

GOVERNMENT OF PAKISTAN
PLANNING AND DEVELOPMENT DIVISION
NATIONAL TRANSPORT RESEARCH CENTRE

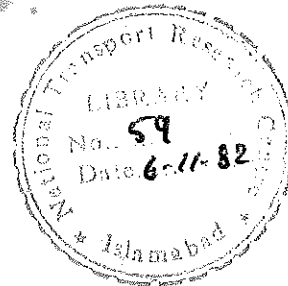
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EFFECT OF ENFORCEMENT ON ROAD USER'S BEHAVIOUR



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Chief

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7. Conclusions

EFFECT OF ENFORCEMENT ON ROAD USER'S BEHAVIOUR

The traffic in Pakistan is one of the most chaotic and indisciplined among the developing countries. Hardly anybody seems to pay any attention to traffic safety rules and everybody drives in any manner he pleases. The extent of speeding and reckless driving and other moving violations is simply frightening. There is total lack of driving courtesy as everybody tries to be ahead of everybody else. Nobody pays any heed to traffic signs, signals and road markings which have been installed and being maintained at a very high cost. The extent of one way violations, even on high speed dual carriageways, is of alarming proportions. There is total absence of lane discipline and hardly anybody gives R.O.W. if he could get away with it. It is common sight to see overtaking taking place in the face of on-coming vehicles, on curves, at stop sign, in no-overtaking zones. Use of horn is very very high, even in the designated silence zones. Nobody seems to care as to where he parks the vehicle as long as he can find a place on the road or footpath for his vehicle. It is a common site to see double and tripple parking on all busy streets. The extent of lighting violations at night time is so high that the night time driving has become extremely hazardous.

The violations or indiscipline is not limited to any particular class of road users. Everybody, whether he is a

public service vehicle driver or a private car driver or the driver of motor cycle, animal drawn vehicle or cycle or a pedestrian disregards the traffic safety rules with equal impunity. The public service vehicle drivers feel that the only violations that could be prosecuted for are overloading, overcharging or if their documents are not in order. Similarly, the drivers of the private cars believe that they cannot be stopped by a traffic-police official unless they are involved in an accident. The drivers of motor cycles, cycles and animal drawn vehicles believe that the traffic safety rules are only meant for motor vehicle drivers and do not apply to them. The pedestrian very conveniently assume that there are no laws for them as far as use of road is concerned. They believe that the roads are primarily meant for them and the motor vehicles and other road users are encroaching upon their rights. They, therefore, believe that all other road users should yield the R.O.W. to them when they are walking or crossing or just standing around on a road. The total lack of appreciation of dangers while on road exhibited by all types of road users is simply amazing and beyond comprehension.

The net result of all this has been that the problem of safety on highways in Pakistan has become very acute. According to the latest statistics available, motor vehicle accidents killed 3559 people in Pakistan in 1979. Another 9884

were seriously injured. Pedestrians with 40% casualties were the greatest sufferers. The total number of accidents during the year were 9914, averaging about 27 accident per day. This does not include a vast number of accidents which took place resulting in varying degrees of personal injuries and property losses, but were never reported. The under-reporting of injury accident according to very rough estimate is approximately 40, while the property damage accidents are seldom reported.

Another very serious result of this state of affairs has been that the city streets particularly in the busy shopping and business districts have become almost clogged. But the clogging is not due to traffic volume in excess of their capacity. All these streets have capacity much beyond the traffic volume. The congestion has been artificially created by traffic indiscipline, encroachment and other factors. If these streets were properly utilized for the purpose for which they were built, they could very easily accommodate many times the traffic volume being experienced by them.

The problems resulting from haphazard flow of traffic are not confined to accidents alone. Adverse effects of clogged streets and congested roads on business, health, economy and general well-being of the community are well-known.

Many many theories are forwarded to explain this state-of-affair. Some of the most common beliefs regarding the prevailing conditions of road safety and indiscipline are as follows:

1. The root cause of traffic safety problem is lack of adequate traffic signs to guide the motorists with speed and safety.
2. The roads are too narrow for the traffic demand and hence responsible for high rate of accidents.
3. There are too few traffic police officials to cope with the traffic. Also they are not equipped with traffic control equipment such as radars, high speed motor cycles and cars.
4. Root cause of the problem is the high proposition of mechanically defective vehicles on the road.
5. The problem of highway safety is aggravated by the presence of slow moving animal drawn vehicles on the road.
6. Traffic violations are committed by young and in-experienced drivers only.
7. Pursuit of monitary gains by the drivers of the public service vehicles is primarily responsible for high toll on road.
8. The users in the developing countries like Pakistan exhibit lack of traffic discipline due to socio-economic reasons.
9. The traffic violations are generally committed by un-educated, low income drivers of public service vehicles.
10. The very high degree of corruption prevailing in Traffic Police makes it impossible to bring the problem of highway safety in the country under control.

Study Hypothesis:

Whereas all of these factors may have a marginal effect on the prevailing high accident rate and traffic indiscipline in the country, various studies point out that the real culprit in a developing country like Pakistan is the total lack of an effective and meaningful enforcement as can be seen by looking at the problem of highway safety from the point of view of three Es' namely Engineering, Education and Enforcement in the context of conditions prevailing in the country.

- (a) Engineering: Granted that the road facilities in the country are not par excellence. However, they are quite adequate for the amount of traffic carried by them. According to various studies, the roadway facilities in the country can be held responsible for only 5.00% of the accidents which is very insignificant figure and well within the acceptable range.
- (b) Education: The knowledge of traffic safety rules on the part of road users is dangerously low. According to one survey, prior to 1978, the year when earnest efforts were first made to educate the road users with regard to rules-of-the-road, the ignorance was total. Nobody was aware of even the most fundamental traffic safety rules. As a result of the efforts made by the Government during last three years, the level of the knowledge of the traffic safety rules on the part of road users has arisen to 24%, which is still very dismally low as compared to 95-100% as the acceptable level. However the experience has shown that the road-user generally are not very amenable to voluntary education by conventional methods i.e. through media and campaigns, etc.

(c) Enforcement: However, the research has revealed that educating the road user with regard to traffic safety rules has very limited role as far highway safety is concerned. It is essential only to the extent that everybody who is privileged to drive, must be aware of the rules-of-the-road. But knowing the rules is one thing and obeying them another. The respect for law comes only if it is enforced very strictly. However, strict enforcement can only be ensured by a traffic police agency which is thoroughly trained for the job.

Organization of Traffic Police:

Unfortunately, the traffic police as organized at present is one of the most ill-equipped agency compared to the task entrusted to them. They suffer from a number of serious organizational and operational deficiencies as detailed below:

(a) Recruitment:- The traffic police personnel are invariably drawn from the ranks of regular police force for a maximum period of two years. However, in majority of the cases, the posting period is even less than that. There is no regular cadre of the traffic police. The policy has hindered the development of professionalism in the traffic police. Recently, the Government has decided to raise the tenure of traffic police to at least five years but this is yet to be implemented. Also no consideration is given to the education level, physical fitness or aptitude of official before selecting him for traffic duties.

- (b) Training: The traffic police personnels drawn from the ranks of regular police are put on the job directly without giving them any training. Since very little "Traffic Control" is taught to the recruits of regular police, the individuals drawn from them for traffic duties know very little about the job entrusted to them. They are totally unaware of traffic safety rules and motor vehicle laws. They do not even know how to drive a vehicle and are completely ignorant of accident investigation and a host of other pre-requisites of a good traffic police official.
- (c) Power: Although the motor vehicle laws in force given full powers to a traffic police officer in uniform to enforce all the laws, unfortunately since the mid sixties, the lower ranks of traffic police namely constable and head constables have been stripped of all powers through executive orders by senior police officials on the ground that these powers were being misused by them. As a consequence, the traffic police constables and head constables, who in fact are the king-pin of traffic enforcement, have no powers to enforce the traffic laws and have been reduced the mere spectators standing around to watch the traffic go by.
- (d) Security: At the top of it all, the lower ranks of the traffic police have no security **whatsoever** in their jobs. Any complaint made by anybody against them, especially if the complaint happens to be a car driver, are summarily disposed by the senior police officers and the traffic police official is punished without giving him any opportunity to defend himself or without ascertaining the truth or otherwise of the complaint. As a result, the lower ranks of the traffic

police are totally demoralized. They have therefore adopted a policy of non-interference especially as far as the private car drivers are concerned lest the driver of the car may turn out to be a big shot and get offended for being stopped by the official and lodge a complaint before his senior officer against him.

(e) Deployment: The deployment of traffic police is also very defective. Practically the entire traffic police force is deployed in few large urban areas. Even in the cities, the entire force of traffic police is deployed at fixed points only. The points normally looked after by the traffic police are important intersections (signalized as well as un-signalized), bus stops and schools, etc. No attention is paid to the stretches of roads in between the fixed points or other important road sections. As a result, the drivers, once they go pass an intersection manned by a traffic police official, feel totally free to do whatever pleases them. The extent of speeding and reckless driving on road sections is therefore of the highest degree.

As regards the rural roads, hardly any patrolling is done. There are only 33 patrolling teams sanctioned for the entire country. Out of these, only a very few actually do the patrolling of rural highways. The remaining have either been put on various office jobs or their positions are kept vacant.

(f) Enforcement Priorities: Although most of accident and congestion is caused by speeding, reckless driving and lack of discipline, the total energies of the traffic police are devoted towards preventing overloading,

overcharging and checking of documents of Public Service Vehicles. Hardly any notice is taken of the violations committed by the private cars or other road users.

Objective:

The study was designed to measure the response of road users to various selective enforcement emphases. The study tested the reaction of the road users with regard to enforcement emphases on checking over-speeding, turning violations, queuing violation, one-way violation, stop sign violations, lighting violation and jay walking by pedestrian, etc.

Scope of the Study:

The study was restricted to the twin cities of Rawalpindi-Islamabad and was carried out during February-April, 1980.

Methodology:

With the help and cooperation of the local Traffic Police, a comprehensive Enforcement Plan was prepared for the study area. The salient features of the plan were as under:-

- i) The manpower requirements of Traffic Police with regard to tasks other than traffic enforcement such as office staff, manning important public buildings, escorting V.I.P's, reserve and other special duties were quantified and fully provided for.
- ii) The entire study area was divided into sectors. All the important road sections and fixed points (intersections) were identified. The road sections were patrolled by mobile units as well as on foot. Whereas the mobile patrolling was carried out by one individual at a time, the foot patrol was carried out in pairs.

- (iii) Detailed job description of each task namely mobile patrolling, foot patrolling, speed checking, fixed points, night-patrolling, manning major public buildings, V.I.P.'s escort, traffic control in Airport and Bus Stand, etc. was prepared.
- (iv) The Bio-data of each traffic police official with regard to his academic qualifications, length of total service, traffic experience and ability to drive a motor vehicle was collected.
- (v) Minimum qualification of 8th Class was fixed for traffic duties. Those not fulfilling the minimum qualifications were transferred and replaced by those suitably qualified. Preference was given to those with higher academic qualifications and those who could drive a motor vehicle.
- (vi) The available manpower was deployed for the following four specific tasks:
 - (a) Speed Checking
 - (b) Violations at important intersections
 - (c) Violations along important road sections
 - (d) Violations along secondary roads
- (vii) Each individual was specifically selected for a particular task keeping in view the requirement of the job and his suitability for it.
- (viii) The official was assigned a particular task on permanent basis to ensure that in due course of time he would become thoroughly familiar with the area and nature of his duty.
- (ix) In order to enable the officials to perform their task in the required manner, they were thoroughly trained on-the-job. They were also issued detailed written instructions about the manner in which the job was to be carried out.

- x) Each official was guaranteed full protection in the discharge of his duties and every effort was made to boost his morale.
- xi) A fool proof monitoring system was introduced to ensure that each individual carried out the assigned task in the letter and the spirit.
- xii) The traffic surveillance was extended round-the-clock by coordinating with the night-patrolling carried out by regular police force.
- xiii) Each official was trained to cope with various situations especially involving car drivers. They were told to be courteous but firm and were on-the-job trained in finer points of effective enforcements.
- xiv) To ensure that in case of emergency situations, the plan was disrupted to the minimum possible extent, a systematic "Emergency Withdrawal Schedule" was prepared.
- xv) In order to quantify the results of the study, the following indicators were selected and measured at selected locations before and after the commencement of the study:-
 - a) Speed violation
 - b) Stop Sign Violations
 - c) Turning violations
 - d) One-way violations
 - e) Lighting violations
 - f) Queuing vibrations
 - g) Priority Rules at Round-about
 - h) Jay walking
 - i) Violation at signal
 - j) Improper parking

Study Results:

The results of the study are presented in the following paras:

i) Speed violations: A total of 5 suburban arterial roads were selected for speed checking. A team consisting of one Head Constable and one Constable was raised to do the speed check on the designated roads. The team was thoroughly trained to measure speed with the help of a measuring tape, one stop watch and a set of two walkie-talkies.

The team was instructed to select a straight reach of road and mark two points on it at a distance of 352 feet. The Constable with one walkie-talkie and a stop watch was stationed at a hidden vantage point away from the road from where he could see the beginning and end of the road section under observation. He was asked to pick-up a vehicle approaching the section which in his judgement was exceeding the speed limit and clock the time it would take him to go over the road section. Knowing the speed limit in force on the road section and the using the following ready reckoner, he could at once tell whether or not the vehicle was exceeding the speed limit:

<u>T i m e</u>	<u>S p e e d</u>
1 Second	240 miles per hour
2 "	120 " " "
3 "	80 " " "
4 "	60 " " "
5 "	48 " " "
6 "	40 " " "
7 "	35 " " "
8 "	30 " " "
9 "	28 " " "
10 "	24 " " "

An allowance of 5 miles above the speed limit was kept as possible error in measuring the speed. In case of speeding beyond 5 miles per hour above the speed limit, the Head Constable who waited approximately half a mile down stream was informed about the infringement. He had enough time to come on the road and position himself to stop the vehicle when it approached him and write a challan for speeding.

The exercise had a very salutary effect on the speeds of motor vehicles on these roads. Both the operating speed and extent of speeding beyond the limits on the designated roads showed marked decrease, as can be seen from the tables below:

KASHMIR HIGHWAY

Vehicle Type	Exceeding Speed Limits		Average Speed	
	Before	After	Before	After
	(Percent)		(Miles per hour)	

A. PUBLIC:

1. Bus	Nil	Nil	40.71	34.85
2. Truck	12	Nil	41.28	30.37
3. Mini-Bus	36	Nil	39.27	35.08
4. Taxi	Nil	Nil	35.87	34.3
5. Pick-Up	Nil	Nil	54.54	32.74

B. PRIVATE

1. Car	28	13	48.1	43.08
2. Jeep	Nil	Nil	39.56	40.13
3. Pick-Up	23	10	44.59	38.77
4. Motor Cycle	35	6	39.98	30.81

SIR SYED ROAD

Vehicle Type	Exceeding Speed Limits		Average Speed	
	Before (Percent)	After	Before (Miles per hour)	After

A. PUBLIC:

1. Bus	32	7	41.37	38.13
2. Truck	9	Nil	36.53	32.45
3. Mini-Bus	12	Nil	38.11	36.12
4. Taxi	Nil	Nil	35.43	34.04
5. Pick-Up	Nil	Nil	48	36.92

B. PRIVATE:

1. Car	9	Nil	42.33	36.27
2. Jeep	Nil	Nil	36.36	Nil
3. Pick-Up	Nil	Nil	39.82	Nil
4. Motor Cycle	Nil	Nil	31.8	30.37

AIRPORT ROAD

Vehicle Type	Exceeding Speed Limits		Average Speed	
	Before	After	Before	After
	(Percent)		(Miles per hour)	

A. PUBLIC:

1. Bus	79	28	46.94	42.03
2. Truck	Nil	Nil	36.60	35.79
3. Mini-Bus	33	Nil	41.60	38.43
4. Taxi	60	Nil	41.80	37.66
5. Pick-Up	Nil	Nil	42.85	37.45

B. PRIVATE:

1. Car	60	39	55.1	43.1
2. Jeep	Nil	Nil	41.9	37.14
3. Pick-Up	20	Nil	41.00	41.63
4. Motor Cycle	Nil	Nil	34.00	36.54

MURREE ROAD

<u>Vehicle Type</u>	<u>Exceeding Speed Limits</u>		<u>Average Speed</u>	
	<u>Before</u>	<u>After</u>	<u>Before</u>	<u>After</u>
	(Percent)		(Miles per hour)	

A. PUBLIC:

1. Bus	33	Nil	40.2	33.02
2. Truck	Nil	Nil	35.54	30.62
3. Mini-Bus	23	Nil	37.58	33.91
4. Taxi	30	Nil	41.61	34.29
5. Pick-Up	56	Nil	43.10	Nil

B. PRIVATE:

1. Car	29	12	41.33	36.05
2. Jeep	33	Nil	43.61	34.57
3. Pick-Up	10	Nil	41.39	33.19
4. Motor Cycle	15	10	33.43	32.00

ISLAMABAD HIGHWAY

Vehicle Type	Exceeding Speed Limits		Average Speed	
	Before (Percent)	After	Before (Miles per hour)	After

A. PUBLIC:

1. Bus	60	Nil	42.63	34.9
2. Truck	Nil	Nil	38.79	33.33
3. Mini-Bus	54	12	41.16	31.60
4. Taxi	18	Nil	41.86	30.82
5. Pick-Up	20	Nil	41.25	38.82

B. PRIVATE:

1. Car	11	3	44.25	40.47
2. Jeep	Nil	Nil	43.76	33.04
3. Pick-Up	Nil	Nil	43.86	37.40
4. Motor Cycle	24	Nil	38.68	25.95

ii) Violation of Stop Sign: In Pakistan, nobody pays any attention to Stop Sign. The most common practice for entering a major road (whether or not protected by a Stop Sign) is to slow down, blow the horn and enter slowly. While entering, if any vehicle is seen approaching from the left or right, then the driver takes evasive action to get out of the way of the approaching vehicle either moving to the right or left of the road or get on the shoulder if need be. The other vehicle also slows down and gives room to the entering vehicle to avoid collision. Many a time they do not succeed and accident results.

During the course of the study every effort was made to enforce the rule regarding entering a major highway and stop sign. Two locations, with proper stop sign control were selected, for observing the effects of enforcement emphasis on stop sign violation. Both the locations had experienced quite a number of fatal accidents. The minor roads approaching at both the locations had a very restricted sight distance, due to curvature and road structures. There was substantial amount of traffic passing through both the intersection, on major roads as well as minor cross roads.

The readings taken before and after the study, showed considerable decrease in the violation rate of stop sign as can be seen from the following table:

VIOLATION OF STOP SIGN (PERCENT)

	<u>ZERO POINT</u>		<u>LAL QUARTER</u>	
	<u>Before</u>	<u>After</u>	<u>Before</u>	<u>After</u>
Cars	92	78	84	56
Buses	80	67	-	-
Trucks	97	81	100	45
Mini-buses	90	77	75	13
Motor Cycles	95	81	90	30

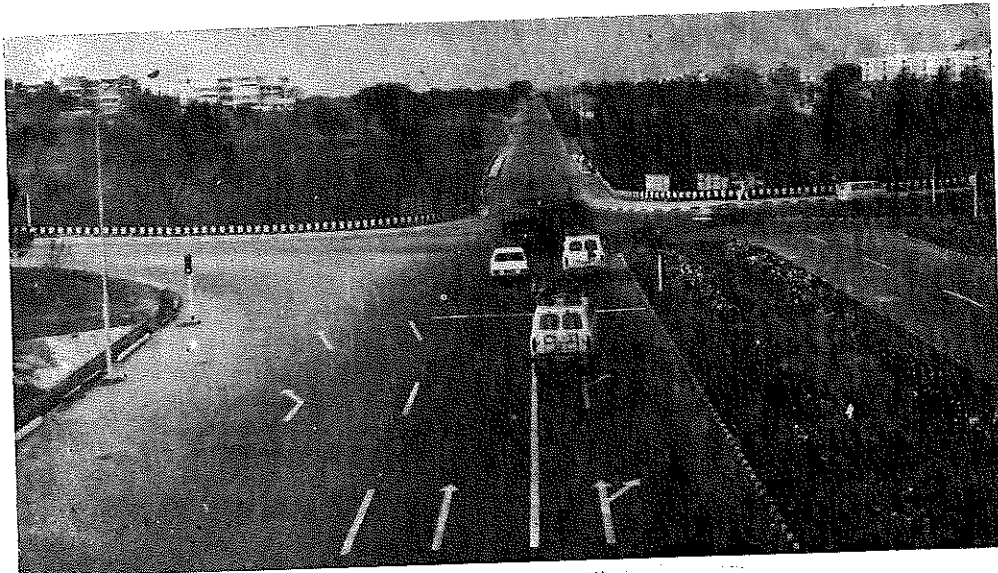
iii) Turning Violations: The general impression among the drivers is that the only requirement for turning is to give the indication of the intended manoeuvres either manually or by using turn indicators. How the turn is made is not important. No attention is paid to the positioning of the vehicle before making the turn. The turning manoeuvres normally carried out are:

(a) On a multi-lane roads, it is common sight to see vehicles turning right from left lane or vice-versa even when the permissible movements from various lanes are clearly marked on the pavement with the help of arrows. As can be seen from the pictures on pages 20 to 22.

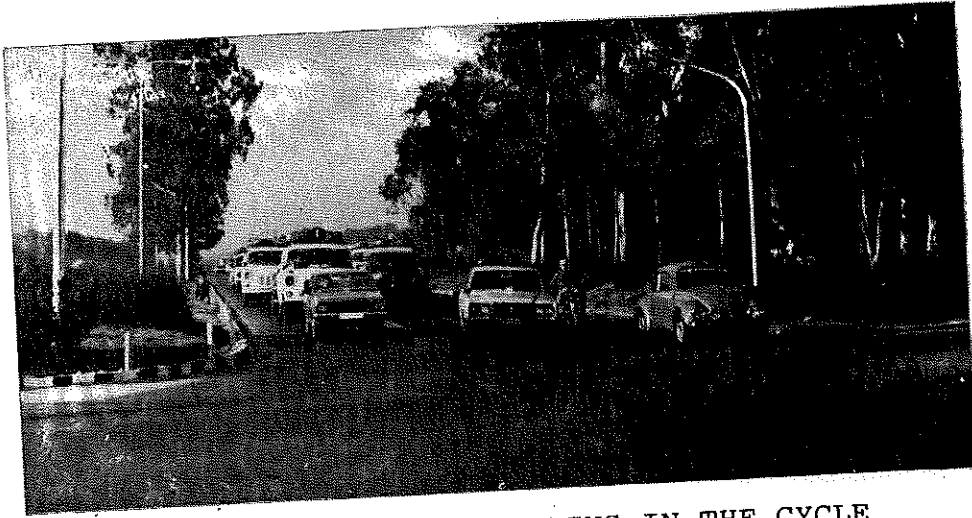
COMMON SIGHTS
PRIOR TO STUDY



A WELL DESIGNED/STRIPED ROAD JUNCTION WITH ONLY FIVE VEHICLES. THE TRAFFIC INDISCIPLINE CAN ONLY BE BLAMED ON BAD ROAD BEHAVIOUR.



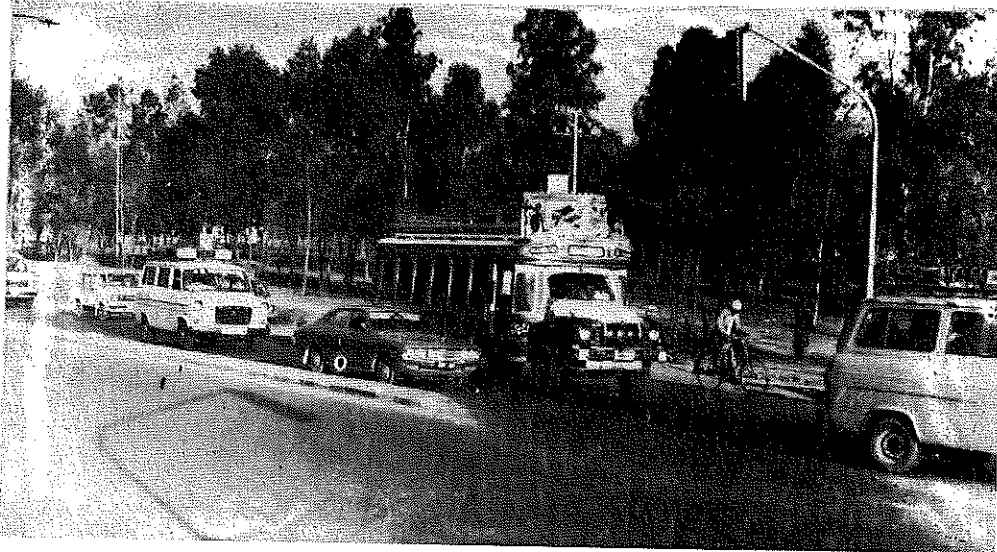
THE TRUCK IN THE PICTURE HAPPENS TO BE A POLICE TRUCK, WHICH IS ATTEMPTING TO TURN RIGHT FROM FOURTH LANE. IS IT ANY FAULT OF THE ROAD?



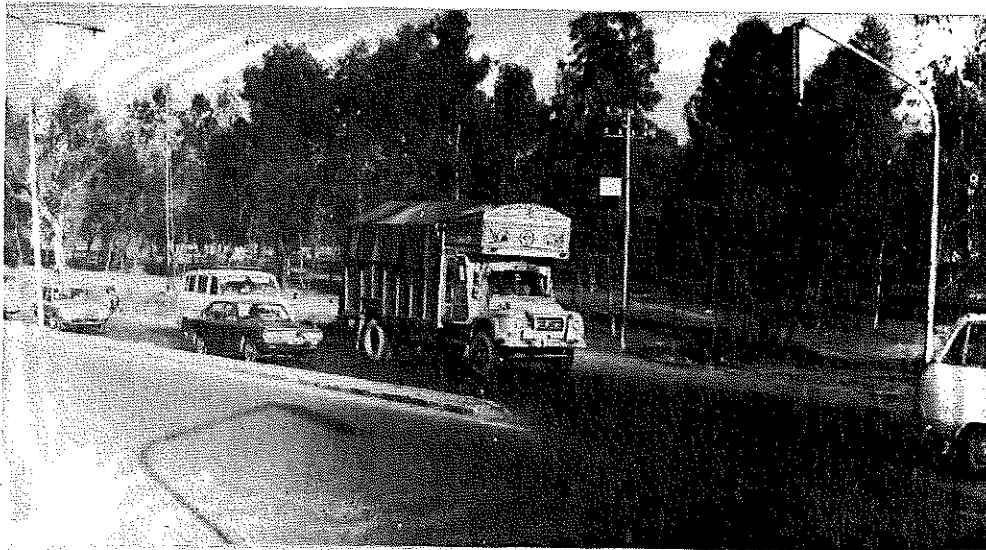
THE VOLKS WAGON IS STANDING IN THE CYCLE TRACK WHILE THE CAR IN BETWEEN WANTS TO TURN RIGHT FROM THE LANE WHICH ALLOWS ONLY STRAIGHT AHEAD MOVEMENT



A REPETITION OF ABOVE WITH A NEW SET OF VEHICLES. A VERY COMMON PEHENOMENON



THE BUS FROM LEFT LANE IS TURNING RIGHT
WHILE THE CAR IS GOING STRAIGHT AHEAD



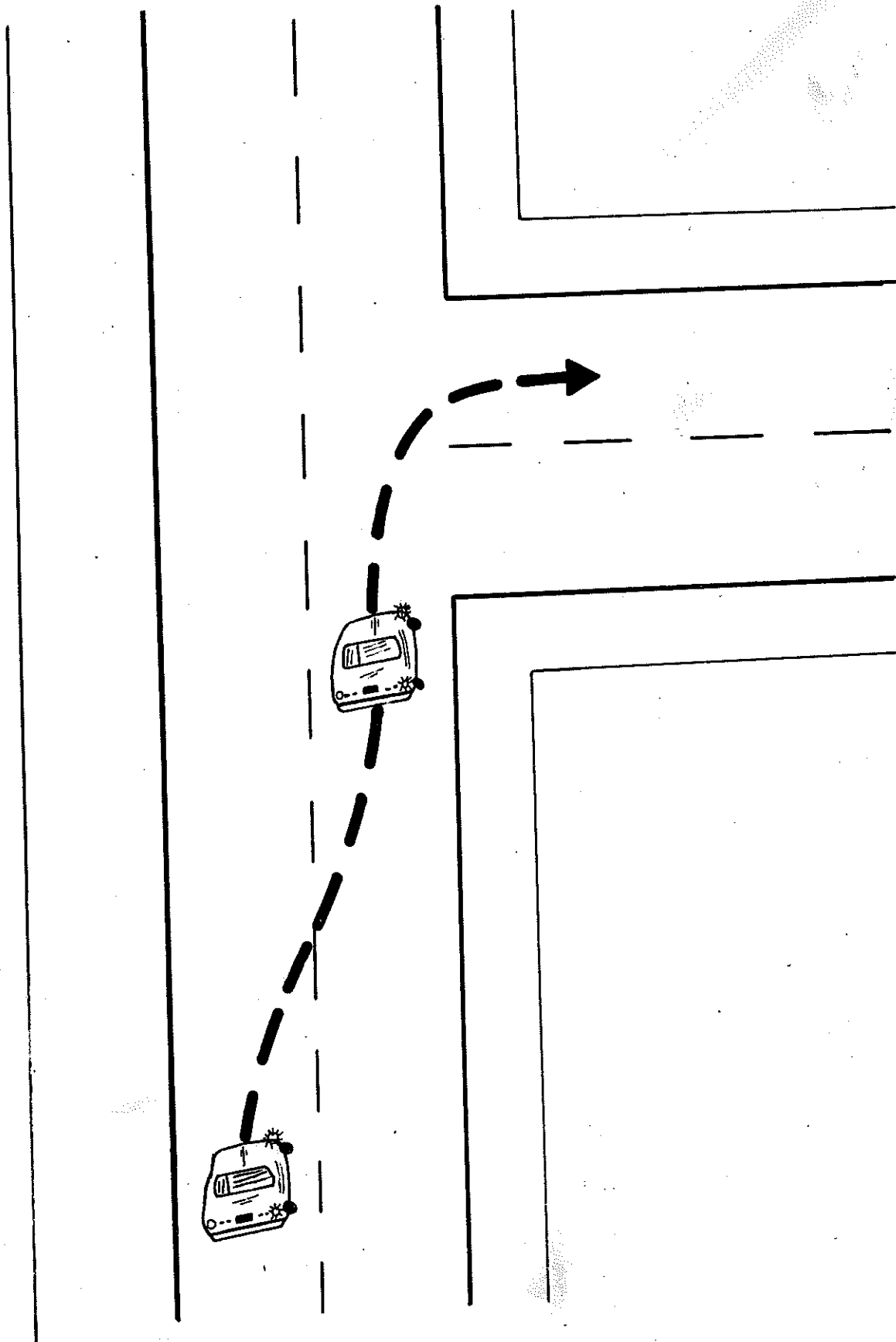
A REPETITION OF ABOVE. MORE OF THE SAME.
A DAILY OCCURRANCE WITHOUT ANY BODY TAKING
NOTE OF IT.

- b) On a two lane road, right turns are made either from the right lane or getting on the left shoulder and allowing all the following vehicles to pass. Similarly, the left turns are made either from right lane or from left shoulder especially at signalized intersections when vehicle in front is waiting on the red light, as illustrated by the sketches on pages 24 and 25.
- c) It is quite common to see vehicles taking right turn in the face of on-coming vehicles, without yielding R.O.W both on the highways as well as signalized intersection.
- d) Quite commonly, the vehicles turning right from a road, enter the other road in the right lane as illustrated on page 26.

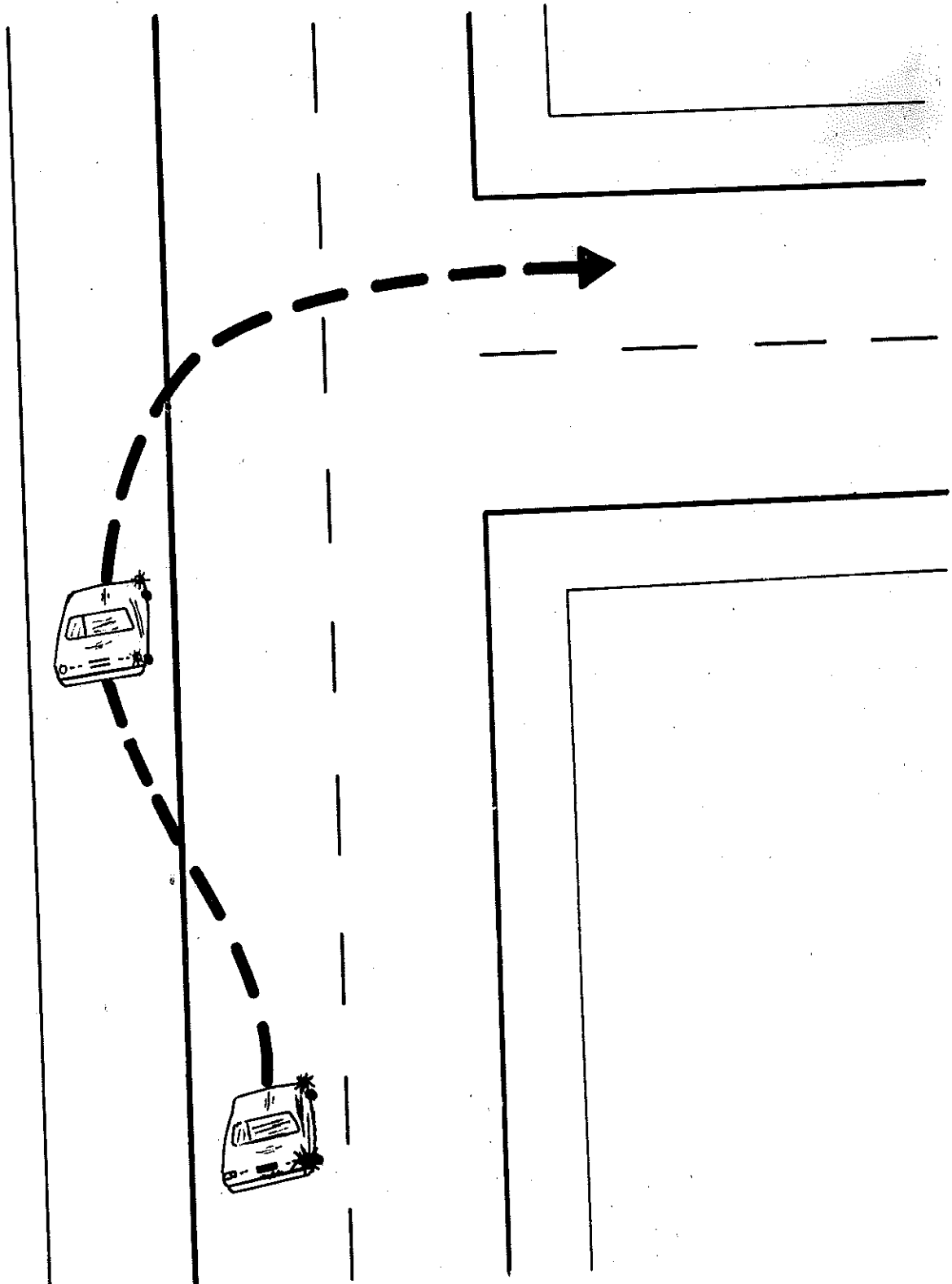
During the course of the study, special attention was given to turning violations. The following two intersections were specifically selected for quantifying the effect of enforcement on turning violations:-

- a) ZERO POINT: The approach from Faizabad was selected. The approach is a two lane facility with a separate cycle track. Of the two lanes, the right one is meant for going straight or making right turn, while the left lane is earmarked for going straight. A separate lane is provided for left turn. The approach is very well marked with lane marking and sign posted.

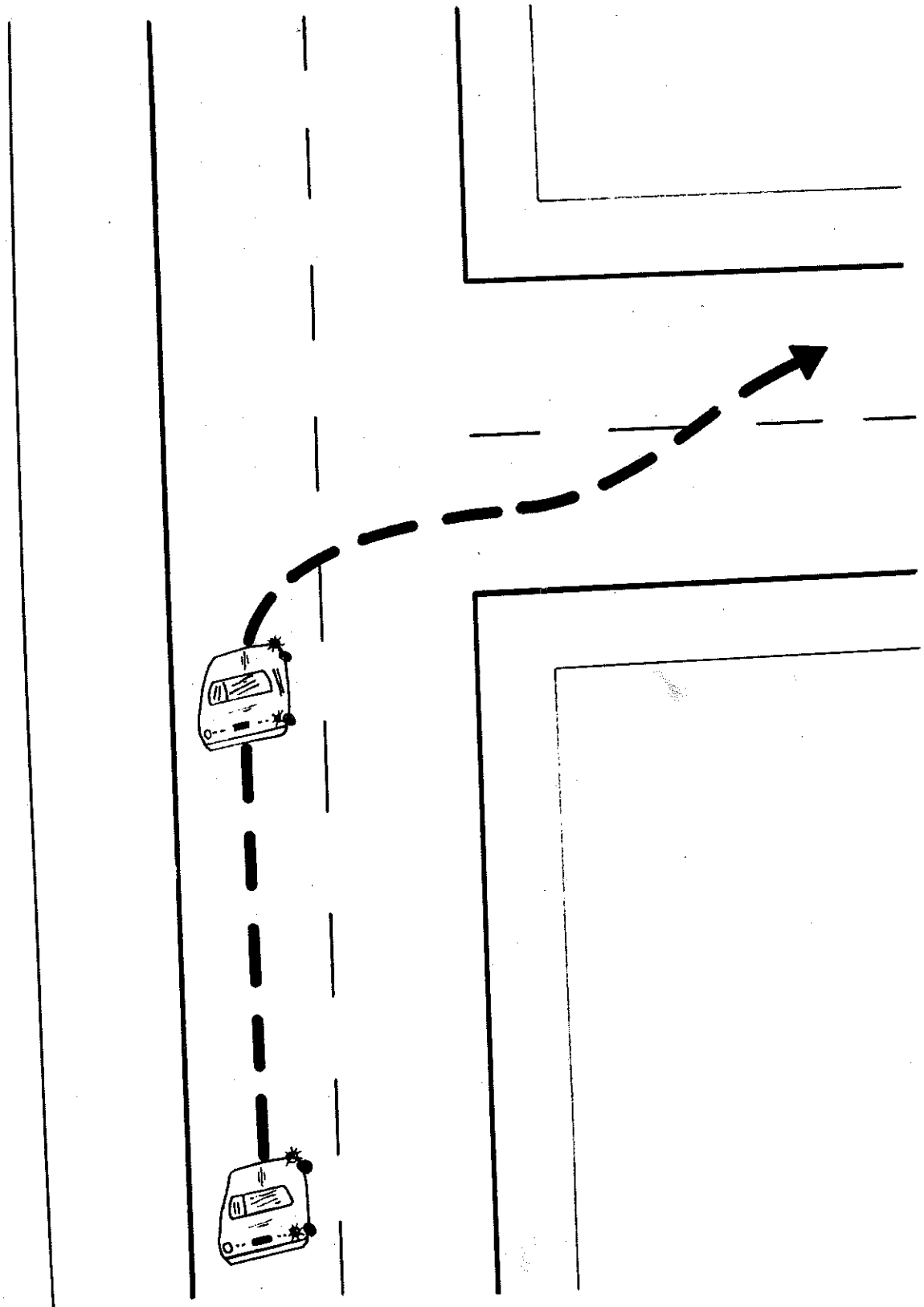
TURNING RIGHT FROM RIGHT LANE



TURNING RIGHT FROM LEFT SHOULDER



TURNING RIGHT INTO RIGHT LANE



The intersection is signalized with adequate green phase to take care of traffic going through the intersection.

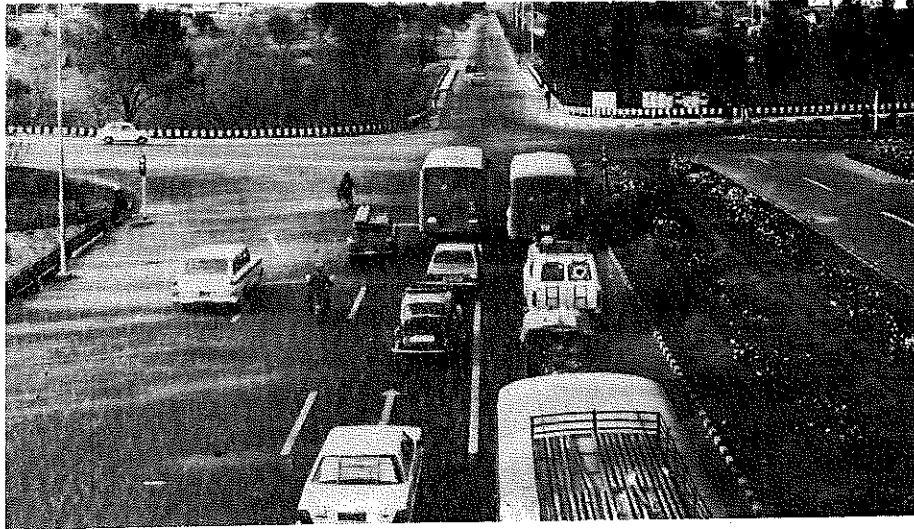
- b) FAIZABAD: The approach from Zero Point was selected which was similar to Zero Point with the exception that the right lane is exclusively marked for right-turn, while the left lane is meant for going straight only. The left turning traffic is accommodated by providing a separate ramp approximately 500 feet before the intersection and cycle track is carried through the intersection. This approach is also properly sign posted.

The result of the study showed a very significant reduction in turning violations at both locations before and after the study as can be seen from the table given below:

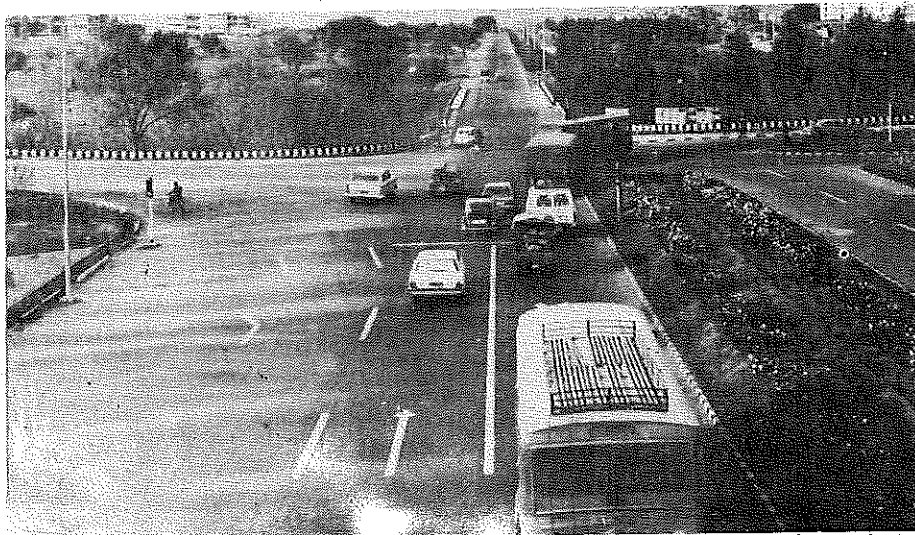
	<u>TURNING VIOLATIONS</u>		<u>(PERCENT)</u>	
	<u>ZERO POINT</u> <u>Before</u>	<u>After</u>	<u>FAIZABAD</u> <u>Before</u>	<u>After</u>
Buses	75	22	89	58
Mini Buses	59	15	63	34
Cars	65	31	59	32
Motor Cycle	79	29	71	21

Arrangements were made to take photograph of the traffic flow at Zero Point before and after the study. The pictures at pages 28 and 29 clearly show the improvement in proper turning at the location.

COMMON SIGHTS
PRIOR TO STUDY

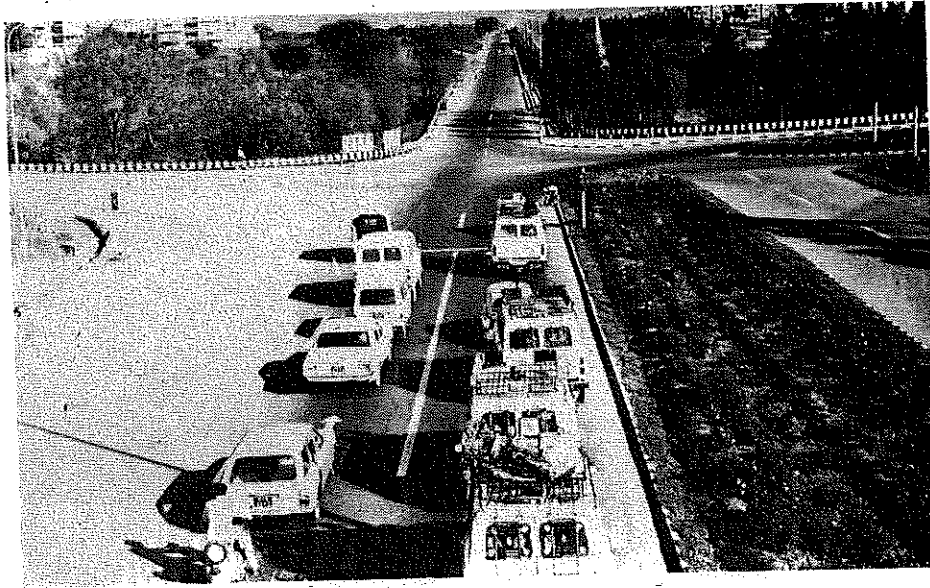


THE SAME INTERSECTION WITH LITTLE MORE
TRAFFIC IS THIS TRAFFIC BEHAVIOUR JUSTIFIED?



SECOND SEQUENCE OF ABOVE. THE STATION WAGON
ON THE EXTREME LEFT IS TRYING TO GO STRAIGHT

AFTER THE STUDY



THE ABOVE DISCIPLINE WAS BROUGHT ABOUT BY ENFORCEMENT ALONE



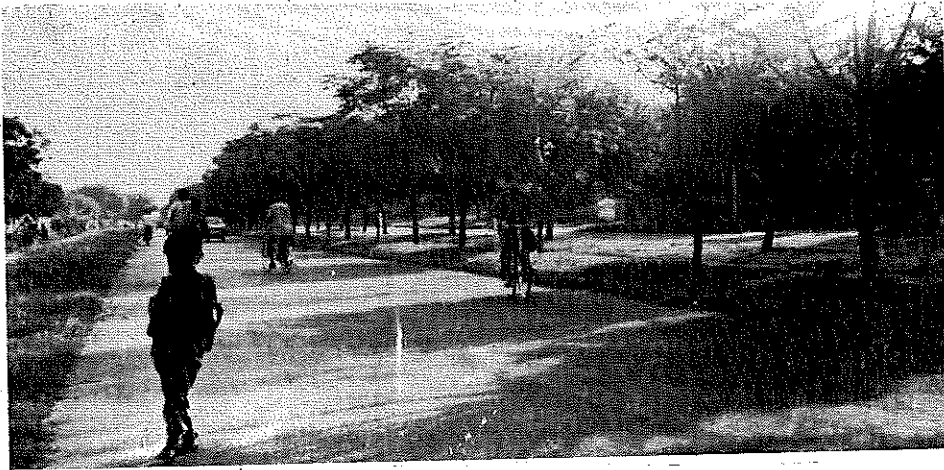
EFFECT OF ENFORCEMENT THE NO ONE DATE TURN RIGHT FROM LEFT LANE

(iv) One-way Violations: Most of the arterial roads in the study area are either four lane divided highways, multi-lane roads or one-way streets. The multi-lane roads and one-way streets have proper warning and regulatory signs. In spite of this, there is a very high incidence of violation of one-way regulation in the entire study area. Nobody thinks anything of going down the wrong side of a road.

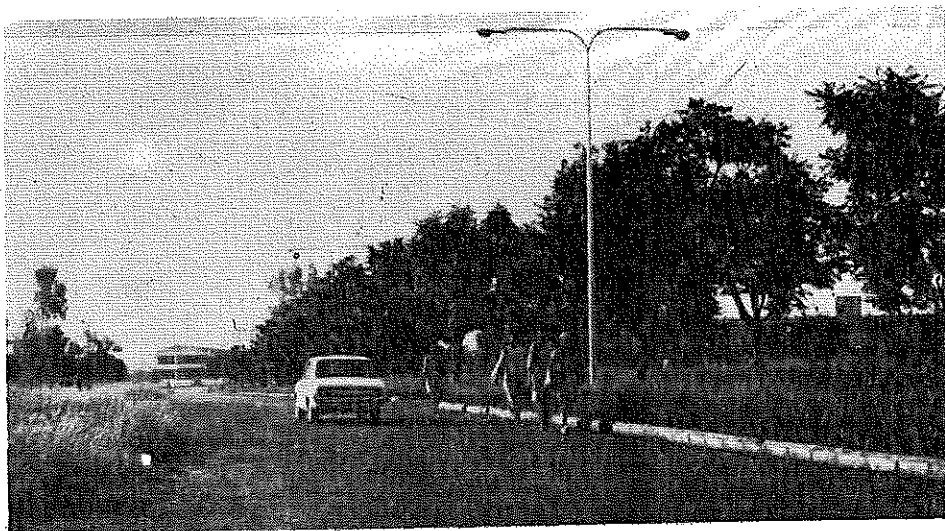
The extent of one-way violation is so high that it is pretty well accepted by everybody as part of normal traffic problems. The drivers meeting the vehicles coming down the wrong side of the road dutifully move, without any sign of protest, to one or other side of the road to make room for the other vehicle to pass. The one-way violations are not confined to any particular category of the road users as is evident from the Photo on page 31. It includes everybody ranging from trucks and buses to cycles and pedestrians

During the course of the study, strict instructions were issued to pay special attention to violations of one-way regulation. Some of the excuses given by the drivers caught violating the one-way violation during the study are as follows:

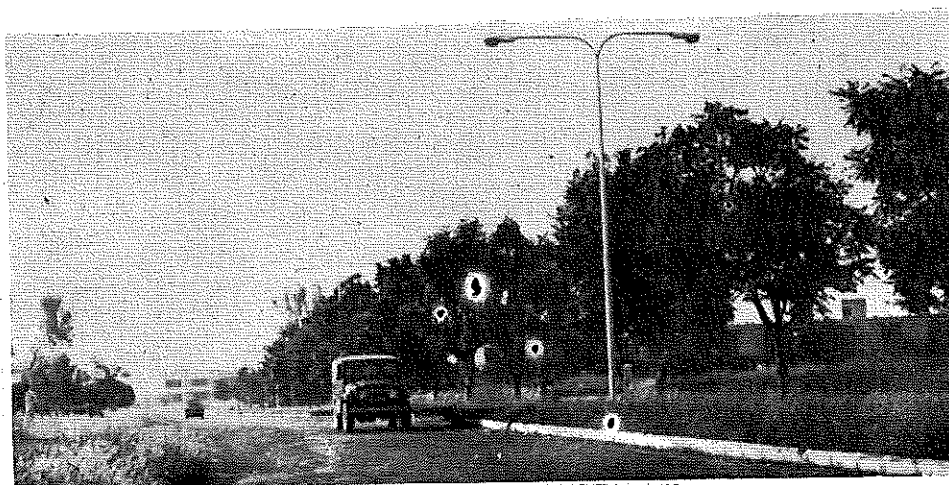
ONE WAY VIOLATIONS ON DUAL CARRIAGEWAY



LACK OF ENFORCEMENT OR FACILITIES



NO RULES FOR PEDESTRIAN



ONE WAY OR ANY WAY!

- (a) I was going this way while the U-turn opening was on-that side.
- (b) The road on the other side was little rougher.
- (c) I live on this side of the road therefore I come down this side.
- (d) What is the difference which side I go on as long as there is ample room for everybody.
- (e) I was in a hurry.
- (f) Everybody does it.
- (g) It should be alright as long as I do not cause any accident.
- (h) I have been doing it for years and nobody has stopped me before.

Two streets (dual-carriageways) with opening in the median at approximately 100 meter were selected for the purpose of study. The "Before and After" count revealed that the incidence of one-way violations reduced significantly as a result of the enforcement of one-way violations. The results of the study are given below:

VIOLATION OF ONE WAY

(Percent)

S. NO.	Vehicle	PESHAWAR ROAD		PRINCIPLE ROAD F-8	
		Before	After	Before	After
1.	Bus	-	-	90	22
2.	Truck	40	10	-	-
3.	Mini-Buses	39	19	80	20
4.	Taxi	43	15	35	10
5.	Cars	98	72	55	30

(v) Lighting Violations: The lighting violations in the country as a whole is very high as can be seen from the extracts from "Pakistan Road Safety Appraisal" study conducted by a team of U.K. Experts during first quarter of 1978.

A survey was carried out by the team in order to quantify the order of magnitude of violations of vehicle lighting regulations. The survey was carried out on major thoroughfares in Karachi, Lahore, Rawalpindi, Peshawar and Quetta. The results are summarized as follows:

- almost all vehicle lighting faults were those of rear lights,
- of the five major cities in which the survey was undertaken, Karachi had the best vehicle lighting record with 17 percent of all motorised vehicles having lighting faults. Corresponding figures for Lahore, Rawalpindi, Quetta and Peshawar, were 23, 25, 29, respectively.

- of all motorised vehicles observed in reasonably large numbers, motor rickshaws had the worst record with 37 to 52 percent having lighting faults. About 30 percent of motor cycles had lighting faults - almost invariably of rear lights.
- it is unusual for bicycles to carry any form of lighting.

During the study, efforts were concentrated on lighting violations particularly by the cyclists. In the beginning 100% cyclists were without light at night time. On fourth night after the enforcement of lighting regulations were started, first cycle fitted with light was reported. After one month of efforts, the observance of proper lighting regulation showed a visible improvement particularly by cyclists as can be seen from the result of 'Before and After' Survey at two locations in the study area given below:

S.No.	Vehicle	LIGHTING VIOLATION (Percent)			
		7TH AVENUE		MURREE ROAD	
		Before	After	Before	After
1.	Buses	53	45	52	47
2.	Trucks	75	62	33	29
3.	Mini-Buses	36	32	18	15
4.	Taxis	61	59	30	28
5.	Cars	42	40	21	20
6.	Motor Cycles	49	46	32	30
7.	Cycles	100	86	100	75

(vi) Queuing Violation: The road-user in Pakistan like most developing countries generally lack traffic discipline. Everybody, whether he is a pedestrian, cyclists or motor vehicle driver, wants to be ahead of everybody else if he could manage it in any manner possible. They exhibit a very high degree of impatience while on road and there is remarkable lack of respect or consideration for other road users. As a result, even a slight disturbance or holdup in the traffic causes considerable traffic jam.

During the course of the study, queuing violations were also taken note of and efforts were made to inculcate greater traffic discipline through enforcement. For the purpose of study, the road users were divided into two groups. The first group included drivers of all motor vehicles while the second group consisted of only pedestrians.

Motor Vehicles: The queuing violations by the drivers of motor vehicles were generally of the following kind:

- Total disregard for lane marking at signalized intersection on dual carriageways while waiting on red signal.
- Occupying right hand lane of two lane facility at signalized intersection or at rail level crossing while waiting for green signal or gate opening.

- Overtaking a vehicle waiting at a stop sign for traffic on main road.
- Overtaking by Public Service Vehicles on bus stops.

The Photos on pages 20-22 give an indication of the extent of queuing violation in the study area. The efforts made during the study resulted in substantial reduction in queuing violation as can be seen from the Photo on page 29. The summary of the results achieved at four points in the study area is given below:

QUEUING VIOLATION

<u>Location</u>	<u>Violations(percent)</u>	
	<u>Before</u>	<u>After</u>
Faizabad Chowk	18	3
Zero Point	12	2
Aabpara	24	10
Super Market	19	5

Apart from this, two bus stops one with proper bus bay (at Central Government Hospital) and one without a proper bus bay but with ample space on the shoulder of the road (near Faizabad) were selected for studying the effect of enforcement on queuing discipline of Public Service Vehicle drivers. The Public Service Vehicle drivers normally committed the following

violations at bus stops:

- Did not approach the bus stop in a line. Every arriving vehicle instead of stopping behind the vehicle already at the bus stop, dropping/picking up passengers, would overtake it and pull in front of the vehicle.
- None of the vehicle used the properly constructed off street bus bays wherever provided in the study area. Dropping or picking up of passengers was done on the road itself thus causing obstruction in the traffic.
- Contrary to the law, the bus stops were used by the Public Service Vehicle drivers as either resting places or for waiting on additional passengers till the vehicles were filled to the desired capacity.

Two police Constables, one for each side of the road, were posted at these two bus stops to require each Public Service Vehicle to approach the bus stop in a line and drops/pick up passenger in a proper manner and then leave the bus stop in turn.

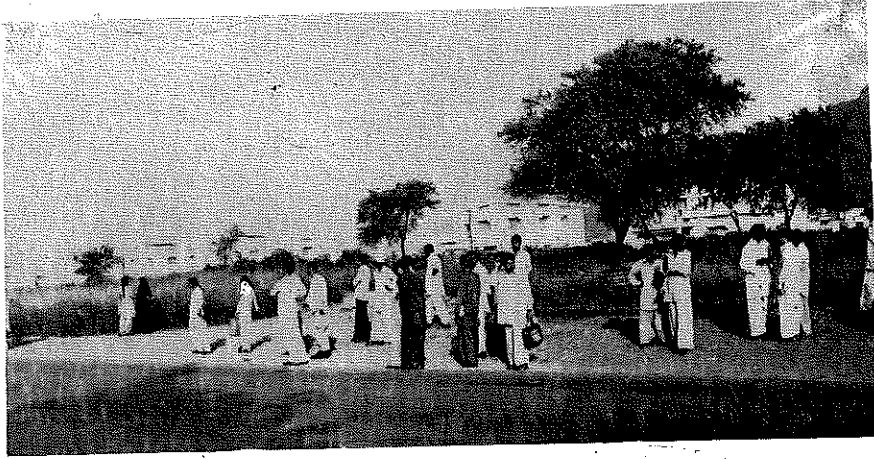
The efforts made during the study resulted in complete dis-appearance of the problem on the two selected bus stops. From a total indiscipline, complete discipline was achieved as long as the traffic police constables were on duty. At other times when the constables were not around, some of the drivers would try to revert to the old ways but proportion of such drivers was very small.

(b) Pedestrian: The pedestrian violation of queue is usually witnessed at bus stops. Everybody clamours to get on the bus at the same time when disembarking passenger want to get out of the bus. As a result, the getting on and off of a bus requires lot of physical strength. The infirm and the old are the greatest sufferers.

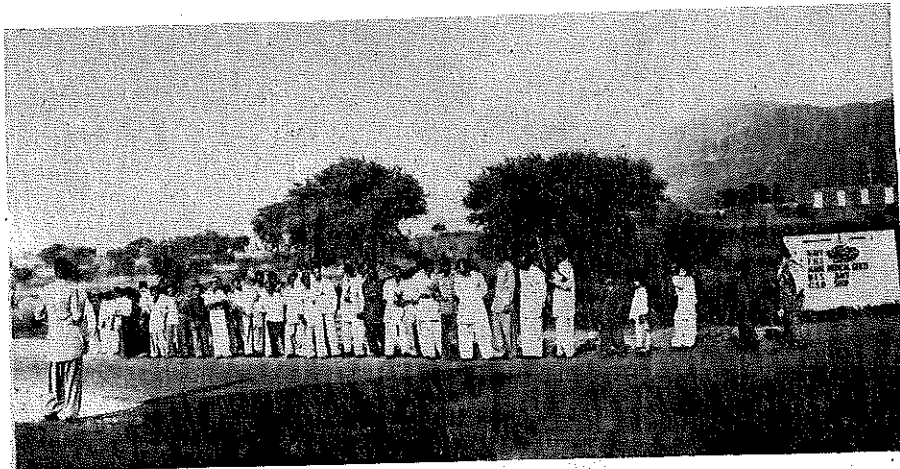
To study the effect of enforcement on the queuing discipline at bus stops, the waiting passengers at the two selected bus stops were ordered to form a queue and not attempt boarding till all those wishing to dis-embark were out of the vehicle. They were then allowed to embark in single file. The efforts yielded a total elimination of problem as long as the traffic police official was on duty. During the period when the traffic police official was withdrawn, the condition quickly returned to the old.

No readings were taken before and after the study to quantify the effect of enforcement on road users behaviour at bus stops. However, photographs at Page - 39 clearly indicate the influence of enforcement. The two bus stops are located approximately 500 meters apart. Both the stops are used by same type of people i.e. labours, low paid govt. employees and students. In the case of first bus stop, which

DISCIPLINE AT BUS STOP



WAITING ON BUS STOP WITHOUT
ENFORCEMENT INTERVENTION



WAITING AT BUS STOP WITH PROPER
ENFORCEMENT INTERVENTION

happens to be in front of Naval Colony, the navy soldier on duty, under orders by the higher authorities, enforces the queue discipline on all bus passengers at that stop. No such arrangements exist on the second bus stop and the result is clear for everybody to see.

- (vii) Round-about: Very few road user observe the Priority Rule on a Roundabout: Although the primary reason for it is the ignorance of road users regarding the Priority Rules on the Round-about and this ignorance is not limited to road users alone, the rule is never enforced which further aggravates the problem.

During the study, one Roundabout in the study area was selected and police officials were posted to enforce the Priority Rule on the Round-about. The efforts resulted in significant decrease in the number of violations as can be seen from the table below:

PRIORITY AT ROUND-ABOUT

S. No.	<u>Vehicle</u>	<u>Violation (Percent)</u>	
		<u>Before</u>	<u>After</u>
1.	Bus	91	52
2.	Trucks	93	47
3.	Mini-Buses	88	53
4.	Cars	97	78
5.	Motor Cycles	95	82

(viii) Pedestrians: The violations commonly committed by the pedestrian are:

- Crossing an intersection at green signal
- crossing the intersection through the middle rather than at designated cross walks
- crossing roads at all points and without regard to traffic
- walking on road proper even where there is a foot-path
- walking in the median lane of dual carriageway facing the traffic or some time even with their backs to the traffic.

Although the efforts made during the study did result in some improvements of pedestrian behaviour, the effect was not long lasting for three reasons. Firstly the traffic police officials found it difficult to cope with vehicular traffic and pedestrians at the same time and gave higher priority to the vehicular traffic letting the pedestrian slip by. Secondly there was also reluctance on the part of the traffic police to entangle with the pedestrian which often resulted in long arguments and could only be enforced by physically escorting each erring pedestrian to proper crossing places. Thirdly, the proportion of stranger in the stream was so high that the efforts did not result in any significant residual gain.

(ix) Right turn on Road: Even though the law clearly stipulates that no right turn can be made on red light, but due to laxity of enforcement, the incidence of violation of the rules is wide spread. Prior to the study, it was observed that majority of the drivers wishing to make right turn at a signalized intersection would do so even when the light was red. The violation was quite often committed in the presence of traffic police officials who would not take any notice. As a result, it had become accepted as a normal phenomenon.

The efforts made during the study to curb the violations resulted in significant reduction of the violation on selected intersections as can be seen from the table below:

RIGHT TURN ON RED

S. No.	Vehicle	Violation (Percent)	
		Before	After
1.	Bus	86	38
2.	Trucks	78	46
3.	Mini buses	69	31
4.	Cars	82	71
5.	Motor Cycle	97	87

(x) Left Turn on Red: The law stipulates that on an intersection controlled by a signal, it is permissible to turn left on red provided:

- (a) there is no vehicle ahead waiting in the left hand lane for light to turn green.
- (b) the vehicle comes to a complete stop.
- (c) yields to the pedestrian crossing the road.
- (d) yields to the traffic approaching from the right.

However, majority of the drivers take it for granted that the left turn on red is permissible without any conditions. The traffic police also do not enforce the rule. As a result, the left turns are made at will without giving any consideration to the right of pedestrians crossing the road or vehicles approaching from right on green signals.

The efforts made during the study to check illegal left turns were concentrated on yielding the R.O.W. to traffic approaching from the right. The before and after survey revealed significant increase in yielding R.O.W. to vehicles approaching from the right but did not have any appreciable effect on yielding the R.O.W. to pedestrian, as can be seen from table below:

- 44 -
LEFT TURN ON RED

S. No.	Vehicle	Violations(Percent)	
		Before	After

Yield to Vehicle

1.	Buses	100	57
2.	Trucks	100	43
3.	Mini buses	100	42
4.	Cars	100	88
5.	Motor Cycles	100	92

Yield to Pedestrian

1.	Buses	100	100
2.	Trucks	100	99
3.	Mini Buses	100	100
4.	Cars	100	100
5.	Motor Cycles	100	100

(xi) Parking:- Parking violations in the study area, as in other major urban areas, are so wide spread that it appears as if there are no laws and regulations in existence to regulate the parking. This is not true. The parking regulations clearly state that nobody is to park a vehicle:

- within 30 feet of a road intersection;
- within 10 feet of fire hydrant;
- more than one foot from a kerb;
- less than one foot behind or in front of another parked vehicle;
- on a footpath;
- at a bus or tram stop;
- in front of a drive way, or blocking passage to a premise;
- in 'No Parking' zone;
- on the black topped part of the road where there is a shoulder;
- opposite or nearly opposite another standing vehicle or other obstruction (e.g. road repairs);
- on the wrong side of the road;
- near the top of a hill;
- on bridge;
- on zebra crossing.

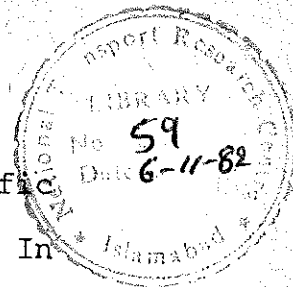
Obviously the above problem is due to lack of enforcement to ensure proper parking. Efforts were made, especially in congested areas to ensure proper parking and thereby reduce the impediments in the traffic flow. The parking control effort could not be mounted at a degree high enough to have a significant impact, mostly due to reluctance of

traffic police officials to enforce the rule on private cars, who were the primary source of the problem especially in busy commercial and shopping areas.

Conclusions:

The study has clearly established that:

- (i) It is not so much the lack of engineering facilities which is responsible for traffic chaos as the behaviour of the road users.
- (ii) The cheapest, the quickest and the most effective method of bringing traffic problems under control is the enforcement.
- (iii) The road users are quite amenable to enforcement emphasis.
- (iv) Even within the given resources of traffic police manpower, equipment and prevailing socio-economic condition greater traffic discipline can be brought about by changing the enforcement emphasis from document checks and checking of over loading/overcharging to enforcement of moving violations which result in traffic indiscipline and chaos.
- (v) The drivers of the Public Service Vehicles exhibited greater amenability to enforcement emphasis than the private vehicle drivers especially if it is in the areas other than those which adversely affects them financially such as overcharging/overloading.
- (vi) The drivers of the private vehicle never before been subjected to observance of the rules enforced during the study, did not accept the authority of these officials, especially by lowest officials of traffic police, to enforce these rules on them. Many ugly incidents were noticed in which the drivers of



the private vehicle threatened the traffic police official with dire consequences. In few cases the driver even tried to over run the traffic constables for daring to check them.

- (vii) The effect of enforcement emphasis was longer lasting in the drivers of Public Service Vehicles than the drivers of the private vehicles.
- (viii) The extent of response of the road users to the enforcement emphasis was directly proportional to the enforcement effort exerted.
- (ix) The traffic police was very reluctant to enforce the traffic rules on the drivers of private vehicles especially car drivers for fear of reprisal at the hands of those prosecuted by them.
- (x) The effectiveness of the traffic police to check any given violation was directly depended on two factors:
 - (a) the amount of training received in the art of traffic enforcement.
 - (b) confidence reposed by the lower level traffic police officials in their bosses to stand by them and save them from the harm at the hands of private car drivers prosecuted by them.
- (xi) Selective enforcement of few serious moving violations has much greater impact on traffic discipline than indiscriminate issuing of tickets for every small infraction of law.