

ATTACHED REPORT 3
TRAFFIC SAFETY CAMPAIGN

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Part 3: Traffic Safety Campaign

In the city of Phnom Penh, the number of traffic accidents (475 cases in 1999) and fatalities (133 cases) are showing signs of rapid increases. The present fatality rate stands at 11.0 person/100,000 population. Fatality rates in Japanese cities with a similar population size of about one million, such as Kawasaki City and Hiroshima City are only 3.9 and 6.3 respectively. Comparing these rates, the City of Phnom Penh has a fatality rate of 2 to 3 times that of the Japanese cities.

Anticipating that traffic accidents and fatalities in Phnom Penh will continue to increase in the near future, traffic safety planning must be carried out soon and countermeasures must be implemented as quickly as possible.

One of the efficient countermeasures to cope with traffic accident problems is “traffic safety campaign” which is often carried out in many cities of developed and developing countries.

It was proposed that the Department of Public Works and Transport together with the Traffic Police Office and the Municipality of Phnom Penh take the initiative to devise a traffic safety campaign in this city, sponsored by JICA. The campaign was carried out for educating traffic safety knowledge and principles as well as traffic rules and manners to the citizens and vehicle drivers.

3.1 Outline of Traffic Safety Campaign

The Department of Public Works and Transport, the Traffic Police Office and the Municipality of Phnom Penh carried out a traffic safety campaign in the city, sponsored by JICA, from January 27 through February 4, 2001.

The campaign was implemented according to the following items:

(1) Goal

To reduce traffic accidents and to promote smooth traffic flow

(2) Title

Traffic Safety Campaign Week --- 2001

Subtitle “Protecting the People from Traffic Accidents “

(3) Objectives and Target Groups

- To educate the public on traffic safety knowledge and basic traffic rules
- To educate drivers on traffic rules and safe driving

(4) Implementation Date

January 27 (Saturday) to February 4 (Sunday), 2001

(5) Methods

- To utilize mass media such as:
 - Television
 - Newspapers
 - Banners
 - Radio
 - Posters
 - Stickers
- Guidance and enforcement by traffic police officers at 2 selected intersections
- Public participation
 - Distribution of stickers to drivers and pedestrians by primary school children on site,
 - Drawing contest on traffic safety by primary school children.

(6) Educational Contents

Based on the results of accident analyses and dangerous behaviors of drivers, the contents for traffic safety education were focused on the following items:

Part 1 (for the general public especially pedestrians)

- a. Announcing the time schedule and topics of the campaign
- b. Presenting traffic accident conditions in Phnom Penh, using statistical data and graphs,
- c. Emphasizing that pedestrians have to use the designated pedestrian cross-walks when crossing the roads and obey traffic signals at signalized intersections.

Part 2 (for Drivers)

- d. Give way to pedestrians and obey traffic signals
- e. Do not drive on opposing roads
- f. Do not drive under the influence of alcohol
- g. Do not stop and park your car at or near intersections

Part 3 (Public experiment)

- h. Necessity of introducing a bus system to this city
- i. Necessity of segregating the 4-wheelers from the other vehicles to improve traffic operation.

(7) Practice of Driving Guidance and Enforcement

The following activities were carried out by Phnom Penh Traffic Police Officers at the designated intersections of S.P.Sihanouk / No.161 - No. 163 during the campaign duration:

- Drivers and pedestrians will be told of their errant behavior or violation, and instructed on proper behavior and safe driving method,
- Drivers will be enforced for their errant behavior or violation of traffic rules.

Traffic violations to be effectively enforced are:

- driving on opposing road
- driving under the influence of alcohol
- cars parked at or near intersection
- stopping over the stop line at intersection
- no obedience of traffic signals
- ignoring pedestrians on crosswalks
- driving without legal licenses

(8) Public participation

- Distribution of stickers on site
 - Primary school children wearing yellow caps accompanied by their teachers participated in the traffic safety campaign at *the intersection of Blvd. Norodom / Due Decho Damdin (154)* in the 5 days from January 29 to February 2, 2001.
 - They distributed stickers bearing the slogan “ traffic safety campaign 2001“ to drivers and pedestrians,
 - The children also put up the stickers on the back of cars and motorcycles, stopped by traffic police officers.
(School children and their teachers were well protected from the traffic by ample police officers at the site)
- Drawing contest on traffic safety by primary school children,
 - The contest was opened in the middle of February, and closed at the end of February 2001.
 - Excellent drawings will be given prizes and displayed on buses operated by DPWT and JICA in the Public Experiment in May, 2001

(9) Impact Assessment

The impact of the experiment were assessed as follows:

- Home and on-site interview surveys before and after the campaign
- Traffic flow surveys using video before and after the campaign
 - Checking for differences of traffic flows before and after the campaign
- Opinions of school children, their parents and teachers who participated in the campaign

3.2 Activities in the Campaign

(1) Propaganda Activities before the Campaign

The following meetings with related authorities and primary schools were held to inform them on the importance of traffic safety and to instruct them on what they are expected to do during the campaign.

1) Preah Norodom Primary School

24 school children were selected from the primary school of Preah Norodom to participate in the Traffic Safety Campaign. A meeting was held with the 24 children, their teachers, 2 traffic police officers at the school on January 23, 2001. A study team member explained the basic traffic rules and traffic safety to all the participants, and then instructed the school children on what they have to do on site during the campaign.

2) Sisovath Primary School

A meeting was held by the Department of Education, Youth and Sport Service of the MPP at the Sisovath Primary School on January 27, 2001. It was attended by 113 representatives from all primary schools and 18 representatives from all kindergartens in Phnom Penh city, together with a traffic police officer and an officer of the Department of the PWT. Two deputy directors of the DEYSS and DPWT, and a study team member first explained the importance of traffic safety education and the contents of the Traffic Safety Campaign in the meeting. Finally, posters and stickers were distributed to each school and kindergarten.

3) The Central Traffic Police Office

A meeting was held by the chief of the Central Traffic Police Office, MPP with 7 deputy directors of all the traffic police district offices in Phnom Penh city on January 27, 2001. A study team member explained the importance of driving guidance to drivers and traffic enforcement, and the contents of the Traffic Safety Campaign. Finally, posters and stickers were distributed to each district office.

4) Phnom Penh Governor's Speech for Broadcasting from TVK Station

Phnom Penh City Governor gave a speech on the existing traffic and accident conditions, the importance of the traffic safety education and campaign, and future traffic improvement plans at the city hall on January 29, 2001. He also emphasized the need for citizens' cooperation and participation during the traffic safety campaign 2001. The speech was recorded for broadcasting on TVK.

5) Improvement of related facilities

Before implementing the traffic education and safety campaign, the following facilities were improved:

- road surface and pedestrian sidewalk were improved at the selected intersections,
- traffic markings were improved or installed at the selected intersections,
- signal lights were checked to ensure they were working,
- street lighting were also checked to ensure they were working.

(2) Propaganda by Mass Media

Specifications regarding campaign propaganda using mass media are shown in Table 3.3.1.

The design for the posters and newspaper announcement is illustrated in Figure 3.3.1. Figure 3.3.2 shows three types of sticker illustrations. Figure 3.3.3 also shows four campaign slogans used on banners installed above and across the city roads.

(3) Driving Guidance and Enforcement On Site

At the signalized intersection of Blvd. Sihanouk / No.161-No.163, traffic on each approach was controlled and drivers were guided on proper driving manner by 10 traffic police officers from January 27 through February 4, 2001.

Table 3.2.1: Specifications regarding Propaganda Media

Items of Media Type	Quantities
1 TV Spot Kinds of TV spots (45 seconds/type) Broadcasting from 27, January to 04 February Broadcasting by TVK Station Times: Weekend --- 6:30, 6:55, 18:55, 19:45 Times: Weekday --- 11:55, 12:45, 18:55, 20:45 Broadcasting of The Govonnor's Speech by TV 3 Station	8 types 9 days 4 times /day 3 times
2 Newspapers Advertising on "Raksmei Kampuchea" (Size I/4 with Color) 28 January and 4 February, 2001 3 Radio Kinds of Radio Tapes (45 seconds/tape) Broadcasting from 27, January to 04 February Broadcasting by FM 103 Station Times: 6:30, 7:30, 8:30, 11:30, 12:30, 17:30, 18:30, 19:30, 22:30	2 times 3 tapes 9 days 8 times/day
4 Posters Printing Distribution City Hall Traffic Police --- Center, 7 districts Ministries ----- 23 District Offices, MPP Primary Schools -- 113 Kindergarten ----- 18 Educational district offices ---- 7 districts Bus and Taxi Terminals Public Places (Market, etc.) <i>Total</i>	2,000 sheets 20 80 70 70 1,130 180 70 50 330 2,000
5 Stickers Types of Stickers Printing --- 25,000 x 3 types Distribution Distribution on Road Side --- 5100 x 3 types Public Places ---- 1000 x 3 types Traffic Police --- Center, 7 districts ---- 800 x 3 types 113 Primary Schools -- 11,300 x 3 types 18 Kindergarten ----- 1800 x 3 types <i>Total (20,000 x 3 types)</i>	3 types 75,000 sheets 10,100 sheets 3,000 2,400 33,900 5,400 75,000
6 Banners Types of Banners Printing --- 4 types Installation on Blvd. Monivong Blvd. Norodom Rue Kampuchea Krom Blvd. C.de Gaulle Blvd. Sihanouk Blvd. Mao Tsu Toung	4 types 12 banners 2 banners 2 2 2 2 2
7 Pamphlets of Outline of Traffic Safety Campaign	500 copies
8 Yellow Hats for School Children Hats with Slogan Printed	200 hats



Figure 3.2.1: Design for Poster and Newspaper Announcement

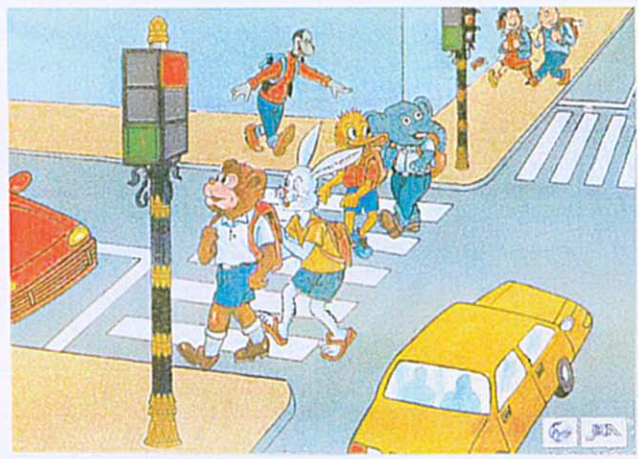
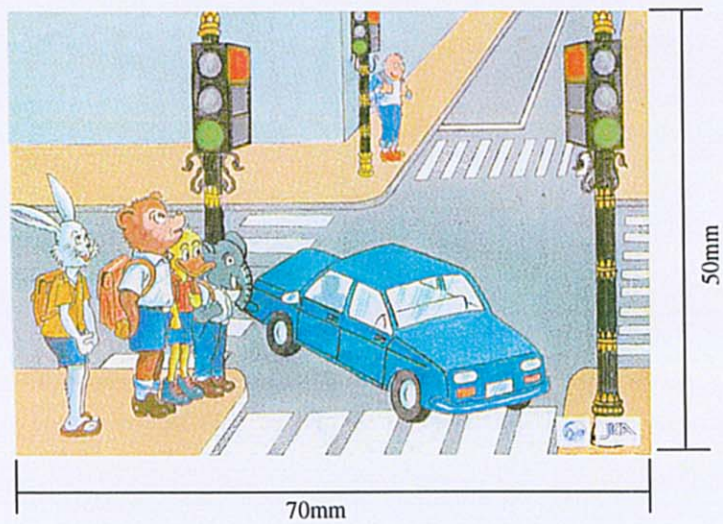


Figure 3.2.2: Design of Stickers Distributed to the Public



Figure 3.2.3: Design of Banners for Announcing the Campaign

The main activities of the traffic police officers were as follows:

- guiding drivers to stop their vehicles before the stop line after the traffic signal has turned to red from yellow,
- guiding drivers who were driving on opposing roadway to use proper roadway,
- guiding drivers parking their vehicles near the intersection to relocate their vehicles to designated parking lots,
- guiding pedestrians to walk on designated pedestrian crossing,
- distributing stickers for the campaign to drivers and pedestrians.

As a result, it is noticeable that these activities led to smoother and better traffic flows and safer road crossing manners by pedestrians at the intersection. In particular, most of vehicles were observed to stop before the pedestrian cross-walks, and less vehicles ignored the traffic signals.

(4) Participation of Primary School Children in the Campaign

At the signalized intersection of Blvd. Norodom / Due Decho Damdim (154), 12 primary school children together with their teachers gathered at the corners of the intersection and distributed the campaign stickers to drivers and pedestrians for 5 days from January 29 through February 2, 2001. The children wearing bright and eye-catching yellow caps were well protected from traffic by 10 traffic police officers and 4 police assistants during their participation.

Most of the drivers were happy to receive the stickers from the children. This made a great impression on them.

Table 3.2.2 shows the date and schedule when on-site activities as described above were conducted.

Table 3.2.2: Locations, Date and Times of On-Site Activities

Intersection Name	Time of day	January in 2001					February in 2001				
		27 Sat	28 Sun	29 Mon	30 Tue	31 Wed	1 Thu	2 Fri	3 Sat	4 Sun	
Intersection of Sihounuk / No.161-163	08:30-10:30	Driving Guidance and Enforcement									
	11:10-12:30										
	17:00-18:30	Driving Guidance and Enforcement									
Intersection of Norodom / Due Decho Damdim (154)	08:30-10:30										
	11:10-12:30			Children Participation							
	17:00-18:30										

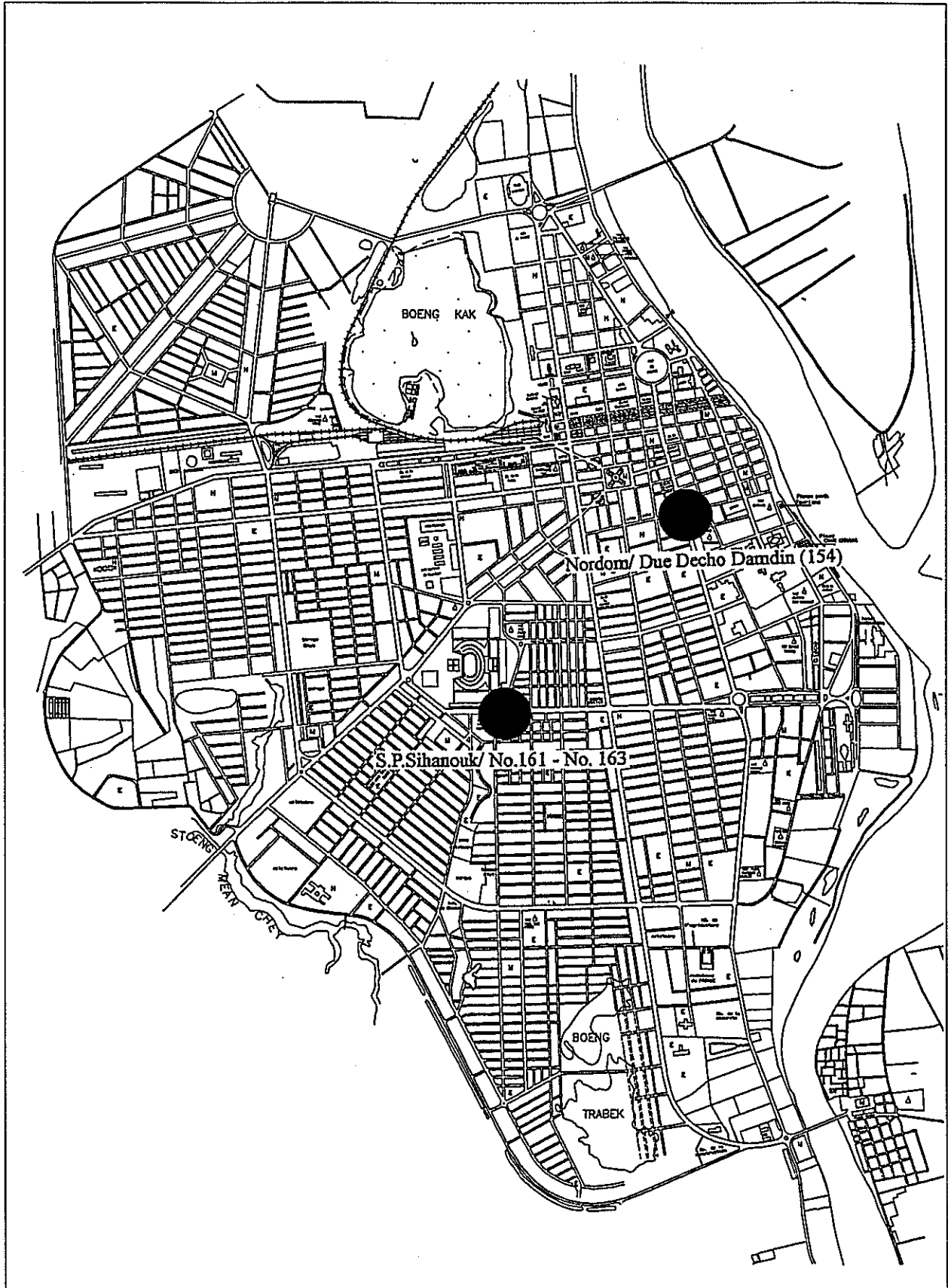


Figure 3.2.4: Locations for Driving Guidance and Children Participation



Picture 1: Meeting with Deputy Directors of Primary Schools



Picture 2: Pedestrians Crossing the Road



Picture 3: School Children Distributing Campaign Stickers

3.3 Impact Assessment

The following methods were used to measure the impact of the campaign activities.

- Home and on-site interview surveys before and after the campaign
- Traffic flow surveys using video camera before and after the campaign
- Opinions of school children and their teachers who participated in the campaign

These survey specifications are described in Table 3.3.1.

Table 3.3.1: Impact Studies for Traffic Safety Campaign

Items of Effect Studies	Quantities
1 On-Street and Home Interview Before study 175 samples on site and 157 samples in 7 districts Dates conducted on Jan. 22 and 23, 2001 After study 180 samples on site and 175 samples in 7 districts Dates conducted on Feb. 05 and 06, 2001	332 samples 355 samples
2 Shooting Traffic Flow by Video Before study Shooting Video on Bld.Nodorom on Jan. 22 and 23 2001 Shooting Video on Bld. Sihaounke on Jan.22, 2001 Study during the campaign Shooting Video on Bld.Nodorom on Feb.02, 2001 Shooting Video on Bld. Sihaounke on Feb.01, 2001 After study Shooting Video on Bld.Nodorom on Feb. 05 and 06, 2001 Shooting Video on Bld. Sihaounke on Feb. 5, 2001	2 hours 2 hours 1 hours 1 hours 2 hours 2 hours
3 Collecting Opinions of Children and Teachers Interviewing children and teacher parents during the campaign Between Jan. 29 and Feb. 2, 2001	32 answers

(1) Home and On-site Interview

1) Interview studies

The interview surveys were conducted twice, namely before and after the campaign. The numbers of samples gathered by the surveys were 332 for before-survey and 355 for after-survey.

The questionnaire sheet used for before-survey was shown in Table 3.3.2 (1) and the questionnaire sheet for after-survey was shown in Table 3.3.2 (2).

2) Results of the interview studies

Main results from the interview data analysis are described as follows:

a. Ratio of persons recognizing the campaign

96 percent of the citizens knew about the holding of the campaign. Only 15 persons in 355 interviewed could not recognize it, of which 8 persons were over 40 years old.

Table 3.3.2 (1): Questionnaire for interview with the Public for Before-Survey

-
- 1) Sex (a. male b. female)
 - 2) Age (a. less than 15 b. 16 to 22 c. 23 to 40 d. over 41)
 - 3) Do you usually drive a vehicle ?
a. No b. 4-wheel vehicle c. motorcycle d. others
 - 4) Do you Have a driving license ? (a. yes b. no)
 - 5) Are you a professional driver ? (a. yes b. no)
 - 6) Are you always afraid to encounter a traffic accident during your travel ?
a. Yes b. No c. Not clear
 - 7) Are you interested in Traffic Safety ?
a. Yes b. No c. Not clear
 - 8) Do you think that the citizen in Phnom Penh must have interest in Traffic Safety ?
a. Yes b. No c. Not clear
 - 9) Do you know the traffic safety campaign conducted by Municipality of Phnom Penh in March 2000 ?
a. Yes b. No c. Not clear
 - 10) Do you think the Traffic Safety Campaign is important to reduce traffic accidents ?
a. Yes b. No c. Not clear
 - 11) Do you think that, if you are involved in a traffic accident, you are at fault in it ?
a. Yes b. No c. Not clear
-

b. How they came to know about campaign

Various mass-media and driving guidance on site by traffic police officers were used to inform the public on the campaign for education of traffic safety.

33 percent of the citizens knew about the campaign by the 12 banners installed across main arterial streets. The other useful types of mass media were poster, television, sticker and radio through which 12 to 15 percent of the persons interviewed came to know about it.

In spite of conducting the driving guidance on site at only 2 locations, an impressive 8 percent of the persons interviewed indicated they came to know about the campaign by such guidance.

c. Ratio of persons noticing a safer and smoother traffic flow after the campaign

It is found that 96 percent of the citizens interviewed indicated that they noticed a safer and smoother traffic flow on the streets after the campaign.

d. Conduct the campaign continuously

99 percent of the citizens wanted to see such campaign continue in the future.

e. Ratio of persons being apprehensive of traffic accident during travel

67 percent of the citizens interviewed felt apprehensive about traffic accident during travel before the campaign. However, the ratio increased up to 100 percent after the campaign. This means that 100 percent of the interviewees are now fully aware of the horror and danger of traffic accident.

f. Ratio of persons feeling at fault in a traffic accident

In case they are involved in a traffic accident, only 42 percent of the citizens interviewed felt at fault before the campaign. This ratio however was up to 85 percent after the campaign.

This indicates that they have begun to recognize that when an accident occurs, it is not only due to the perpetrator's fault but also to a certain degree of their own responsibility. They will behave with more attentions to traffic accident from hence on.

Table 3.3.2 (2): Questionnaire for Interview with the Public for After-Survey

- 1) Sex (a. male b. female)
- 2) Age (a. less than 15 b. 16 to 22 c. 23 to 40 d. over 41)
- 3) Do you usually drive a vehicle ?
a. No b. 4-wheel vehicle c. motorcycle d. others
- 4) Do you Have a driving license ? (a. yes b. no)
- 5) Are you a professional driver ? (a. yes b. no)

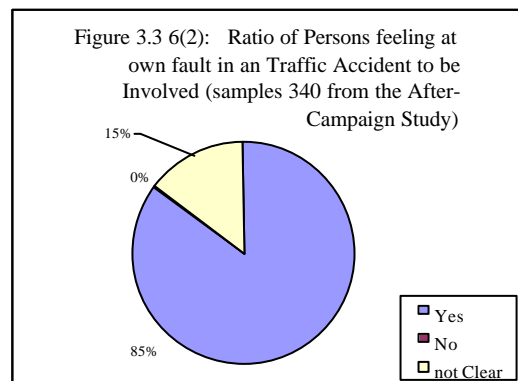
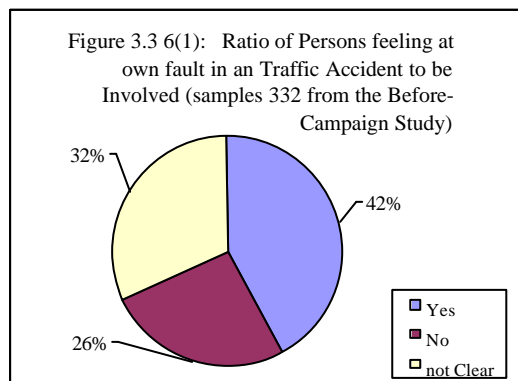
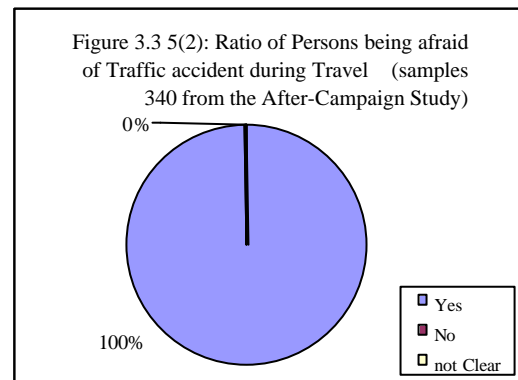
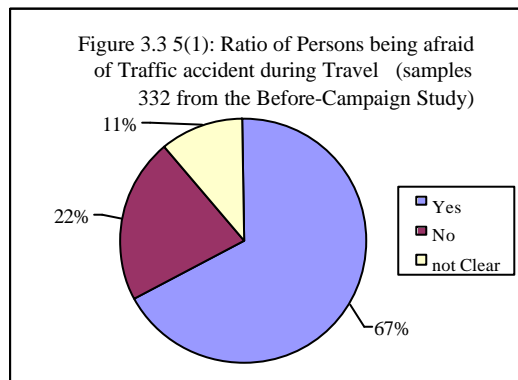
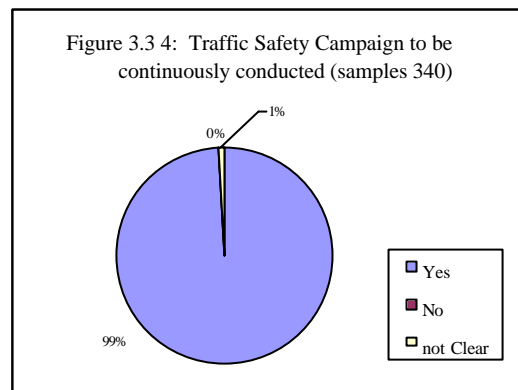
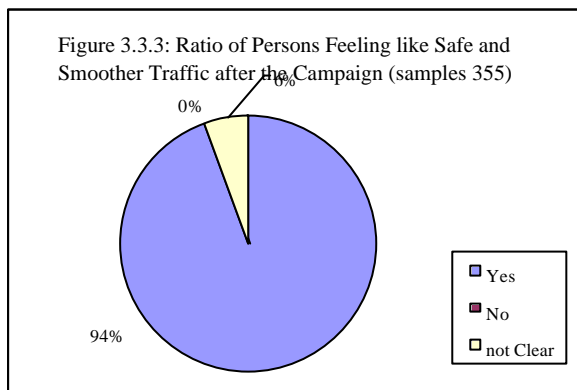
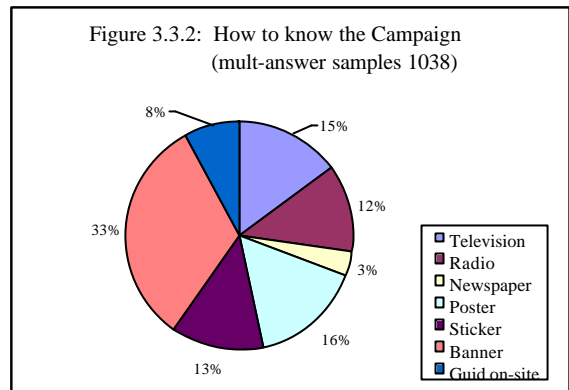
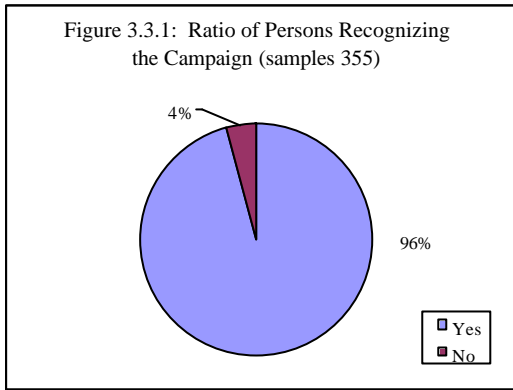
Do you know that “ Traffic Safety Campaign Week – 2001 ” was carried out from January 27 to February 4, 2001 for a 9 day duration ?

- a. Yes b. No

If Yes, go to the following item, or if No, go to Item 7:

- 1) How do you know it ? (multi answers are possible)
a. Television b. Radio c. Newspaper d. Poster
e. Sticker f. Banner j. Guidance at site
 - 2) Which mass media impressed you the most ?
a. Television b. Radio c. Newspaper d. Poster
e. Sticker f. Banner j. Guidance at site
 - 3) After the Campaign, are you aware of the danger of traffic accident ?
a. Yes b. a little c. No d. Not clear
 - 4) Do you think the Traffic Safety Campaign is one of effective activities to reduce traffic accidents ?
a. Yes b. No c. Not clear
 - 5) Do you expect that Traffic Safety Campaign be continuously conducted in future ?
a. Yes b. No c. Not clear
 - 6) Are you always afraid of encountering a traffic accident during your travel ?
a. Yes b. No c. Not clear

 - 7) Are you interested in Traffic Safety ?
a. Yes b. No c. Not clear
 - 8) Do you think that, if you are involved in an traffic accident, you are at fault in it ?
a. Yes b. a little c. No at all
 - 9) To make traffic flow smoothly and safely, the dangerous driving behaviors to avoid are:
a. Driving on opposing roadway b. Driving when drunk
c. Ignoring signal d. parking in or near intersection
e. Ignoring pedestrian f. others
 - 10) Do you think that, after the campaign, the traffic flow becomes smoother than before ?
a. Yes b. a little c. Not clear
-



(2) Traffic Flow Analyses Before and After the Campaign

Video recordings of traffic flows using video cameras were carried out before, during and after the campaign to compare the traffic flows on the north side approach of the intersection of Sihanouk / St.No.163 designated for the campaign.

Based on the video recordings, observations were made on the following driver behaviors:

- Traffic volumes on the approach surveyed
- Number of vehicles which stop over the stop-line during red light
- Number of vehicles which pass through on the opposing road
- Number of times when congestion occurred between crossing traffic movements

1) Driver behaviors on the north side approach of the intersection of Sihanouk / St.No.163

Table 3.3.3 shows the traffic volumes and the numbers of such vehicles' behaviors as: i) vehicles stopping over the stop line and ii) vehicles passing through on the opposing road before campaign and after campaign.

The traffic volumes during all the studies were almost the same values: 4 wheel vehicles were 55 to 60 per 30 minutes and motorcycles were 316 to 371.

It is observed that most drivers stopped their vehicles on /before the stop line during the red signal. It is also observed that 18 to 30 percent of motorcycles stopped over the stop-line after the campaign compared with more than half before the campaign.

Motorcycles stopping on the opposing road during red signal decreased by 4 percent after the campaign, but the 4 wheel vehicles caught behaving in the same manner increased in the morning hours.

There were some drivers who did not know the meaning of stop-line and pedestrian crossing markings.

Table 3.3.3 Comparison of Vehicle Behaviors with Violation before and after the Campaign

Time Period	Survey	Traffic Volume				No.of Vehicle Stopping over Stop-Line		No.of Vehicle Stopping on Opposing Road	
		Car	M'cycle	Bicycle	Cyclo	Car	Motorcycle	Car	Motorcycle
9:00-9:30	Before	55	316	7	19	15 27.3%	165 52.2%	2 3.6%	58 18.4%
	After	60	371	18	20	0 0.0%	66 17.8%	5 8.3%	45 12.1%
12:00-12:30	Before	56	345	17	21	13 23.2%	213 61.7%	2 3.6%	75 21.7%
	After	58	329	5	14	2 3.4%	99 30.1%	1 1.7%	57 17.3%

2) Traffic flows in the intersection of Sihanouk / St.No.163

This intersection is controlled by traffic signal with fixed cycle length of 60 seconds. Traffic congestions sometimes occur at the intersection when drivers ignore the signal.

Table 3.3.4 shows the numbers of cycles with congestion (in 60 cycles/hour).

With the campaign, the number of cycle with congestion has decreased from 8 to 3 cycles. There was no congestion in the intersection during the campaign due to presence of the police officers. It is found that this type of congestions will be further reduced with better driving manners and behaviors among the drivers.

Table 3.3.4 Comparison of Traffic Conflicts before, during and after the Campaign

Time Period	Survey	No.of Cycles	No.of Cycles with Congestion	
9:00-10:00	Before Campaign	60	8	13%
9:00-10:00	During Campaign	60	0	0%
9:00-10:00	After Campaign	60	3	5%

(3) Opinions of School Children and their Teachers

An interview was carried out with the school children and teachers who participated in the campaign. They were interviewed regarding their opinions of traffic safety and accident during the participation of the campaign.

The numbers of the children and teachers interviewed were 28 and 4 respectively.

A summary of their opinions is described as follows:

Children's Opinions of Traffic Accidents

- a. I'm afraid of traffic accident which may destroy my future. --- 25 samples
- b. I must follow the traffic law from now through the future. --- 22 samples
- c. If all drivers follow the traffic law, it must reduce the traffic accidents. --- 18 samples
- d. We will have happiness and safety, if we follow the traffic law. --- 14 samples
- e. Traffic accidents happen because some drivers drink alcohol and drive in higher speed. --- 12 samples

Children's Requests

- f. I want all teachers to integrate the traffic safety lesson into the normal educational program. --- 25 samples
- g. Road conditions are no good, so that most drivers can not follow the traffic law. --- 9 samples

Children's Opinions on Traffic Safety Campaign

- h. Traffic safety campaign is very important to urge drivers and pedestrians to have respect for the traffic law. --- 26 samples
- i. I'm very happy today for the participation in the campaign. --- 26 samples
- j. I want to participate in the drawing contest. --- 26 samples

Teachers' Opinions

- k. I want children to understand about the traffic law. --- 4 samples
 - l. I would like to make a request to the government for promoting the traffic law to all levels of the citizens. --- 4 samples
-

3.4 Future Expectations

The effectiveness of the traffic safety campaign as part of the JICA study was demonstrated to the city of Phnom Penh with its citizens appreciating and recognizing its importance and positive impacts on the traffic conditions. If such a campaign is carried out regularly, the effects will be accumulated over time and eventually contribute greatly to decreasing traffic accidents while increasing road capacity and smoother traffic flow. In addition, through such a campaign, each driver can recognize that using appropriate driving manner by following traffic rules does contribute to his/her own benefit such as shorter traveling time, decreasing dangerous situation, relieving frustration and so forth. Such learning will eventually enhance an improvement of driving manner. The study team strongly recommends that such campaign be carried out regularly

Traffic safety campaign is relatively easy to implement because its operation cost is much cheaper than that of road construction or improvement and the implementing duration is short.

In particular, the study team found that driving and walking guidance/instruction by traffic police officers on site are easy to implement at low cost and its effects are very remarkable.

Final

In this Study, various specific and high priority counter measures were examined. However, the range of applicable counter measures is very wide in contents and scope. Some of them require high capital expenditures while others require long time period for implementation.

The important factor however is to identify the most appropriate counter measures that can be implemented using the available budget and also those which can be applied easily to the target area and be accepted by the road users.

From the traffic engineering perspective, essential counter measures for traffic management include improvement of road pavement, and the use of vehicle guidance facilities such as, lane markings, traffic signs and channelization islands.

From the traffic safety perspective, there is in fact no short term measures. Long term measures to upgrade traffic safety awareness among both the public and road users, stringent and continuous traffic enforcement efforts are required.

Finally, there is an urgent need to train and produce traffic engineers who are knowledgeable in traffic engineering, traffic management and traffic operation in order that the efforts on traffic management for the city of Phnom Penh can be continuously carried out.