicles are not complied with which results in the deterioration of infrastructure and vehicles entailing risks as far as **safety** is concerned.
- The technical inspection of vehicles give rise to violations, consisting either in borrowing or renting parts from someone else at the time of inspection.
- Lack of professional advise before vehicles are purchased for environmental operators. The climate of Sierra Leone throughout the year stands at 80°F or 27°C. Most of the second hand buses and goods haulage vehicles imported into the country are not suitable to be economically operated in Sierra Leone.

- The financial inability of vehicle owners to buy new vehicles. They have therefore resorted to the maintenance and frequent repairs of the imported second hand vehicles at very high cost and results in the erosion of a large part of Sierra Leone's foreign exchange.
- The present mechanical ability of fitters in private garages where vehicles are repaired cannot cope with technological changes in the proper maintenance and repairs to the second hand sophisticated vehicles. Lack of proper mechanic tools and the conversion of a work out part to a fake one is now a common practice in all private garages in the country and this is a risk in private transport industry.
- There are lots of personation in Road Transport operation. Vehicles that are not licensed and authorized for passenger and goods purposes are being found operating as both passenger and goods vehicles. They undercut the profit potential of private commercial vehicles.
- Private operators of road transport vehicles are now confronted with astronomical costs of new vehicles, exorbitant prices of spare parts, high insurance and licensing fees, bad roads (necessitating frequent repairs), and other hidden charges. These factors have contributed in part to drive away from the industry several operators, and to discourage new entrants.
- The quality of service is far below standard both in the Urban and Rural areas. Roads in the Urban and Rural areas are under rugged conditions, ill-equipped vehicles moving here and there, poor driving standard, contravention of the Road Traffic Act by motorist, farmers could hardly afford to truck their products to the nearest market.
- **Driving standard** in the country as a whole is poor. Drivers bypass the certifying and examining officer doing test before obtaining license. This practice had caused numerous fatal accidents and total loss of vehicles in the past.
- Vehicle operators do not know the type of vehicles they buy to ply in a suitable environment. They often buy short range vehicles and deploy them on routes that are meant for high range vehicles.
- Apart from the un-classical system of **issuing driving license** in Sierra Leone, commercial vehicle drivers - whether passenger, goods or chemical vehicles drivers have never received formal training to qualify them to operate as P.S.V. (public Service Vehicle or H.G.V. (Heavy Goods Vehicle) drivers. These un-classical drivers do not only create hazards on the road but are in most cases responsible for the destruction of engines, gear boxes, clutches of all heavy duty

vehicles and buses in the country. The conduct and inefficiency of these drivers is a great financial burden on private vehicle operators and this could hardly make them survive in the road transport operation.

- Bad lubricants used by private vehicle operators contributes to damaged engines. The public needs to be educated on the types of lubricants in the market and government has to stop the sale of mineral oils by peddlers.
- With regard to axle load there is no effective control of vehicle axle and gross loads. This is a serious situation whose economic consequences must not be over emphasized. Recent advances in technical knowledge have shown that the damage inflicted by a vehicle axle is proportional to the fourth power of the load it carries. In simple terms if an axle load exceeds that for which the road is designed by double, then it has the damaging power of 16 axles; if it exceeds the design axle by treble then the damaging power is that of 81 axles etc.

2.2 The Campaign Programme

2.2.1 The Rationale

10. Traffic accidents bring tragic human casualties and enormous waste in resources. They also inevitably create great social problems. Because of the peculiar urban form of Freetown, space is limited in many areas of the city. A vital factor on road safety is to optimize the road use. In addition to the above concern, many of the Freetown streets are currently being rehabilitated under the Third Road Rehabilitation Project (RRMT-3) being financed by a credit from the World Bank. The Sierra Leone Roads Authority has argued that these rehabilitated facilities might be misused if proper education of the users is not done prior to the completion of the project. This thinking shows that the Sierra Leone Roads Authority is in the fore front in providing the necessary leadership in road safety.

2.2.2 The Planning Aspect

11. There is a Traffic Management Committee established under the Sierra Leone Roads Authority and composed of representative from:

- The Ministry of Works and Technical Maintenance
- The Sierra Leone Roads Authority
- The Ministry of Transport, Communication and the Environment

- The Road Transport Board
- The Sierra Leone Police
- The Freetown City Council
- The utilities
 - Guma Valley Water Company
 - SIERRATEL
 - National Power Authority

12. For this campaign, the following organizations were invited:

- Coopted members
 - Consulting firms
(Wilbur Smith/Davies Techsult and Scheladia/TAMS)
 - Contractors
(C.S.E.)
- Resource Organizations
The Ministry of Education, **Economic Commission for Africa**, the Ministry of Information and Broadcasting, the Sierra Leone Teachers Union, the Professional Drivers Association, Institute of Engineers, Driving Schools, the Sierra Leone Road Transport Corporation, National Commission for Democracy, the Ministry of Lands, Housing, Town and Country Planning, Head Teachers Council, Supreme Islamic Council, Municipal Association of Traders, Sierra Leone Association of Retired Teachers, Sierra Leone Association of Justices of the Peace, Sierra Leone, Ex-service Men's Association, Civil Service Association of Pensioners, Council of Principals of Secondary Schools, and Council of Churches of Sierra Leone. (As resource organizations, each organization would be called upon for specific support during the campaign.)

13. In connection with the Road User Education Campaign, the main functions of the Traffic Management Committee were to:

- develop action plan for the Campaign which consisted of:

- Decision on the objectives of the Campaign;
- Drawing up of programme of activities (workshops, Seminars, field demonstration, etc.);
- Publicity for the campaign;
- Defining target groups;
- Defining mechanism to assess the impact of the programme.

2.2.2.1 Agreed Programme and Activities

14. The Traffic Management Committee decided on the following programme.

Campaign Theme

SAFE DRIVING AND WALKING HABITS CAN CONTRIBUTE TO THE NATION'S PROGRESS BY REDUCTION OF LOSS OF LIFE AND DAMAGE TO PROPERTY.

WEEK ONE: October 7 - 11, 1996

Sub-Theme: ROAD SIGN AND COMMUNICATION - THE WAY FORWARD

1. (a) Workshop

15. The target group for the workshop was meant for policy and decision makers in the various government ministries. The strategy recognized the need to have useful exchange of views between the Administrative Cadre and Technical personnel in the government service.

The workshop was aimed at:

- (i) synthesizing them on the need to give support (budgetary allocations etc.) to organized road safety activities;
- (ii) Creating road safety consciousness among them.

(b) The activities of the workshop are shown below:

Presenter	Organization	Title of Paper/Function
Mr. A. G. Beckley, Director General	Sierra Leone Roads Authority	Welcome Address and Introduction of Chairman
Mr. S. E. A. Taylor- Lewis, President	Sierra Leone Institution of Engineers	Chairman's Opening Remarks
Hon. Emmanuel O. Grant, Minister	Ministry of Works and Technical Maintenance	Opening Statement
Mr. Daniel R. W. Faux, Regional Advisor	Economic Commission for Africa	Statement on ECA Activities in Road Safety
Sam Leigh, Managing Partner	Wilbur Smith/Davies Techsult (Consultants)	Road Communication elements: The Basic Use
Sam Sesay, CPO, Traffic	Sierra Leone Police	The Enforcement of Traffic Signs and Regulations
A. D. E. Jackson, Director of Development	Sierra Leone Roads Authority	Road Works Sign - The Nature and Implementation/Requirements
J. S. Keifala, Assistant Director	Road Transport Department	Vehicle Registration and Identification
P. T. Musa, Chief Engineer Surveys & Designs	Sierra Leone Roads Authority	Present Status of Road Signs and Markings in Africa

2. (a) Education Seminar

16. This workshop was held in an open park which provided an opportunity for many people to attend. It was aimed at the General Public and Drivers. It was hosted by the Sierra Leone Motor Drivers and General Workers Union.

(b) The activities of the seminar are shown below:

Presenter	Organization	Title of Paper/Function
Mr. A. A. Kamara, Secretary General	Sierra Leone Motor Drivers and General Workers Union	Opening Statement
Mr. Ogun, Manager	Chistex Driving School	Driving Skills
Mr. Sam Sesay, CPO, Traffic	Sierra Leone Police	Courtesies of the Road

A video show on driving was shown to the public in the evening.

3. (a) Education Seminar

17. This seminar held in a Lorry Park was aimed at the professional drivers. It was hosted by the Professional Driver's Association.

(b) The activities of the seminar are shown below:

Presenter	Organization	Title of Paper/Function
Mr. Sidiki Brima, Deputy Minister	Ministry of Transport, Communication and the Environment	Opening Remarks
Mr. Abubakarr Sillah, National President	Sierra Leone Professional Drivers' Association	Planned Driving for any Hazards
Mr. Sam Sesay, CPO, Traffic	Sierra Leone Police	Road Traffic Rules
Mr. A. D. E. Jackson, Director, Development	Sierra Leone Roads Authority	Traffic Signs and Markings

4. (a) Education Seminar

18. The seminar was held at the Sierra Leone Road Roads Transport Corporation (SLRTC). This corporation is government owned and provides public passenger services (urban and inter-city). The target group was SLRTC drivers even though outside participants were invited.

(b) The activities of the seminar are shown below:

Presenter	Organization	Title of Paper/Function
J. S. Keifala, Deputy Director	Road Transport Department	Road Worthiness Test Requirements
M. Conteh, Works Manager	Sierra Leone Road Transport Corporation	Basic Maintenance Procedure for Drivers
O. M. G. Taylor-Pearce, Environmental Engineer	Sierra Leone Roads Authority	Maintenance of Vehicles and the Environment

5. (a) Site visits and field demonstration

19. These visits were undertaken by a team from the Sierra Leone Roads Authority, Sierra Leone Police and the Ministry of Transport, Communications and the Environment. The aim was to practically demonstrate:

- How drivers can show courtesies on the road;
- The way to properly park vehicles;
- Correct and proper way for pedestrian crossing;
- Answers and questions from the audience.

2. WEEK TWO: October 14 - 19, 1996

20. The activities of the campaign for this period were aimed at Educational Institutions. The sub-theme was: EDUCATIONAL INSTITUTIONS AND THE USE OF THE ROAD.

WORKSHOP

21. This workshop was attended by representatives of the Ministry of Education, School Teachers, Teachers Union and other invited guests.

The activities of the workshop are shown below:

Presenter	Organization	Title of Paper/Function
D. B. Rogers, Professional Head	Ministry of Works and Technical Maintenance	Chairman's Opening Remarks
Dr. Alpha Wurie, Minister	Ministry of Education	Opening Statement
Sam Leigh, Managing Partner	Wilbur Smith/Davis Techsult (Consultants)	International Pedestrian Problems
Dr. J. B. Tengbe, Chief of Planning	Sierra Leone Roads Authority	Economic Commission for Africa and Improvement of Pedestrian Traffic Safety in Urban Areas
Sam Sesay, CPO, Traffic	Sierra Leone Police	The Meaning of Roads Signs and Markings
A. O. E. Jackson, Director Development	Sierra Leone Roads Authority	African accident Experiences
Sam Sesay, CPO, Traffic	Sierra Leone Police	Accident Experience in Sierra Leone
Mrs. Florence Dillsworth, Chairlady	Freetown, City Council	Closing Address

SCHOOL SEMINARS

22. A team drawn from the Sierra Leone Roads Authority, Sierra Leone Police and the Ministry of Transport, Communication and the Environment visited selected schools in Freetown. The objectives of these visits were:

- To acquaint the school children about the campaign;
- Interest school children in road safety so that they in turn can educate their parents;
- Practically demonstrate how to behave in traffic.

3. WEEK THREE: October 21 - 26, 1996

The sub-theme for this activity was:

RIGHT OF WAY AND THE ROAD USER**WORKSHOP**

The activities of the workshop are shown below:

Presenter	Organization	Title of Paper/Function
Mr. C. Williams, General Manager	Guma Valley Water Company	Welcome Address and Introduction of Chairman
Mr. D. G. Iscandari, Technical Co-ordinator	Sierra Leone Roads Authority	Chairman's Opening Remarks
Rtd. Capt. Abdul Rahman Kamara, Minister	Ministry of Lands, Housing and Country Planning	Opening Statement
Director of Surveys and Lands	Ministry of Lands	Building Lines - An Ordinance to provide for the position of buildings and other obstruction with reference to the roads
C. Y. Johnson Director-Maintenance	Sierra Leone Roads Authority	Sierra Leone Roads Authority and the Right-of-Way
Mr. N. Bollo-Kamara Utility Engineer	Sierra Leone Roads Authority	Utilities and the Sierra Leone Roads Authority (SLRA): SLRA View
A Representative	Guma Valley Water Company	The utilities and Sierra Leone Roads Authority Cooperation: The Utilities View
O. M. G. Taylor- Pearce	Sierra Leone Roads Authority	Advertising/Hoarding and the Right-of-Way
Sam Leigh, Managing Director	Wilbur-Smith/Davies Techsult	Off Sheet Parking and Taxi/Poda Poda

The Rest of the Programmes

23. These were accordingly carried out by some of the various resource organizations. For example, the Institution of Engineers (Sierra Leone) prepared a special programme.

2.2.3 Outcome of the campaign

24. The following highlights are drawn from the lead papers as well as resume of discussions at the workshops and seminars.

25. The workshops and seminars **NOTED** the following:

- **ROAD COMMUNICATION ELEMENTS - THE BASIC USE**

(Figures 1 and 2 give some examples of communications element.)

- Road communication elements are found along all roads providing information to all road users concerning the safe use of the road network at all times.
- The following are the three primary road communication elements:
 - ROAD SIGNS;
 - PAVEMENT MARKINGS;
 - TRAFFIC SIGNALS.

In highway engineering practice they are referred to as **ROAD FURNITURE** and in traffic engineering practice they are referred to as **TRAFFIC CONTROL DEVICES**.

- Road communications elements are divided into three groups depicting those that **REGULATE, WARN OR GUIDE**.

REGULATORY DEVICES are used so that drivers are:

Informed of regulations in force (speed limits, one way - operations, etc.)

Instructed to take particular actions (stop, yield, right turn only, etc.)

Prohibited from making certain maneuvers (turns on a red signal, U-turns, etc). Assigned right of way (lane markings etc)

REGULATORY

- Inform: Speed limits, parking channelization, one-way operation, etc.
- Instruct: Stop, right turn, yield, etc.
- Prohibit: U-turns, turns on red signals, waiting, etc.
- Assign
right-of way: lane channelization, etc.

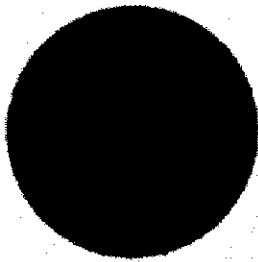
WARNING

- Indicate: hazards
- Define: Changes in roadway character eg. pavement ends, road narrows, etc.
- Mark
Obstructions: bumps, low clearance, etc.
- Inform in
advance: Speed zone ahead, stop sign ahead, etc.
- Advises: An appropriate action eg. merging traffic, etc.

GUIDE

- Private
Information: Distance signs, directions, travel information, etc.

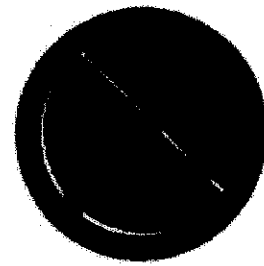
FIGURE 1



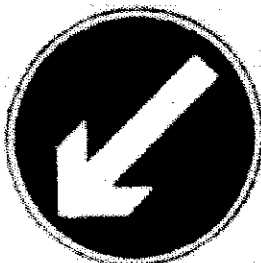
WAITING RESTRICTIONS APPLY



TRAFFIC SIGNALS AHEAD



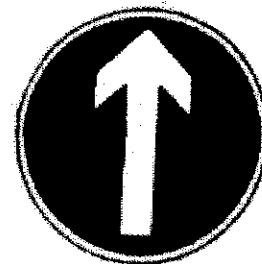
NO STOPPING



KEEP LEFT



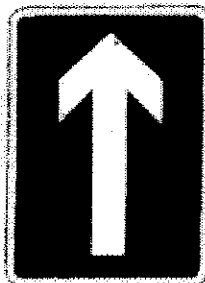
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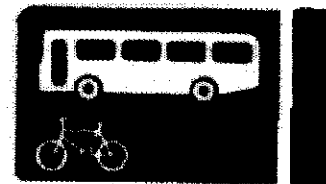
AHEAD ONLY



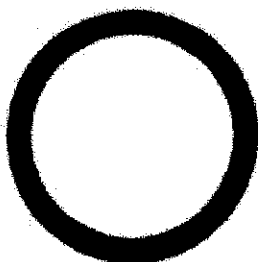
NO VEHICLES



ONE WAY TRAFFIC



**ROAD RESERVED FOR BUSES
AND PEDAL CYCLISTS**



NO STOPPING



SCHOOL CROSSING AHEAD



ROAD NARROWS ON RIGHT SIDE

FIGURE 2



TWO WAY TRAFFIC



STOP AND GIVE WAY



ROADWORKS AHEAD



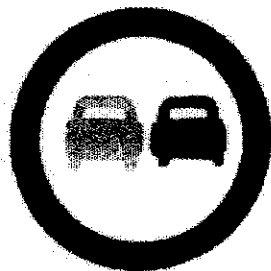
NO U TURNS



NO RIGHT TURN



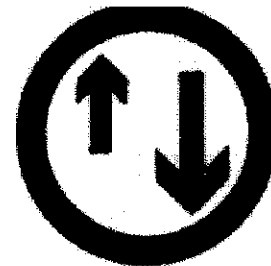
SLIPPERY ROAD



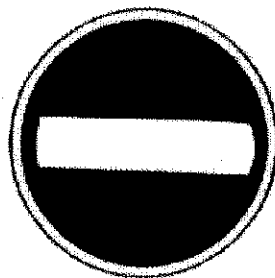
NO OVERTAKING



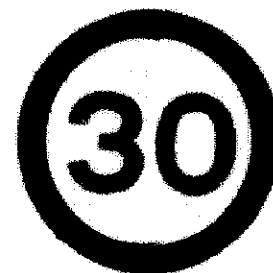
PEDESTRIAN CROSSING AHEAD



**GIVE PRIORITY TO VEHICLES
FROM OPPOSITE DIRECTION**



**NO ENTRY FOR VEHICULAR
TRAFFIC**



MAXIMUM SPEED

- **ROAD WORTHINESS TEST REQUIREMENTS**

- Compulsory vehicle testing was first introduced in Sierra Leone during the early 40's when the Road Traffic Ordinance came into operation.
- When the Road Traffic Act no. 62 of 1964 was enacted the test was confined to old commercial vehicles but with the increase in accident rate, the testing has been extended to private vehicles.
- The vehicle testing scheme is primarily a road safety measures designed to ensure that vehicles and properly maintained at at least twice a year are examined.
- The testing of vehicles is conducted principally by government officers known as Certifying and Examining officers.
- Vehicles subjected to tests are divided into:
 - A: Goods and passengers
 - A1: Goods for hire
 - A2: Goods for own business
 - A0: Motor omnibus (buses)
 - AT: Hackney carriage (Taxis)
 - MC: Motor cycles
 - P: Private.

- **VEHICLE MAINTENANCE AND THE ENVIRONMENT**

- Motor vehicles are responsible for a wide variety of environmental impacts. These impacts arise through out the vehicles' life-cycle (from construction through operation and maintenance to disposal).
- Vehicle maintenance is of particular interest in Sierra Leone since possible over 90% of all vehicles imported are second hand and between five and ten years old. The effects on the environment during this phase is of particular concern as various maintenance practices could either enhance or minimize the total impact of the vehicles on the environment.

- The environment comprising not only the parameters of the physical and natural environment but also those of the human environment.
- Legislative provisions relating to the environment are contained in the Road Traffic Regulation Act of 1960. This provides for every motor vehicle and trailer and act parts and accessories of such vehicle or trailer to be in such a condition as not to cause danger to any person there is or to any person using the road or to any property lying on or adjoining the road.
- The regulations provide for the silencing of vehicles to control noise: (i) Construction and maintenance of vehicles to ensure that no avoidable smoke is emitted; (ii) proper lighting on vehicles to ensure safety; and (iii) the provision of a single tone horn to ensure that excessive voice is not produced.
- Two maintenance conditions have large effects on the environment; poorly maintained vehicles and vehicles that have been tampered with. Poor vehicle maintenance results in poor and incomplete fuel combustion, greater fuel use, leaks and increased gaseous and noise emission.

● VEHICLE REGISTRATION AND IDENTIFICATION

- In order to ensure safety on the roads, minimum standards must be set so that patrols on the highways and traffic control can result on an effective way of making road users comply with rules and regulations designed to reduced avoidable deaths.
- A key factor in minimizing road accidents is ensuring a good and uniform licensing scheme for drivers and vehicles.
- Any key factor in which the licensing scheme is non-uniform and haphazard will make it impossible to effectively monitor and control very important parameters such as issuing of drivers' licenses, vehicle licenses and registration and vehicle inspection.
- The Road Traffic Act of 1964 and Road Traffic Regulations of 1960 and 1970 and the Road Traffic ordinance which proceeded the current acts and regulations made provision for the registration, licensing and identification of vehicles.
- Vehicles are registered with the Principal Licensing Authority (The Inspector General of Public).

- Vehicles can be identified by the license it may display on the side-screen. They can also be identified by the plates they may display. The following plates are currently in circulation.

F - Freetown

C - Colony

PR - Protectorate

E - Eastern Province

N - Northern Province

S - Southern Province

W - Western Area

EK - Eastern (Kenema District)

EM - Eastern (Kono District)

EL - Eastern (Kailahun District)

NB - Northern (Bombali District)

ND - Northern (Koinadugu District)

NK - Northern (Kambia)

NP - Northern (Port Loko District)

NT - Northern (Tonkololi District)

SB - Southern (Bo District)

SM - Southern (Noyambu District)

SN - Southern (Bonthe District)

SP - Southern (Payechun District)

WR - Western (Rural Area)

WU - Western (Urban Area)

- **THE ROAD WORKS SIGN: THE NATURE AND IMPLEMENTATION REQUIREMENTS**
 - Today's roads are full of fast, and heavy traffic. Drivers have to keep a constant look-out for changing road conditions. At the same time road works are becoming increasingly necessary particularly in a developing country. The authorities must therefore make desperate efforts to keep the road and other utilities functioning to the satisfaction of their users.
 - In undertaking road works schemes, a compromise must be found between getting the work done quickly and safety as possible and keeping the traffic flowing safely.
 - It is important to take traffic management arrangements during the execution of road works. This involves planning the activities to optimize work efficiency and safety and to minimize traffic and road user congestion, delay and inconvenience.
 - Road work is any works or temporary restriction which causes partial or total obstruction of the road whether on the verges, the hard shoulder, the footway or carriageway.
 - Types of roadworks signs are control signs, command and prohibition signs, warning and symbolic signs, hazard markers, diagrammatic signs, guidance and information signs, and information board.
- **AFRICAN ACCIDENT EXPERIENCES**
 - Africa has a real road safety problem.
 - On the average road accidents are the second most important causes of death after serious diseases in Africa.
 - Most African countries have a road accident recording systems based on some form of legal obligation to report accidents to the police.

TABLE 1
TRAFFIC ACCIDENTS IN 1993

Country	Total Accidents Involving Persons	Injured	Killed
<u>AFRICA</u>			
SOUTH AFRICA	84,672	128,155	9,470
TANZANIA	12,595	11,513	1,483
ZIMBABWE	8,125	13,818	1,021
<u>AMERICA</u>			
BRAZIL	65,000	39,200	5,500
MEXICO	23,091	35,461	5,252
USA	6,105,000	3,125,000	40,115
<u>ASIA</u>			
HONG KONG	15,469	20,558	351
JAPAN	724,675	878,633	10,942
SOUTH KOREA	260,921	339,698	10,402
<u>EUROPE</u>			
FRANCE	137,500	189,020	9,052
GERMANY	385,384	505,591	9,949
UNITED KINGDOM	228,665	302,206	3,814
<u>OCEANIA</u>			
NEW ZEALAND	10,994	15,108	680

- BASIC MAINTENANCE PROCEDURE FOR DRIVERS

- The driver must:
 - (a) have a basic knowledge of his vehicle;
 - (b) have consideration for road hazards;
 - (c) carry out simple but meaningful repairs;
 - (d) have a good sense of leaving;
 - (e) have a good sense of smell and his sight must be good.
- The vehicle always communicates with the driver. Whenever anything is about to go wrong, the vehicle in its one way to give the driver a warning signal. This can be in a form of noise, smell, smoke or the like.
- In the morning, the driver:
 - (a) goes round the vehicle for usual tests (tire pressure, scratches, etc.);
 - (b) enters and opens the bonnet (levels and loose connections);
 - (c) Starts the engine, watches and listens;
 - (d) move a few feet and check the breaks.
- Driver should maintain the engine level at all times.
- Drivers should never buy road-side oil in bottles (most times a combination and even contaminated).
- Engine oil should turn black not grey or milky (milky oil indicates pressure of water).
- Overheating is a major defect. AT first notice, stop the vehicle, switch off the engine, open the bonnet and feel the engine temperature. (This is because the temperature gauge might give wrong readings at times).
- Whenever an unusual noise develops, listen carefully to enable you locate the source.
- A good driver is a good mechanic also.

● **INTERNATIONAL PEDESTRIAN PROBLEM**

- A common problem that pedestrians face all over the world is that of safety on public streets and highways;
- Pedestrian accidents represent a significant proportion of traffic accidents. (Rates vary from which 15% to 45% depending on the region.)
- The pedestrian problem has often been characterized as a problem of the YOUNG, the OLD, and the DRUNK. This serves to demonstrate that certain segments of the pedestrian population are perceived as being over involved in accidents.
- Traffic laws and ordinances are generally enacted to ensure the safety of pedestrians and motorists alike by regulating how they operate and conduct themselves in the traffic.
- Police enforcement is a vital and crucial components of any pedestrian safety programmes.
- The role of enforcement must go beyond the typical traffic duties of the police officer assigned to control traffic or to check on drivers for licenses and insurance certificates.
- The ECA has recently carried out a study on improvements of Pedestrian Traffic Safety. This study can be used to develop a policy framework for enhancing safety in Sierra Leone.
- That lack of funds has played a major role in the non-availability of road signs and markings.

26. The participants at the workshops and seminars RECOGNIZED the following needs:

- To improve the professional qualifications and training of Driver Test Examiners;
- For the production of comprehensive pamphlets explaining the requirements of, and how to prepare for the driving tests;
- For the improvement of the facilities for testing drivers;
- That very much more stringent tests be introduced for drivers of heavy vehicles;
- To establish professional drivers training schools in the country;

- To introduce some form of registration of driving schools, of the licensing of driving school instructors and of a statutory insistence upon the achievement and maintenance of maximum standards of efficiency of such schools and instructors;
- To pursue functional education in reaching every body, cognizant of the fact that there is high illiteracy rate in Sierra Leone;
- For government to seriously monitor the quality of imported spare parts as fake spare parts have a safety consequence;
- For roads to be fully equipped with maintained signs, markings and other safety installations;
- To introduce traffic and safety education in schools;
- For the public to support the police when they are molested by drivers;
- For the police to use restraint whenever, they use their power of discretion;
- To bring road safety activities to the notice of the higher authorities;
- For better training and retraining of drivers;
- To encourage the driving profession and introduce driver training in the 6-3-3-4 school programme;
- To enact and enforce pedestrian control legislation;
- To involve the media and the insurance companies in future road safety campaigns;
- For government to develop a modern park for commercial vehicles;
- To give the traffic police a well structured training in road safety matters;
- For road contractors to provide safety measures during construction work;
- For a coordinated city planning in Freetown, cognizant of the fact that a well-ordered city is a safety city;
- To ensure that pedestrian ways are safe and convenient to use;
- To improve road safety administration in Sierra Leone.

27. The participants at the workshops and seminars CALLED for:

- The setting up of a Road Safety Council which will coordinate and manage national road safety activities;
- The revision of the Road Traffic Regulations of 1960 and Act no. 62 of 1964 (an Act to consolidate and amend the law relating to road traffic). It is generally recognized this legislation is out of date;
- The establishment of a modern Lorry Park;
- The establishment of professional training schools for drivers and mechanics;
- The introduction of road safety in the curriculum of schools;
- The organization of workshops for media practitioners;
- The establishment of driving schools;
- The enforcement of a policy whereby any driver that is involved in an accident is retested;
- The organization of similar road safety campaigns in the provinces;
- For the development of a safety optimization model for Sierra Leone;
- For the development of a manual of procedures investigating accidents in order to identify accident - avoidance behaviors;
- Technical assistance from the ECA to set up a National Road Safety Council and the revision of the Road Traffic Act and the Highway Code.

III. CONCLUSION AND RECOMMENDATIONS

28. Like many other African countries, Road Safety is increasingly receiving the desired attention in Sierra Leone, but much more remains to be done. Somehow, everybody's life is involved in traffic situations in one way or the other. There is a rising financial cost to the country due to accidents. It is no wonder that apart from humanitarian considerations, it is always a good economic sense to allocate sufficient money and devote manpower to improving road traffic safety.

29. The Road User Education Campaign provided an opportunity for many useful exchange of views as well as providing a forum in which Road Users were informed on road safety issues. The following key elements can be highlighted:

- The campaign was well organized. The open door workshops and seminars at Victoria and the Lorry Park ensured that even those Road Users who were not invited stopped to watch the proceedings. They became aware of the campaign.
- The high level involvement in the campaign was especially good.
- The campaign showed that the Sierra Leone Roads Authority is in the fore front in providing the necessary leadership in Road Safety activities.
- The various actors (Roads Authority, Ministry of Transport, Communications and the Environment, Ministry of Works and Technical Services, the Sierra Leone Police, the Drivers Associations, etc.) involved in Road Safety activities showed great enthusiasm. They showed that they can work in harmony to achieve the best result without being too touchy about their respective rights. However, their activities need to be coordinated.
- Restrictions, unless properly enforced are meaningless.
- More and more attention should be focused on self-enforcing measures.
- The vehicle is as good as the operator.
- In order to assure safe and efficient flow of traffic, both the pedestrian and the driver must assume basic responsibility for their conduct in the traffic.
- The appointments of the Principal Licensing Authority and the Principal Certifying and Examining Officer are the prerogatives of the Minister of Transport and Communications, and these appointments could be done from within the Public Service Sector or outside it. Whereas, the office of the Principal Certifying and Examining Officer continues to be under the direct supervision of the Minister of Transport and Communications, the position of the Principal Licensing Officer continues to be filled by the Inspector General of Police and the performances of this office supervised by the Department of Internal Affairs. It would appear that the functions of the Principal Licensing Authority were delegated to the Department of Internal Affairs, although this Department has not exerted sufficient control over the license office. This is a loose arrangement, which continues to pose some serious threats to maintaining efficient **ROAD SAFETY** and a consistent revenue collection system.

- An examining officer shall, when appointed, be charged with the duty of listing applicants for **driving licenses**.
As it applies, driving tests are conducted once in a life span for all categories of drivers. There is a possibility that in the course of time, a driver who is issued a driving license can develop health defects, eye, ear, etc. This ultimately undermines **ROAD SAFETY**. Similarly, a driving license can be issued to a driver with specialty only in light vans or cars. This cannot qualify him to drive heavy vehicles or containing liquids. It is therefore absolutely necessary that on the basis of the above, drivers be subject to periodic retests, at least every five years and driving be strictly specified to categories - cars, light vans, heavy vehicles, liquid vehicles, (etc.).
- Without a doubt one major cause of inefficiency is the number of organizations involved in the vehicle licensing. This could and should be reduced in number. There does not seem any logical reason why the police should be involved with the issue of licenses, only with their enforcement in the field. The issuing of licenses ~~criteria~~ ^{creates} needless bureaucratic responsibility for the police. The entire vehicle licensing should, for efficiency, be under one administration.
- As attitudes are important in road traffic safety, the opportunity was provided to think of ways to change.

30. The mission, having assessed the conduct of the Road User Education Campaign and the outcome, is of the view that two urgent needs should be urgently attended to. These are:

- Establishing a National Road Safety Council; and
- The review of Traffic Regulation and Highway Code.

31. The mission strongly recommends that ECA seriously considers giving technical assistance to Sierra Leone in meeting the aforementioned needs.

ANNEX I

PROPOSED POLICIES AND MEASURE FOR IMPROVING TRAFFIC SAFETY FOR PEDESTRIAN AND CHILDREN (SECTION V OF ECA PAPER PRESENTED AT THE ROAD USER EDUCATION CAMPAIGN: TRANSCOM/976/2)

1. Based on the foregoing, a set of policies and measures are suggested for improving the traffic safety situation for pedestrians and children in urban areas and to relieve the current problems that they face when walking along sidewalks or whilst crossing roads. These policies and measures are categorized as given below fields of action:

- Institutional;
- Urban and transportation planning;
- Educational;
- Training;
- Road and traffic engineering;
- Vehicle engineering;
- Legislative;
- Enforcement;
- Information;
- Health-related measures;
- School-related measures;
- Research-related measures.

2. These measures should not where deemed necessary have to be treated separately. As a matter of fact, any package of safety countermeasures should include measures from each of these fields of action. These should complement each other and work together in a supportive way so as to tackle the particular traffic safety problem, see figure 72.

V-1 Institutional measures

3. An institutional framework should be put in place to support and ensure continuity of road traffic safety activities in African member states. At the national level there is a need for setting up the following bodies:

- a. A National Road Safety Council to advise government on policy formulation for road safety activities.
- b. A Road Safety Unit to implement all programmes pertaining to road safety.
- (c) An autonomous National Road Safety Commission

National Road Safety Council

4. The National Road Safety Council membership would cut across several government and nongovernmental bodies. Members could be drawn from:

- Ministry of Transport
- Municipalities and Local Authorities
- Ministry of Education, Schools, Parents
- Ministry of Justice
- Ministry of Public Health
- Traffic Police
- Traffic Safety Experts and Academics
- Ministry of Information (mass media including television, radio, newspapers)
- Other non-government organizations,
- Road user groups,
- Private companies (insurance, oil, car assembly and manufacturing companies)

5. This council should have support at the highest level in government and should also have a legal entity

Road Safety Unit

6. The Road Safety Unit could be located under ministerial cabinet of one of the most concerned ministries with safety such as the ministry of transport, or the ministry of interior. The unit should draw expertise from various institutions in the country such as transport academics, traffic police, road safety experts, psychologists, doctors, educationist, social workers, etc. The unit should also have provincial/district offices to provide a backup in the field.

7. One of the main tasks of the unit would be to promote road safety through the community and to help and encourage the formation of non-government voluntary organizations who are interested in road safety work.

An Autonomous National Road Safety Commission

8. As an alternative to (a) and (b) an autonomous National Road Safety Commission could be set up with responsibility for road safety management and related matters.

9. The commission will comprise a governing council and an executive uniformed corps. The former will be responsible for policy formulation as well as organization and administration of the corps whose functions will be to ensure and enforce safety on all public roads. The corps will also be responsible for highway patrols and traffic control.

10. The commission will require full legislative backing and adequate subventions to carry out its statutory duties:

Other Supportive Activities and Organizations

11. Certain steps, and activities are usually needed in order to set the right scene for the decision-makers and politicians to act towards the establishment of such bodies, see figure 73. Traffic safety lobbying as well as traffic safety research are vitally important in convincing decision makers of the importance for setting such bodies. Other organizations, international, intergovernmental and non governmental, and the donor community also have a major role to play in support of road activities through inter-alia, technology transfer through twinning arrangements, research, training and funding.

Urban and transportation planning related measures

12. The solution to the problem of preventing traffic accidents lies mainly in the better planning of our cities and the adequate provision of transport infrastructure and facilities. However, this is sometimes difficult to attain in the existing urban areas. Thus the need to reduce accidents will still require considerable research in the design and application of packages of safety countermeasures. Some planning guidelines are highlighted in the following points.

- Incompatible and mixed allocation of land use types should be avoided. Residential areas should be separated from industrial, commercial or office areas.
- Urban planners should consider a functional classification for the road network. More use of the cul-de-sacs grid system in residential areas.
- Activities that are expected to attract heavy pedestrian traffic should be located away from main roads.
- Urban planners should consider land use plans that minimizes the travelling distances, use of cars, thus encouraging more pedestrian walking rather than vehicle traffic.
- Urban planners should consider in their city planning the possibilities of segregating the movement of pedestrians from that of vehicles.
- Land-use and transport planners should look at choosing safe locations for schools, and allocating substantial space for school playgrounds.
- Provision of better public transport facilities (in terms of fare, frequency, comfort, convenience, etc). This is meant to attract those people who are forced to walk long journeys as a result of their inability to use public transport.
- Provision of public transport facilities that offer a high level of service including proper location of bus stops. These should be introduced to encourage the private-car users into leaving their cars and using public transport facilities.
- Car-pooling should be encouraged.
- City traffic restraint should be practiced such as heavy parking fees, restricted parking areas, etc.
- Bus stops should be properly located after pedestrian crossing facilities so as to be accessible to pedestrians.

Education related measures

13. Points raised during meetings with headmasters/headmistresses and teachers included: perception of the problem of traffic safety for school children specially in front of the schools, extent of safety education at school (material, number of hours), school measures to reduce potential traffic hazards in front of their schools, .. etc. Realizing that today children constitute a major part of today pedestrians as well as tomorrow drivers and pedestrians, the following set of policies and measures are advocated.

- Road safety should be a separate, graded subject at all schools.
- A strong commitment towards road safety education and training at schools is needed. Ministries of education should focus their efforts towards designing attractive educational and training materials with emphasis on pictorial material.
- Teachers' guidelines for instructing teachers on what and how to teach in terms of traffic safety should be developed.
- Road safety teaching should cover topics such as: where to play safely, how to cross roads, understanding traffic signs and signals, getting to school safely, identifying local dangerous spots, seeing and being seen by traffic, judging distances and speeds, etc.
- Involvement of experts and use of recently developed technology in developing educational and training materials as well as in giving talks and lectures should be encouraged.
- Traffic safety education should be undertaken through community programmes for adults (parents and especially those just arriving from rural areas).

Training related measures

- Cognitive and perceptual skills as well as positive safe attitude towards road safety ought to be acquired and enhanced. Road safety training should be compulsory in schools. Training can be at simulated environment in the school yard or at traffic parks, or using audio-visual 3 dimensional films or computer simulation. Alternatively and more effective is to train children in real environment.
- Traffic gardens that simulate the real road conditions should be developed. In traffic gardens, children can be trained, through role play exercises, on how to deal with traffic situations.
- Children should be taken to suitable real road sites specially in the neighborhood of their homes and schools to learn and experience road safety.

- Planned and continuous training of trainers (teachers/ instructors/ people involved in community programmes) is an absolute necessity to efficiently and effectively perform their mission.
- Drivers should not be allowed to apply for a driving test except through driving schools certified to adequately teach and train drivers.
- A uniform nation wide driving instructions booklet should be developed.
- Drivers instructors should be well trained and they should apply for a certificate to become driving instructors. They should be carefully selected in accordance with a pre-set stringent selection criteria.
- First aid training should constitute a training component for traffic police officers.
- Traffic safety personnel (technicians and engineers) should be trained for use of microcomputers for accident data coding and storage as well as for use of accident analysis software for accident data analysis, investigation and countermeasures scheme design and scheme monitoring.

Road and traffic engineering measures

- The prevention and reduction of accidents should be included in the appraisal of new road schemes on the basis that these schemes consider in their design and implementation, the relevant road safety features.
- Maintenance and surface treatment of sidewalks and road defects, improvement of skid resistance, and reconstruction of severely damaged roads all should be continuously and properly undertaken. Road safety should always be taken into consideration when roads are reconstructed.
- Sidewalks should be wide enough specially in heavily pedestrianised areas to allow for a more comfortable and easy movement for pedestrians.
- Kerbs should be dropped at pedestrians crossings to ease the crossing.
- Hazardous locations such as open gutters, open electricity kiosks should be fenced and visual and audible warning signs should be installed. Uncovered electric cables should be covered.
- Warning signs and speed control humps should be placed in front of schools.
- Segregated crossing facilities should be thoroughly evaluated and if found feasible should be implemented.

- Local manufacturing of traffic signals, road signs, road markings, guard fences should be encouraged. A traffic safety industry can develop that manufactures, installs and maintains these traffic safety features.
- Management of parking in terms of designating parking space away from highly pedestrianised areas so as to minimize the obstruction to pedestrians' crossing view as well as not hindering their movement on sidewalks.
- In general, all forms of self-enforcing road and traffic engineering measures should be introduced, the simplest of is to increase the number of traffic signals.
- Increase the number of uncontrolled crossing facilities accompanied by publicity and enforcement campaigns.
- Roads which are characterized by a dense pedestrian movement should be considered for full pedestrianisation and alternatives for re-routing traffic to other roads should be thought of.
- Traffic calming measures should be adopted. These measures are meant to reduce the number and the severity of pedestrian/vehicle conflicts.
- Road closure or limiting access in front of schools should be considered.
- On wide roads, stage the crossing through central refuge islands to allow pedestrians to negotiate one traffic stream at a time.
- More use of intersection designs that are speed-self reducing. These include: roundabouts, curves at T-junctions.
- Provide adequate road lighting.
- Maintenance of traffic control devices should well programmed.

Vehicle engineering measures

- Vehicle safety standards should be set.
- Mandatory regular inspection of all types of vehicles. This should determine road worthiness of vehicles in terms of safety and environmental hazards before being licensed for use on the roads.
- Inspection procedures should be stringent so as not to allow any vehicles with serious defects to operate on the roads.

- Old vehicles should be regularly inspected with the possibility of deciding that these are ultimately not road worthy.
- Maintenance programmes and management systems for the public bus fleet as well as the heavy good vehicles should be emphasized, developed and practiced.

Legislative measures

- Drivers applying for driving licenses should demonstrate their knowledge of pedestrian traffic rules and regulation. Inclusion of instructions on how to drive in front of schools in driving instruction booklets
- More tight and stringent driving tests that emphasize the practical as well as theoretical parts.
- Legislation that penalize pedestrians for violating traffic rules and regulations, such as crossing the carriageway at any location, should be issued.
- In general, traffic regulations should be consistently strengthened. Penalties should include: warnings, penalty points, on the spot fines, off the spot fines, traffic driving license withdrawal, driving suspension, suspended imprisonment, revoking of driving license.
- Highway codes should be updated and be more coherent and consistent.
- Traffic offenses should be clearly defined and penalties for these offenses should be specified.
- Legislation should be developed that strictly and totally prohibits drinking and driving.
- Standards pertaining to locally assembled and imported cars should be set in terms of age, condition and safety features.
- The court system pertaining to traffic violations should be mainly looking at major cases of traffic accidents or traffic violations. Traffic police should be given more powers to inflict on-the-spot penalties for speeding violations, parking violations, drink and drive violations, running of red lights, .. etc.
- Legislation should consider the rural-urban migration phenomenon characterizing most of the developing countries. Rules and regulations should be produced to reduce and prevent this phenomenon. The main issue should be to prevent the spread of unplanned dwellings and areas around our cities.

Enforcement measures

14. Enforcement measures are fundamental in developing countries. Drivers as well as pedestrians are always reluctant to obey the rules unless they are self enforcing such as traffic lights, speed humps, median barriers, fences. Alternatively and complementary the presence of police officers and their strict enforcement of traffic rules and regulations is always expected to produce good results. As has been shown that traffic behavior of drivers and pedestrians is a function of their traffic attitude, knowledge and experience. Strict and continuous enforcement is one of the key factors that can bring change to negative traffic attitudes and hence improve the behavior of road-users towards a more safe traffic behavior.

- A specialized traffic police unit/department should be established where it does not exist.
- Traffic police to be well trained and equipped. Training should include how to deal with an accident in terms of accident reporting, dealing with victims if any, clearing accident sites, etc.
- Man-power allocated to traffic police should be sufficient to deal both with traffic control as well as enforcing traffic violations.
- Enforce penalizing and prohibiting illegal occupation of sidewalks whether by parked vehicles, stall holders, hawkers, petty-sellers, ribbon development on densely trafficked roads. Petty sellers and hawkers should be also totally prohibited from standing in front of schools.
- Strong and adequate enforcement of traffic laws in front of school entrances.
- Crossing police patrols to be located at busy crossing points to assist children to cross these roads while coming to and leaving their schools.
- Increasing the number of uncontrolled traffic management facilities, accompanied by continuous publicity campaigns should be also accompanied at the start by an advisory campaign which is followed after sometime by a strict enforcement campaign.
- A traffic police officer should be present at the times of start and finish of school day so as to ensure the safe crossing of children. This is particularly important for those schools whose entrances are on heavily trafficked roads.

Information and mass media related measures

- Promoting the awareness and courtesy of drivers towards pedestrians. Mass-media campaign slogans should be carefully selected and targeted correctly.
- Promoting and raising the society awareness of the potential traffic hazards and problems encountered by school children.
- An annual traffic week or a monthly traffic day should be produced. This involves concentrated mass media campaign on traffic safety aspects, press articles, exhibitions, school competitions, posters, and leaflets and pamphlets. Television and radio interviews with officials responsible for traffic safety such as traffic police officers, academics, city engineers, doctors, teachers
- Media campaigns should concentrate on disseminating knowledge to the public regarding the safe use of the road, as well as attempting to change unsafe traffic attitudes

Health related measures

- Quick emergency service using latest equipment for communication, well trained first aid officers, and high speed mode for victim transportation (sometimes even helicopters if nearest hospital is relatively far).
- Small well equipped medical centers that are specialized in dealing with accident emergency should be located in different areas so as to minimize the time of transporting the victim from accident sites to the medical centers.

School related measures

- Schools should attempt to choose their entrances to be at lightly trafficked side-roads as well as stagger and select off-peak traffic hours for the start and the end of the school day.
- Schools should keep their gates opened from early morning before the starting school hours and until late evening after the end time of the school day.
- Children should be prohibited to stay outside school.
- Schools with school bus fleets should separate children using the school buses and those children picked up by their parents.
- If space allows, schools are advised to allocate parking spaces for parents who come to pick up their children.
- On dropping children from school buses, bus drivers should ensure dropping children on the right side.

Research related measures

- Research organizations in the field of transportation and traffic engineering should be established. These organizations should be responsible to perform the following tasks:
 - Develop a unit of highly educated, well trained academics and professionals in the field of transportation and traffic engineering;
 - Conduct specialized research in the areas of transportation and traffic engineering including road safety;
 - Organize training courses, seminars, lectures for engineers, professionals and technicians whose work is related to the areas of transportation and traffic engineering;
 - Act as a consultant for undertaking transportation and traffic related studies including traffic safety studies;
 - Establish research linkages and contacts with international organizations and international research centers;
 - Develop and update specialized libraries through which access and dissemination of research publications, information could be maintained ; and
 - Organize national and international conferences
- Most traffic safety research ends up by a set of recommendations and measures to be implemented. If these are not implemented, then the evaluation of the effectiveness and efficiency of remedial measures would remain unidentified.
- Specialized transport and traffic research institutes as well as universities should be constantly encouraged and supported. Special research grants to conduct traffic safety research should be offered and consistency maintained.
- A reliable accident data base is crucial for any safety research. Attention needs to be given to the whole process of accident data collection, storage, and analysis to systemize this process and ensure that it is functioning in an adequate and efficient manner. Inadequacies of some present data collection systems include carelessness in completing the accident reporting forms, difficulty in reading third/fourth carbon data recording form, incomplete forms, unclear accident

sketches. Errors in data coding and data storage is also very common, as well as sometimes the forms are not at all coded and the accident data-base is not updated.

- Easy and accessible dissemination of accident data to all interested organizations/individuals who need to use the data particularly for research.

V-2 An Action Plan for Further Studies

15. Traffic safety research in general ought to address the following:

- a. Future research should be mainly directed at all the activities and functions constituting the integrated traffic safety approach, how to perform these activities in an efficient organized way and how these activities should be coordinated to work together within the framework of an integrated traffic safety approach. This involves research in the following areas:
 - Accident reporting systems
 - Development and updating of data bases on road traffic accidents and use of a computer based accident analysis and investigation system
 - Identification of accident locations and victims patterns
 - Diagnosis of direct, root and post causes of accidents including studies on:
 - urban planning and transportation planning and management as related to traffic safety
 - road environment condition as related to traffic safety
 - vehicle condition as related to traffic safety
 - road user behavior as related to traffic safety
 - pedestrian and vehicle traffic characteristics
 - traffic legislation (rules and regulations) and their enforcement.
 - post accident emergency, medical treatment and trauma management.

- Setting of safety goals/objectives
 - Identification of potential safety countermeasures (with a special emphasis on the applicability of low cost countermeasures)
 - Costing of safety countermeasures
 - Valuation of traffic accidents
 - Evaluation of safety countermeasures
 - Development of integrated packages of safety countermeasures
 - Coordination of the implementation of integrated traffic safety packages
 - Operation and implementation of the integrated traffic safety action program
 - Dynamic monitoring of the effect of integrated traffic safety packages.
 - Post evaluation of integrated traffic safety packages.
 - Development of an information base on safety countermeasures and packages
- b. Research should be also looking at the integration of traffic safety countermeasures within a wider framework that encompasses other major activities such as urban planning, environmental protection, traffic management, transportation management, ..etc.

16. Research pertaining to pedestrian and children safety ought to address the following

- a. More road users behavioral studies to look at:
- the exact kind of relationship between knowledge, cognitive processes and attitudes or motivation of drivers and pedestrians.
 - the development process with respect to formation of traffic attitudes
 - the impact of gender, age, socio-economic levels, culture, level of education of road users affect their traffic behavior.

- b. School children as well as pedestrians should be monitored in real world situations. This can be achieved by personal documented observations, and/or monitoring using video cameras. These observations together with the interpretation of the video films recordings can be analyzed for the purpose of inferring the pattern of actual traffic behavior of school children and pedestrians as well as the difficulties that limit their mobility and the traffic hazards that they encounter.
- c. Future research should attempt to identify and define the adequate desired traffic behavior for school children and pedestrians. The expected gap between the actual levels of traffic behavior and the factors affecting it and the desired levels can then be identified both in a quantitative and qualitative terms.
- d. Future studies should also look at the level of service of pedestrian movement on sidewalks and while crossing roads (volume, density, speed, delays).
- e. Further studies should be looking at drivers stopping behavior at junctions and pedestrian crossings facilities as well as at drivers knowledge of pedestrian rules.
- f. Inventories describing the traffic environment around schools and in areas characterized by a high density of pedestrian movements should be developed.
- g. Studies aiming at establishing the institutional arrangements that suits a particular country for dealing with traffic safety issues.
- h. Studies aiming at developing manuals and handbooks for urban and transportation planners to take into account the traffic safety of pedestrians and children in their physical and transportation plans.
- i. Studies into the development of traffic safety educational material as well as developing innovative ways of traffic safety training.
- j. Studies looking at the potential application of road and traffic engineering designs that are mainly developed to cater for pedestrians and not for cars, i.e. self enforcing measures, traffic calming and traffic restraint design principles.
- k. Studies looking at the vehicle condition, maintenance, inspection and licensing.
- l. Studies looking at legislative rules and regulations that ensures the traffic safety of pedestrians and the safe behavior of both drivers and pedestrians.

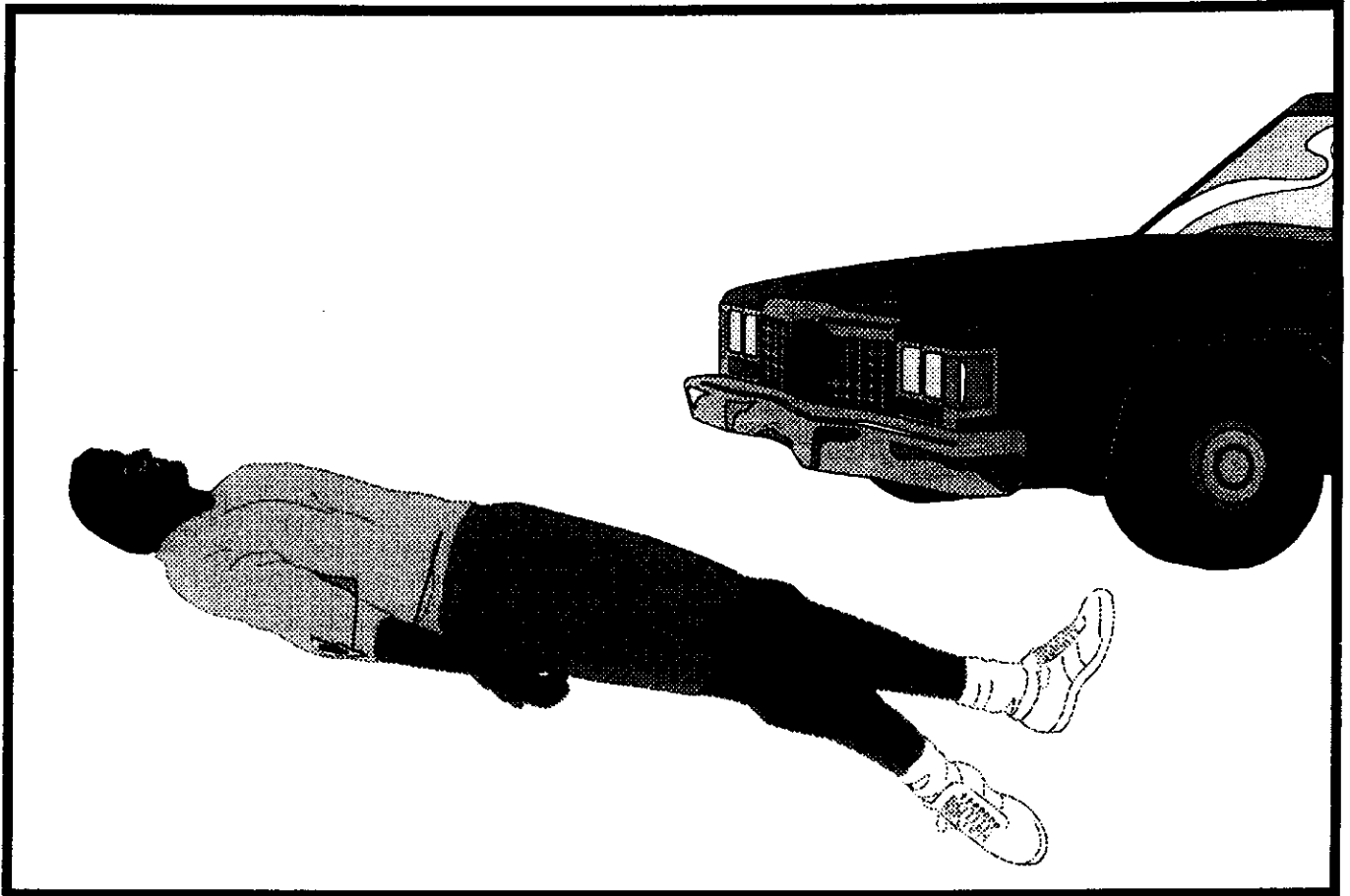
- m. Studies looking at enforcement measures that help in enforcing traffic rules and regulations pertaining to pedestrians.
- n. Studies directed towards the design of mass media and information campaigns through which traffic safety knowledge can be disseminated and behavioral changes can be brought about.
- o. Studies directed at how to improve the emergency and rescue service, and the pre-accident medical treatment.
- p. Costing of traffic accidents so as to economically evaluate the worthiness of remedial measures for improving . In valuing children traffic accidents, several quantitative as well as qualitative factors ought to be considered. Basically the notion of "Children being the Future of Tomorrow" has to be emphasized. Studies looking at valuing traffic accidents should be initiated.
- q. Assessment of the utility of pedestrian bridges and pedestrian tunnels in terms of justification and the problems that discourage pedestrians from using these facilities.
- r. Studies directed at improving the pedestrian environment for all types of pedestrians especially catering for the needs of highly vulnerable road users i.e. the elderly and the mobility handicapped, see Mabrouk and Abbas 1994.

ANNEX II

ROAD USER EDUCATION CAMPAIGN

FREETOWN, SIERRA LEONE

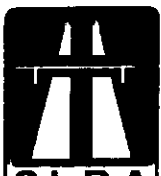
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ONE FOR THE ROAD

DRUNK DRIVING: DON'T LET THIS BE YOU!

SLRA



ECA

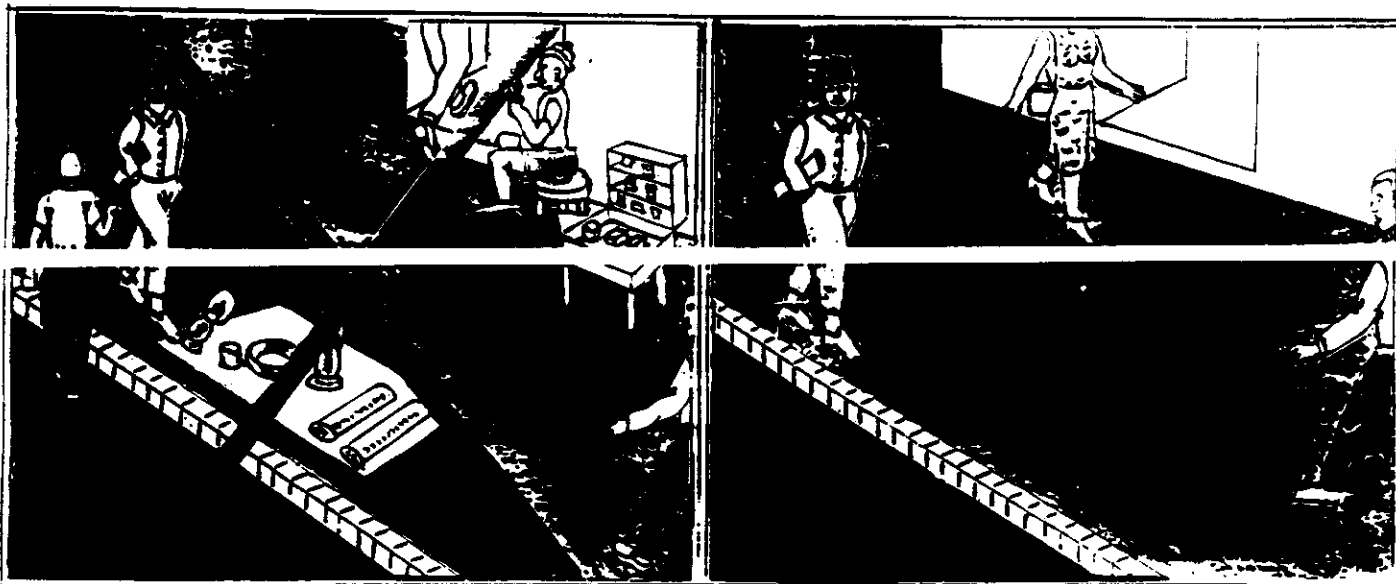


ANNEX III

Traffic Management Committee

ROAD USER EDUCATION CAMPAIGN

7th OCTOBER -- 26th OCTOBER 1996



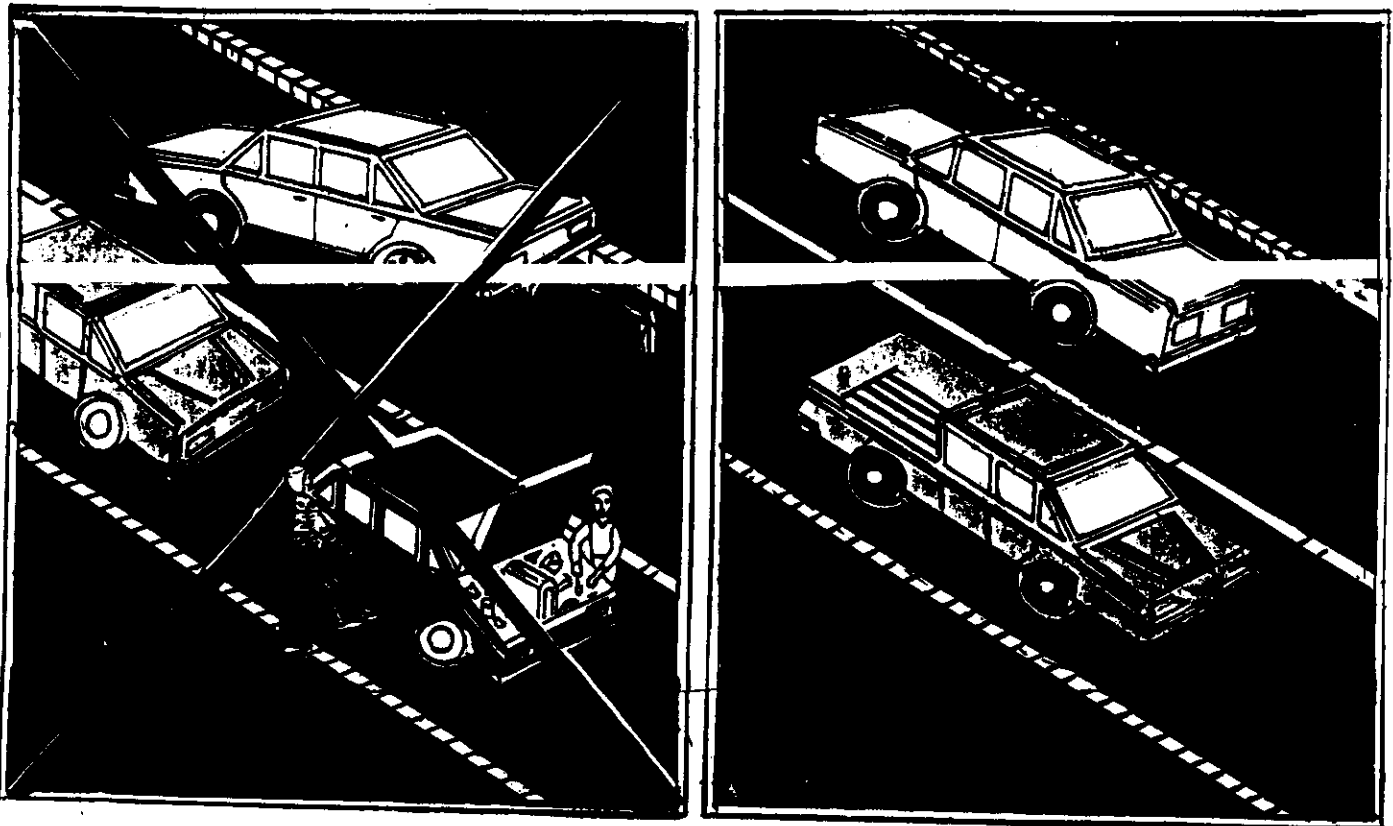
**STREET TRADING
PROHIBITED**

SIDEWALKS ARE FOR PEDESTRIANS!

Traffic Management Committee

ROAD USER EDUCATION CAMPAIGN

7th OCTOBER -- 26TH OCTOBER 1996



**STREETS ARE NOT TO
BE USED AS GARAGES**

WILLFUL INTERRUPTION OF THE FREE PASSAGE

ANNEX V

OTHER ACTIVITIES OF THE REGIONAL ADVISER WHILE IN FREETOWN

1. The Regional Adviser took the opportunity of the Road User Education Campaign period to pay courtesy visits to the relevant ministries.

2. Ministry of Transport, Communications and the Environment.

Persons met

- Mr. Sulaiman Tejan-Jalloh, Minister
- Mr. Sidigue Brimah, Deput Minister
- Mr. Oskoo-Coker, Permanent Secretary
- Dr. Shamsu Mustapha, Director, Planning and Monitoring Unit

3. Ministry of Works and Technical Maintenance

Persons met

- Mr. Emmanuel O. Grant
Minister
- Mr. David Rogers
Professional Head

4. Sierra Leone Airports Authority

Persons met

- Mr. B. M. Koroma,
Chairman, Board of Directors
- Mr. F. Bull
General Manager
- Mrs. S. Bash-Taoui
Secretary to the Board

5. Sierra National Airlines

Persons met

- Mr. Kamandah
Ag. General Manager

6. Ministry of Tourism

Persons met

- Mrs. Shirley Gbujama
Minister
- Mr. Kawah
Director of Tourism