CHAPTER 6

Environment, Transport and Works Bureau

Hong Kong Police Force

Transport Department

Information Services Department

Road safety: accident investigation and law enforcement

Audit Commission
Hong Kong
31 March 2006

This audit review was carried out under a set of guidelines tabled in the Provisional Legislative Council by the Chairman of the Public Accounts Committee on 11 February 1998. The guidelines were agreed between the Public Accounts Committee and the Director of Audit and accepted by the Government of the Hong Kong Special Administrative Region.

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ROAD SAFETY:
ACCIDENT INVESTIGATION AND LAW ENFORCEMENT

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PART 1: INTRODUCTION

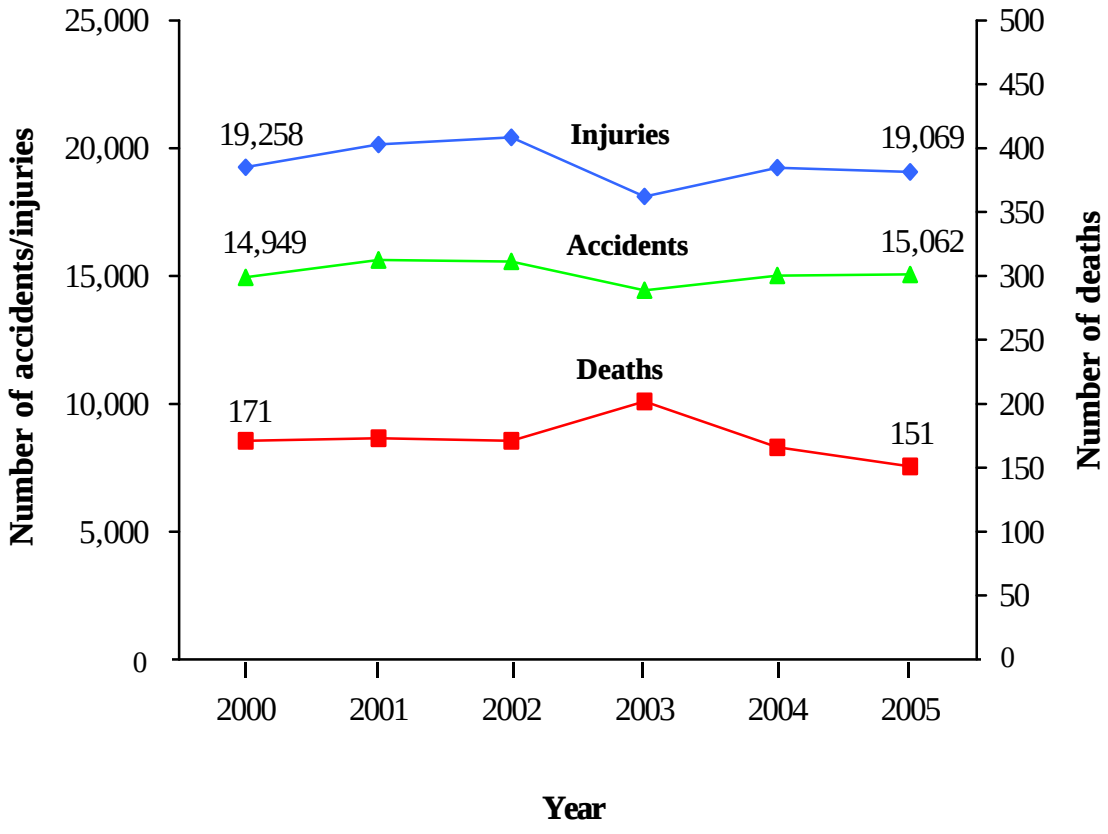
1.1 This PART describes the background to the audit and outlines the audit objectives and scope.

Background

1.2 Road safety is an area where there is no room for complacency. Road accidents wreck the lives not only of those who are killed or injured but also their families. Figure 1 shows the road accident trend for the period 2000 to 2005. It can be seen in Appendix A that the numbers of road accidents (about 15,100 a year), injuries (about 19,400 a year), and deaths (about 170 a year) during this period remained at about the same level. Given the significant costs of road accidents to society, road safety warrants close and continuous attention.

Figure 1

Road accident trend between 2000 and 2005



Source: Transport Department records

1.3 In Hong Kong, the responsibility for improving road safety is mainly shared by the Environment, Transport and Works Bureau (ETWB), the Transport Department (TD), the Hong Kong Police Force (Police) and the Information Services Department (ISD). Their roles are summarised in Appendix B.

Director of Audit's Report No. 30

1.4 The Audit Commission (Audit) conducted a review on road safety in 1998. The findings were reported in the Director of Audit's Report No. 30 of June 1998. Audit reported, among other things, that:

(a) there were inaccurate data in the TD's computerised Traffic Accident Data System (TRADS) because of input errors or failure to subsequently update the TRADS after contributory factors (see para. 2.3) were revised by police officers;

(b) the Police took a long time to complete a drink driving test;

(c) speed limits were widely disregarded; and

(d) there was a need to step up publicity and enforcement action to ensure a high seat belt wearing rate.

1.5 Audit recommended that:

(a) the Commissioner of Police should:

  (i) review the data input procedures and implement remedial measures to ensure that data in the TRADS were accurate and kept up-to-date; and

  (ii) critically review and streamline the drink driving testing procedures to ensure that there were no delays in completing the test; and

(b) the Administration should:

  (i) consider extending the use of automated speed detection devices as far and as early as possible; and

  (ii) step up publicity and enforcement action to ensure the achievement of a high seat belt wearing rate.

1.6 The Administration agreed with most of the audit recommendations and had taken action on them.

Follow-up audit review

1.7 Audit has recently conducted a follow-up review on road safety. The audit objectives are to:

(a) examine the effectiveness of the measures taken by the Administration in response to the Director of Audit's Report No. 30; and

(b) ascertain whether there is further scope for improvement in road safety.

1.8 The audit has focused on, and identified scope for improvement in, the following areas:

(a) data accuracy of the TRADS (PART 2);

(b) road accident investigation (PART 3);

(c) drink driving test (PART 4);

(d) use of automated speed enforcement cameras (PART 5); and

(e) measures to promote seat belt wearing (PART 6).

General response from the Administration

1.9 The **Secretary for the Environment, Transport and Works** has said that:

(a) there has been substantial improvement in road safety performance in the past two decades;

(b) the number of road accidents per 1,000 vehicles has dropped by over 50% from the 1980s to the early 2000s, and has levelled off in recent years; and

(c) given Hong Kong's high population and extensive road network, the numbers of road accidents and casualties are relatively small and Hong Kong's road safety record compares favourably with overseas cities.

1.10 The **Commissioner for Transport** has said that:

(a) in the past 10 years, there has been a marked decrease in deaths caused by road accidents. Compared to the average of over 300 deaths per year in the early 1990s, there was a more than 50% reduction in the number of deaths in 2005;

(b) the number of serious injuries dropped from 3,666 in 1995 to 2,688 in 2005, representing a decrease of nearly 30%. The road traffic fatality rate is among the lowest as compared to other major cities; and

(c) the TD will not be complacent, and will continue to implement various measures to further improve road safety.

Acknowledgement

1.11 Audit would like to acknowledge with gratitude the full cooperation of the staff of the Police and the TD during the audit.

PART 2: DATA ACCURACY OF THE TRAFFIC ACCIDENT DATA SYSTEM

2.1 This PART examines the data accuracy of the TRADS.

Traffic Accident Data System

2.2 The TD administers the TRADS in which road accident data are stored. The TRADS helps the TD in:

(a) identifying road accident black spots;

(b) identifying problems of road environment, road users, vehicle types and driving behaviour; and

(c) formulating strategies to tackle specific types of accidents.

2.3 When a road accident involving casualty is reported, the Police will conduct an investigation. The main objectives of the investigation are to identify the parties responsible for the accident and the contributory factors (hereinafter referred to as "factors" — Note 1) of the accident. Findings of the investigation and data of the accident (e.g. accident location and details of the drivers/vehicles involved) are input into the TRADS.

Audit observations and recommendations in the Director of Audit's Report No. 30

2.4 In the Director of Audit's Report No. 30, Audit examined a random sample of 300 accident investigation files of the Police to ascertain whether accurate and up-to-date data on road accident factors had been input into the TRADS. Audit found that for 75 cases (i.e. 25%), one or more data inaccuracies existed due to:

(a) input errors; and

(b) the lack of action taken to revise/update data in the TRADS upon further investigation.

Note 1: *The TRADS has 126 factors classified into four categories, namely, environment (27 factors), driver (52 factors), vehicle (22 factors), and casualty (25 factors).*

Audit recommended that the Police should review the data input procedures and implement necessary improvement measures so as to ensure that data in the TRADS were always accurate and kept up-to-date.

Measures taken

2.5 In response to the audit findings and recommendations, the Police has, since June 1998, taken the following measures to enable efficient and accurate data updating in the TRADS:

(a) the Police has implemented the Traffic Operations and Management System (TOMS) to enable the responsible police officer to input investigation results and accident data directly into the system. The TOMS is based on a more user-friendly format which helps reduce input errors. Moreover, the TOMS is linked to the TRADS directly to enhance the efficiency and accuracy of data updating;

(b) all accident investigation police officers have been fully trained to input accident data into the TOMS; and

(c) a file resubmission system has been developed to ensure accurate data entry of investigation reports. The system requires the officer and the supervisor involved to double-check the data input of the TRADS and the TOMS before closing the file.

Current situation

Inaccuracies in the input data

2.6 In order to ascertain the effectiveness of the measures taken by the Police for enabling efficient and accurate data updating in the TRADS, Audit initially examined 36 road accident cases that occurred in 2004. Audit found that, of the 216 factors recorded, 38 (or 18%) were inaccurate.

2.7 The audit findings revealed inaccuracies in the input data. Consequently, Audit examined a further 326 cases of three police traffic regions (i.e. Traffic Hong Kong Island, Traffic New Territories South, and Traffic New Territories North). Audit found that, of the 1,782 factors recorded, 239 (or 13%) were inaccurate.

2.8 Audit considers that there is room for improvement in three areas (see paras. 2.9 to 2.11).

2.9 ***Training.*** In one case, the investigation results indicated that the driver suffered from heart attack. The Police input into the TRADS "sudden illness" as the factor under the driver category and "suffering from illness" under the casualty category. According to the TD, the factor input by the Police under the casualty category was incorrect. The correct input should be "no factor". Such input error indicates a need for more TRADS input training.

2.10 ***Different factor lists.*** Audit noted that the TRADS and the TOMS had different road accident factor lists. The TRADS had 126 factors classified into four categories. The TOMS had a list of 45 factors. Many factors in the TRADS were not available in the TOMS. In response to Audit's enquiry, in late 2005, the TD and the Police agreed that:

(a) a common list of factors for both the TRADS and the TOMS could help reduce input errors; and

(b) some of the factors currently used could be consolidated so as to shorten the factor lists (see Table 1).

Table 1

Examples of possible changes to improve the factor lists of the TRADS and the TOMS

System	Existing factors	Possible change
TRADS	"Turning left negligently", "U turning negligently" and "Turning right negligently"	"Turning negligently"
	"Driving too fast for road environment" and "Driving too fast for other road users"	"Driving too fast"
TOMS	"Improper or illegal turn" and "Turning left or right negligently"	"Turning negligently or illegally"
	"Failing to maintain a safe braking distance" and "Driving too close to the vehicle in front"	"Driving too close to the vehicle in front"

Source: TRADS and TOMS records and Audit analysis

2.11 S***upervision.*** Audit examined 326 case files in three police traffic regions. The input error rates of these three traffic regions ranged from 9.7% to 21%. Audit noted that in the two traffic regions with lower error rates, the officer and the supervisor involved double-checked the data input of the TRADS and the TOMS before closing the case file. This shows that input errors can be reduced by supervisory checks.

Accident locations

2.12 The TD regularly identifies accident-prone locations for investigation based on the TRADS data. The TRADS uses a grid reference system to specify accident locations. Such system enhances the efficiency and effectiveness of the TD's work.

2.13 In response to Audit's enquiry, in December 2005, the TD informed Audit that there were many cases where the same grid reference was used for different accident locations. Considerable time and resources were needed to rectify such errors.

2.14 Audit compiled a list of grid references with frequent occurrence of accidents in 2004 based on the TRADS data. Audit selected the grid reference (20100 easting, 32940 northing) for detailed examination. According to the TRADS, 20 accidents occurred at this location in 2004. However, in fact, all these 20 accidents occurred at different locations along the Yuen Long Highway.

2.15 In response to Audit's enquiry, in November 2005, the Police explained that:

(a) while the grid reference database of the TRADS covered almost the entire road network, grid references of new roads were often not updated to the database immediately;

(b) in case accidents occurred at locations where grid references were not available, the Police would not be able to input the correct grid references into the TRADS; and

(c) to ensure that accident data could be input on time, some police officers had to use a nearby grid reference instead.

2.16 In response to Audit's enquiry, in December 2005, the TD explained that:

(a) the grid reference database of the TRADS was updated regularly to include new roads once the maps were available. If the Police was unable to input the grid references of accident locations, there were established procedures for the TD to update the grid reference database immediately; and

(b) the grid references of accident locations could be more conveniently and accurately input through a map-based system. As the TRADS would be upgraded to a map-based system in the near future, the TD expected that the new system would help solve the problem.

Audit observations

2.17 Accurate and up-to-date accident data are important for formulating measures to improve road safety. The audit findings reported in paragraphs 2.6 to 2.16 indicate that there is an urgent need for the Police and the TD to review the data input procedures and implement the necessary improvement measures.

Audit recommendations

2.18 **Audit has *recommended* that the Commissioner of Police should, in consultation with the Commissioner for Transport, review the data input procedures and implement necessary improvement measures so as to ensure that data input into the TRADS are always accurate and up-to-date. These measures may include, for example:**

(a) **providing more training to police officers on data input;**

(b) **standardising the factor lists of the TRADS and the TOMS; and**

(c) **ensuring that there is supervisory check on data input.**

2.19 **Audit has *recommended* that the Commissioner for Transport should take action to ensure that:**

(a) **the grid reference database of the TRADS is updated in a timely manner; and**

(b) **any input problems encountered by the Police would be dealt with promptly.**

Response from the Administration

2.20 The **Commissioner of Police** generally agrees that there is room for improvement in the three areas reported in paragraphs 2.9 to 2.11 and supports the audit recommendations mentioned in paragraph 2.18. He has said that:

(a) there are plans to improve the situation. These include reminding supervisors of their supervisory roles and upgrading the TOMS. This upgrade aims at standardising the factor lists of the TRADS and the TOMS and incorporating a supervisory check function into the TOMS. Thereafter, a revised training programme for the officers and supervisors involved will be organised; and

(b) due to the different shift patterns of the Police and the TD, assistance from the TD is unavailable outside office hours, thereby increasing the possibility of inaccurate data input. The Police will liaise with the TD to examine ways of sharing information in a timely manner.

2.21 The **Commissioner for Transport** agrees that there is room for improvement in the TRADS. He has said that the TD will:

(a) work closely with the Police to standardise the factor lists of the TRADS and the TOMS;

(b) upgrade the TRADS to a map-based system to facilitate updating of the grid reference database in a timely manner; and

(c) in the meanwhile, closely liaise with the Police to deal with any problems encountered in data input.

PART 3: ROAD ACCIDENT INVESTIGATION

3.1 This PART examines the investigation of road accidents by the Police and the issue of vehicles without third-party insurance coverage.

Accident investigation by the Police

3.2 When a road accident is reported, a police officer will carry out an investigation. The officer will take photographs, prepare sketches of the scene of the accident, assess the weather and traffic conditions at the time of the accident, take preliminary statements from the parties involved in the accident and from the witnesses, and inspect the vehicles concerned to determine if vehicle examinations are required. Statements will be taken from the drivers, passengers, injured persons, and witnesses at subsequent police interviews.

3.3 After the investigation is completed, an investigation report will be prepared. The report will include accident details, findings of the investigation, and the follow-up action to be taken. All this information will be input into the TOMS for uploading to the TRADS.

Using data from vehicle event data recorder

3.4 Audit examination of the accident investigation files revealed that the Police's investigation often took considerable time and resources to complete, because crucial evidence about how the vehicle was driven immediately before the accident was often not readily available. For serious cases, the Police had to reconstruct the accident so as to find out who was responsible, based on the statements given by the parties concerned, and the evidence collected at the scene.

3.5 Audit notes that many vehicles have on-board computers. Vehicle on-board computer consists of many modules, one of which is the airbag module. Some airbag modules have a recording function similar to that of a vehicle event data recorder (EDR). They keep running records of data such as speed, the position of control pedals, whether the driver is wearing the seat belt, and minor bumps and collisions. If a collision is detected, the data gathered will be stored in a memory chip for subsequent downloading. This type of airbag module is originally installed to ensure correct operation of the airbags and facilitate the manufacturers' own research on airbags. Its recording functions may assist road accident investigations. In the United States of America (USA), over half of the 2004 model passenger cars and light vehicles had some forms of vehicle EDR.

3.6 In Canada, the Ontario Provincial Police has been using vehicle EDR data, where available, to investigate road accidents since the late 1990s. In the USA, some state and local police forces are using vehicle EDR data in traffic prosecutions.

Audit observations

3.7 Audit notes that considerable time and resources are needed to complete a road accident investigation. Some countries have begun using data recorded by vehicle EDR to improve the efficiency and effectiveness of road accident investigation and prosecution. So far, the installation and use of vehicle EDR is more common in vehicles manufactured in North America. **Audit considers that the TD should monitor the development of vehicle EDR technology. The Police should also keep in view the use of data recorded by vehicle EDR for road accident investigation.**

Audit recommendation

3.8 **Audit has *recommended* that the Commissioner for Transport should, in consultation with the Secretary for the Environment, Transport and Works and the Commissioner of Police, monitor the development and application of vehicle EDR by car manufacturers.**

Response from the Administration

3.9 The **Secretary for the Environment, Transport and Works** has said that the ETWB will continue to keep in view the development of vehicle EDR in overseas countries.

3.10 The **Commissioner for Transport** has said that the TD will closely monitor the development and application of vehicle EDR overseas. He has also said that:

(a) the technical specification of these devices is still at an early stage of development; and

(b) privacy considerations on the use of the data stored in these devices have to be taken into account.

3.11 The **Commissioner of Police** supports the audit recommendation. He has said that the Police is happy to assist the TD in monitoring overseas development of vehicle EDR.

Vehicles without a valid third-party insurance policy

3.12 Under section 4(1) of the Motor Vehicles Insurance (Third Party Risks) Ordinance (Cap. 272), it shall not be lawful for any person to use, or to cause or permit any other person to use, a motor vehicle on a road unless there is in force an insurance policy or a security in respect of third-party risks.

Audit observations

3.13 During the examination of accident investigation files, Audit noted that in a number of cases, the driver/owner could not produce a valid third-party insurance policy. According to the Police's records, there were 295 prosecutions in 2005 against such offences.

3.14 In response to Audit's enquiry, in February 2006, the Motor Insurers' Bureau of Hong Kong (MIB — Note 2) stated that where the victims of road accidents were unable to recover the damages awarded to them because of the lack of valid third-party insurance, the MIB would secure the satisfaction of claims. **The MIB was concerned about the rapid rise in the number of such cases.** In 2000, 10 such cases were referred to the MIB. In 2005, the number had risen to 16 (i.e. a 60% increase).

3.15 Under regulation 24 of the Motor Vehicles Insurance (Third Party Risks) Regulations (Cap. 272A), any person applying for a vehicle licence or delivering to the TD a notice of transfer of vehicle ownership has to produce a certificate of insurance or security in respect of third-party risks which is valid on the date when the licence is to become operative.

3.16 According to the TD, some vehicle owners would only produce insurance cover notes that are valid for 30 days or less for the purpose of obtaining or renewing their vehicle licences. The TD has no knowledge as to whether these vehicles are insured after the expiry of the insurance cover notes. Furthermore, for those who apply for a vehicle licence through the Electronic Service Delivery Scheme, only a scanned copy of the insurance cover note would be provided. Forgery is possible.

Note 2: *The MIB was incorporated in 1980 in Hong Kong as a non-profit-making company and limited by guarantee. All authorised motor insurers in Hong Kong are required to be members of the MIB.*

Audit recommendation

3.17 **Audit has *recommended* that the Commissioner for Transport should, in consultation with the Secretary for the Environment, Transport and Works and the Commissioner of Police, consider ways to ensure that vehicles on a road always have valid third-party insurance policies.**

Response from the Administration

3.18 The **Commissioner for Transport** agrees with the audit recommendation. He has said that the TD will, together with the ETWB, the Police, the insurance industry and other relevant interest groups, consider ways to ensure that vehicles always have valid third-party insurance policies.

PART 4: DRINK DRIVING TEST

4.1 This PART examines the time needed to complete a drink driving test and reports the results of Audit's research on overseas practices.

Background

4.2 Sections 39B and 39C of the Road Traffic Ordinance (Cap. 374) empower a police officer to require a driver to take a drink driving test. The current prescribed limits of alcohol concentration of a driver are as follows:

(a) 22 micrograms of alcohol in 100 millilitres of breath;

(b) 50 milligrams of alcohol in 100 millilitres of blood; and

(c) 67 milligrams of alcohol in 100 millilitres of urine.

Drink driving testing procedures

4.3 A drink driving test consists of two parts. The first part of the test is the screening breath test. If the driver fails this part, he will be arrested and taken to the nearest police station (Note 3) to take a second part of the test, known as the evidential breath test, or to undergo a blood or urine test.

4.4 If the alcohol level of an evidential breath test does not exceed 37 micrograms of alcohol in 100 millilitres of breath, the driver can request to take a blood or urine test. He will be released if such test indicates that his alcohol level does not exceed the prescribed limit (see para. 4.2).

Time taken to complete drink driving test

4.5 Most of the alcohol consumed is metabolised in the liver. The rate of alcohol metabolism varies among individuals. It is therefore important that the evidential breath test is carried out as soon as possible after apprehending the suspected drunk driver. Otherwise, there is a risk that the suspect would be released because his alcohol level has fallen below the prescribed limit.

Note 3: *According to the Police Force Ordinance (Cap. 232), a person arrested must be forthwith delivered into the custody of the officer in charge of a police station.*

4.6 It is worth noting that when the legislation on drink driving was being examined in 1995, Members of the Bills Committee of the Legislative Council expressed concern about the time interval between the screening breath test and the evidential breath test and how it might affect the effectiveness of the new legislation. The Committee was informed that:

(a) the time interval between the screening breath test and the evidential breath test would be about 15 to 20 minutes; and

(b) its effects on the amount of alcohol in the suspected drunk driver's blood (i.e. blood alcohol concentration or BAC) would not be significant.

Audit observations and recommendations in the Director of Audit's Report No. 30

4.7 In the Director of Audit's Report No. 30, Audit analysed drink driving cases during the period between December 1995 and December 1997. Audit found that:

(a) the average time interval between the screening breath test and the evidential breath test was about 70 minutes;

(b) where the driver requested to take a blood or urine test after the evidential breath test (see para. 4.4), the average additional time taken was about two hours. Including the 70 minutes needed to complete the evidential breath test, the average total time required was about 190 minutes; and

(c) where the driver did not take the evidential breath test but took a blood or urine test instead (e.g. when an injured driver was taken directly to a hospital where an evidential breath test analyser was not available), the average time taken after the screening breath test was about 88 minutes.

4.8 Audit found that the average time taken to complete a drink driving test after the screening breath test ranged from 70 minutes to 190 minutes. Audit considered that the Administration should critically review and streamline the drink driving testing procedures, so as to ensure that there was no delay in completing the required drink driving tests.

Measures taken

4.9 In response to the audit findings and recommendations, the Administration has, since June 1998, implemented a number of measures to help the Police reduce the time required to complete a drink driving test. The key measures are as follows:

(a) amendments were made in 1999 to the relevant legislation to empower the Commissioner of Police to designate police vehicles and Police Traffic Offices as breath testing centres and to allow nurses, in addition to doctors, to take blood specimens;

(b) additional sets of evidential breath testing devices have been installed; and

(c) actions have been taken to closely monitor the drink driving test completion time. Any test taking longer than 90 minutes to complete would be reviewed to determine the reasons for delay.

Current situation

4.10 In order to ascertain the effectiveness of the measures taken by the Administration, Audit analysed drink driving cases in 2004 and 2005 (up to June 2005). Comparing the audit findings with those reported in the Director of Audit's Report No. 30, Audit noted that:

(a) the average time interval between the screening breath test and the evidential breath test had been shortened to about 50 minutes (or an improvement of 20 minutes);

(b) where, after the evidential breath test, the driver had to take a blood or urine test, the average time was about an hour. Therefore, the average total time taken to complete a drink driving test was about 110 minutes (or an improvement of 80 minutes); and

(c) where the driver did not take the evidential breath test but took a blood or urine test instead, the average time taken after the screening breath test was about 76 minutes (or an improvement of 12 minutes).

4.11 While there was a noticeable improvement, the time interval between the screening breath test and the evidential breath test (i.e. 50 minutes) was still much longer than the 15 to 20 minute interval envisaged in 1995 (see para. 4.6).

4.12 In order to ascertain whether there is scope for further shortening the time required to complete a drink driving test, Audit visited three of the five police traffic regions and interviewed police officers who were responsible for administering the test. Audit was informed that:

(a) in real-life situations, full cooperation from the suspected drunk driver was rare. It was also not uncommon that the Duty Officer (i.e. the officer in charge of a police station report room) was unable to attend to the case immediately due to other work commitments;

(b) apart from the time required to complete the arrest and breath test processes, time was needed for the police vehicle to arrive at the scene of arrest and to take the suspected drunk driver to the nearest police station. The time needed depended on the distance and traffic conditions between the scene of arrest and the nearest police station; and

(c) further travelling time would be needed if the nearest police station (see Note 3 to para. 4.3) was not equipped with an evidential breath testing device because the suspected drunk driver would have to be taken to another police station where such a device was available.

4.13 In response to Audit's enquiry, in early March 2006, the Police advised that:

(a) the "15 to 20 minutes" interval between the screening breath test and the evidential breath test was at best an estimation of the time likely to be needed, made during the Bills Committee stage in 1995; and

(b) subsequent operational experience gained from handling thousands of cases showed that this time interval was over-optimistic.

4.14 The situation faced by the Police is not unique to Hong Kong. Appendix C outlines some of the measures recently implemented in overseas countries to address the drink driving problem.

Audit observations

4.15 Audit notes that the Administration has implemented measures to shorten the time needed to complete a drink driving test. Despite the improvements made, considerable time is still required for completing a drink driving test. **Audit considers that the Administration should keep in view practices and new technology adopted by other countries to combat drink driving.**

Audit recommendation

4.16 **Audit has *recommended* that the Commissioner of Police should, in consultation with the Secretary for the Environment, Transport and Works, keep in view overseas practices and new technology to combat drink driving.**

Response from the Administration

4.17 The **Secretary for the Environment, Transport and Works** supports the audit recommendation.

4.18 The **Commissioner of Police** fully supports the audit recommendation and has said that the Police always looks out for new enforcement tools that will improve operational efficiency and be accepted by the courts.

4.19 The **Commissioner for Transport** has said that the TD is happy to keep in view the developments in other countries.

PART 5: USE OF AUTOMATED SPEED ENFORCEMENT CAMERAS

5.1 This PART examines the use of automated speed enforcement cameras (SECs) for identifying drivers who drive at a speed exceeding the speed limit prescribed by law.

Background

5.2 Speeding is a major cause of serious road accidents. It increases the distance needed to stop a vehicle and prevents a driver from reacting to dangerous situations in time. Speeding also increases the severity of the impact in a collision. A driver who drives at a speed exceeding the speed limit on any road commits a traffic offence.

Audit observations and recommendations on speeding in the Director of Audit's Report No. 30

5.3 In the Director of Audit's Report No. 30, Audit reported that the level of enforcement was insufficient to deter speeding and that speed limits were widely disregarded in Hong Kong. The Administration planned to test the suitability of using automated SECs to deter speeding in Hong Kong. Audit supported the initiative and considered that, if the results of the test were satisfactory, the Administration should extend the use of automated SECs as far and as early as possible.

Measures taken

5.4 In 1999, the Administration tested the suitability of using automated SECs by installing 2 automated SECs in 10 locations along the Tolo Highway on a rotational basis. The results were satisfactory. The Administration later drew up a plan to install additional automated SECs along other major roads and highways, particularly at locations that were prone to road accident or speeding. As at 31 December 2005, 10 automated SECs were installed at 85 locations on a rotational basis.

Current situation

5.5 Audit notes that speed limits are still often disregarded in Hong Kong, as indicated by:

(a) ***Accident statistics.*** According to the TD's TRADS, the number of road accidents caused by speeding-related factors was 419 in 2005. Compared to 261 in 2000, the number increased by 61%; and

(b) ***Speeding enforcement statistics.*** According to the Police's speeding enforcement statistics, the number of speeding cases increased steadily from about 181,000 in 2000 to about 227,000 in 2005 (i.e. an increase of 25%).

5.6 In response to Audit's enquiry, in early March 2006, the Police advised that:

(a) despite the 61% increase in the number of road accidents caused by speeding-related factors during the period 2000 to 2005, the ranking of speeding as a driver contributory factor in accidents was never higher than five (in 2002) and stayed mostly at seven; and

(b) while speeding required the Police's continued attention, the increase in speeding cases was more a reflection of the build-up in the SEC system in recent years rather than simply a major rise in the offending rate.

Audit observations

Scope for further extending the use of automated SECs

5.7 Apart from using automated SECs to detect speeding, the Police regularly carries out speed enforcement operations using manually-operated speed detectors such as laser guns, mobile radar cameras, and in-car video system. Compared to automated SECs, manually-operated speed detectors have the following limitations:

(a) ***Labour-intensive.*** A manually-operated speed detector requires at least one police officer to operate. Where vehicles caught speeding need to be stopped, additional police officers are needed to man a road block;

(b) ***Limited coverage.*** Only a very small section of a road can be monitored by a police team at any one time. Therefore, the geographical coverage of the enforcement action at any one time is limited; and

(c) ***Short-lived deterrent effect.*** Police surveillance at a particular location can only last for a short duration because of staff resource constraints. Therefore, the deterrent effect on speeding is short-lived.

5.8 Audit examination of the Police's records of speed enforcement operations reveals that laser gun is the most frequently used manually-operated speed detector. In the last quarter of 2004, on average, 715 speed enforcement operations were carried out monthly using laser guns. Of these 715 operations, 411 (or 57%) were carried out at the same location for 5 times or more.

5.9 In response to Audit's enquiry, in February 2006, the ETWB explained that:

(a) due to resource limitations, it was not possible to install automated SECs to cover all the speeding black spots. The Police's enforcement operations using manually-operated speed detectors at locations not covered by automated SECs were therefore necessary;

(b) operations using manually-operated speed detectors were carried out at locations that were not fixed and not known to motorists. As such, motorists would be generally more alert; and

(c) using a combination of automated SECs and manually-operated speed detectors would have a higher deterrent effect.

Speed enforcement camera to location ratio

5.10 Audit noted that as at 31 December 2005, 10 automated SECs were installed at 85 locations on a rotational basis. The SEC-to-location ratio of 1 to 8.5 was low, when compared to the red-light camera (RLC — Note 4) to location ratio of 1 to 4. In this connection, it is worth noting that the Administration has planned to install more RLCs so as to improve the RLC-to-location ratio to 1 to 1.4 by the end of 2006.

5.11 In response to Audit's enquiry, in March 2005, the Police informed Audit that there was another school of thought that, regardless of the SEC-to-location ratio, the fact that cameras were rotated and motorists did not know if they were likely to be photographed also acted as a deterrent.

5.12 **Audit considers that a low SEC-to-location ratio reduces the likelihood of catching speeding vehicles. The number of automated SECs should be increased so as to maintain an adequate SEC-to-location ratio.**

Note 4: *Since 1993, RLCs have been installed. As at 31 December 2005, 28 RLCs were installed at 111 locations.*

Audit recommendations

5.13 **In order to enhance the deterrent effect on speeding and to improve the efficiency and effectiveness of speed enforcement operations, Audit has *recommended* that the Secretary for the Environment, Transport and Works should, in consultation with the Commissioner for Transport and the Commissioner of Police, consider:**

(a) **extending, as far as possible, the use of automated SECs to locations where speed enforcement operations using manually-operated speed detectors are regularly carried out; and**

(b) **increasing the number of automated SECs with a view to improving the SEC-to-location ratio.**

Response from the Administration

5.14 The **Secretary for the Environment, Transport and Works** agrees with the audit recommendations. She has said that:

(a) the ETWB plans to improve, as far as practicable, the camera-to-location ratio of automated SECs and to install more of such cameras and camera-housings at speeding black spots and other strategic locations; and

(b) the use of automated SECs will be complemented by mobile operations of the Police.

5.15 The **Commissioner of Police** generally agrees that there is a need to increase the SEC-to-location ratio and fully supports the audit recommendation of extending the use of automated SECs. He has said that:

(a) the Police agrees with the audit observation that speed surveillance can be carried out more effectively at some locations using automated SECs. However, on balance, mention needs to be made of technical and environmental limitations of the system, which is not suited to all locations, while the procurement, maintenance and operating costs for the additional equipment are considerable;

(b) the continued use of officer-operated laser guns at random locations maintains an element of "surprise" and "flexibility", allowing a timely enforcement response to current road trends, while ensuring that motorists do not become accustomed to "fixed" locations; and

(c) the Police is working closely with the TD to follow up the matter with regard to the additional staff and equipment costs.

5.16 The **Secretary for Financial Services and the Treasury** has said that the audit recommendations should be subject to the assessment of the cost-effectiveness of extending the use of automated SECs, as compared to that of the existing enforcement measures.

Identification of drivers caught by automated enforcement cameras

5.17 Vehicles caught speeding or jumping red light by automated SECs and RLCs are usually not stopped immediately by the Police. Instead, the Police would check the identity of vehicle owners from the TD's records, and issue a notice to the vehicle owner at his registered address, requiring him to provide the details of the driver at the time of the alleged offence. Once the driver's identity is confirmed, the Police will either issue him with a fixed penalty ticket or apply for a summons. The Police may prosecute the vehicle owner if he fails to identify the driver.

Audit observations

Illegible vehicle registration mark

5.18 Audit was informed that of the 170,000 cases caught by automated SECs and RLCs between October 2004 and September 2005, 5,400 (3%) had to be withdrawn because the vehicle registration marks were illegible. Audit noted that some of the cases were withdrawn because the vehicle registration mark was partially blocked.

Driver and vehicle owner records kept by the TD

5.19 Apart from partially blocked vehicle registration mark, another factor that affects the efficiency and effectiveness of using automated SECs and RLCs is inaccuracy of the driver and vehicle owner records kept by the TD. In such cases, considerable police resources are used to locate the vehicle owners. In response to Audit's enquiry, in December 2005, the Police advised that, for 3,000 (or 17%) of the 18,000 cases caught by automated SECs and RLCs in October 2005, the address records were inaccurate.

Existing loophole

5.20 The regulations requiring drivers and vehicle owners respectively to update their personal particulars are as follows:

(a) regulation 18(1) of the Road Traffic (Driving Licences) Regulations of the Road Traffic Ordinance stipulates that "a licence holder shall notify the Commissioner ***(i.e. Commissioner for Transport)*** in writing of any change in the name,

address or identity document ***specified in the driving licence*** held by him within 72 hours after such change" (Audit's emphasis); and

(b) regulation 19(1) of the Road Traffic (Registration and Licensing of Vehicles) Regulations of the Road Traffic Ordinance stipulates that "within 72 hours after any change of name, ***address*** or identity document of a registered owner ***entered in a registration document,*** the registered owner shall forward to the Commissioner ***(i.e. Commissioner for Transport)*** a notice of such change" (Audit's emphasis).

5.21 Driving licences and vehicle registration documents were changed from booklet format to card and loose sheet format respectively in the 1970s. Since then, these documents issued by the TD no longer have any address entered therein.

5.22 The regulations mentioned in paragraph 5.20 were not amended accordingly when the formats of driving licences and vehicle registration documents were changed. An anomaly has resulted in that, while drivers and vehicle owners are required by law to notify the TD of any change of address, such information is no longer required to be provided in the driving licence or the vehicle registration document. Consequently, no enforcement action can be taken against persons who have failed to notify the TD of the change of address.

5.23 ***TD did not require address proof.*** Audit noted that while there was a provision in the Road Traffic Ordinance to penalise those providing false information, the TD did not require drivers or vehicle owners to produce proof of address (e.g. water or electricity bills) when registering their address. In this connection, it is worth noting that in a court case in 2001, the presiding Magistrate commented that the TD should request vehicle owners to produce letters with printed name and address when registering their address.

Remedial actions taken by the TD

5.24 In response to Audit's enquiry, in December 2005, the TD informed Audit that:

(a) action was being taken to plug the loophole mentioned in paragraphs 5.20 to 5.22; and

(b) the TD expected that legislative amendments would be tabled in the Legislative Council in 2006 to require drivers and vehicle owners to notify the TD of address changes. The TD would consider requiring driving licence applicants and vehicle owners to produce documentary proof when registering their address.

Audit recommendations

5.25 **Audit has *recommended* that the Commissioner for Transport should:**

(a) **in consultation with the Commissioner of Police, work out a practicable solution to ensure the legibility of vehicle registration mark; and**

(b) **expedite the remedial actions that the TD has agreed to take to ensure that the driver and vehicle owner records kept by the TD are accurate and up-to-date (i.e. making legislative amendments to require drivers and vehicle owners to notify the TD of address changes, and considering the need to require driving licence applicants and vehicle owners to produce documentary proof when registering their address).**

Response from the Administration

5.26 The **Commissioner for Transport** agrees with the audit recommendations. He has said that:

(a) legislative amendments are in the pipeline to require drivers and vehicle owners to notify the TD of address changes; and

(b) while the TD would consider the need to require applicants to produce documentary proof when registering their address, the TD is concerned that the proposal may not be conducive to streamlining the application procedures and encouraging online applications.

5.27 The **Commissioner of Police** supports the audit recommendation mentioned in paragraph 5.25(a).

Driving too close to the vehicle in front

5.28 Tailgating (i.e. the demeanour of driving too close to the vehicle in front deliberately at a considerable speed) can be dangerous. It is often the cause of multiple collisions. In terms of the number of road accidents, tailgating was consistently the top-ranking driver factor leading to road accidents in recent years. In 2005, about 1,800 road accidents were caused by tailgating.

5.29 Presently, tailgating does not constitute any specific offence under the law. Tailgating drivers are prosecuted for careless driving under section 38 of the Road Traffic Ordinance. The Police mainly uses laser guns for gathering evidence of tailgating. The laser guns are usually placed at locations where there is a stretch of road not less than 500 to 600 meters in length. Respective speeds of the vehicles, and the distance and time gap between them are measured. Apart from laser guns, the Police uses patrol vehicles equipped with a traffic enforcement video documentation system to gather evidence of tailgating.

5.30 Audit notes that in some countries, automated enforcement systems are used to gather evidence of tailgating. Deployment of such systems can enhance the deterrent effect on tailgating and help improve road safety.

5.31 In response to Audit's enquiry, in February 2006, the Police advised that:

(a) some of the overseas automated enforcement systems were used in enclosed areas like tunnels. In Hong Kong, most tunnels were always busy with slow traffic. Other equipment (e.g. closed circuit televisions) was already available to assist enforcement;

(b) the devices used overseas might not meet the evidential requirements of the courts in Hong Kong; and

(c) it would be difficult and costly to install automated enforcement systems to cover the whole road network in Hong Kong.

Audit observations

5.32 **Audit considers that the use of automated systems can assist the Police in enforcement operations against tailgating. There is a need for the Administration to keep in view overseas practices and consider carrying out feasibility studies of using automated systems to gather evidence of tailgating.**

Audit recommendations

5.33 **Audit has *recommended* that the Commissioner of Police should, in consultation with the Secretary for the Environment, Transport and Works:**

(a) **keep in view overseas practices in taking enforcement action against tailgating; and**

(b) **consider carrying out feasibility studies of using automated systems to gather evidence of tailgating.**

Response from the Administration

5.34 The **Secretary for the Environment, Transport and Works** agrees with the audit recommendations.

5.35 The **Commissioner of Police** fully supports the audit recommendations and has said that the Police will continue to monitor overseas development in technology in support of specific tailgating enforcement. He has also said that:

(a) the Police notes that there are problems in drafting specific legislation due to the nature of the tailgating offence, which involves a prolonged period of driving in a manner constituting both "close following" and "careless driving"; and

(b) current enforcement techniques rely on evidence gathering by electronic equipment (in-car video systems) and the police officer's direct observations to establish the offender's driving manner.

PART 6: MEASURES TO PROMOTE SEAT BELT WEARING

6.1 This PART examines the measures implemented to promote seat belt wearing with reference to overseas practices on publicity campaign and enforcement.

Seat belt legislation

6.2 In 1983, compulsory seat belt legislation for private car drivers and front seat passengers came into operation. Over the years, the legislation has been revised to cover other road users. A summary of the existing seat belt legislation is given in Table 2.

Table 2

Summary of the existing seat belt legislation

<table>
<tr><th>Vehicle type</th><th>Driver and front seat passenger</th><th>Middle front seat passenger</th><th>Rear seat passenger</th></tr>
<tr><td>Private car</td><td>Seat belt must be worn if fitted (1983)</td><td rowspan="5">Seat belt must be worn if fitted (1996)</td><td>Seat belt must be worn if fitted (1996)</td></tr>
<tr><td>Taxi</td><td rowspan="3">Seat belt must be worn if fitted (1989)</td><td>Seat belt must be worn if fitted (2001)</td></tr>
<tr><td>Public light bus</td><td>Seat belt must be worn if fitted (2004)</td></tr>
<tr><td>Private light bus</td><td>Not applicable</td></tr>
<tr><td>Goods vehicle</td><td>Seat belt must be worn if fitted (1990)</td><td>Not applicable</td></tr>
<tr><td>Bus</td><td>Seat belt for driver must be worn if fitted (1997)</td><td>Not applicable</td><td>Not applicable</td></tr>
</table>

Source: *TD records*

Remarks: *The year in bracket indicates when the relevant seat belt legislation became effective.*

Audit observations and recommendations in the Director of Audit's Report No. 30

6.3 In the Director of Audit's Report No. 30, the following audit observations were made on the wearing of seat belts:

(a) seat belt legislation was effective in reducing casualty rate;

(b) while the seat belt wearing rates of drivers and front seat passengers were satisfactory, the wearing rate of private car rear seat passengers was low;

(c) the Police normally dealt with the non-compliance of the seat belt legislation as a secondary offence. Action would only be taken if the offence came to light while investigating other traffic offences; and

(d) the TD proposed to launch more publicity campaigns and to draw the Police's attention for appropriate enforcement action, so as to increase the seat belt wearing rate.

6.4 Audit recommended that the Administration should closely monitor the use of rear seat belts. Publicity and enforcement action should be stepped up to ensure a high wearing rate. Action plan should also be drawn up to extend the seat belt legislation to taxis and light buses. The Administration agreed with the audit findings and recommendations.

Audit observations

Public light bus seat belt wearing rate

6.5 Passenger seat belts serve little purpose unless they are properly worn. Audit noted that:

(a) the seat belt wearing rate of private car passengers was high, based on the TD's road accident statistics. Of the 1,577 private car passengers who were injured or killed in 2005, only 35 (2%) were not wearing a seat belt; and

(b) in 2005, the Police carried out three enforcement operations against drivers and passengers who were not wearing a seat belt. The operation launched in November 2005 (Note 5) targeted specifically at public light bus passengers.

Note 5: *The operation was carried out following a fatal accident in November 2005.*

During this operation, 231 verbal warnings and 455 summonses were issued. In the other two operations, of the 972 warnings and summonses issued, 484 (50%) were issued to public light bus passengers. The large number of warnings and summonses issued indicated that seat belt wearing of public light bus passengers was less than satisfactory.

6.6 The seat belt legislation is effective only if people are aware of what the law says and they understand both the injury and penalty risks of non-compliance. Effective publicity campaign and enforcement action are therefore important. Audit examined the ISD's and the Police's records to ascertain the action the Administration had taken to promote seat belt wearing among public light bus passengers.

Publicity campaign

6.7 The publicity campaign to promote seat belt wearing among public light bus passengers began in July 2004. During the initial period of about six weeks, Announcements in the Public Interest (APIs) promoting seat belt wearing in public light buses were broadcast, on average, about 15 times a week on each non-pay television channel, and about 9 times a week on each radio channel. In the first ten months of 2005, these APIs were broadcast, on average, about twice a week on each non-pay television channel and 2.5 times a week on each radio channel.

6.8 According to the ISD, APIs promoting seat belt wearing in public light buses had reached 97% of the targeted viewers (i.e. those who were aged four and over) for the twelve-month period ended 31 July 2005. Among them, 92% saw these APIs 3 times, 64% 10 times and 33% 20 times. Despite such high viewing rates and broadcasting frequency, many public light bus passengers still do not wear a seat belt (see para. 6.5(b)). **Audit considers that there is a need to ascertain the effectiveness of the publicity campaign to promote seat belt wearing among public light bus passengers.**

Enforcement action

6.9 Audit noted that since the beginning of the publicity campaign in July 2004, the Police had taken only limited enforcement action (see para. 6.5(b)) against public light bus passengers who were not wearing seat belts.

6.10 In response to Audit's enquiry, in early March 2006, the Police explained that:

(a) as in the case for all new offences, a grace period was allowed to permit public light bus passengers to become accustomed to wearing seat belts; and

(b) specific enforcement difficulties were discovered, particularly in confirming from the outside of the vehicle whether seat belts were being worn. This necessitated large-scale pre-planned operations using both plain-clothes and uniformed officers, two of which had been held to date. Such enforcement action would continue subject to other urgent enforcement commitments.

Overseas practices on publicity campaign

6.11 In the United Kingdom, the authorities launched a publicity campaign in 1998 to promote the seat belt wearing rate of rear seat passengers. The survey conducted during the campaign revealed that the seat belt wearing rate of rear seat passengers had increased from 67% to 72%.

6.12 Prior to the commencement of the campaign, a detailed survey was carried out to ascertain the reasons for the low seat belt wearing rate of rear seat passengers. It revealed that public perceptions were that the back of the car was safe, and that as the rear seat passengers were not near the front windscreen, their risk was low. Based on the survey findings, the authorities directed the publicity campaign to focus on providing new evidence to correct complacency and misbelief. **This shows that understanding the reasons for low seat belt wearing rate and public perceptions contributes to the success of a publicity campaign.**

Overseas practices on enforcement

6.13 The European Transport Safety Council considers that intensive, highly-visible and well-publicised enforcement can increase seat belt wearing rate. The National Highway Traffic Administration of the USA also considers that high-profile enforcement effort is one of the best ways to encourage seat belt use. Slovenia has been adopting such approach to promote seat belt wearing since 2003. The Slovenian campaign links intensive, highly-visible enforcement to publicity work.

Need to draw on overseas practices for reference

6.14 **Audit considers that the Administration may draw on overseas practices in planning seat belt publicity campaign and enforcement action in future.** In particular, there may be a need to ascertain the reasons for low seat belt wearing rate among public light bus passengers by conducting periodic surveys.

Penalties on non-compliance with seat belt legislation

6.15 A passenger who is caught not wearing a seat belt is summonsed to appear in court and is liable to a fine of $5,000 and imprisonment for three months. However, drivers who are caught for the same offence are only liable to a fixed penalty of $320, under the Fixed Penalty (Criminal Proceedings) Ordinance (Cap. 240). Audit noted that in 2005, 973 passengers were summonsed and 17,481 drivers were given fixed penalty tickets for non-compliance with seat belt legislation.

6.16 The prosecution of passengers by summonses creates additional workload for the Police, the Department of Justice, and the courts. **Audit considers that an option worth considering by the Administration is to amend the legislation so that non-compliance with passenger seat belt legislation may be dealt with as a scheduled offence under the Fixed Penalty (Criminal Proceedings) Ordinance (i.e. a passenger who is caught not wearing a seat belt is given a fixed penalty ticket).**

Extending the seat belt legislation to other types of vehicles

6.17 **Audit considers that given the proven benefit of seat belt wearing in reducing road accident casualties, the feasibility of extending the seat belt legislation to seated passengers of other types of vehicles (e.g. rear seat passengers of goods vehicles and private light buses — see Table 2 in para. 6.2) is worth examining.**

Audit recommendations

6.18 **Audit has *recommended* that the Commissioner of Police should closely monitor the results of the Police's enforcement action against public light bus passengers not wearing seat belts and, taking into account other enforcement priorities, adjust the priority of such action accordingly.**

6.19 **Audit has *recommended* that the Secretary for the Environment, Transport and Works should, in consultation with the Commissioner for Transport, the Commissioner of Police and the Director of Information Services:**

(a) **carry out a survey to ascertain the reasons for low passenger seat belt wearing rate in public light buses;**

(b) **consider carrying out periodic surveys on seat belt wearing rate for assessing the effectiveness of publicity campaign and enforcement action; and**

(c) **keep in view overseas practices in the enforcement and publicity of seat belt legislation and, where appropriate, consider adopting similar practices in Hong Kong.**

6.20 **Audit has *recommended* that the Secretary for the Environment, Transport and Works should, in consultation with the Commissioner for Transport and the Commissioner of Police:**

(a) **consider the feasibility of classifying passenger seat belt offence as a scheduled offence which may be dealt with by issuing fixed penalty tickets under the Fixed Penalty (Criminal Proceedings) Ordinance; and**

(b) **keep in view overseas practices on the application of seat belt legislation and consider the feasibility of extending the requirement for seat belt wearing to passengers of other types of vehicles (e.g. rear seat passengers of goods vehicles and private light buses).**

Response from the Administration

6.21 The **Commissioner of Police** agrees with the audit recommendation mentioned in paragraph 6.18 which is already in effect. He also supports in principle the audit recommendation mentioned in paragraph 6.20(a).

6.22 The **Secretary for the Environment, Transport and Works** agrees with the audit recommendations mentioned in paragraphs 6.19 and 6.20.

6.23 The **Director of Information Services** agrees with the audit recommendations mentioned in paragraph 6.19. She has said that:

(a) a survey to ascertain the reasons for the low seat belt wearing rate among public light bus passengers will help the Administration devise new strategies or measures to enhance the seat belt usage;

(b) subsequent surveys on the effectiveness of the publicity efforts can also serve as useful reference for formulating and fine-tuning the publicity strategy. The ISD stands ready to assist the ETWB in conducting such surveys; and

(c) the ISD will keep in view overseas practices in planning publicity efforts.

Appendix A
(para. 1.2 refers)

Statistics of road accidents
(2000-2005)

Year	Number of accidents (a)	Number of injuries (b)	Number of deaths (c)	Number of casualties (d) = (b) + (c)
2000	14,949	19,258	171	19,429
2001	15,631	20,145	173	20,318
2002	15,576	20,429	171	20,600
2003	14,436	18,108	202	18,310
2004	15,026	19,236	166	19,402
2005	15,062	19,069	151	19,220
Average	**15,113**	**19,374**	**172**	**19,546**

Source: TD records

Appendix B
(para. 1.3 refers)

Roles of the Environment, Transport and Works Bureau and different government departments in improving road safety

Bureau/Department	Role
Environment, Transport and Works Bureau	Formulating and reviewing road safety policy and legislation
Transport Department	Promoting road safety through legislation, publicity and education, setting standards for road design, analysing road accident statistics, formulating and implementing remedial measures for road accident black spots, vehicle examination, and licensing of vehicles and drivers
Hong Kong Police Force	Enforcing road traffic laws and delivering road safety talks to students and other user groups
Information Services Department	Implementing road safety publicity programmes

Source: Audit research

Appendix C
(para. 4.14 refers)

Measures recently implemented in overseas countries to combat drink driving

1. This Appendix outlines some of the measures recently implemented in overseas countries to combat drink driving.

Roadside evidential breath testing devices

2. Modern roadside evidential breath testing devices are capable of producing evidence admissible in court. Their application could streamline the breath test process and allow the police to test more suspected drunk drivers with the same level of resources.

3. In 2004, the United Kingdom Department for Transport tested the performance of some of the latest roadside evidential breath testing devices against that of an approved, police station-based evidential breath testing device. It concluded that all the new devices assessed had demonstrated a high level of precision in terms of accuracy, reliability and consistency. The United Kingdom Department for Transport also found that the latest generation of compact portable evidential breath testing device offered the following three major advantages:

(a) the evidence would not be lost by a person's BAC falling back below the legal limit in the time it took to bring the suspected drunk driver to a designated police station;

(b) police officers would not be diverted from their roadside work to bring a suspected drunk driver to a police station; and

(c) in the event of a suspected drunk driver's BAC falling below the legal limit, he could be released immediately without the inconvenience of having to be taken to a police station.

4. In the United Kingdom, a new piece of legislation enacted in April 2005 enables the United Kingdom police to use roadside evidential breath test results as evidence. The Royal Society for the Prevention of Accidents of the United Kingdom supports the new legislation, saying that police officers "can spend more time on patrol and test more suspected drunk drivers with the same level of resources".

5. Other countries (e.g. Austria, New Zealand and Sweden), the Victoria State of Australia and the State of California in the USA have been using roadside evidential breath testing devices. According to a research conducted by the Swedish National Laboratory of Forensic Science, the introduction of the roadside evidential breath testing device simplified the related paperwork.

Random roadside breath test

6. In Hong Kong, the Police's power to require the driver to take a breath test is restricted (Note1). According to a 2004 study of the World Health Organisation, in 74 countries, the police is empowered to carry out random roadside breath test. Of these 74 countries, 24 reported that random roadside breath test was often carried out.

7. According to another World Health Organisation report published in 2004, in some countries, random roadside breath test had reduced overall alcohol-related road accidents by about 20%.

Alcohol ignition interlocks

8. An alcohol ignition interlock (also known as "alcolock") is a device installed in a vehicle that requires the driver to provide a breath sample every time an attempt is made to start the engine. If the driver has a BAC above a specified threshold, the ignition system will not function. Drivers are also required to perform a re-test at random intervals when travelling. Extensive studies carried out in the USA and Canada since the 1980s show that, when embedded in a comprehensive monitoring programme, alcolocks lead to 40% to 95% reduction in repeating the offence. It was estimated that some 70,000 alcolocks were being used throughout North America in 2004.

Source: Audit research

Note: *According to the Road Traffic Ordinance, the Police can require a driver to take a breath test only if he is involved in a road accident, commits a traffic offence, or the Police has reasonable cause to suspect that he has been driving with alcohol in his body.*

Acronyms and abbreviations

APIs	Announcements in the Public Interest
Audit	Audit Commission
BAC	Blood alcohol concentration
EDR	Event data recorder
ETWB	Environment, Transport and Works Bureau
ISD	Information Services Department
MIB	Motor Insurers' Bureau of Hong Kong
Police	Hong Kong Police Force
RLC	Red-light camera
SECs	Speed enforcement cameras
TD	Transport Department
TOMS	Traffic Operations and Management System
TRADS	Traffic Accident Data System
USA	United States of America